



FINAL Supplemental Environmental Impact Statement, Greater Sage-Grouse 2020

Three Hard Looks : 2015, 2019 and 2020



143 alternatives
considered in **18 EISs**



54
public meetings



48,734
total pages of NEPA analysis



2,313
people attended



\$17.1 million
total cost



326
partners and
cooperators

Public Comments

8,512 unique scoping comments

16,862 substantive comments on draft EISs

Habitat Investments

Treatment and Restoration

2013-19 **\$294 million** **2.7 million acres**

2020 **\$37 million** **584,000 acres**



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Utah State Office
440 West 200 South, Suite 500
Salt Lake City, UT 84101-1434

In Reply Refer To:
1793 (UT-930)

Dear Reader:

The Utah Greater Sage-Grouse Final Supplemental Environmental Impact Statement (FSEIS) is available for your review. The Bureau of Land Management (BLM) prepared this document in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Federal Land Policy and Management Act of 1976, as amended, implementing regulations, and other applicable law and policy. Please note when reading this document that we refer to the entire planning process that culminated in a Record of Decision in March 2019, as the 2019 Planning Process or Effort. The NEPA analysis, including the Draft Environmental Impact Statement (DEIS) and the Final Environmental Impact Statement (FEIS) were completed in 2018, so we refer to those documents as the 2018 DEIS and the 2018 FEIS.

The affected area includes the BLM Vernal, Moab, Price, Richfield, Kanab, Cedar City, Fillmore, and Salt Lake Field Offices and the Grand Staircase-Escalante National Monument. The planning area encompasses approximately 48 million acres in 27 of Utah's 29 counties (all except Washington and San Juan). Within this area 2.5 million acres are mapped as containing Greater Sage-Grouse habitat on lands administered by the BLM. Additionally, the BLM administers approximately 1.5 million acres of subsurface federal mineral estate located beneath non-federal lands or National Forest System lands that are also mapped as containing Greater Sage-Grouse habitat.

The BLM has prepared this FSEIS to review its previous NEPA analysis and clarify and augment it where necessary. This FSEIS addresses four specific issues: the range of alternatives, need to take a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. The BLM's FSEIS will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information.

Following the publishing of the Notice of Availability for the Draft Supplemental Environmental Impact Statement (DSEIS) in the Federal Register on February 21, 2020 (85 FR 10184), the BLM received public comments for 90 days, through May 21, 2020. Across the Utah Draft SEIS and five other Draft SEISs for other BLM State Offices, a total of 126,062 submissions were received; 222 of these were considered unique submissions. In addition, the BLM received

INTERIOR REGION 7 • UPPER COLORADO BASIN

COLORADO, NEW MEXICO, UTAH, WYOMING

125,840 campaign letters spearheaded by two separate organizations. In accordance with the NEPA, the BLM reviewed and considered all substantive comments received, and provides responses to such comments in this FSEIS.

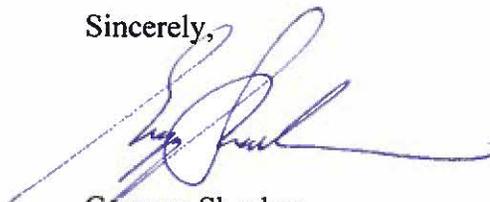
To address public comments raised during this supplemental analysis, the BLM convened a team of biologists and land use planners to evaluate scientific literature provided to the agency. Upon review, the BLM found that the most up-to-date Greater Sage-Grouse science and other information has incrementally increased, and built upon, the knowledgebase of Greater Sage-Grouse management evaluated by the BLM most recently in its 2019 land use plan amendments, but does not change the scope or direction of the BLM's management; however, new science does suggest adaptations to management may be warranted at site-specific scales.

After reviewing public comments and completing the new science evaluation, the BLM determined that the most recent scientific information relating to Greater Sage-Grouse is consistent with the BLM's environmental analysis supporting its 2019 Greater Sage-Grouse land use plan amendments.

You can access the FSEIS on the project website at: <https://goo.gl/o2AQWQ>. Hard copies are also available for public review at BLM offices within the planning area.

Thank you for your continued interest in Greater Sage-Grouse management. We appreciate the information and suggestions you contributed to the NEPA process.

Sincerely,



Gregory Sheehan
State Director

Utah Greater Sage-Grouse
Final Supplemental Environmental Impact Statement
November 2020

Responsible Agency: United States Department of the Interior
Bureau of Land Management

Abstract: This final supplemental environmental impact statement (FSEIS) has been prepared by the United States Department of the Interior (DOI), Bureau of Land Management (BLM). The FSEIS describes and analyzes the seven alternatives considered during the 2015 and 2019 Greater Sage-Grouse planning processes, BLM's consultation and coordination process with federal and state stakeholders, and the rigorous analysis completed to align BLM Greater Sage-Grouse management with the State of Utah's plans.

On October 16, 2019, the US District Court for the District of Idaho issued an order granting a motion for a preliminary injunction filed by Plaintiffs Western Watersheds Project, WildEarth Guardians, Center for Biological Diversity, and Prairie Hills Audubon Society. The court found that the Plaintiffs were likely to succeed on the merits of their claims that the BLM violated the National Environmental Policy Act (NEPA) when adopting the 2019 Greater Sage-Grouse plans. The BLM has prepared this FSEIS to review its previous NEPA analysis, clarify and augment it where necessary, and provide the public with additional opportunities to review and comment. The BLM's FSEIS will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information. To inform this decision that the BLM will make, it has prepared this FSEIS to address four specific issues: the range of alternatives, need to take a "hard look" at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

References to the CEQ regulations throughout this SEIS are to the regulations in effect prior to September 14, 2020. The revised CEQ regulations effective September 14, 2020 are not referred to in this SEIS because the NEPA process began prior to this date.

For further information, contact:

Christine Fletcher, BLM Utah Greater Sage-Grouse State Implementation Lead
Telephone: (435) 865-3035
Bureau of Land Management, Utah State Office
440 W 200 S #500
Salt Lake City, UT 84101

This page intentionally left blank.

TABLE OF CONTENTS

Chapter Page

EXECUTIVE SUMMARY.....ES-1

ES.1	Introduction	ES-1
ES.2	Purpose of and Need for Action	ES-3
ES.3	Items to be Clarified in This FSEIS.....	ES-4
ES.4	New Science and Information Considered by the BLM.....	ES-5
ES.5	Analysis Conclusions.....	ES-7

CHAPTER I. PURPOSE OF AND NEED FOR ACTION..... I-1

I.1	Introduction	I-1
I.2	Purpose of and Need for Action	I-4
I.3	Planning Area and Current Management.....	I-5
I.4	2019 and Issues Development.....	I-7
I.4.1	Issues and Related Resource Topics Identified Through Scoping as Part of the 2019 Planning Process	I-7
I.4.2	Issues and Related Resource Topics Retained for Further Consideration in this FSEIS	I-8
I.4.3	Clarification of Planning Decisions in the 2015 ARMPA.....	I-10
I.4.4	Issues and Resource Topics not Carried Forward for Additional Analysis (Scoping Issues Outside the Scope and Scoping Issues Previously Analyzed)	I-12
I.5	Items to be Clarified in This FSEIS.....	I-13
I.6	Relationship to Other Policies, Plans, and Programs	I-13
I.6.1	State Plans/Strategies	I-13
I.6.2	Tribal Plans/Strategies.....	I-14
I.6.3	Local Plans	I-14
I.6.4	Local Sage-Grouse Working Group Plans.....	I-15
I.7	Changes Between Draft and Final SEIS.....	I-15

CHAPTER 2. ALTERNATIVES 2-1

2.1	Introduction	2-1
2.2	Other Alternatives Considered	2-1
2.2.1	Varying Constraints on Land Uses and Development Activities.....	2-1
2.2.2	Making Priority Habitat Management Areas Identical to the State’s Greater Sage-Grouse Management Areas.....	2-3
2.2.3	Use of Other Habitat Maps for PHMA Designation	2-4
2.2.4	County Greater Sage-Grouse Management Plans	2-5
2.3	Description of Alternatives in the 2018 Proposed RMPA/Final EIS	2-5
2.3.1	No-Action Alternative.....	2-5
2.3.2	2018 Proposed RMPA/Final EIS Proposed Plan Amendment.....	2-5
2.4	Comparative Summary of Alternatives	2-6
2.5	Detailed Description of Alternatives Considered during the 2019 Planning Process.....	2-8
2.5.1	Summary of Alternatives Considered in the 2019 Planning Process	2-9
2.5.2	Alternatives Specific to the 2018 Planning Process.....	2-17
2.6	Alternatives Analyzed in Detail in the 2015 Final EIS and Carried Forward for Consideration in the 2019 Effort.....	2-40

CHAPTER 3. AFFECTED ENVIRONMENT	3-1
3.1 Introduction	3-1
3.2 Resources Affected	3-5
3.3 Greater Sage-Grouse.....	3-7
3.3.1 Greater Sage-Grouse Population Trends	3-7
3.3.2 Adaptive Management	3-9
3.3.3 Greater Sage-Grouse Interim Seasonal Habitat Models	3-10
3.3.4 Greater Sage-Grouse Seasonal Habitat Guidelines.....	3-11
3.3.5 Anthropogenic Disturbance.....	3-11
3.4 Air Quality.....	3-12
3.5 Vegetation (including Noxious Weeds, Riparian and Wetlands).....	3-14
3.6 Other Special Status Species.....	3-15
3.7 Wild Horses and Burros.....	3-16
3.8 Wildland Fire Management.....	3-17
3.9 Wilderness Characteristics	3-18
3.10 Livestock Grazing/Range Management	3-20
3.11 Recreation	3-20
3.12 Comprehensive Travel and Transportation Management.....	3-21
3.13 Lands and Realty	3-21
3.14 Renewable Energy	3-22
3.15 Leasable Minerals (Oil and Gas, Nonenergy Leasable Minerals, Coal, and Oil Shale and Tar Sands).....	3-22
3.15.1 Oil and Gas	3-22
3.15.2 Nonenergy Leasable Minerals.....	3-25
3.15.3 Coal.....	3-26
3.15.4 Oil Shale and Tar Sands.....	3-26
3.15.5 Locatable Minerals.....	3-26
3.16 Social and Economic Conditions.....	3-26
CHAPTER 4. ENVIRONMENTAL CONSEQUENCES	4-1
4.1 Introduction	4-1
4.2 Analytical Assumptions.....	4-1
4.3 General Method for Analyzing Impacts.....	4-2
4.4 Incomplete or Unavailable Information.....	4-3
4.5 Impacts from the 2018 Proposed RMPA/Final EIS No-Action Alternative.....	4-4
4.6 Impacts from the Proposed Plan Amendment.....	4-41
4.6.1 Impacts on Greater Sage-Grouse	4-45
4.6.2 Impacts on Air Quality	4-53
4.6.3 Impacts to Climate Change.....	4-54
4.6.4 Impacts on Soil Resources.....	4-54
4.6.5 Impacts on Vegetation (Including Noxious Weeds, Riparian Areas, and Wetlands)	4-55
4.6.6 Impacts on Other Special Status Species	4-56
4.6.7 Impacts on Fish and Wildlife	4-57
4.6.8 Impacts on Cultural Resources	4-59
4.6.9 Impacts on Lands and Realty.....	4-59
4.6.10 Impacts on Renewable Energy	4-60
4.6.11 Impacts on Fluid Minerals	4-61
4.6.12 Impacts on Nonenergy Leasable Minerals, Coal, Locatable Minerals, Mineral Materials, and Oil Shale and Tar Sands	4-64

4.6.13	Impacts on Social and Economic Conditions	4-66
4.6.14	Impacts on Other Resources.....	4-67
4.7	Cumulative Impacts.....	4-68
4.7.1	Range-wide Cumulative Effects Analysis – Greater Sage-Grouse.....	4-71
4.7.2	Why use WAFWA Management Zones?.....	4-72
4.7.3	Cumulative Effects on Greater Sage-Grouse: Management Zone I	4-75
4.7.4	Cumulative Effects on Greater Sage-Grouse: Management Zone II/VII.....	4-77
4.7.5	Cumulative Effects on Greater Sage-Grouse: Management Zone III	4-81
4.7.6	Cumulative Effects on Greater Sage-Grouse: Management Zone IV.....	4-83
4.7.7	Cumulative Effects on Greater Sage-Grouse: Management Zone V.....	4-85
4.8	Irreversible and Irrecoverable Commitment of Resources	4-87
4.9	Unavoidable Adverse Impacts.....	4-87
4.10	Relationship Between Local Short-Term Uses and Long-Term Productivity	4-88
CHAPTER 5. CONSULTATION AND COORDINATION.....		5-1
5.1	Public Involvement During the 2020 NEPA Process.....	5-1
5.1.1	Public Comments on the DSEIS.....	5-1
5.2	American Indian Tribal Consultation	5-1
5.3	List of Preparers.....	5-2
CHAPTER 6.....		6-1
GLOSSARY.....		GLOSSARY-I
INDEX		INDEX-I

TABLES

Page

1-1	Land Management in the Utah Planning Area	1-5
1-2	Acres of PHMA and GHMA in the Decision Area for the RMPA.....	1-6
1-3	Issues and Related Resource Topics.....	1-8
2-1	Comparative Summary of Alternatives	2-6
2-2	Alternatives Considered During the 2015 and 2019 Planning Processes.....	2-9
2-3	Detailed Comparison of Alternatives Specific to the 2018 Final EIS	2-17
2-4	Description of Alternatives Analyzed in Detail and Carried Forward for Consideration from the 2015 Final EIS	2-40
3-1	Affected Environment Information Incorporated by Reference	3-5
3-2	Greater Sage-Grouse Population Trends for Areas in Utah.....	3-8
3-3	Modeled Seasonal Habitat Acres in PHMA and GHMA.....	3-10
3-4	Inventoried Disturbance in Greater Sage-Grouse Habitat Management Areas.....	3-12
3-5	Air Quality Monitoring Values in Utah.....	3-13
3-6	Acres of Greater Sage-Grouse Conservation Actions.....	3-15
3-7	Wild Horses and Burros Population Levels.....	3-16
3-8	Wildfires in Greater Sage-Grouse Habitat Management Areas (2015–2019)	3-17
3-9	Acres of Wildfire in PHMA and GHMA (2015–2019).....	3-18
3-10	Natural Areas Overlapping PHMA.....	3-19
3-11	Lands with Wilderness Characteristics Overlapping PHMA.....	3-19
3-12	Lands with Wilderness Characteristics Overlapping GHMA	3-20
3-13	Oil and Gas Federal Activity in the Decision Area (as of March 2019)	3-23
3-14	Oil and Gas Leasing Categories in the Decision Area.....	3-23

3-15	Oil and Gas Federal Leases and Wells in the Uintah Population Area (as of March 2019)	3-23
3-16	Oil and Gas Leasing Categories in the Uintah Population Area.....	3-23
3-17	Oil and Gas Federal Leases and Wells in the Carbon Population Area (as of March 2019).....	3-24
3-18	Oil and Gas Leasing Categories in the Carbon Population Area.....	3-24
3-19	Oil and Gas Federal Leases and Wells in the Emery Population Area (as of March 2019) ...	3-24
3-20	Oil and Gas Leasing Categories in the Emery Population Area.....	3-24
3-21	Oil and Gas Federal Leases and Wells in the Rich Population Area (as of March 2019)	3-25
3-22	Oil and Gas Leasing Categories in the Rich Population Area.....	3-25
4-1	Environmental Consequences for the No-Action Alternative, Incorporated by Reference.....	4-5
4-2	Summary of Environmental Consequences.....	4-13
4-3	Proposed Plan Amendment Issues Already Analyzed in the 2015 Final EIS and 2016 Draft EIS.....	4-41
4-4	Cumulative Effects Analysis Incorporated by Reference.....	4-73

APPENDIX

The appendices below from the 2015 ROD/ARMPA were modified as part of the Management Alignment Alternative. Those appendices are included here with the same letters as the 2015 ROD/ARMPA. Appendix C, Required Design Features, from the 2015 ROD/ARMPA were modified to remove required design features for GHMA as GHMA was longer be a management area under the Management Alignment Alternative. Similarly, Appendix D, Greater Sage-Grouse Monitoring Framework, was modified to remove reference to GHMA. Other appendices appearing absent are not modified.

- A Maps
- B Applying Lek Buffer Distances
- E Greater Sage-Grouse Disturbance Cap Guidance
- G Stipulations Associated with Fluid Mineral Leasing
- I Adaptive Management
- K Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol

The appendices below are new; they were not included in the 2015 ROD/ARMPA

- 1 Cumulative Effects Supporting Information
- 2 Current Conditions of GHMA in Utah
- 3 Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process
- 4 Responses to Substantive Public Comments on the 2020 Draft Supplemental EIS

ACRONYMS AND ABBREVIATIONS

Full Phrase

ARMPA	approved resource management plan amendment
BLM	Bureau of Land Management
BMP	best management practice
BSU	biologically significant unit
CEQ	Council on Environmental Quality
COT	Conservation Objectives Team
CSU	controlled surface use
DOI	US Department of the Interior
DSEIS	draft supplemental environmental impact statement
EIS	environmental impact statement
FLMPA	Federal Land Management and Policy Act
FSEIS	final supplemental environmental impact statement
GHMA	General Habitat Management Area
LUPA	Land Use Plan Amendment
MZ	management zone
NEPA	National Environmental Policy Act
NTT	National Technical Team
NSO	no surface occupancy
NRCS	Natural Resources Conservation Service
PHMA	Priority Habitat Management Area
RDF	required design feature
RMP	resource management plan
RMPA	resource management plan amendment
RNA	Resource Natural Area
ROD	record of decision
ROW	right of way
SO	Secretarial Order
TL	timing limitation
UDWR	Utah Division of Wildlife Resources
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

This page intentionally left blank.

Executive Summary

ES.I INTRODUCTION

Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe ecosystems. These ecosystems are managed in partnership across its range by federal, state, and local authorities. State agencies responsible for fish and wildlife management possess broad responsibility for protecting and managing fish, wildlife, and plants within their borders, except where preempted by federal law. Similarly, the BLM has broad responsibilities to manage public lands and resources for the public's benefit. Approximately half of Greater Sage-Grouse habitat is managed by the BLM and Forest Service. State agencies are at the forefront of efforts to maintain healthy fish and wildlife populations and to conserve at-risk species. State-led efforts to conserve the species and its habitat date back to the 1950s. For the past two decades, state wildlife agencies, federal agencies, and many others in the range of the species have been collaborating to conserve Greater Sage-Grouse and its habitats. The BLM prepared this Final Supplemental Environmental Impact Statement (FSEIS) to clarify analysis from the 2018 Final Environmental Impact Statement (2018 Final EIS) published as part of the 2019 Plan Amendment Process and subsequent Record of Decision. This FSEIS clarifies the range of alternatives analyzed, the range-wide nature of the analysis, and other aspects of the 2018 Final EIS where information was incorporated by reference from the 2015 Greater Sage-Grouse Land Use Plan Amendments.

In 2010, USFWS determined that listing the Greater Sage-Grouse under the Endangered Species Act of 1973 (ESA) was “warranted, but precluded” by other priorities. In its determination, the USFWS found there to be inadequate regulatory mechanisms to protect Greater Sage-Grouse and conserve its habitat. In response, the BLM, in coordination with the Forest Service, USFWS, and state agencies, developed a management strategy that included targeted Greater Sage-Grouse management actions. In 2015, the BLM and Forest Service adopted land use plan amendments and revisions to 98 BLM and Forest Service land use plans across ten western states. These planning decisions addressed, in part, threats to the Greater Sage-Grouse and its habitat. The amended land use plans govern the management of 67 million acres of Greater Sage-Grouse habitat on federal lands.

In September 2015, the USFWS determined that the Greater Sage-Grouse did not warrant listing under the ESA. The USFWS based its 2015 determination, in part, on the regulatory certainty provided by the conservation commitments and management actions in the federal planning decisions, as well as on other private, state, and federal conservation efforts.

The 2015 plans recommended that sagebrush focal areas (SFAs) be proposed for withdrawal from location and entry under the Mining Law of 1872. While the BLM later proposed to withdraw these areas, it canceled that proposed withdrawal on October 11, 2017. The BLM determined that the proposal to withdraw these areas was unreasonable in light of the data that showed that mining affected less than 0.1 percent of Greater Sage-Grouse across its occupied range.

On March 29, 2017, the Secretary of the Interior issued Secretary's Order 3349, *American Energy Independence*. It ordered DOI agencies to reexamine practices “to better balance conservation strategies and policies with the equally legitimate need of creating jobs for hard-working American families.”

On June 7, 2017, the Secretary issued Secretary's Order 3353 with a purpose of enhancing cooperation among eleven western states and the BLM in managing and conserving Greater Sage-Grouse. Secretary's Order 3353 directed an Interior Review Team, consisting of the BLM, the US Fish and Wildlife Service (USFWS), and US Geological Survey (USGS), to coordinate with the Greater Sage-Grouse Task Force. They also were directed to review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that may require modification, including opportunities to enhance consistency with individual state plans and better balance the BLM's multiple-use mission, as directed by Secretary's Order 3349.

On August 4, 2017, the Interior Review Team submitted its Report in Response to Secretary's Order 3353. In the report the Team recommended modifying the Greater Sage-Grouse plans and associated policies to better align with the individual state plans. On August 4, 2017, the Secretary issued a memo to the Deputy Secretary directing the BLM to implement the recommendations found in the report.

In the *Federal Register* of October 11, 2017, the BLM published the Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environment Impact Statements or Environmental Assessments.

The BLM continues to prioritize efforts to conserve Greater Sage-Grouse and restore sagebrush habitat. From Fiscal Year 2017 to Fiscal Year 2020, the BLM has treated on average over 550,000 acres of Greater Sage-Grouse habitat every year. In Fiscal Year 2020, the BLM treated approximately 584,000 acres. These 2020 treatments included approximately 162,000 acres of conifer removal; 71,000 acres of fuel breaks; 203,000 acres with invasive species treatments; 42,000 acres of habitat protection; and restored habitat on 106,000 acres of uplands and over 700 acres of riparian habitat. In 2020, Utah conducted habitat treatments on 82,000 acres. The BLM is committed to working directly with local communities on sagebrush conservation efforts and to emulate the successes demonstrated by the Natural Resources Conservation Service (NRCS) through the Greater Sage-Grouse Initiative on private lands. These efforts include:

- an agreement with the Intermountain West Joint Venture to work with local cattlemen associations to improve sagebrush rangeland conditions through actions such as controlling invasive species, improving mesic areas, and removing invasive conifers;
- a Memorandum of Understanding between the BLM, NRCS, and the Forest Service resulting in development of a map that identifies areas where the agencies have ongoing restoration projects and opportunities for additional collaboration across land ownerships and associated landscapes;
- promoting a locally led collaborative conservation, the BLM, the USFWS, and the Geological Survey are collaborating with the Western Association of Fish and Wildlife Agencies as they lead the development and implementation of the Sagebrush Conservation Strategy;
- working with livestock permittees and stakeholders on "targeted grazing" to utilize grazing as a tool to create and maintain fuel breaks to manage the threats of wildfire and invasive species in or to Greater Sage-Grouse habitats; and,
- working to develop "outcome-based grazing" to provide greater flexibility for livestock permittees and land managers to meet habitat objectives as conditions on-the-ground change.

During the 2019 planning process's public scoping period, the BLM sought public comments on whether all, some, or none of the 2015 Greater Sage-Grouse plans should be amended, what issues should be

considered, and if plans should be completed at the state level rather than at the national level. In addition, the BLM recognizes that the Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitats managed in partnership by federal, state, and local authorities. Input from governors would weigh heavily when the BLM considers what management changes should be made and when ensuring consistency with the BLM's multiple-use mission.

Further, in the 2018 Draft EIS the BLM requested public comments on the BLM's approach to compensatory mitigation. In response to these comments and information supplied by the states about how to align with their compensatory mitigation laws and policies, the 2018 Final EIS clarified the BLM's approach to compensatory mitigation in its Proposed Plan Amendment. Through the Draft Supplemental EIS, the BLM sought additional comment from the public on compensatory mitigation.

This FSEIS also addresses and clarifies the BLM's reliance on scientific information, including how the BLM addresses the recommendation and objectives in the NTT and COT reports. The BLM, the USFWS, states and other federal agency partners prepared the NTT (2011) and the COT (2013) reports to identify rangewide Greater Sage-Grouse conservation objectives and conservation measures that would: inform the USFWS 2015 decision under the Endangered Species Act and for partners; and provide guidance for the BLM to consider through land use planning, which the BLM did in 2015 and 2019, and again in this FSEIS.

Further, at the time that the NTT and COT reports were being developed, the BLM, USFWS, and state agencies had not completely developed or established the robust programs to conserve Greater Sage-Grouse that exist today.

In 2015, the BLM developed an action alternative around the NTT report. In the 2018 Final EIS, the BLM incorporated this analysis by reference. The BLM also coordinated with the USFWS during the process culminating in the 2019 RODs to make sure that the conservation measures from the NTT and COT informed the management alignment alternative (**Appendix 3**). Including the USFWS as a cooperating agency during the 2019 planning process ensured that BLM used the same materials and newest science that the USFWS uses and recommends for Greater Sage-Grouse management.

In 2018, the Environmental Protection Agency (EPA) provided comments on the Draft RMPAs/EISs. Specifically, they provided six comments on the Utah Draft RMPA/EIS, six comments on the Idaho Draft RMPA/EIS, seven comments on the Nevada/Northeast California Draft RMPA/EIS, three comments on the Wyoming Draft RMPA/EIS, six comments on the Oregon Draft RMPA/EIS, and five comments on the Colorado Draft RMPA/EIS. The EPA's comments include suggestions and questions regarding lek buffers, recent science, mitigation, adaptive management, and fluid minerals. The BLM responded to each of EPA's comments and made corrections and/or changes in the 2018 Final EISs. The complete EPA comment analysis can be found in the administrative record. This FSEIS also clarifies how the BLM considered comments, including those of other federal agencies and experts, when developing its 2019 planning decisions.

ES.2 PURPOSE OF AND NEED FOR ACTION

In the Federal Land Policy and Management Act (FLPMA), Congress provided the BLM with discretion and authority to manage public lands for multiple use and sustained yield and declared it the policy of the United States to, consistent with the laws governing the administration of the public lands,

coordinate planning activities with the land use planning and management programs of other federal, state, and local governments. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife. As the sovereign entities with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving the Greater Sage-Grouse and its habitat.

In the 2019 Planning effort the BLM modified its approach to managing Greater Sage-Grouse habitat in land use plans by (1) enhancing cooperation and coordination with the State of Utah and tribes where applicable, (2) aligning with DOI and BLM policies issued since 2015, and (3) incorporating updated local science, research and information to better align with Utah's Greater Sage-Grouse conservation plan, which goal is "to protect, maintain and increase sage-grouse populations and habitats" so as to "ensure that greater sage-grouse will remain 'not warranted' for listing under the Endangered Species Act (Utah Conservation Plan for Greater Sage-Grouse, 2019). The BLM achieved these goals while maintaining the vast majority of Greater Sage-Grouse protections it incorporated into its land use plans in 2015. By implementing these land use plan conservation measures and continuing to exercise its discretion to approve future project proposals under appropriate terms and conditions or deny them where appropriate, the BLM can adequately protect Greater Sage-Grouse and its habitat while meeting its general obligation under FLPMA to manage public lands under principles of multiple use and sustained yield.

On October 16, 2019, the US District Court for the District of Idaho issued an order granting a motion for a preliminary injunction filed by Plaintiffs Western Watersheds Project, WildEarth Guardians, Center for Biological Diversity, and Prairie Hills Audubon Society. The court found that the Plaintiffs were likely to succeed on the merits of their claims that the BLM violated the National Environmental Policy Act (NEPA) when adopting the 2019 Greater Sage-Grouse plans.

The BLM has prepared this FSEIS to review its previous NEPA analysis, clarify and augment it where necessary, and provide the public with additional opportunities to review and comment. The BLM's FSEIS will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information. To inform this decision that the BLM will make, it has prepared this FSEIS to address four specific issues: the range of alternatives, need to take a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

ES.3 ITEMS TO BE CLARIFIED IN THIS FSEIS

The items considered in this FSEIS are related to the analysis in the 2018 Final EIS. These items are:

- clarifying the range of alternatives (including how the BLM considered the full range of the 2015 alternatives in the 2019 planning process),
- taking a hard look and using the best available science (including clarified effects analysis, how the 2015 and 2019 Final EISs addressed the NTT and COT recommendations and conservation measures) (**Appendix 3**),
- clarifying that the cumulative effects analysis was done at the range wide level and organized by WAFWA Management Zone (MZs), updated language also highlights why WAFWA MZs were used,
- an updated Reasonably Foreseeable Future Actions.

ES.4 NEW SCIENCE AND INFORMATION CONSIDERED BY THE BLM

Land use plan decision-making is a multi-faceted and collaborative process. It involves evaluating scientific information at landscape scales to anticipate the potential environmental consequences of different policy and regulatory considerations. Science aides this process by educating policy makers on these potential consequences. Science does not and cannot tell policy makers how to weigh competing values and goals, particularly in a multiple-use environment.

The BLM has long utilized the best available science and information to facilitate informed choices among different values for policy and management decisions regarding the Greater Sage-Grouse. The agency has simultaneously sought to adapt and align its efforts with other federal and state management frameworks. Science, regulations, and policy considerations help define how the BLM can adaptively implement its multiple-use mission, including habitat management, while supporting a state's obligation to manage wildlife populations.

The BLM's decade-long land use planning process for Greater Sage-Grouse began with the best available science at that time, and the agency has consistently built upon that body of knowledge to inform its adaptive management. In 2011, the BLM assembled a "National Technical Team" (NTT), comprising state and federal land managers and scientists to review the scientific literature available at that time. On December 21, 2011, the NTT finalized a document entitled *A Report on National Greater Sage-Grouse Conservation Measures*, also known as the *National Technical Team Report* (NTT Report). The NTT Report was developed to synthesize "the latest science and best biological judgement" from the available literature (NTT Report, Introduction, page 5) and was not itself a new or original scientific product.

While the NTT Report provided a synthesis of available information regarding sage-grouse management, it did not evaluate conservation measures against other regulatory and policy requirements associated with land use planning and NEPA; nor did it provide conservation measures specific to all populations, landscapes, and site-specific condition. The NTT Report acknowledges this inherent uncertainty and clearly indicates the conservation measures are not management decisions. Rather, the NTT Report was intended "to assist [the BLM] in making management decisions." (NTT Report, Introduction, page 5.) In other words, "the conservation measures described in [the] report are *not an end point* but, rather, *a starting point* to be used in the BLM's planning processes" (ibid, page 5) (emphasis added). The BLM was not bound to the NTT Report recommendations and has subsequently built upon that body of knowledge and considered new policy and regulatory considerations to adapt its management to changing circumstances.

The BLM understood the NTT Report to be a compendium of conservation measures based on best science available and was meant to be adapted based on site-specific considerations. The BLM anticipated adjustments to the conservation measures to address local ecological site variability, regulatory frameworks, and an evolving body of science related to Greater Sage-Grouse management, and intended its management and planning process to be adaptive to changing scientific, regulatory, and policy considerations. In point of fact, the BLM issued policy in 2012 (IM 2012-044) guiding use of the NTT Report in land use planning and instructing the BLM to consider its recommended conservation measures insofar as they were consistent with applicable law.

While the BLM's Greater Sage-Grouse habitat management efforts build upon recommendations in the NTT Report, its approach has adapted as expected to new information, policy, regulation, and informed

choices among competing uses of Public Lands. At regular intervals, the BLM has assessed and synthesized new science, using it to inform efforts to better align its management with state and local frameworks. The BLM first initiated its own assessment through the NTT as described above, followed by the USFWS efforts to develop the COT report. The BLM then commissioned a second synthesis from USGS in 2017 prior to initiating the 2019 planning process. Finally, the BLM coordinated with USGS in 2020 to review scientific literature presented during the DSEIS comment period. The USGS has continuously evaluated science published after 2018 and has maintained an annotated bibliography of scientific research on greater sage-grouse. The BLM relied upon USGS' annotated bibliography for the 2020 review. Out of the 75 articles considered by the BLM as new science, USGS had already reviewed 67 articles. BLM biologists summarized the remaining eight papers submitted by the public for validation.

The BLM plans also call for rigorous annual reviews of adaptive management triggers and anthropogenic disturbances, that allows the plans to adapt with changing information and conditions on the ground.

This common progression of informed decision-making and adaptive management is further exemplified by the BLM application of the Conservation Objectives Team report.

In 2012 the director of the USFWS convened a Conservation Objectives Team (COT) of state and USFWS representatives. The team developed a peer-reviewed report (COT Report) that established broad conservation objectives based on the “best scientific and commercial data available at the time of its release” (COT Report, page ii). Like the NTT, the COT Report was an assessment of the best available science at the time and did not present new or original scientific research.

The COT Report, released in March 2013, identifies conservation objectives, measures, and options for each of the Greater Sage-Grouse threats assessed. The COT Report also identified Priority Areas for Conservation (PACs) which were described as “the most important areas needed for maintaining Greater Sage-Grouse representation, redundancy, and resilience across the landscape” (ibid, page 13). In contrast to the NTT Report, the COT Report identified threats to each PAC, recognizing that threats vary across the range, and therefore corresponding management should vary to address those threats. The preface to the report is clear that the COT report “is guidance only” and that the “identification of conservation objectives and measures does not create a legal obligation beyond existing legal requirements” (ibid, page ii). Further, the preface notes that the objectives “are subject to modification as dictated by new findings, changes in species’ status, and the completion of conservation actions” (ibid, page ii).

Similar to the NTT Report, the BLM understood that the COT Report was a compendium of conservation objectives established to relative to identified threats to Greater Sage-Grouse conservation. The COT Report recommended objectives for the BLM to evaluate and consider but was not bound to achieving only those objectives. Further, like the NTT Report, the COT recognizes uncertainty in land management and anticipated adapting management strategies to changing scientific, regulatory, and policy considerations. In the management of natural resources such as Greater Sage-Grouse habitat, it is unlikely that a manager knows with certainty that a management action will result in precisely the expected outcome. While science and information can inform the managers decision among a variety of management options, it cannot account for all variability across landscapes, time, and conditions. The COT acknowledges that varying management strategies may be employed to achieve the recommended conservation objectives. The COT does not establish an expectation that conservation outcomes will be uniform across all BLM managed landscapes. The BLM further recognizes the

challenges land managers face when selecting from among a range of management options to achieve objectives and outcomes that may be uncertain due to varying natural conditions. This recognition creates a variable management framework wherein the BLM may choose locally from among a range of informed science, policy, and regulatory considerations. See **Appendix 3** for a full discussion of the NTT and COT reports and their role in informing decisions in the 2015 and 2019 plans.

The 2015 plans took a one-size-fits-all approach. Through a decade of land use planning and implementation of Greater Sage-Grouse management decisions, the BLM has continuously collaborated in the development, synthesis, and application of new science. Throughout this planning and conservation effort, the BLM has remained well-connected to our partners. Many of these cross-agencies partnerships are facilitated by the Western Association of Fish and Wildlife Agencies (WAFWA). For example, WAFWA has convened the Sagebrush Executive Oversight Committee to coordinate sage-grouse and sagebrush conservation efforts across Federal and State agencies. The BLM is represented on this committee by the Assistant Director for Resources and Planning. WAFWA has also formed sub-committees to work on a Sagebrush Conservation Strategy and a 2020 Sage-grouse Conservation Assessment, of which the latter will rely heavily on the BLM's Five-Year Sage-grouse Monitoring Report. The BLM has also formed other partnerships, such as with the Natural Resources Conservation Service's Sage Grouse Initiative (now a component of NRCS's Working Lands for Wildlife initiative) and with the Intermountain West Joint Venture. There are also several state-level agreements related to BLM's management of sagebrush and sage-grouse.

As acknowledged by the NTT and COT reports and the growing body of scientific information, there exist site-specific variables not anticipated in either report or adopted in the 2015 approved plans. The 2019 plans thoughtfully considered the unique needs of each state's specific regulatory and policy considerations and addressed new science in that capacity. This tailored and adaptive approach accounted for more site-specific conditions, maximizing the collaborative approach between federal and state resource management, in a way that the 2015 plans failed to do.

To address science and information raised through public comments on this supplemental analysis, the BLM convened a team of biologists and land use planners to evaluate scientific literature provided to the agency. The BLM found that the most up-to-date Greater Sage-Grouse science and other information has incrementally increased, and built upon, the knowledgebase of Greater Sage-Grouse management evaluated by the BLM most recently in its 2019 land use plan amendments, but does not change the scope or direction of the BLM's management. While the NTT, the COT and this new science and information remain consistent with the scope of the 2019 planning decisions, new science does suggest adaptations to management may be warranted at site-specific scales. This is precisely the approach envisioned by the NTT and COT reports as well as the BLM's decades long planning efforts to address local actions that may affect Greater Sage-Grouse. Where appropriate, the BLM will consider this science and information through implementation-level NEPA analysis, consistent with its approved land use plans, policies, and regulatory frameworks.

ES.5 ANALYSIS CONCLUSIONS

The additional information provided in this SEIS do not change analytical conclusions from either the 2018 Proposed RMPA/Final EIS or the 2015 Proposed LUPA/Final EIS. See summary of environmental consequences from 2018 in Section ES.6 of the Proposed RMPA/Final EIS and from 2015 in Section 2.12 of the Proposed LUPA/Final EIS.

'This page intentionally left blank.

Chapter I. Purpose of and Need for Action

I.1 INTRODUCTION

Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe ecosystems. These ecosystems are managed in partnership across its range by federal, state, tribal, local, and private authorities and input. State agencies responsible for fish and wildlife management possess broad responsibility for protecting and managing fish, wildlife, and plants within their borders, except where preempted by federal law. Similarly, the DOI has broad responsibilities to manage federal lands and resources for the public's benefit. On reservations, Native American tribes manage wildlife and their associated habitat. Approximately half of Greater Sage-Grouse habitat is managed by the Bureau of Land Management (BLM) and United States Forest Service (Forest Service).

State agencies are at the forefront of efforts to maintain healthy fish and wildlife populations and to conserve at-risk species. State-led efforts to conserve Greater Sage-Grouse and its habitat date back to the 1950s. For the past two decades, state wildlife agencies, federal agencies, state governments, non-governmental organizations, and many others in the range of the species have been collaborating to conserve Greater Sage-Grouse and its habitat.

In 2010, the United States Fish and Wildlife Service (USFWS) determined that listing the Greater Sage-Grouse under the Endangered Species Act of 1973 was “warranted but precluded” due to higher listing priority species. In part, the USFWS’s 2010 determination was based on a review of the five ESA factors, wherein the USFWS concluded that a lack of regulatory mechanisms was a threat to the Greater Sage-Grouse. In response, the BLM, in coordination with the United States Department of Agriculture, developed a management strategy that included targeted Greater Sage-Grouse management actions. In September 2015, the agencies adopted land use plan amendments (LUPAs) and revisions to 98 BLM and Forest Service land use plans (LUPs) across ten western states. These LUPAs addressed, in part, threats to the Greater Sage-Grouse and its habitat. The amended LUPs govern the management of 67 million acres of Greater Sage-Grouse habitat on federally administered lands.

In September 2015, the USFWS determined that the Greater Sage-Grouse did not warrant listing under the Endangered Species Act. The USFWS attributed its 2010 “warranted but precluded” determination primarily to “inadequate regulatory mechanisms.” In its 2015 conclusion of “not warranted,” the USFWS based its decision in part on regulatory certainty from the conservation commitments and management actions in the federal land use plan amendments (LUPAs) and revisions, as well as on other private, state, and federal conservation efforts.

The BLM continues to prioritize efforts to conserve Greater Sage-Grouse and restore sagebrush habitat. From Fiscal Year 2017 to Fiscal Year 2020, the BLM has treated on average over 550,000 acres of Greater Sage-Grouse habitat every year. In Fiscal Year 2020, the BLM treated approximately 584,000 acres. These 2020 treatments included approximately 162,000 acres of conifer removal; 71,000 acres of fuel breaks; 203,000 acres with invasive species treatments; 42,000 acres of habitat protection; and restored habitat on 106,000 acres of uplands and over 700 acres of riparian habitat. In 2020, Utah conducted habitat treatments on 82,000 acres. The BLM is committed to working directly with local communities on sagebrush conservation efforts and to emulate the successes demonstrated by the

Natural Resources Conservation Service (NRCS) through the Greater Sage-Grouse Initiative on private lands. These efforts include:

- an agreement with the Intermountain West Joint Venture to work with local cattlemen associations to improve sagebrush rangeland conditions through actions such as controlling invasive species, improving mesic areas, and removing invasive conifers;
- a Memorandum of Understanding between the BLM, NRCS, and the Forest Service resulting in development of a map that identifies areas where the agencies have ongoing restoration projects and opportunities for additional collaboration across land ownerships and associated landscapes;
- promoting a locally led collaborative conservation, the BLM, the USFWS, and the Geological Survey are collaborating with the Western Association of Fish and Wildlife Agencies as they lead the development and implementation of the Sagebrush Conservation Strategy;
- working with livestock permittees and stakeholders on “targeted grazing” to utilize grazing as a tool to create and maintain fuel breaks to manage the threats of wildfire and invasive species in or to Greater Sage-Grouse habitats; and,
- working to develop “outcome-based grazing” to provide greater flexibility for livestock permittees and land managers to meet habitat objectives as conditions on-the-ground change.

The plans recommended that sagebrush focal areas (SFAs) be proposed for withdrawal; however, the proposed withdrawal was cancelled on October 11, 2017, pursuant to 82 *Federal Register* 47248.

On March 29, 2017, the Secretary of the Interior (Secretary) issued Secretarial Order (SO) 3349, *American Energy Independence*. It ordered DOI agencies to reexamine practices “to better balance conservation strategies and policies with the equally legitimate need of creating jobs for hard-working American families.”

On June 7, 2017, the Secretary issued SO 3353 for the purpose of enhancing cooperation among 11 western states and the BLM in managing and conserving Greater Sage-Grouse. SO 3353 directed an Interior Review Team, consisting of the BLM, the USFWS, and United States Geological Survey (USGS), to coordinate with the Sage-Grouse Task Force, which is comprised of representatives of the governors of each of the 11 states. They also were directed to review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that will maintain healthy Greater Sage-Grouse populations but may require modification to make the plans more consistent with the individual state plans and better balance the BLM’s multiple-use mission as directed by SO 3349.

On August 4, 2017, the Interior Review Team submitted its Report in Response to Secretarial Order 3353. In this report, the team recommended modifying the Greater Sage-Grouse plans and associated policies to better align with the individual state plans and to meet the purpose of SO 3353. On August 4, 2017, the Secretary issued a memorandum to the Deputy Secretary directing the BLM to implement the recommendations found in the report.

On October 11, 2017, the BLM published the Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environment Impact Statements or Environmental Assessments in the *Federal Register* (82 *Federal Register* 47248).

During the public scoping period for the 2019 planning process, the BLM sought public comments on whether all, some, or none of the 2015 Greater Sage-Grouse plans should be amended, what issues should be considered, and if plans should be completed at the state level rather than at the national level. The BLM specifically sought public comment on SFA designations, mitigation standards, lek buffers, disturbance and density caps, habitat boundaries to reflect new information, and reversing adaptive manage response when the BLM determines that resource conditions no longer warrant those responses. In addition, the BLM recognizes that Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitat managed in partnership by federal, state, tribal, and local authorities. Input from state governors would weigh heavily when the BLM considers what management changes should be analyzed while ensuring consistency with the BLM's multiple-use mission and state and local plans, to the maximum extent consistent with the Federal Land Policy and Management Act (FLPMA) and the purposes, policies, and programs of federal laws and regulations applicable to public lands.

After reviewing comments received during the public scoping period, the BLM proposed the Draft EIS on May 4, 2018 and ultimately issued the Final EIS on December 6, 2018. Through the notice and comment process, the BLM was able to accomplish the objectives set forth in SO 3353 and remedy inconsistencies that existed in the 2015 LUPAs. Below is a summary of some of the issues raised during the Draft EIS and addressed during the Final EIS.

Further, in the 2018 Draft EIS the BLM again requested public comments on a number of issues, including the BLM's approach to compensatory mitigation. In response to these comments and information supplied by the states about how to align with their compensatory mitigation laws and policies, the 2018 Final EIS clarified the BLM's approach to compensatory mitigation in its Proposed Plan Amendment. Through the Draft Supplemental EIS (DSEIS), the BLM sought additional comment from the public on compensatory mitigation.

The BLM prepared this FSEIS to review, clarify, augment the 2018 FEIS NEPA analysis, and provide the public with additional opportunities to review and comment. This FSEIS will address, in part, four specific issues: the range of alternatives (including those incorporated by reference), the need to take a "hard look" at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. Further, this FSEIS addresses and clarifies the BLM's reliance on scientific information, including how the BLM addresses the recommendation and objectives in the National Technical Team (NTT) and Conservation Objectives Team (COT) reports. The BLM, the USFWS, states and other federal agency partners prepared the NTT (2011) and the COT (2013) reports to identify rangewide Greater Sage-Grouse conservation objectives and conservation measures that would: inform the USFWS 2015 decision under the Endangered Species Act and inform partners; and provide guidance for the BLM to consider through land use planning, which the BLM did in 2015 and 2019, and again in this FSEIS. The NTT and COT reports constituted starting points for the BLM to consider in at least one alternative to be considered through the NEPA and land use planning process. They are not compendiums that, standing alone, represent best available science. The NTT and COT reports do not address, or even attempt to address, how the implementation of their Greater Sage-Grouse conservation measures would affect other uses of the public lands—such as recreation, fluid mineral development, mining, and livestock grazing. Moreover, the NTT and COT reports do not quantify, or even attempt to quantify, the Greater Sage-Grouse conservation benefits of each respective conservation measure.

At the time that the NTT and COT reports were being developed, the BLM, USFWS, and state agencies had not completely developed or established the robust programs to conserve Greater Sage-Grouse that exist today.

In 2015, the BLM developed an action alternative around the NTT report. In the 2018 Final EIS, the BLM incorporated this analysis by reference. The BLM also coordinated with USFWS during the process culminating in the 2019 RODs to make sure that the conservation measures from the NTT and COT informed the management alignment alternative (**Appendix 3**). Including the USFWS as a cooperating agency during the 2019 planning process ensured that BLM was aware of the same materials and newest science that the USFWS uses and recommends for Greater Sage-Grouse management.

In 2018, the Environmental Protection Agency (EPA) provided comments on the Draft RMPAs/EISs. Specifically, they provided six comments on the Utah Draft RMPA/EIS, six comments on the Idaho Draft RMPA/EIS, seven comments on the Nevada/Northeast California Draft RMPA/EIS, three comments on the Wyoming Draft RMPA/EIS, six comments on the Oregon Draft RMPA/EIS, and five comments on the Colorado Draft RMPA/EIS. The EPA's comments include suggestions and questions regarding lek buffers, recent science, mitigation, adaptive management, and fluid minerals. The BLM responded to each of EPA's comments and made corrections and/or changes in the 2018 Final EISs. The complete EPA comment analysis can be found in the administrative record. This FSEIS also clarifies how the BLM considered comments, including those of other federal agencies and experts, when developing its 2019 planning decisions.

I.2 PURPOSE OF AND NEED FOR ACTION

In the Federal Land Policy and Management Act (FLPMA), Congress provided the BLM with discretion and authority to manage public lands for multiple use and sustained yield and declared it the policy of the United States to, consistent with the laws governing the administration of the public lands, coordinate planning activities with the land use planning and management programs of other federal, state, and local governments. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife. As the sovereign entities with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving the Greater Sage-Grouse and its habitat.

In the 2019 Planning effort the BLM modified its approach to managing Greater Sage-Grouse habitat in land use plans by (1) enhancing cooperation and coordination with the State of Utah and tribes where applicable, (2) aligning with DOI and BLM policies issued since 2015, and (3) incorporating updated local science, research and information to better align with Utah's Greater Sage-Grouse conservation plan, whose goal is "to protect, maintain and increase sage-grouse populations and habitats" so as to "ensure that greater sage-grouse will remain 'not warranted' for listing under the Endangered Species Act (Utah Conservation Plan for Greater Sage-Grouse, 2019). The BLM achieved these goals while maintaining the vast majority of Greater Sage-Grouse protections it incorporated into its land use plans in 2015. By implementing these land use plan conservation measures and continuing to exercise its discretion to approve future project proposals under appropriate terms and conditions or deny them where appropriate, the BLM can adequately protect Greater Sage-Grouse and its habitat while meeting its general obligation under FLPMA to manage public lands under principles of multiple use and sustained yield.

On October 16, 2019, the US District Court for the District of Idaho issued an order granting a motion for a preliminary injunction filed by Plaintiffs Western Watersheds Project, WildEarth Guardians, Center for Biological Diversity, and Prairie Hills Audubon Society. The court found that the Plaintiffs were likely to succeed on the merits of their claims that the BLM violated the National Environmental Policy Act (NEPA) when adopting the 2019 Greater Sage-Grouse plans.

The BLM has prepared this FSEIS to review its previous NEPA analysis, clarify and augment it where necessary, and provide the public with additional opportunities to review and comment. The BLM's FSEIS will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information. To inform this decision that the BLM will make, it has prepared this FSEIS to address four specific issues: the range of alternatives, need to take a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

1.3 PLANNING AREA AND CURRENT MANAGEMENT

The planning area includes all of the State of Utah, regardless of jurisdiction, except lands in Washington and San Juan Counties (see **Figure I-1**, Utah Planning Area). **Table I-1**, Land Management in the Utah Planning Area, identifies surface acres administered by federal agencies, state, tribal, and local governments and lands that are privately owned in the planning area. Greater Sage-Grouse habitat comprises only a portion of the planning area.

Table I-1
Land Management in the Utah Planning Area

Surface Land Management	Total Surface Land Management Acres
BLM	20,367,500
Forest Service	7,390,200
Private	10,811,700
Indian reservation	1,141,000
USFWS	99,800
State	5,166,500
National Park Service	1,365,600
Bureau of Reclamation	3,900
Department of Defense	1,812,500
Total acres	48,158,700

Source: BLM GIS 2015

The RMPA/EIS decision area includes BLM-administered lands in Greater Sage-Grouse habitat management areas, including surface and split-estate lands with BLM-administered subsurface mineral rights. All decisions apply only to BLM-administered lands, including split-estate lands within Greater Sage-Grouse habitat management areas (the decision area).

The Greater Sage-Grouse management areas represent the local ranges of one or more Greater Sage-Grouse populations. These areas are non-contiguous, meaning they are often separated by natural geographic features/barriers or human development (**Figure I-1**). In the 2015 Greater Sage-Grouse plan amendments, the decision area is further divided into priority habitat management areas (PHMA) and general habitat management areas (GHMA). PHMA and GHMA are defined as follows:

- **PHMA**—Areas prioritized for managing Greater Sage-Grouse populations (management is only applicable to actions on BLM-administered lands). These management areas include high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat. PHMA largely coincides with the State of Utah’s Greater Sage-Grouse management areas (SGMA). In the SGMA, the State identified areas of seasonal habitat, nonhabitat, and opportunity areas, though management is focused on the habitat. PHMA are areas that include all the seasonal habitats for the corresponding Greater Sage-Grouse populations, including breeding, late brood-rearing, winter areas, and migration or connectivity corridors.
- **GHMA**—Areas identified in the 2015 Plan with mapped occupied habitat outside of PHMA (management is only applicable to actions on BLM-administered lands). The State of Utah’s plan does not include maps or specific management for occupied habitat outside their SGMA.

The BLM’s 2015 Greater Sage-Grouse plan amendments designated PHMA and GHMA as follows: (see **Table I-2**).

Table I-2
Acres of PHMA and GHMA in the Decision Area for the RMPA

	PHMA	GHMA
BLM-administered surface	2,079,900	440,100
BLM-administered mineral estate*	1,319,400	178,000

Source: BLM GIS 2015

*Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM administered (e.g., private, state, tribal, and United States Department of Agriculture, Forest Service) but that have a federal mineral estate administered by the BLM.

It is important to note that the State of Utah’s maps used for occupied habitat are broad in nature, and were developed to identify the general areas of potential habitat where Greater Sage-Grouse may be found. The State’s general maps, and by extension the BLM’s PHMA maps, were developed with the intent that as decision-making in the mapped areas moves from broad considerations to application at more specific areas, information that is correspondingly more detailed should be reviewed to determine if a given area actually includes occupied Greater Sage-Grouse habitat.

There are 14 land use plans in Utah that were amended as part of the 2019 planning process:

- Vernal Resource Management Plan (2008)
- Price Resource Management Plan (2008)
- Richfield Resource Management Plan (2008)
- Kanab Resource Management Plan (2008)
- Grand Staircase-Escalante National Monument Management Plan (2000)
- Cedar/Beaver/Garfield/Antimony Resource Management Plan (1986)
- Pinyon Management Framework Plan (1978)
- Warm Springs Resource Management Plan (1987)
- House Range Resource Management Plan (1987)

- Pony Express Resource Management Plan (1990)
- Box Elder Resource Management Plan (1986)
- Randolph Management Framework Plan (1980)
- Park City Management Framework Plan (1975)
- Salt Lake District Isolated Tracts Planning Analysis (1985)

I.4 2019 AND ISSUES DEVELOPMENT

I.4.1 Issues and Related Resource Topics Identified Through Scoping as Part of the 2019 Planning Process

When deciding which issues to address related to the purpose and need, the BLM considers points of disagreement, debate, or dispute regarding an anticipated outcome from a proposed action. Issues are based on anticipated environmental impacts; as such, issues can help shape the proposal and alternatives. The BLM used internal, agency, and public scoping to identify issues to consider in the environmental analysis. A summary of the scoping process for the 2019 planning process is presented in Potential Amendments to Land Use Plans Regarding Greater Sage-Grouse Conservation Scoping Report (<https://goo.gl/FopNgW>). When determining whether to retain an issue for more detailed analysis in the 2018 RMPA/EIS, the interdisciplinary team considered, among other things, the following:

- The environmental impacts associated with the issue and the threats to species and habitat associated with the issue are central, or of critical importance, to developing a Greater Sage-Grouse management plan.
- A detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives.
- The environmental impacts associated with the issue are a significant point of contention among the public and other agencies.
- Whether there are potentially significant impacts on resources associated with the issue.

Ultimately, it was important for decision-makers and the public to understand the impacts that each of the alternatives would have on specific resources; therefore, the BLM used resource topics as a heading to indicate which resources would be affected by a management change. Importantly, resource topics helped organize the discussions of the affected environment (**Chapter 3**) and environmental consequences (**Chapter 4**).

The sections below outline how issues raised during scoping for the 2019 planning process, as well as related resource topics, were considered in the 2018 RMPA/EIS. Generally, they fell into the following categories:

- Issues and related resource topics retained for further consideration in the 2018 RMPA/EIS— These were issues raised during scoping for which alternatives were developed to address the issues. In some cases, the resolutions in the alternatives were previously analyzed in the 2015 Final EIS. In other cases, additional analysis was needed in the 2018 RMPA/EIS. Because the issues were analyzed under resource topics in 2015, the resource topics corresponding with those retained for further analysis were also considered in the 2018 RMPA/EIS. Just like issues, they may have been analyzed in the 2015 Final EIS for those decisions included in the 2018 RMPA/EIS.

- Clarification of decisions in the 2015 Approved Resource Management Plan Amendments (ARMPA)—These were decisions or frameworks in the 2015 ARMPA that required clarification as to their application or implementation. No new analysis was required, as the effects behind the decisions were analyzed in the 2015 Final EIS.
- Some issues and resource topics that were brought up during scoping were not carried forward for additional consideration or analysis in the 2018 RMPA/EIS—While some of these issues were considered in the 2018 RMPA/EIS, they did not require additional analysis because they were analyzed in the 2015 Final EIS. Others were not carried forward in the 2018 RMPA/EIS because they did not further the purpose of aligning with the State’s conservation plan. Similar to issues, there were resource topics that were not retained for further analysis. This was because either they were not affected by the changes proposed in Chapter 2 of the 2018 RMPA/EIS or because the impact was analyzed in the 2015 Final EIS.

I.4.2 Issues and Related Resource Topics Retained for Further Consideration in this FSEIS

Based on the issues identified in **Table I-3**, below, the resource topics that could be affected are as follows: Greater Sage-Grouse, air quality, soil resources, water resources, vegetation (including noxious weeds and riparian and wetlands), other special status species, fish and wildlife, wild horses and burros, cultural resources, visual resources, wildland fire management, lands with wilderness characteristics (not managed for their protection), livestock grazing/rangeland management, recreation, comprehensive travel and transportation management, lands and realty, renewable energy, leasable minerals (fluid, nonenergy, coal, oil shale, and tar sands), locatable minerals, mineral materials, social and economic conditions, and tribal interests. Therefore, these resource topics are carried forward for additional consideration and analysis.

Table I-3 identifies the issues and the corresponding resource topics to which they relate. The level of detail in the description of each resource topic and the impacts from implementing the alternatives are described in **Chapters 3** and **4**.

**Table I-3
Issues and Related Resource Topics**

Issues	Resource Topics Related to the Issues
<p>Sagebrush Focal Area Designations/Withdrawal Recommendation</p> <ul style="list-style-type: none"> • Do SFAs contribute to achieving conservation outcomes? • Relevance of this habitat designation in the absence of a withdrawal? • Does the designation and associated management align with the State’s plan/strategy? 	<p>Greater Sage-Grouse, soil, water, vegetation, other special status species, fish and wildlife, cultural, wildland fire management, livestock grazing, fluid mineral leasing, locatable minerals, social and economic considerations, and tribal interests</p>

Issues	Resource Topics Related to the Issues
<p>Administering Disturbance and Density Caps</p> <ul style="list-style-type: none"> • How should non-habitat portions of PHMA be accounted for when administering the disturbance cap? • How can local data on how Greater Sage-Grouse use the landscape in Utah inform the disturbance cap? • Can the disturbance and density caps be administered to incentivize avoidance of important Greater Sage-Grouse habitat without blanket constraints on energy and mineral development? 	<p>All, except for air quality, renewable energy, and oil shale and tar sands</p>
<p>Modifying Mitigation Strategy</p> <ul style="list-style-type: none"> • What adjustments are needed to the mitigation strategy to align it with the State of Utah’s Compensatory Mitigation Program? • What adjustments are needed to the mitigation strategy to align it with BLM policy contained in IM 2018-093 (Compensatory Mitigation), dated July 24, 2018? 	<p>Greater Sage-Grouse, vegetation, other special status species, fish and wildlife, lands and realty, leasable minerals (fluid, nonenergy, coal, oil shale, and tar sands), locatable minerals, mineral materials</p>
<p>Modifying Habitat Objectives</p> <ul style="list-style-type: none"> • Are the objectives applicable to the ecological conditions and potential for areas throughout Utah? • Do the indicators align with the site-specific needs of the species? • How will local science be incorporated, recognizing differing ecological conditions and potential throughout the planning area? 	<p>Greater Sage-Grouse, vegetation, other special status species, fish and wildlife, wild horses and burros, and livestock grazing</p>
<p>Waivers, Exceptions, and Modifications for NSO Stipulations</p> <ul style="list-style-type: none"> • Can development occur in portions of PHMA without impacting Greater Sage-Grouse and its habitat? • Change in requirements for the USFWS to approve waivers, exceptions, or modifications • Impact of oil and gas leasing on achieving Greater Sage-Grouse conservation outcomes 	<p>Greater Sage-Grouse, air, soil, water, vegetation, other special status species, fish and wildlife, wild horses and burros, cultural, visual resources, wildland fire management, wilderness characteristics, fluid mineral leasing, social and economic considerations, and tribal interests</p>
<p>General Habitat Management Areas in Utah</p> <ul style="list-style-type: none"> • What management of Greater Sage-Grouse habitat outside of PHMA is necessary to balance conservation outcomes for Greater Sage-Grouse with local economic development opportunities? • Are any habitat designations warranted to achieve conservation outcomes beyond the State of Utah’s ‘Greater Sage-Grouse Management Area’ designation? 	<p>All, except wild horses and burros, livestock grazing, recreation, and coal</p>
<p>Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA</p> <ul style="list-style-type: none"> • Is management to protect Greater Sage-Grouse necessary in areas of non-habitat within PHMA? • Can conservation of Greater Sage-Grouse occur while considering opportunities for development within PHMA? 	<p>All, except Greater Sage-Grouse, livestock grazing, travel and transportation, and coal</p>
<p>Adaptive Management</p> <ul style="list-style-type: none"> • How can adaptive management responses better focus on the factors causing the declines? • Identify the process for changing management if species has recovered from an action (or actions) that tripped a trigger • Identify a process for potentially removing an area from PHMA if recovery efforts fail 	<p>All</p>

Issues	Resource Topics Related to the Issues
<p>Prioritization of Mineral Leasing</p> <ul style="list-style-type: none"> Does the objective for prioritizing fluid mineral leasing outside PHMA and GHMA align with the state’s Greater Sage-Grouse conservation strategy? 	<p>Greater Sage-Grouse, vegetation, other special status species, fish and wildlife</p>
<p>Land Disposal and Exchanges</p> <ul style="list-style-type: none"> Is retaining all lands managed as PHMA and GHMA always the only means of conserving Greater Sage-Grouse? Can site-specific conditions surrounding potential land disposals or exchanges affect whether retention of public lands is the best management approach? Increase flexibility in considering the benefit to disposing of Greater Sage-Grouse habitat where the public would benefit from such a transaction 	<p>Greater Sage-Grouse, vegetation, other special status species, fish and wildlife, wildland fire management, wilderness characteristics, land use and realty, oil shale and tar sands, and social and economic conditions</p>
<p>Managing Habitat to Manage Predation</p> <ul style="list-style-type: none"> Are there vegetation management measures that would reduce the threat of predation to Greater Sage-Grouse? 	<p>Greater Sage-Grouse, vegetation, special status species, and fish and wildlife</p>
<p>Burial of Transmission Lines</p> <ul style="list-style-type: none"> Is burial of every proposed transmission line or renewal, amendment, or reauthorization of existing transmission lines the best conservation approach for Greater Sage-Grouse? Is prioritizing burial of transmission lines consistent with the state’s conservation strategy? 	<p>Greater Sage-Grouse, soil resources, vegetation, other special status species, fish and wildlife, cultural resources, visual resources, wildland fire management, land use and realty, renewable energy, social and economic conditions, and tribal interests</p>

1.4.3 Clarification of Planning Decisions in the 2015 ARMPA

The following issues with existing planning decisions were raised during scoping. These issues require clarification to the ARMPA language but, because they are clarifications and do not change management as intended or analyzed in the 2015 Final EIS, they do not require new analysis. The clarifying language for these planning decisions is displayed in this planning document to communicate how these issues are being addressed.

Clarifying Process for Modifying Habitat Management Area Boundaries

The PHMA boundaries were initially designated to align with the areas mapped as “habitat” within the State’s 2013 SGMA; however, the State’s SGMA boundaries were intended to be adjusted based on site-specific data. Similarly, the PHMA boundaries were intended to be able to be adjusted (increased or decreased) based on site-specific data to adequately capture Greater Sage-Grouse habitat needs to the corresponding Greater Sage-Grouse population, based on best available site-specific science and monitoring data. This was clearly described in language in the 2015 Final EIS, Section 2.7.4.

Clarifying Application of Lek Buffers

During scoping, an issue was raised questioning whether the lek buffers identified in the 2015 ARMPA were tools to analyze and reduce impacts or to preclude activities in the buffer area. The BLM’s 2015 ARMPA provided direction to apply lek buffer-distances; however, the appendix describing how to apply the buffers is not consistent on whether they are a tool to “evaluate impacts to leks” or to “relocate [projects] outside the applicable lek buffer-distances.” This process clarifies the inconsistency by aligning the buffer strategy with the BLM Utah’s PHMA strategy, which is consistent with the State of Utah’s

management approach. Like the state's SGMA, the BLM's PHMA was mapped to capture all seasonal habitats used by priority populations of Greater Sage-Grouse in the State, not just focus on breeding or nesting areas that are addressed by lek buffers. Because the clarifications in how lek buffers are applied are consistent with the strategies already contained in the 2015 ROD/ARMPA and analyzed in the 2015 Final EIS, no additional analysis is necessary.

The 2015 ARMPA appendix also includes language that "justifiable departures to decrease or increase from [the] distances, based on local data [and] best available science...may be appropriate for determining activity impacts." Since completion of the 2015 ROD/ARMPA, Utah State University has analyzed the relationships between power lines and nesting and brood-rearing hen data from Utah. Based on their analysis, the tall structures buffer is being decreased from 2.0 miles to 1.7 miles, consistent with the language already in the appendix. Because such adjustments were already provided for in the appendix, no additional analysis is necessary.

Clarifying Grazing Systems and Prioritization of Grazing Permits

The 2015 ARMPA includes several management actions in the livestock grazing section that duplicate existing agency regulations, policies, or management actions in other sections of the ARMPA. As such, these actions would continue to be implemented whether or not they appear in the land use plan. Additionally, these actions tend to address management on livestock grazing in general, rather than focusing on the threat to Greater Sage-Grouse from improper livestock grazing, which is the focus of the State's management and strategies. Because removing these actions does not change whether they are implemented via regulation, policy, or other management action, no new analysis is required.

Clarifying Management of Water Developments for Livestock

The second sentence of management action MA-LG-10 in the 2015 ROD/ARMPA could be interpreted as potentially impinging on the State's authority to manage water rights; however, the second sentence merely repeats the principle of the first sentence of this action with more specific details to a type of vegetation condition. So long as the first sentence is met, the second sentence's removal does not change any impacts, and increases alignment with the State's plans and strategies.

Clarifying the Role of the State of Utah and Counties with Respect to Travel Management Planning

An issue was raised in scoping to clarify the role of governmental parties in subsequent travel management efforts. Clarification of who needs to be included in coordination for implementation-level travel management planning does not have any on-the-ground impact, and therefore does not require new analysis.

Clarifying the Role of the BLM, State of Utah, and Counties with Respect to Predator Control

An issue was raised in scoping to clarify the role of governmental parties in predator control. Successful predator management requires coordination across a wide variety of state, county, and federal agencies with differing jurisdictions. The importance of such coordination was addressed in this RMPA/EIS as a clarification of language already present in the 2015 ARMPA. Clarification of the importance of such coordination does not have any on-the-ground impact, and therefore does not require new analysis.

Clarifying Management of Surface Coal Mining

Issues were raised during scoping regarding surface mining of coal in Greater Sage-Grouse habitat. Management Action MR-18 in the 2015 ARMPA included language that addressed this issue, but it became apparent through scoping that the language was not sufficiently clear. To address this confusion the language was modified to clarify the intent of the 2015 ARMPA. As this does not include a change in the actual decision, but merely a clarification to align with the intent of the 2015 ARMPA, no new impacts need to be analyzed.

Decisions that Require Analysis of Specific Alternatives during Implementation

An issue from scoping noted that several of the ARMPA actions did nothing more than direct analysis of specific alternatives during environmental review of site-level projects. Nothing in the State of Utah's plan directs blanket analysis of a given course of action without consideration of the issues and site-specific resource conditions. As such, requirements to analyze specific alternatives regardless of site-specific issues do not align with the State's plan or strategies. Because there is no impact associated with simply "considering" a future unknown action, there is no corresponding impact as a result of removing it from required consideration. Therefore no new impacts need to be analyzed. Any actual impacts of a given "considered" action would be determined during the site-specific NEPA effort and be based on the specific conditions in the given planning area.

I.4.4 Issues and Resource Topics not Carried Forward for Additional Analysis (Scoping Issues Outside the Scope and Scoping Issues Previously Analyzed)***Issues and Related Resource Topics not Carried Forward for Additional Analysis***

Comments were raised regarding managing for target Greater Sage-Grouse population levels as an issue for consideration during scoping for the 2018 RMPA/EIS. The issue was not carried forward for detailed analysis because the BLM does not manage species populations, an authority that falls under the jurisdiction of the State of Utah and implemented by the Division of Wildlife Resources.

Because the following issues were analyzed in the 2015 Final EIS, and no significant new information had emerged, they did not require additional analysis in the 2018 RMPA/EIS and these related resource topics were dismissed from additional analysis. The types of impacts on these resources were described in the range of alternatives in the 2015 Final EIS. The impacts of implementing the alternatives in the 2018 RMPA/EIS were within the range of alternatives previously analyzed in 2015:

- Restrictions on rights-of-way (ROWs) and infrastructure
- ROW avoidance in PHMA and GHMA
- Varying stipulations applied to oil, gas, and, geothermal development
- Impacts of NSO stipulations on Greater Sage-Grouse habitat on land not administered by the BLM
- Numerical noise limitations in PHMA
- Contribution of disturbance caps toward Greater Sage-Grouse conservation objectives
- Required design features (RDFs)
- Vegetation treatments and wildfire response
- Habitat and plan effectiveness monitoring using tools such as the habitat assessment framework

The BLM evaluated the following issues as part of the 2015 Final EIS. For the same reasons they were dismissed in the 2015 Final EIS, they were not carried forward for detailed analysis in the 2018 RMPA/EIS (see Section 1.6.3 in the 2015 Final EIS):

- Greater Sage-Grouse hunting
- Predator control
- Military overflights of PHMA/GHMA

Resource Topics Not Carried Forward for Additional Analysis

The resource topics below are dismissed from detailed analysis. While these resource topics may have impacts related to Greater Sage-Grouse conservation that were analyzed in the 2015 Final EIS, they were dismissed from detailed analysis because they have no potentially significant impacts from actions proposed in the 2018 RMPA/EIS:

- Geology
- Paleontological resources
- Special designations (i.e., areas of critical environmental concern, wilderness, wilderness study areas, wild and scenic rivers, and national trails)
- Lands with wilderness characteristics managed for their protection (natural areas)

1.5 ITEMS TO BE CLARIFIED IN THIS FSEIS

The items considered in this FSEIS are related to the analysis in the 2018 Final EIS. These items are:

- clarifying the range of alternatives (including how the BLM considered the full range of the 2015 alternatives in the 2019 planning process),
- taking a hard look and using the best available science (including clarified effects analysis, how the 2015 and 2019 Final EISs addressed the NTT and COT recommendations and conservation measures) (**Appendix 3**),
- clarifying that the cumulative effects analysis was done at the range wide level and organized by WAFWA Management Zone (MZs), updated language also highlights why WAFWA MZs were used,
- an updated Reasonably Foreseeable Future Actions.

1.6 RELATIONSHIP TO OTHER POLICIES, PLANS, AND PROGRAMS

The BLM recognizes the importance of state, tribal, and local plans. The BLM will be consistent with or complementary to the management actions in these plans to the maximum extent consistent with FLPMA.

1.6.1 State Plans/Strategies

State plans and strategies considered during planning are the following:

- Governor's 10-year Strategic Energy Plan (2011)
- Uintah Basin Energy Zone (2015)
- Green River Energy Zone (2014)

- Utah Conservation Plan for Greater Sage-Grouse (2019)
- State of Utah Executive Order 2015/002 – Implementing the Utah Conservation Plan for Greater Sage-Grouse (2015)
- Utah Wildlife Action Plan (2015)
- State of Utah Administrative Code – R-634-003 – Compensatory Mitigation Program (2018)
- State of Utah Resource Management Plan (2018)

I.6.2 Tribal Plans/Strategies

The tribal plan and strategy considered during planning was the Uintah and Ouray Greater Sage-Grouse Conservation Ordinance (2013)

I.6.3 Local Plans

Local land use plans considered during planning are the following:

- Beaver County General Plan (1994) and Beaver County Resource Management Plan (RMP) (2017)
- Box Elder County General Plan (1998, as amended) and Box Elder County RMP (2017)
- Cache County Comprehensive Plan (1998) and Cache County RMP (2017)
- Carbon County Master Plan (1997) and Carbon County RMP (2017)
- Daggett County General Plan (2009) and Daggett County RMP (2017)
- Duchesne County General Plan and Duchesne County RMP (2017)
- Emery County General Plan (1996, as amended) and Emery County RMP (2017)
- Garfield County, Utah, General Plan (1995, as amended) and Garfield County RMP (2017)
- Grand County General Plan (2012) and Grand County RMP (2017)
- Iron County General Plan (1995, as amended) and the Iron County RMP (2017)
- Juab County General Plan and Juab County RMP (2017)
- Kane County, Utah, General Plan (1998, as amended) and Kane County RMP (2017)
- Millard County General Plan (2010) and Millard County RMP (2017)
- Morgan County General Plan (2010) and Morgan County RMP (2017)
- General Plan for Piute County (1994) and Piute County RMP (2017)
- Rich County Comprehensive Plan (1996) and Rich County RMP (2017)
- Sanpete County General Plan (2010, as amended) and Sanpete County RMP (2017)
- Sevier County General Plan (1998) and Sevier County RMP (2017)
- Eastern Summit County General Plan (2010) and Summit County RMP (2017)
- Tooele County General Plan (1995) and Tooele County RMP (2017)
- Uintah County Land Use Plan (2011) and Uintah County RMP (2017)
- Uinta County Comprehensive Plan (2011)
- Uinta County Conservation District Plan
- Utah County General Plan (2006) and Utah County RMP (2017)
- Wasatch County General Plan (2010) and Wasatch County RMP (2017)
- General Plan for Wayne County (1994) and Wayne County Public Lands RMP (2017)

I.6.4 Local Sage-Grouse Working Group Plans

- Castle Country Greater Sage-Grouse Local Conservation Plan (2006)
- West Box Elder Greater Sage-Grouse Local Working Group Conservation Plan (2007)
- Color Country Greater Sage-Grouse Local Conservation Plan (2008)
- Morgan-Summit Greater Sage-Grouse Local Conservation Plan (2006)
- Parker Mountain-Emery Greater Sage-Grouse Local Conservation Plan (2014)
- Rich County Coordinated Resource Management Greater Sage-Grouse Conservation Plan (2006)
- Southwest Desert Greater Sage-Grouse Local Conservation Plan (2007)
- Strawberry Valley Greater Sage-Grouse Local Conservation Plan (2006)
- Uinta Basin Greater Sage-Grouse Local Conservation Plan (2007)
- West Desert Greater Sage-Grouse Local Conservation Plan (2007)

I.7 CHANGES BETWEEN DRAFT AND FINAL SEIS

Based on comments received on the DSEIS, the BLM has updated the list of past, present, and reasonably foreseeable projects considered for cumulative impacts in **Appendix I**. Responses to substantive public comments received on the DSEIS are included in **Appendix 4**.

This page intentionally left blank.

Chapter 2. Alternatives

2.1 INTRODUCTION

This chapter describes the seven alternatives considered during the 2019 planning process. The 2018 Draft RMPA/EIS analyzed in detail the No-Action Alternative and the Management Alignment Alternative, which was modified to be the Proposed Plan Amendment in the 2018 Proposed RMPA/Final EIS based on coordination with the State of Utah, input from other cooperating agencies and public comments, and alignment with BLM policies. In addition to the alternatives considered in detail, this chapter includes a description of alternatives considered but eliminated from detailed analysis.

The 2018 Draft RMPA/EIS expressly incorporated the full range of 2015 alternatives by reference, which were carried through the 2018 Proposed RMPA/Final EIS and subsequent 2019 Record of Decision. This FSEIS incorporates by reference, with additional detailed summaries, all 2015 alternatives, and is providing the public with an additional opportunity to review and comment on the full range of seven alternatives evaluated in the 2018 Proposed RMPA/Final EIS. The full range of alternatives considered in the 2018 Final EIS is both summarized and provided in detail in the three tables in **Section 2.5**. NEPA's implementing regulations require materials to be incorporated by reference when the effect will be to cut down on bulk without impeding agency and public review (40 CFR 1502. 21).

Components of Alternatives

Goals are broad statements of desired outcomes and are not quantifiable or measurable; objectives are specific measurable desired conditions or outcomes intended to meet goals. Goals and objectives can vary across alternatives, resulting in different allowable uses and management actions for some resources and resource uses.

Management actions and allowable uses are designed to achieve goals and objectives. Management actions are measures that guide day-to-day and future activities; allowable uses delineate those that are permitted, restricted, or prohibited and may include stipulations or restrictions. Allowable uses also identify lands where specific uses are excluded to protect resource values, or where certain lands are open or closed in response to legislative, regulatory, or policy requirements. Implementation decisions are site-specific actions and are typically not addressed in RMPs.

2.2 OTHER ALTERNATIVES CONSIDERED

2.2.1 Varying Constraints on Land Uses and Development Activities

During scoping for the 2019 planning process, some commenters asked for increased or additional constraints on land uses and ground-disturbing activities to protect Greater Sage-Grouse habitat. These constraints were beyond those in the 2015 management plan.¹ Other commenters, in contrast, asked the BLM to consider eliminating or reducing constraints on land uses, or incorporating other flexibilities into the BLM's implementation of RMPs, in addition to those issues that were evaluated in the 2018

¹For example, this 2018 planning process builds on the 2015 planning process and will continue to ensure that the BLM complies with its special status species policy, including the commitment to "implement measures to conserve [Special Status] species and their habitats... and promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA." (BLM Manual 6840, Special Status Species Management)

Management Alignment Alternative (adjusted to be the Proposed Plan Amendment). The BLM considered every scoping comment and, where appropriate, incorporated these issues into the 2018 Draft RMPA/EIS Management Alignment Alternative following coordination with the State. Because the purpose and need for the BLM's action in 2018, building off of the 2015 ROD/ARMPA, was to enhance cooperation with the states by seeking to better align the BLM's RMPs with individual state plans and/or conservation measures (e.g., Conservation Plan for Greater Sage-Grouse in Utah; Utah Executive Order EO/2015/002, Utah Sage-Grouse Compensatory Mitigation Program), the BLM carefully evaluated the State's evaluation of issues.

This 2019 planning process did not revisit every issue that the BLM evaluated in 2015, as the analysis from that document was still accurate. Instead, the BLM addressed refinements to the 2015 ROD/ARMPA decisions, consistent with the BLM's purpose and need for action. Accordingly, the 2018 Proposed RMPA/Final EIS had as its foundation in the comprehensive 2015 Final EIS and ROD/ARMPA, and incorporated all the alternatives from that process by reference—including the entire range of alternatives evaluated through the 2015 planning process:

- Alternative A (No-Action Alternative) would have retained the management goals, objectives and direction specified in the BLM RMPs and the Forest Service land and resource management plans effective prior to the 2015 ROD/ARMPA.
- Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office IM 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
- Alternative C was based on a citizen groups' recommended alternative and was combined with Alternative F considered by Idaho, Nevada and Northeastern California, Montana, and Oregon. This alternative emphasized improvement and protection of habitat for Greater Sage-Grouse and was applied to all occupied Greater Sage-Grouse habitat. Alternative C would have limited commodity development in areas of occupied Greater Sage-Grouse habitat and would have closed or designated portions of the planning area as unavailable for some land uses.
- Alternative D, which was identified as the Preferred Alternative in the 2015 Utah Greater Sage-Grouse Draft LUPA/EIS, balanced opportunities to use and develop the planning area and protects Greater Sage-Grouse habitat based on scoping comments and input from Cooperating Agencies involved in the alternatives development process. Protective measures would have been applied to Greater Sage-Grouse habitat.
- Alternative E was based on management from the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah. It incorporated guidance from specific State Conservation strategies and limited management to the State of Utah's Sage-Grouse Management Areas that included all seasonal habitats of the State's priority Greater Sage-Grouse populations.
- The Proposed LUPA in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.

The BLM considered the entire range of alternatives from the 2015 Final EIS to identify issues meriting reconsideration, given the BLM's goal of enhancing alignment with state plans. In this manner, the BLM will continue to appropriately manage Greater Sage-Grouse and its habitat through this planning effort in tandem with the 2015 ROD/ARMPA.

Further, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse LUPs, the BLM partnered with the USGS to review the best available information published since January 2015, develop an annotated bibliography of that Greater Sage-Grouse science (Carter et al. 2018; see **Section 3.1**), and incorporate the information into this EIS. In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing to economic growth and energy independence. As analyzed in the 2015 Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

2.2.2 Making Priority Habitat Management Areas Identical to the State's Greater Sage-Grouse Management Areas

During alternatives development for the 2019 planning process, the interdisciplinary team considered strategies to improve alignment between the BLM's priority habitat management areas (PHMA) and the State of Utah's Greater Sage-Grouse management areas (SGMA). This included considering aligning PHMA with the 2013 SGMA boundaries, regardless of whether the SGMA was mapped as habitat, non-habitat, or opportunity area.

PHMA was developed to align with areas mapped as habitat in the 2013 SGMA to the greatest extent possible. If the BLM were to adopt an alternative with identical PHMA and SGMA boundaries, an unintended consequence would be that PHMA would include a significant amount of areas the State plan identified as non-habitat or opportunity areas; consequently, PHMA management prescriptions would apply to these non-habitat and opportunity areas, which would increase inconsistencies in management, compared with the State's plan. It would also be inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1 - Land Use Planning Handbook, Appendix C, page 24). This alternative was eliminated from detailed analysis for reasons similar to those discussed in **Section 2.2.1** above.

In particular, the BLM's RMPs are the primary location for management actions to avoid or minimize impacts on Greater Sage-Grouse habitat. This includes land use allocations and stipulations for activities such as oil and gas leasing (e.g., no surface occupancy, controlled surface use) and consideration of rights-of-way (e.g., avoidance, exclusion). These allocations are necessary to align with the State's Greater Sage-Grouse management protocol that "avoidance of disturbance to habitat or birds by an activity is the preferred option" and to "avoid surface disturbance to the greatest degree possible" while "balancing the economic and social needs of the residents of Utah."

The interdisciplinary team determined the approach of matching PHMA and SGMA boundaries would not be consistent with BLM policies or increase alignment with the State's strategies, compared with

other potential adjustments considered in this chapter (e.g., exceptions for PHMA with areas of non-habitat and providing for boundary adjustments). Due to this, the approach was not analyzed in detail.

2.2.3 Use of Other Habitat Maps for PHMA Designation

During the scoping process for the 2019 planning process, some commenters included requests that the BLM use different habitat maps for use in designating PHMA. Some commenters requested expanding current PHMA to include all areas within 5 miles of any occupied lek, while some requested contracting it to only include areas that currently have sagebrush. An approach based on these comments was considered but eliminated from detailed analysis for the reasons discussed below.

- The request that any area within 5 miles of a lek be included as PHMA relied on one piece of literature that suggested that impacts from development may extend for 5 miles from occupied leks; however, based on a substantial review of literature regarding lek buffers, the USGS recognized “that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the Greater Sage-Grouse range” (Manier et al. 2014). Additionally, making areas within 5 miles of occupied leks PHMA would increase disparity with the State’s plan and strategies, which is not consistent with the purpose and need. Because of this, an alternative that automatically makes any area within 5 miles of occupied leks PHMA was not analyzed in detail.
- Some commenters requested that PHMA boundaries be adjusted to include only areas with sagebrush, including omitting areas that could be habitat with treatment. Mapping areas for PHMA as broader polygons is intended to encompass Greater Sage-Grouse habitats used throughout the year by known Greater Sage-Grouse populations. Peer-reviewed literature notes that Greater Sage-Grouse habitat can be described at four scales: a broad geographic range that defines the species distribution, populations/sub-populations, mosaics of seasonal habitats utilized by individuals, and the food and cover attributes at particular sites (see Appendix K of the 2015 ROD/ARMPA).
- PHMA are areas that meet some stage of the Greater Sage-Grouse life-cycle requirements, based on best available science. These broad habitat maps are necessary at the resource management plan-scale of planning in order to include a variety of important seasonal habitats and movement corridors that are spread across geographically diverse and naturally fragmented areas. Greater Sage-Grouse use multiple areas to meet seasonal habitat needs throughout the year and the resulting mosaic of habitats (e.g., winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas. Broad habitat maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included. While areas of non-habitat, in and of themselves, may not provide direct habitat value for Greater Sage-Grouse (e.g., canyons, water bodies, and human disturbances), these areas may be crossed by birds when moving between seasonal habitats.

Further, the State of Utah has statutory responsibility to manage Greater Sage-Grouse. Where submitted information and strategies are inconsistent with those used by the State, the BLM has chosen to use the State of Utah’s information based on their knowledge of and responsibility for the management of Greater Sage-Grouse. Using maps that limit PHMA to just sagebrush would increase disparity from the State’s plan and strategies, which is not consistent with the purpose and need. For these reasons, an alternative that shrinks PHMA to just areas with sagebrush was not analyzed in detail.

2.2.4 County Greater Sage-Grouse Management Plans

During scoping for the 2019 planning process, some counties requested that Greater Sage-Grouse management be developed on a county-by-county basis to accommodate the differences in habitat and land uses. After review of the various county plans, it was determined an alternative specifically based on these plans not be analyzed in detail for two general reasons:

- 1) Aspects of some county plans are substantially similar to the State’s plans and strategies. Consideration of a separate alternative for these aspects is unnecessary since alignment with the State’s strategies is the purpose of this effort.
- 2) Some aspects of the county plans are substantially different from the State’s plan and strategies. To the extent that the plans diverge, following those aspects of the county plans would not meet the purpose and need. Since the purpose of this planning effort is to increase alignment with the State strategies, aligning with different approaches would not be consistent with the purpose and need. Additionally, the BLM’s planning regulations note that “where state and local government policies, plans, and programs differ, those of the higher authority will normally be followed” (43 CFR 1610.3-2(d)).

2.3 DESCRIPTION OF ALTERNATIVES IN THE 2018 PROPOSED RMPA/FINAL EIS

2.3.1 No-Action Alternative

Under the No-Action Alternative, the BLM would not change the management actions from the 2015 Utah Greater Sage-Grouse ROD/ARMPA. Greater Sage-Grouse habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered lands and federal mineral estate would not change. Allowable uses and restrictions pertaining to such activities as mineral leasing and development, lands and realty, and livestock grazing would also remain the same. This alternative includes the designation of Sagebrush Focal Areas (SFAs), PHMA, and GHMA, with corresponding management for each type of area.

2.3.2 2018 Proposed RMPA/Final EIS Proposed Plan Amendment

The 2018 Proposed RMPA/Final EIS Proposed Plan Amendment was developed by modifying the 2018 Draft RMPA/EIS Management Alignment Alternative based on clarifications and modifications that resulted from coordination with the State of Utah, input from other cooperating agencies and public comments, and alignment with BLM policies. It was developed through coordination with the State of Utah and cooperating agencies to increase alignment with the State of Utah’s Greater Sage-Grouse conservation plan and strategies and to support conservation outcomes for Greater Sage-Grouse.

The BLM continued to build upon the 2015 planning effort as envisioned in SO 3353 by collaborating with states to improve compatibility between federal management plans and other plans and programs at the state level, while ensuring consistency with the BLM’s multiple use mission. This enhanced cooperation between the BLM and the Utah Governor’s office would lead to improved management and coordination with the State across the range of Greater Sage-Grouse in Utah. The Proposed Plan Amendment focuses management on PHMA to protect the seasonal habitats that support over 95 percent of Greater Sage-Grouse populations in Utah, while removing the designation and management of GHMA. Additionally, PHMA management would be adjusted to maintain avoidance protections while allowing site-specific adjustments to account for the unique nature of habitat types and distribution throughout Utah.

Consistent with the notice of Cancellation, which canceled the BLM’s application to withdraw SFA from locatable mineral entry (82 *Federal Register* 195, October 11, 2017, p. 47248), this alternative would remove the recommendation for withdrawal. The effects of such action are included in **Chapter 4**.

Specific changes between the 2018 Draft RMPA/EIS Management Alignment Alternative and the Final EIS Proposed Plan Amendment are highlighted in gray in **Section 2.5** for ease of reference.

2.4 COMPARATIVE SUMMARY OF ALTERNATIVES

Table 2-1 summarizes and compares how management associated with issues changes between the No-Action Alternative and the 2018 Proposed Plan Amendment. In comparing these it is important to clarify that the land use allocations had not changed from those in the 2015 effort (e.g., right-of-way open/avoidance/exclusion, oil and gas open/controlled surface use/no surface occupancy/closed, and salable open/closed). Those allocations are the BLM’s mechanism to avoid disturbance, consistent with the direction in the State’s strategies to first avoid development; rather, the differences are the degree to which local information can be taken into account to determine if a more flexible approach can be applied that to consider development while not impacting Greater Sage-Grouse populations.

It is also critical to note that information in this table can be useful in helping the reader understand differences between the No-Action Alternative and the 2018 Proposed Plan Amendment; however, there are limitations. The reader is urged to use the information in this table as a quick reference but to read the detailed alternatives and analyses (**Section 2.5** and **Chapter 4**) to understand specific differences.

Table 2-1
Comparative Summary of Alternatives

2018 Final EIS Issue	2018 No-Action Alternative	2018 Proposed Plan Amendment
Sagebrush Focal Area Designations/Withdrawal Recommendation	<ul style="list-style-type: none"> 181,100 acres of SFA Recommended for withdrawal and prioritized for treatments/livestock permits 	<ul style="list-style-type: none"> 0 acres of SFA Return to underlying management (usually PHMA) – no withdrawal
Administering the Disturbance and Density Caps	<ul style="list-style-type: none"> No additional disturbance if an area has >3% disturbance or an average of >1 facility/640 acres 	<ul style="list-style-type: none"> If project design and site conditions indicate a project will improve habitat, exceedances of disturbance and density caps are allowed
Modifying Habitat Objectives	<ul style="list-style-type: none"> Values based on standard vegetation data, differentiated by populations. Adjustments can be made at the local level based on local science 	<ul style="list-style-type: none"> Objective values based on micro-site vegetation data combined with broad vegetation, climatic, and elevation data. Adjustments can be made at the local level based on local science
Waivers, Exceptions, and Modifications (WEMs) for NSO Stipulations	<ul style="list-style-type: none"> In SFA, no WEMs In PHMA, only one lease exception and no waivers or modifications. To grant the exception, the state, BLM, and Fish and Wildlife Service must all agree it will benefit Greater Sage-Grouse 	<ul style="list-style-type: none"> No SFA Exception and modification in PHMA if the development is in non-habitat and doesn’t indirectly impact habitat Would still need to apply minimization measures (3%, noise, etc.) Waiver if the area is no longer PHMA

2018 Final EIS Issue	2018 No-Action Alternative	2018 Proposed Plan Amendment
General Habitat Management Areas in Utah	<ul style="list-style-type: none"> • 448,600 acres of GHMA • Includes lek buffers, required design features, net conservation gain, habitat objectives, leasing prioritization • Management in place prior to the 2015 Plan Amendment would remain 	<ul style="list-style-type: none"> • 0 acres of GHMA, and removing associated management • Management in place prior to the 2015 Plan Amendment would remain • Avoid indirect impacts on PHMA • Replace seasonal habitat developed outside PHMA by improving habitat in PHMA
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA	<ul style="list-style-type: none"> • Non-habitat portions of GHMA can be developed without restriction, but not non-habitat portions of PHMA 	<ul style="list-style-type: none"> • Non-habitat portions of PHMA can be developed if it does not indirectly impact habitat
Application of Lek Buffers	<ul style="list-style-type: none"> • Unclear whether buffers are to “assess and address impacts” or “not allow activities” within the buffer distances • Adjust buffers with local scientific data 	<ul style="list-style-type: none"> • Clarifies that buffers are to “assess and address impacts” to maintain lek persistence • Adjust buffers with local scientific data
Adaptive Management	<ul style="list-style-type: none"> • Determine the cause of a decline after management changes have been made • If area recovers, another plan amendment would be needed to change management 	<ul style="list-style-type: none"> • Determine cause of decline first, then apply specifically designed response • If area recovers, return to original management • If birds are no longer present, do not manage as PHMA anymore
Prioritization of Mineral Leasing	<ul style="list-style-type: none"> • In addition to NSO stipulations, prioritize oil and gas leasing outside of PHMA and GHMA 	<ul style="list-style-type: none"> • Remove prioritization objective and rely on NSO stipulation and other measures to protect habitat
Land Disposal and Exchanges	<ul style="list-style-type: none"> • No disposals of PHMA or GHMA unless no impacts on Greater Sage-Grouse or habitat 	<ul style="list-style-type: none"> • Can consider disposal of PHMA if the disposal will not compromise the distribution or abundance of the population
Predation	<ul style="list-style-type: none"> • Collaborate with applicable government entities to control predator populations 	<ul style="list-style-type: none"> • Same as No-Action, plus support and encourage efforts to minimize impacts from predators • Remove trees with unoccupied corvid nests during habitat treatments
Burial of Transmission Lines	<ul style="list-style-type: none"> • Require burial of transmission lines unless “not technically feasible.” 	<ul style="list-style-type: none"> • Minimize and otherwise mitigate impacts from transmission lines, considering options that may include burial
Modifying Habitat Management Area Boundaries	<ul style="list-style-type: none"> • Adjust PHMA boundaries based on site-specific information 	<ul style="list-style-type: none"> • Clarified that PHMA boundaries should be adjusted based on site-specific information
Modifying Mitigation Standard	<ul style="list-style-type: none"> • Projects must provide a net conservation gain for Greater Sage-Grouse 	<ul style="list-style-type: none"> • The BLM would pursue improvement of Greater Sage-Grouse habitat in alignment with the State Management plan. • The BLM would cooperate with the State of Utah to analyze applicant-proposed or state-imposed compensatory mitigation to offset residual impacts. The BLM may authorize such actions consistent with NEPA analysis and the governing RMP.

2018 Final EIS Issue	2018 No-Action Alternative	2018 Proposed Plan Amendment
Clarifying Grazing Systems and Prioritization of Grazing Permits	<ul style="list-style-type: none"> Repeats regulations, policies, and management actions from other sections 	<ul style="list-style-type: none"> Focuses specifically on identifying and minimizing improper livestock grazing Removes actions that repeat regulations, policies, or management from other sections
Clarifying Management of Water Developments for Livestock	<ul style="list-style-type: none"> Includes a sentence that could be interpreted as potentially impinging on the State's authority to manage water rights 	<ul style="list-style-type: none"> Removes the sentence and combines two water development actions into one for neutral or beneficial impacts on Greater Sage-Grouse
Clarifying the Role of the BLM, State of Utah, and Counties with Respect to Travel Management Planning	<ul style="list-style-type: none"> Does not specifically direct engagement of state, local and tribal governments during implementation-level travel planning 	<ul style="list-style-type: none"> Adds language to clarify that offices should engage State, local and tribal governments
Clarifying Management of Surface Coal Mining	<ul style="list-style-type: none"> Coal unsuitability will be determined when a lease is requested, but then declares that all PHMA is "essential habitat" for the purposes of the suitability criteria 	<ul style="list-style-type: none"> Clarifies that the unsuitability process will be conducted when a lease is requested based on site-specific information, including identification of "essential habitat"
Decisions that Require Analysis of Specific Alternatives during Implementation	<ul style="list-style-type: none"> Includes several actions that direct consideration of specific alternatives during environmental reviews 	<ul style="list-style-type: none"> Removes direction to consider specific alternatives, instead allowing the NEPA process to identify alternatives based on site-specific issues

2.5 DETAILED DESCRIPTION OF ALTERNATIVES CONSIDERED DURING THE 2019 PLANNING PROCESS

BLM considered a range of alternatives when responding to Secretary's Order 3353 to enhance cooperation with Western States in the management and conservation of sage-grouse and its habitat. The BLM analyzed six alternatives in detail during the 2015 planning process and two alternatives during the 2019 planning process. BLM incorporated the 2015 alternatives by reference into the 2018 Final EISs for a total of seven alternatives evaluated in detail.

The following three tables illustrate the alternatives that the BLM considered during the 2019 land use planning effort. **Table 2-2** summarizes the alternatives that the BLM evaluated in detail during the 2019 planning effort, as well as alternatives that the BLM considered but did not analyze in detail in either the 2015 or the 2019 planning efforts.

Table 2-3 describes in detail the new alternatives developed during the 2019 planning effort to address the issues raised during scoping. Because the 2019 effort was focused on aligning BLM sage-grouse management with State plans, BLM focused on a narrower set of issues and therefore only two alternatives were analyzed in detail. However, that did not limit the BLM, which incorporated analysis from 2015 to consider all the alternatives considered in 2015.

Table 2-4 describes in detail the alternatives developed during the 2015 planning effort that were also considered in the most recent Greater Sage-Grouse land use planning process. **Table 2-4** is considerably longer than **Table 2-3** because the 2015 process addressed many more issues than the focused 2019 planning effort.

2.5.1 Summary of Alternatives Considered in the 2019 Planning Process

As an extension of the 2015 planning process, this planning effort builds upon and incorporates all the alternatives from both the 2015 and 2019 planning effort. **Table 2-2** summarizes all the alternatives that the BLM evaluated in detail during the 2019 planning effort, as well as alternatives that the BLM considered but did not analyze in detail in either the 2015 or the 2019 planning efforts.

Table 2-2
Alternatives Considered During the 2015 and 2019 Planning Processes

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative A	Fully Analyzed	Alternative A was the No-Action Alternative, which would have retained the management goals, objectives and direction specified in the 14 BLM RMPs and the six Forest Service land and resource management plans effective prior to the 2015 ROD/ARMPA.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative B	Fully Analyzed	Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office IM 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative C	Fully Analyzed	Alternative C was based on a citizen groups' recommended alternative and was combined with Alternative F considered by Idaho, Nevada and Northeastern California, Montana, and Oregon. This alternative emphasized improvement and protection of habitat for Greater Sage-Grouse and was applied to all occupied Greater Sage-Grouse habitat. Alternative C would have limited commodity development in areas of occupied Greater Sage-Grouse habitat and would have closed or designated portions of the planning area as unavailable for some land uses.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative D	Fully Analyzed	Alternative D, which was identified as the Preferred Alternative in the 2015 Utah Greater Sage-Grouse Draft LUPA/EIS, balanced opportunities to use and develop the planning area and protects Greater Sage-Grouse habitat based on scoping comments and input from Cooperating Agencies involved in the alternatives development process. Protective measures would have been applied to Greater Sage-Grouse habitat.

2. Alternatives (Table 2-2: Alternatives Considered During the 2015 and 2019 Planning Processes, *cont'd*)

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative E	Fully Analyzed	Alternative E was based on management from the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah. It incorporated guidance from specific State Conservation strategies and limited management to the State of Utah's Sage-Grouse Management Areas that included all seasonal habitats of the State's priority Greater Sage-Grouse populations.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Proposed LUPA	Fully Analyzed	The Proposed LUPA in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Increased Livestock Grazing	Considered; Not Analyzed in Detail	During scoping in 2011 there were requests to increase the amount of livestock grazing in Greater Sage-Grouse habitat. It was not carried forward because 1) there was a lack of peer-reviewed information to support increased livestock grazing as a method of enhancing or restoring habitat; 2) actual use within habitat on BLM-administered lands in the Utah is approximately 70 percent of permitted use, meaning increases in livestock grazing could occur under existing management based on habitat condition; and 3) Neither the State of Utah nor the BLM were able to identify a method for calculating an increase in AUMs at the planning level. See the 2015 Final EIS Section 2.11.1 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Make Greater Sage-Grouse Habitat Available for Oil Shale and Tar Sands Leasing	Considered; Not Analyzed in Detail	The BLM's <i>Approved Land Use Plan Amendments/Record of Decision for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Environmental Impact Statement</i> , completed in March 2013, closed all mapped occupied Greater Sage-Grouse habitat on BLM-administered lands in Utah to oil shale and tar sands leasing and development, with the exception of approximately 2,123 acres. No alternative was considered to change that decision, because an alternative that would open Greater Sage-Grouse habitat would be inconsistent with the purpose and need to identify and incorporate conservation measures to conserve, enhance, and/or restore Greater Sage-Grouse habitat by reducing, eliminating, or minimizing threats to that habitat. See the 2015 Final EIS Section 2.11.2 for additional detail.

2. Alternatives (Table 2-2: Alternatives Considered During the 2015 and 2019 Planning Processes, *cont'd*)

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Citizen Proposed Alternatives	Considered; Not Analyzed in Detail	Several scoping comments included input for potential alternatives. The BLM chose to combine information submitted by these interested public into one alternative (Alternative C). In addition, not all management actions proposed by interested public were brought forward for detailed analysis under Alternative C. Many of the management actions proposed by interested public were implementation-level decisions rather than planning-level decisions. Therefore, consideration of these management practices would be evaluated on a project-by-project basis. Other management actions proposed by interested public were eliminated from detailed analysis because they were ineffective (did not respond to the purpose and need) or speculative (did not resolve any issue or threat). See the 2015 Final EIS Section 2.11.3 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Adoption of the State of Utah's Greater Sage-Grouse Management Areas as PHMA for all Alternatives	Considered; Not Analyzed in Detail	In a letter received by the BLM on February 26, 2013, the State of Utah requested that the BLM and Forest Service use the areas identified as SGMAs in the State of Utah 2013 Greater Sage-Grouse Conservation Plan for all alternatives being considered in the land use planning process. This alternative was considered but eliminated from detailed analysis because the BLM, Forest Service, Fish and Wildlife Service (USFWS), and State of Utah had not reached agreement on which lands have the highest conservation value, or which lands are necessary to maintain or increase Greater Sage-Grouse populations. NEPA section 102(e) requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." See the 2015 Final EIS Section 2.11.4 for additional detail.

2. Alternatives (Table 2-2: Alternatives Considered During the 2015 and 2019 Planning Processes, *cont'd*)

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Use of Other Habitat Maps	Considered; Not Analyzed in Detail	Several counties participating as cooperating agencies requested that the BLM use different habitat maps that they developed as the baseline for analysis rather than the Utah Division of Wildlife Resource's occupied Greater Sage-Grouse habitat map or the State's SGMAs. An alternative based on county-provided habitat maps was considered but eliminated from detailed analysis since the State has jurisdiction by law and special expertise related to Greater Sage-Grouse, the habitat maps used were intentionally developed at a broad geographic scale to increase the likelihood that all seasonal habitats (including transition and movement corridors) are included. Inevitably such mapping approaches include a patchwork of habitats and non-habitats, but those could be addressed during the project-scale based on management that allows for modification of maps and even some decisions during plan implementation based on site-specific information. See the 2015 Final EIS Section 2.11.5 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	County Greater Sage-Grouse Management Plans	Considered; Not Analyzed in Detail	Several counties who are cooperating agencies requested that an alternative based on the given county's draft or final Greater Sage-Grouse management plan be considered. After review of the various draft plans and one final plan, it was determined that these plans be dismissed from detailed analysis for two general reasons: 1) they were substantially similar to the state's plan, which was the basis for Alternative E1, or 2) they were not consistent with the purpose and need of the planning effort. See the 2015 Final EIS Section 2.11.6 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Conservation Objectives Team (COT) Report	Considered; Not Analyzed in Detail	The State of Utah commented that the BLM should consider an alternative which focuses on consistency with the COT report. An alternative based on the COT report was not analyzed in detail because all conservation measures and objectives identified in the COT report are considered within the range of alternatives. See the 2015 Final EIS Section 2.11.7 for additional detail.

2. Alternatives (Table 2-2: Alternatives Considered During the 2015 and 2019 Planning Processes, *cont'd*)

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	BLM Policies and Regulations	Considered; Not Analyzed in Detail	The State of Utah suggested that the BLM should consider an alternative based on BLM Manual 6840, Special Status Species Management, and rangeland health regulations, found at 43 CFR 4180.2. The BLM did not consider this alternative in detail because under all alternatives the BLM is required to comply with existing laws, rules regulations and policy (see Section 1.7.1, Planning Criteria [of the 2015 Final EIS]). In addition, as discussed in the USFWS listing decision, existing regulatory mechanisms, which includes compliance with these existing regulations and policies has not been sufficient to prevent Greater Sage-Grouse habitat loss or population declines. As such, an alternative based on compliance with BLM Manual 6840 and rangeland health regulations would substantially similar in design to the No Action Alternative. See the 2015 Final EIS Section 2.11.8 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	USFWS-Listing Alternative	Considered; Not Analyzed in Detail	Comments provided through scoping requested analysis of an alternative based on the assumption that Greater Sage-Grouse become listed under the Endangered Species Act (ESA). This was outside the scope; the purpose and need of this plan amendment is to address inadequacy of regulatory mechanisms that were identified as one of the listing factors for Greater Sage-Grouse in the USFWS finding on the petition to list Greater Sage-Grouse. Although the potential listing of Greater Sage-Grouse would also include conservation measures identified by the USFWS, those conservation measures are not known at this time. Therefore, an alternative that includes USFWS-listing with associated conservation measures for Greater Sage-Grouse was not being analyzed in detail. See the 2015 Final EIS Section 2.11.9 for additional detail.
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	No Action	Fully Analyzed	The No Action would not amend the current RMPs amended by the Idaho and Montana Greater Sage-Grouse Resource Management Plan Amendment (2015 ROD/ARMPA). Greater Sage-Grouse habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered lands and federal mineral estate would not change. Allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, lands and realty, and livestock grazing would also remain the same.

2. Alternatives (Table 2-2: Alternatives Considered During the 2015 and 2019 Planning Processes, *cont'd*)

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	Management Alignment Alternative	Fully Analyzed	This alternative was derived through coordination with the State and cooperating agencies to better align with the Idaho Governor's conservation plan and to support conservation outcomes for Greater Sage- Grouse. The BLM continued to build upon the 2015 planning effort as envisioned in SO 3353 by collaborating with states and stakeholders to improve compatibility between federal management plans and other plans and programs at the state level, while ensuring consistency with the BLM's multiple use mission.
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	Making PHMA the same as the State's SGMAs	Considered; Not Analyzed in Detail	During alternatives development, the BLM considered aligning PHMA with the entire 2013 SGMA boundaries, regardless of whether the SGMA was mapped as habitat, non-habitat, or opportunity area. Remapping PHMA boundaries to include the 2013 SGMA areas mapped as non-habitat and opportunity areas would decrease alignment with the State's plan by applying the same level of management to non-habitat in SGMAs as is applied to areas of habitat. It would also be inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1 - Land Use Planning Handbook, Appendix C, page 24). Because of this, this approach was not analyzed in detail. See the 2018 Draft EIS Section 2.2.2 for additional detail.
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	Use of Other Habitat Maps for PHMA Designation	Considered; Not Analyzed in Detail	During the scoping, some commenters requested that the BLM use different habitat maps for PHMA. Some commenters requested that PHMA be expanded to include areas within 5 miles of any occupied lek, while some requested contracting PHMA to only include areas that currently have sagebrush. The BLM considered these approaches but eliminated them from detailed analysis because 1) they applied arbitrary distances that don't reflect local habitat conditions; 2) they omit areas that could be habitat with treatment, subsequently requiring additional RMP amendments; and 3) using maps that limit PHMA to just sagebrush would increase disparity from the State's plan and strategies, which is not consistent with the purpose and need. For these reasons, these alternatives were not analyzed in detail. See the 2018 Draft EIS Section 2.2.3 for additional detail.

2. Alternatives (Table 2-2: Alternatives Considered During the 2015 and 2019 Planning Processes, *cont'd*)

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	County Greater Sage-Grouse Management Plans	Considered; Not Analyzed in Detail	As with the 2015 effort, during scoping on this process some counties requested that Greater Sage-Grouse management be developed on a county-by-county basis to accommodate the differences in habitat and land uses. This was also because several counties had completed County RMPs since the 2015 ARMPA. After review of the various county plans, it was determined an alternative specifically based on these plans not be analyzed in detail because 1) some county plans are substantially similar to the State's plans and strategies; and 2) some aspects of the county plans are substantially different from the State's plan and strategies, and since the purpose of this planning effort is to increase alignment with the State strategies, aligning with county-level approaches would not be consistent with the purpose and need. Additionally, the BLM's planning regulations note that "where state and local government policies, plans, and programs differ, those of the higher authority will normally be followed" (43 CFR 1610.3-2(d)). See the 2018 Draft EIS Section 2.2.4 for additional detail.

This page intentionally left blank.

2.5.2 Alternatives Specific to the 2018 Planning Process

Table 2-3 presents the No-Action Alternative (applicable actions from the 2015 ARMPA), the Management Alignment Alternative (from the 2018 Draft RMPA/EIS) and Proposed Plan Amendment (from the 2018 Proposed RMPA/Final EIS) side-by-side to facilitate a comparison of the changes that were considered. Changes made between the Draft EIS Management Alignment Alternative and the Final EIS Proposed Plan Amendment are highlighted in gray in the table for ease of reference.

The following points describe this section’s format to help the reader cross-walk between the alternatives considered in the 2018 RMPAs/EISs and the 2015 Approved Resource Management Plan Amendment (2015 ARMPA):

- This process is driven by the issues identified during scoping; the table below is organized by the issues identified during the 2019 planning process. The management actions from the 2015 ARMPA that correspond to each issue are presented under the applicable issue header. Actions that correspond to more than one issue are repeated under the different issue headings.
- The table focuses on the differences between the No-Action Alternative, Management Alignment Alternative, and the Proposed Plan Amendment. Goals, objectives, and management actions from the 2015 ARMPA that would be the same in all the alternatives—indicating no recommended changes from the 2015 ARMPA—are not shown. As such, if there are portions of actions not present, or if there are numbered actions that appear to be missing, the entirety of the noted actions would continue in both alternatives and therefore will not result in a difference in impacts. **All actions not presented in the table are incorporated by reference from the 2015 ARMPA.**
- If the Proposed Plan Amendment includes a small change to a lengthy objective or management action, the application portions of the action that include the change are shown, but the remainder of the action for which there is no change is not repeated. In these instances, an ellipsis (...) is shown to indicate where the remainder of the unchanged action fits. The following text is also included to help the reader know where the remainder of the unchanged portions of the action are located: “Remainder of this action is unchanged from the 2015 ARMPA.” **All unchanged portions of actions not presented in the table in their entirety are incorporated by reference from the 2015 ARMPA.**
- In some cells, “No Similar Action” is used to indicate that there is no similar goal, objective or action to the given alternative in comparison to the other alternative.

**Table 2-3
Detailed Comparison of Alternatives Specific to the 2018 Final EIS**

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Issue: Sagebrush Focal Area Designations/Withdrawal Recommendation			
MA-SSS-2	Designate SFA as shown on Figure 2-1 (181,100 acres of BLM surface estate; 52,200 acres split-estate federal minerals). SFA will be managed as PHMA, with the following additional management: <ul style="list-style-type: none"> • Recommended for withdrawal from location and entry under the Mining Law of 1872 (as amended), subject to valid existing rights • Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing <p>Prioritized for vegetation management and conservation actions in these areas, including, but not limited to land health assessments, wild horse and burro management actions, review of livestock grazing permits/leases, and habitat restoration (see specific management sections).</p>	No similar action. [No areas would be managed as SFA. Lands previously managed as SFA would be managed according to their underlying habitat management area designation.]	No similar action. [No areas would be managed as SFA. Lands previously managed as SFA would be managed according to their underlying habitat management area designation.]
Objective VEG-1	In SFA and PHMA, the desired condition... [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, the desired condition... [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, the desired condition... [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-LG-6	...NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFA and PHMA will.... [Remainder of this action is unchanged from the 2015 ARMPA.]	...NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA would... [Remainder of this action is unchanged from the 2015 ARMPA.]	...NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA would... [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-LG-16	...Prioritize actions in SFA first, then PHMA.... [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [Prioritization sentence would be removed.]	No similar action. [Prioritization sentence would be removed.]
MA-MR-3	...In SFA, there will be no waivers, exceptions, or modifications. In the remainder of PHMA, no waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted.... [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [As no SFAs would exist, this action would be removed.]	No similar action. [As no SFAs would exist, this action would be removed.]
MA-MR-12	SFA will be recommended for withdrawal from location and entry under the Mining Law of 1872 (as amended), subject to valid existing rights (Figure 2-5, Locatable Minerals [Appendix A] [of the 2015 Final EIS]).	No similar action. [As no SFAs would exist, this action would be removed.]	No similar action. [As no SFAs would exist, this action would be removed.]

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-LR-11	SFA will be recommended for withdrawal from location and entry under the Mining Law of 1872 (as amended), subject to valid existing rights.... [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [As no SFAs would exist, this action would be removed.]	No similar action. [As no SFAs would exist, this action would be removed.]
Issue: Administering Disturbance and Density Caps			
MA-SSS-3B	<p data-bbox="428 370 634 397"><u>B- Disturbance Cap</u></p> <p data-bbox="428 403 1205 606">In PHMA, manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, [of the 2015 Final EIS] for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area.</p> <p data-bbox="428 637 1205 840">If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap.</p> <p data-bbox="428 870 1205 1225">If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location.</p> <p data-bbox="428 1255 1205 1372">An area with disturbance is not excluded from the 3 percent until it has been restored to provide Greater Sage-Grouse habitat. The objective of successful restoration is to provide for the needs of Greater Sage-Grouse, as evidenced by one of the following:</p> <ul data-bbox="447 1378 1205 1524" style="list-style-type: none"> <li data-bbox="447 1378 1205 1435">• Vegetative cover is consistent with the Greater Sage-Grouse habitat objectives and the ecological site description (Objective SSS-3) or <li data-bbox="447 1441 1205 1524">• Monitoring indicates the area is regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter) <p data-bbox="428 1554 1205 1636">Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.</p>	<p data-bbox="1243 370 1448 397"><u>B- Disturbance Cap</u></p> <p data-bbox="1243 403 2054 606">In PHMA, manage discrete anthropogenic disturbances so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, [of the 2018 Draft EIS] for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area.</p> <p data-bbox="1243 637 2054 840">If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap.</p> <p data-bbox="1243 870 2054 1050">If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.).</p> <p data-bbox="1243 1080 2054 1260">However, the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements (siting, minimization measures, and compensatory mitigation) indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area.</p> <p data-bbox="1243 1290 2054 1469">Factors considered by the team will include Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors. Such exceptions to the 3 percent disturbance cap may be approved by the BLM Authorized Officer only with the concurrence of the State Director.</p> <p data-bbox="1243 1499 2054 1616">The finding and recommendation shall be made by the technical team which should consist of, at least, a field biologist or other Greater Sage-Grouse expert, a biologist representing the State of Utah, and should include coordination with the appropriate State of Utah agency.</p>	<p data-bbox="2085 370 2290 397"><u>B- Disturbance Cap</u></p> <p data-bbox="2085 403 2915 582">In PHMA, manage discrete anthropogenic disturbances so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, [of the 2018 Final EIS] for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area.</p> <p data-bbox="2085 612 2915 840">If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU) or within a proposed project analysis area in PHMA, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) or the proposed project analysis area until the disturbance has been reduced to less than the cap.</p> <p data-bbox="2085 870 2915 1050">However, the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area or within the PHMA in the population area where the project is located.</p> <p data-bbox="2085 1080 2915 1260">Factors considered by the team will include Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors. Such exceptions to the 3 percent disturbance cap may be approved by the BLM Authorized Officer only with the concurrence of the State Director.</p> <p data-bbox="2085 1290 2915 1407">The finding and recommendation shall be made by the technical team, which should consist of, at least, a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency.</p> <p data-bbox="2085 1437 2915 1636">Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that doing so will improve the condition of Greater Sage-Grouse habitat in comparison to siting a project outside the designated corridor. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location.</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-3B (continued)	(see above)	<p>Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that doing so will improve the condition of Greater Sage-Grouse habitat in comparison to siting a project outside the designated corridor. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location.</p> <p>An area with disturbance within Greater Sage-Grouse habitat is not excluded from the 3 percent cap until it provides Greater Sage-Grouse habitat. The objective of successful restoration of disturbed occupied Greater Sage-Grouse habitat is to provide for the needs of Greater Sage-Grouse, which could be evidenced by one of the following:</p> <ul style="list-style-type: none"> • Vegetative cover is consistent with the Greater Sage-Grouse habitat objectives and the ecological site description (Objective SSS-3) or • Monitoring indicates the area is regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter) <p>Areas of PHMA that were not Greater Sage-Grouse habitat at project initiation would be excluded from the 3 percent cap calculation upon project completion and reclamation, as outlined in the applicable lease or permit.</p> <p>Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.</p>	<p>An area with disturbance within Greater Sage-Grouse habitat is not excluded from the 3 percent cap until it provides Greater Sage-Grouse habitat. The objective of successful restoration of disturbed Greater Sage-Grouse seasonal habitats is to provide for the needs of Greater Sage-Grouse, which could be evidenced by one of the following:</p> <ul style="list-style-type: none"> • Vegetative cover is consistent with the Greater Sage-Grouse habitat objectives and the ecological site description (Objective SSS-3) or • Monitoring indicates the area is regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter) <p>Include a schedule in project authorizations for monitoring the status of restoration efforts (e.g., areas of disturbance that meet the restoration criteria). Areas where disturbance would exceed 3% after project construction should include annual assessments to prioritize restoration efforts and determine what areas have been restored.</p> <p>Areas of PHMA that were not Greater Sage-Grouse habitat at project initiation would be excluded from the 3 percent cap calculation upon project completion and reclamation, as outlined in the applicable lease or permit.</p> <p>Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.</p> <p>Consider the likelihood of development of not-yet-constructed surface-disturbing activities—as defined in Table D.2 of the Monitoring Framework (Appendix D of the 2015 ROD/ARMPA)—under valid existing rights prior to authorizing new projects in PHMA.</p>
MA-SSS-3C	<p>C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Energy and mining facilities to which this action applies are:</p> <ul style="list-style-type: none"> • Oil and gas wells and development facilities, • Coal mines, • Wind towers, • Solar fields, • Geothermal wells/developments, and • Active locatable, leasable, and saleable developments. 	<p>C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.); or (3) the process identified in MA-SSS-3B determines the project will improve the condition of Greater Sage-Grouse habitat through analysis of site-specific Greater Sage-Grouse habitat and population information and project design elements (siting, minimization measures, and compensatory mitigation). Energy and mining facilities to which this action applies are:</p> <ul style="list-style-type: none"> • Oil and gas wells and development facilities • Coal mines • Wind towers • Solar fields • Geothermal wells/developments • Active locatable, leasable, and saleable developments 	<p>C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights (e.g., mining claims under the Mining Law of 1872), if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.); however, the density cap may be exceeded if a project is in non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA), or if the process identified in MA-SSS-3B determines the project will improve the condition of Greater Sage-Grouse habitat at the proposed project analysis area or within the PHMA where the project is located through analysis of site-specific Greater Sage-Grouse habitat and population information and project design elements. Energy and mining facilities to which this action applies are:</p> <ul style="list-style-type: none"> • Oil and gas wells and development facilities • Coal mines • Wind towers • Solar fields • Geothermal wells/developments • Active locatable, leasable, and saleable developments

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Issue: Modifying Habitat Objectives			
Objective SSS-3			

Habitat Objectives for Greater Sage-Grouse

ATTRIBUTE	INDICATORS	DESIRED CONDITION
Breeding and Nesting (February 15–June 15)^{1, 2, 3, 4, 5, 6}		
Lek Security	Proximity of trees	Trees absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 kilometers) of occupied leks. ^{6, 7, 8}
	Proximity of sagebrush to leks	Has adjacent sagebrush cover. ⁶
Cover	% of seasonal habitat meeting desired conditions	>80% of the mapped nesting habitat meets the recommended vegetation characteristics, where appropriate (relative to ecological site potential, etc.). ⁸
	Sagebrush cover	≥15%. ^{6, 8, 9}
	Total shrub cover ^{6, 8, 9}	15-30%: Box Elder, Parker Mountain, Bald Hills, Hamlin Valley, Panguitch, Uintah south of Hwy 40 15-35%: Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40
	Sagebrush height ^{6, 8, 9}	>12 inches (30 cm): Box Elder, Bald Hills, Hamlin Valley, Sheeprocks, Ibapah >10 inches (25 cm): Rich, Carbon, Emery, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40
	Predominant sagebrush shape ¹⁰	>50% in spreading (applicable to the specific sagebrush types prone to columnar vs. spreading shape e.g., Wyoming, not black sage) ⁶
	Perennial grass cover (such as native bunchgrasses, rhizomatous grasses called for on applicable ecological site descriptions, or other perennial grasses that provide similar functionality) ^{6, 8, 9}	>10%: Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >5%: Parker Mountain, Panguitch, Uintah south of Highway 40
	Perennial grass and forb height (includes residual grasses) ^{6, 8, 9}	Provide overhead and lateral concealment from predators. ¹¹
	Perennial forb canopy cover ^{6, 8, 9}	>5%: Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >3%: Parker Mountain, Panguitch, Uintah south of Highway 40

Habitat Objectives for Greater Sage-Grouse (See Map 3-4 for the Wasatch, Low, and Parker Habitat Clusters)

ATTRIBUTE	INDICATORS	DESIRED CONDITION
Breeding and Nesting (February 15–June 15)^{1, 2, 3, 4, 5, 6}		
Lek Security	Proximity to conifers	Conifers are absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 kilometers) of occupied leks. ^{6, 7, 8}
	Proximity of sagebrush to leks	Has adjacent sagebrush cover. ⁶
Cover	% of seasonal habitat meeting desired conditions	>80% of the mapped nesting habitat meets the recommended vegetation characteristics, ⁸ where appropriate (relative to ecological site potential, etc.)
	Sagebrush cover ⁹	Wasatch: ≥14% Low: ≥7% Parker: ≥17%
	Total shrub cover ^{6, 8, 9}	Wasatch: ≥19% Low: ≥17% Parker: ≥22%
	Sagebrush Composition ⁹	Wasatch: ≥83% Low: ≥36% Parker: ≥71%
	Sagebrush height ^{6, 8, 9}	Wasatch: ≥8.7 inches (22 cm) Low: ≥12 inches (30 cm) Parker: ≥5.5 inches (14 cm)
	Perennial grass cover (such as native bunchgrasses, rhizomatous grasses called for on applicable ecological site descriptions, or other perennial grasses that provide similar functionality) ^{6, 8, 9}	Wasatch: ≥8% Low: ≥5% Parker: ≥4%
	Perennial grass and forb height (includes residual grasses) ^{6, 8, 9}	Provide overhead and lateral concealment from predators. ¹¹
	Perennial forb canopy cover ^{6, 8, 9}	Wasatch: ≥4% Low: ≥2% Parker: ≥1%

Habitat Objectives for Greater Sage-Grouse (See Figure 3-1 for the Low, Mid, and High Habitat Objective Zones)

ATTRIBUTE	INDICATORS	DESIRED CONDITION
Breeding and Nesting (February 15–June 15)^{1, 2, 3, 4, 5, 6}		
Lek Security	Proximity to conifers	Conifers are absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 kilometers) of occupied leks. ^{6, 7, 8}
	Proximity of sagebrush to leks	Has adjacent sagebrush cover. ⁶
Cover	% of seasonal habitat meeting desired conditions	>80% of the mapped nesting habitat meets the recommended vegetation characteristics, ⁸ where appropriate (relative to ecological site potential, etc.)
	Sagebrush cover ⁹	Low: ≥7% Mid: ≥18% High: ≥14%
	Total shrub cover ^{6, 8, 9}	Low: ≥17% Mid: ≥22% High: ≥19%
	Sagebrush Composition ⁹	Low: ≥36% Mid: ≥71% High: ≥83%
	Shrub height ^{6, 8, 9}	Low: ≥12 inches (30 cm) Mid: ≥5.9 inches (15 cm) High: ≥9 inches (23 cm)
	Perennial grass cover (such as native bunchgrasses, rhizomatous grasses called for on applicable ecological site descriptions, or other perennial grasses that provide similar functionality) ^{6, 8, 9}	Low: ≥5% Mid: ≥4% High: ≥8%
	Perennial grass and forb height (includes residual grasses) ^{6, 8, 9}	Provide overhead and lateral concealment from predators. ¹¹
	Perennial forb canopy cover ^{6, 8, 9}	Low: ≥2% Mid: ≥1% High: ≥4%

Objective SSS-3 (continued)	Brood-Rearing/Summer (April 15–August 15) ¹			Brood-Rearing/Summer (April 15–August 15) ¹			Brood-Rearing/Summer (April 15–August 15) ¹			
	Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics where appropriate (relative to ecological site potential, etc.) ⁸	Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics ⁸ where appropriate (relative to ecological site potential, etc.)	Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics ⁸ where appropriate (relative to ecological site potential, etc.)	
	Sagebrush cover ^{6, 8, 9}	>10%		Sagebrush cover ^{6, 8, 9}	Wasatch: ≥ 17% Low: ≥ 4% Parker: ≥ 16%		Sagebrush cover ^{6, 8, 9}	Low: ≥ 4% Mid: ≥ 16% High: ≥ 15%		
	Total shrub cover ^{6, 8, 9}	10-25%: Box Elder, Bald Hills, Hamlin Valley, Panguitch, Rich, Parker Mountain, Uintah 10-30%: Carbon, Emery, Sheeprocks, Ibapah,		Total shrub cover ^{6, 8, 9}	Wasatch: ≥ 15% Low: ≥ 10% Parker: ≥ 19%		Total shrub cover ^{6, 8, 9}	Low: ≥ 10% Mid: ≥ 19% High: ≥ 17%		
	Sagebrush height ^{6, 8, 9}	>12 inches (30 cm): Box Elder, Bald Hills, Hamlin Valley, Sheeprocks, Ibapah >10 inches (25 cm): Rich, Carbon, Emery, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40		Sagebrush Composition ⁹	Wasatch: ≥ 77% Low: ≥ 28% Parker: ≥ 7%		Sagebrush Composition ⁹	Low: ≥ 28% Mid: ≥ 77% High: ≥ 77%		
	Perennial grass cover and forbs ^{6, 8, 9}	>15% (Grass: >10%; Forb: >5%): Box Elder, Rich, Sheeprocks, Ibapah, Parker Mountain, Panguitch, Uintah, Carbon, Emery >15% (Grass: >8%; Forb: >7%): Bald Hills, Hamlin Valley,		Sagebrush height ^{6, 8, 9}	Wasatch: ≥ 8 inches (20 cm) Low: ≥ 10.25 inches (26 cm) Parker: ≥ 4.3 inches (11 cm)		Shrub height ^{6, 8, 9}	Low: ≥ 10.25 inches (26 cm) Mid: ≥ 4.3 inches (11 cm) High: ≥ 8 inches (20 cm)		
	Riparian areas/mesic meadows	Proper Functioning Condition		Perennial grass cover ⁹	Wasatch: ≥ 8% Low: ≥ 5% Parker: ≥ 6%		Perennial grass cover ⁹	Low: ≥ 5% Mid: ≥ 6% High: ≥ 8%		
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present ^{6, 12}		Perennial forb cover ⁹	Wasatch: ≥ 6% Low: ≥ 2% Parker: ≥ 2%		Perennial forb cover ⁹	Low: ≥ 2% Mid: ≥ 2% High: ≥ 6%		
	Winter (November 15–March 15)¹				Riparian areas/mesic meadows	Proper Functioning Condition		Riparian areas/mesic meadows	Proper Functioning Condition	
Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics where appropriate (relative to ecological site, etc.). ⁸		Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present ^{6, 12}		Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present ^{6, 12}		
	Sagebrush cover above snow ^{6, 8, 9}	>10%		Winter (November 15–March 15)¹				Winter (November 15–March 15)¹		
	Sagebrush height above snow ^{6, 8, 9, 13}	>10 inches (25 cm): Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40		Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics ⁸ where appropriate (relative to ecological site, etc.).		Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics ⁸ where appropriate (relative to ecological site, etc.).
				Sagebrush cover above snow ^{6, 8, 9}	>10%			Sagebrush cover above snow ^{6, 8, 9}	>10%	
				Sagebrush height ⁹	Wasatch: ≥ 8.7 inches (22 cm) Low: ≥ 12 inches (30 cm) Parker: ≥ 5.5 inches (14 cm)			Shrub height ⁹	Low: ≥ 12 inches (30 cm) Mid: ≥ 5.5 inches (14 cm) High: ≥ 8.7 inches (22 cm)	

¹ Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring and long and/or heavy winter), in coordination with the appropriate State of Utah agency.

² Utah Greater Sage-Grouse Working Group 2013

³ Doherty 2008

⁴ Doherty et al. 2010

⁵ Holloran and Anderson 2005

⁶ Stiver et al. 2015

⁷ Baruch-Mordo et al. 2013

⁸ Connelly et al. 2000

⁹ Unpublished data, Utah Community-Based Conservation Program Greater Sage-grouse Statewide Database, Utah State University, Logan, Utah and Brigham Young

¹ Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring and long and/or heavy winter), in coordination with the appropriate State of Utah agency.

² Utah Greater Sage-Grouse Working Group 2013

³ Doherty 2008

⁴ Doherty et al. 2010

⁵ Holloran and Anderson 2005

⁶ Stiver et al. 2015

⁷ Baruch-Mordo et al. 2013

¹ Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring and long and/or heavy winter), in coordination with the appropriate State of Utah agency.

² Utah Greater Sage-Grouse Working Group 2013

³ Doherty 2008

⁴ Doherty et al. 2010

⁵ Holloran and Anderson 2005

⁶ Stiver et al. 2015

⁷ Baruch-Mordo et al. 2013

⁸ Connelly et al. 2000

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Objective SSS-3 (continued)	<p>University, Provo, Utah. Summarization and analysis of nesting and brood-rearing habitat characteristics from data collected through Utah State University and Brigham Young University research efforts. Researchers located the nest and brood sites using radio-marked telemetry methods. Shortly after the site was used by the marked bird (after hatch or use by a brood), vegetation characteristics on the site were measured using the line intercept method for shrub canopy cover and Daubenmire frames for herbaceous cover. Researchers across the various study areas used methods that followed the guidelines identified in Connelly et al. (2003).</p> <p>¹⁰ Sagebrush plants that are more tree or columnar shaped provide less protective cover near the ground than sagebrush plants with a spreading shape (Stiver et al. 2015 <i>In Press</i>). Some sagebrush plants are naturally columnar (e.g., Great Basin big sagebrush) and a natural part of the plant community; however, a predominance of columnar shape arising from animal impacts may warrant management investigation or adjustments at site-specific scales.</p> <p>¹¹ Specific height requirements needed to meet the objective will be set at the time of watershed assessments.</p> <p>¹² Preferred forbs are listed in Stiver et al. 2015 <i>In Press</i>. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred.</p> <p>¹³ The height of sagebrush remaining above the snow depends upon snow depth in a particular year. Intent is to manage for tall, healthy sagebrush stands.</p>	<p>⁸ Connelly et al. 2000</p> <p>⁹ Dahlgren, D., T. A. Messmer, B. A. Crabb, M. T. Kohl, S. N. Frey, E. Thacker, R. T. Larsen, and R. J. Baxter. (In Review). An empirical approach to refining Greater Sage-Grouse (<i>Centrocercus urophasianus</i>) breeding habitat guidelines. <i>Ecosphere</i>.</p> <p>¹¹ Specific height requirements needed to meet the objective will be set at the time of assessments.</p> <p>¹² Preferred forbs are listed in Stiver et al. 2015. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred.</p>	<p>⁹ Dahlgren, D.K., T.A. Messmer, B.A. Crabb, M.T. Kohl, S.N. Frey, E.T. Thacker, R.T. Larsen, and R.J. Baxter. 2019. Sage-Grouse Breeding and Ledge Brood-Rearing Habitat Guidelines in Utah. <i>Wildlife Society Bulletin</i> 1–14; DOI: 10.1002/wsb.1029 (Updated from 2018 Final EIS with 2019 publication numbers and citation)</p> <p>¹¹ Specific height requirements needed to meet the objective will be set at the time of assessments.</p> <p>¹² Preferred forbs are listed in Stiver et al. 2015. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred.</p>
Issue: Waivers, Exceptions, and Modifications for NSO Stipulations			
MA-MR-3	<p><u>Unleased Areas within PHMA</u> PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations.</p> <p>In SFA, there will be no waivers, exceptions, or modifications. In the remainder of PHMA, no waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:</p> <ul style="list-style-type: none"> • Would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat or • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel and would provide a clear conservation gain to Greater Sage-Grouse. <p>Exceptions based on conservation gain (ii) may only be considered in (a) PHMA of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid federal fluid mineral lease existing as of the date of this ARMPA. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts.</p> <p>Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other Greater Sage-Grouse expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publicly available at least quarterly.</p>	<p><u>Unleased Areas within PHMA</u> PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations.</p> <p>Within PHMA seasonal habitat, as identified through an on-the-ground survey, the BLM Authorized Officer may grant an exception to a fluid mineral lease no surface occupancy stipulation only where the proposed action is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on nearby parcel. This exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts</p> <p>Within PHMA opportunity areas or non-habitat, the BLM Authorized Officer may grant an exception to a fluid mineral lease no surface occupancy stipulation only where the proposed action:</p> <ul style="list-style-type: none"> • Occurs in non-habitat that does not provide important connectivity between habitats • Does not impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the Greater Sage-Grouse population from direct and indirect impacts due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on the nearby parcel <p>The BLM Authorized Officer may grant a modification to a fluid mineral lease no surface occupancy stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the no surface occupancy stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, power lines). While the no surface occupancy stipulation</p>	<p><u>Unleased Areas within PHMA</u> PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations.</p> <p>Within PHMA, the BLM Authorized Officer may grant an exception to a fluid mineral lease NSO stipulation where the proposed action:</p> <ul style="list-style-type: none"> • Occurs in non-habitat that does not provide important connectivity between habitat areas and the development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document; or • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on the nearby parcel; this exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. <p>The BLM Authorized Officer may grant a modification to a fluid mineral lease no surface occupancy stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the no surface occupancy stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, power lines). While the no surface occupancy stipulation could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3.</p> <p>The BLM Authorized Officer may grant a waiver to a fluid mineral lease no surface occupancy stipulation if, through the appropriate planning process (i.e., maintenance, amendment) the area is no longer within PHMA.</p> <p>Approved exceptions will be made publicly available at least quarterly.</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-MR-3 (<i>continued</i>)	<p>In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).</p> <p>Outside PHMA, portions of opportunity areas within 4 miles of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent Greater Sage-Grouse use of PHMA).</p>	<p>could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3.</p> <p>The BLM Authorized Officer may grant a waiver to a fluid mineral lease no surface occupancy stipulation if, through the appropriate planning process (i.e., maintenance, amendment) the area is no longer within PHMA.</p> <p>Approved exceptions will be made publicly available at least quarterly.</p> <p>In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, and RDFs), including if an exception to the NSO is granted.</p> <p>Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent Greater Sage-Grouse use of PHMA).</p>	<p>In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, and RDFs), including if an exception to the NSO is granted.</p> <p>Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent Greater Sage-Grouse use of PHMA).</p>
Issue: General Habitat Management Areas in Utah			
Objective SSS-2	In all Greater Sage-Grouse habitat, manage activities... [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, manage activities... [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, manage activities... [Remainder of this action is unchanged from the 2015 ARMPA.]
Objective SSS-3	In all Greater Sage-Grouse habitat, where sagebrush... [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, where sagebrush... [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, where sagebrush... [Remainder of this action is unchanged from the 2015 ARMPA.]

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment																																																																																																																																																																																																																																																																
MA-SSS-1	Identify PHMA and GHMA as follows (Figure 2-1, Habitat Management Areas [Appendix A, 2015 ROD/ARMPA Maps]):	Identify PHMA as follows (Figure 2-1, Habitat Management Areas [Appendix A, 2015 ROD/ARMPA Maps]):	Identify PHMA as follows (Figure 2-1, Habitat Management Areas [Appendix A, 2015 ROD/ARMPA Maps]):																																																																																																																																																																																																																																																																
	<table border="1"> <thead> <tr> <th rowspan="3">Population Area</th> <th colspan="6">Acres</th> </tr> <tr> <th colspan="3">PHMA</th> <th colspan="3">GHMA</th> </tr> <tr> <th>Total Surface¹</th> <th>BLM Surface²</th> <th>Split Estate³</th> <th>Total Surface¹</th> <th>BLM Surface²</th> <th>Split Estate³</th> </tr> </thead> <tbody> <tr><td>Uintah</td><td>566,800</td><td>263,200</td><td>140,800</td><td>991,500</td><td>294,200</td><td>81,700</td></tr> <tr><td>Carbon ⁴</td><td>260,100</td><td>43,500</td><td>124,200</td><td>198,700</td><td>82,800</td><td>19,200</td></tr> <tr><td>Emery</td><td>85,500</td><td>100</td><td>84,000</td><td>11,400</td><td>0</td><td>9,700</td></tr> <tr><td>Parker Mtn.</td><td>741,300</td><td>214,200</td><td>378,300</td><td>12,900</td><td>0</td><td>7,400</td></tr> <tr><td>Panguitch</td><td>343,900</td><td>163,200</td><td>91,000</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Bald Hills</td><td>326,400</td><td>259,400</td><td>5,200</td><td>21,200</td><td>8,300</td><td>1,200</td></tr> <tr><td>Hamlin Valley</td><td>143,700</td><td>101,500</td><td>6,600</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Sheeprocks</td><td>534,600</td><td>381,100</td><td>111,200</td><td>296,500</td><td>52,800</td><td>15,300</td></tr> <tr><td>Ibapah</td><td>88,800</td><td>48,000</td><td>700</td><td>10,800</td><td>10,100</td><td>0</td></tr> <tr><td>Box Elder</td><td>1,227,800</td><td>439,200</td><td>112,000</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Rich</td><td>1,051,000</td><td>167,000</td><td>178,400</td><td>197,900</td><td>300</td><td>20,600</td></tr> <tr><td>Lucerne</td><td>0</td><td>0</td><td>0</td><td>37,500</td><td>0</td><td>11,500</td></tr> <tr><td>Strawberry</td><td>161,500</td><td>0</td><td>40,900</td><td>20,600</td><td>0</td><td>500</td></tr> <tr><td>Statewide</td><td>5,531,400</td><td>2,080,400</td><td>2,273,300</td><td>1,799,000</td><td>448,500</td><td>167,100</td></tr> <tr><td>% PHMA/GHMA</td><td>75%</td><td>80%</td><td>85%</td><td>25%</td><td>20%</td><td>15%</td></tr> </tbody> </table>	Population Area	Acres						PHMA			GHMA			Total Surface ¹	BLM Surface ²	Split Estate ³	Total Surface ¹	BLM Surface ²	Split Estate ³	Uintah	566,800	263,200	140,800	991,500	294,200	81,700	Carbon ⁴	260,100	43,500	124,200	198,700	82,800	19,200	Emery	85,500	100	84,000	11,400	0	9,700	Parker Mtn.	741,300	214,200	378,300	12,900	0	7,400	Panguitch	343,900	163,200	91,000	0	0	0	Bald Hills	326,400	259,400	5,200	21,200	8,300	1,200	Hamlin Valley	143,700	101,500	6,600	0	0	0	Sheeprocks	534,600	381,100	111,200	296,500	52,800	15,300	Ibapah	88,800	48,000	700	10,800	10,100	0	Box Elder	1,227,800	439,200	112,000	0	0	0	Rich	1,051,000	167,000	178,400	197,900	300	20,600	Lucerne	0	0	0	37,500	0	11,500	Strawberry	161,500	0	40,900	20,600	0	500	Statewide	5,531,400	2,080,400	2,273,300	1,799,000	448,500	167,100	% PHMA/GHMA	75%	80%	85%	25%	20%	15%	<table border="1"> <thead> <tr> <th rowspan="3">Population Area</th> <th colspan="3">Acres</th> </tr> <tr> <th colspan="3">PHMA</th> </tr> <tr> <th>Total Surface¹</th> <th>BLM Surface²</th> <th>Split Estate³</th> </tr> </thead> <tbody> <tr><td>Uintah</td><td>566,800</td><td>263,200</td><td>140,800</td></tr> <tr><td>Carbon ⁴</td><td>260,100</td><td>43,500</td><td>124,200</td></tr> <tr><td>Emery</td><td>85,500</td><td>100</td><td>84,000</td></tr> <tr><td>Parker Mtn.</td><td>741,300</td><td>214,200</td><td>378,300</td></tr> <tr><td>Panguitch</td><td>343,900</td><td>163,200</td><td>91,000</td></tr> <tr><td>Bald Hills</td><td>326,400</td><td>259,400</td><td>5,200</td></tr> <tr><td>Hamlin Valley</td><td>143,700</td><td>101,500</td><td>6,600</td></tr> <tr><td>Sheeprocks</td><td>534,600</td><td>381,100</td><td>111,200</td></tr> <tr><td>Ibapah</td><td>88,800</td><td>48,000</td><td>700</td></tr> <tr><td>Box Elder</td><td>1,227,800</td><td>439,200</td><td>195,800</td></tr> <tr><td>Rich</td><td>1,015,400</td><td>167,000</td><td>153,700</td></tr> <tr><td>Lucerne</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Strawberry</td><td>161,500</td><td>0</td><td>40,900</td></tr> <tr><td>Statewide⁵</td><td>5,495,800</td><td>2,080,400</td><td>1,332,400</td></tr> </tbody> </table>	Population Area	Acres			PHMA			Total Surface ¹	BLM Surface ²	Split Estate ³	Uintah	566,800	263,200	140,800	Carbon ⁴	260,100	43,500	124,200	Emery	85,500	100	84,000	Parker Mtn.	741,300	214,200	378,300	Panguitch	343,900	163,200	91,000	Bald Hills	326,400	259,400	5,200	Hamlin Valley	143,700	101,500	6,600	Sheeprocks	534,600	381,100	111,200	Ibapah	88,800	48,000	700	Box Elder	1,227,800	439,200	195,800	Rich	1,015,400	167,000	153,700	Lucerne	0	0	0	Strawberry	161,500	0	40,900	Statewide ⁵	5,495,800	2,080,400	1,332,400	<table border="1"> <thead> <tr> <th rowspan="3">Population Area</th> <th colspan="3">Acres</th> </tr> <tr> <th colspan="3">PHMA</th> </tr> <tr> <th>Total Surface¹</th> <th>BLM Surface²</th> <th>Split Estate³</th> </tr> </thead> <tbody> <tr><td>Uintah</td><td>566,800</td><td>263,200</td><td>140,800</td></tr> <tr><td>Carbon ⁴</td><td>260,100</td><td>43,500</td><td>124,200</td></tr> <tr><td>Emery</td><td>85,500</td><td>100</td><td>84,000</td></tr> <tr><td>Parker Mtn.</td><td>741,300</td><td>214,200</td><td>378,300</td></tr> <tr><td>Panguitch</td><td>343,900</td><td>163,200</td><td>91,000</td></tr> <tr><td>Bald Hills</td><td>326,400</td><td>259,400</td><td>5,200</td></tr> <tr><td>Hamlin Valley</td><td>143,700</td><td>101,500</td><td>6,600</td></tr> <tr><td>Sheeprocks</td><td>534,600</td><td>381,100</td><td>111,200</td></tr> <tr><td>Ibapah</td><td>88,800</td><td>48,000</td><td>700</td></tr> <tr><td>Box Elder</td><td>1,227,800</td><td>439,200</td><td>195,800</td></tr> <tr><td>Rich</td><td>1,015,400</td><td>167,000</td><td>153,700</td></tr> <tr><td>Lucerne</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Strawberry</td><td>161,500</td><td>0</td><td>40,900</td></tr> <tr><td>Statewide⁵</td><td>5,495,800</td><td>2,080,400</td><td>1,332,400</td></tr> </tbody> </table>	Population Area	Acres			PHMA			Total Surface ¹	BLM Surface ²	Split Estate ³	Uintah	566,800	263,200	140,800	Carbon ⁴	260,100	43,500	124,200	Emery	85,500	100	84,000	Parker Mtn.	741,300	214,200	378,300	Panguitch	343,900	163,200	91,000	Bald Hills	326,400	259,400	5,200	Hamlin Valley	143,700	101,500	6,600	Sheeprocks	534,600	381,100	111,200	Ibapah	88,800	48,000	700	Box Elder	1,227,800	439,200	195,800	Rich	1,015,400	167,000	153,700	Lucerne	0	0	0	Strawberry	161,500	0	40,900	Statewide ⁵	5,495,800	2,080,400	1,332,400
Population Area	Acres																																																																																																																																																																																																																																																																		
	PHMA			GHMA																																																																																																																																																																																																																																																															
	Total Surface ¹	BLM Surface ²	Split Estate ³	Total Surface ¹	BLM Surface ²	Split Estate ³																																																																																																																																																																																																																																																													
Uintah	566,800	263,200	140,800	991,500	294,200	81,700																																																																																																																																																																																																																																																													
Carbon ⁴	260,100	43,500	124,200	198,700	82,800	19,200																																																																																																																																																																																																																																																													
Emery	85,500	100	84,000	11,400	0	9,700																																																																																																																																																																																																																																																													
Parker Mtn.	741,300	214,200	378,300	12,900	0	7,400																																																																																																																																																																																																																																																													
Panguitch	343,900	163,200	91,000	0	0	0																																																																																																																																																																																																																																																													
Bald Hills	326,400	259,400	5,200	21,200	8,300	1,200																																																																																																																																																																																																																																																													
Hamlin Valley	143,700	101,500	6,600	0	0	0																																																																																																																																																																																																																																																													
Sheeprocks	534,600	381,100	111,200	296,500	52,800	15,300																																																																																																																																																																																																																																																													
Ibapah	88,800	48,000	700	10,800	10,100	0																																																																																																																																																																																																																																																													
Box Elder	1,227,800	439,200	112,000	0	0	0																																																																																																																																																																																																																																																													
Rich	1,051,000	167,000	178,400	197,900	300	20,600																																																																																																																																																																																																																																																													
Lucerne	0	0	0	37,500	0	11,500																																																																																																																																																																																																																																																													
Strawberry	161,500	0	40,900	20,600	0	500																																																																																																																																																																																																																																																													
Statewide	5,531,400	2,080,400	2,273,300	1,799,000	448,500	167,100																																																																																																																																																																																																																																																													
% PHMA/GHMA	75%	80%	85%	25%	20%	15%																																																																																																																																																																																																																																																													
Population Area	Acres																																																																																																																																																																																																																																																																		
	PHMA																																																																																																																																																																																																																																																																		
	Total Surface ¹	BLM Surface ²	Split Estate ³																																																																																																																																																																																																																																																																
Uintah	566,800	263,200	140,800																																																																																																																																																																																																																																																																
Carbon ⁴	260,100	43,500	124,200																																																																																																																																																																																																																																																																
Emery	85,500	100	84,000																																																																																																																																																																																																																																																																
Parker Mtn.	741,300	214,200	378,300																																																																																																																																																																																																																																																																
Panguitch	343,900	163,200	91,000																																																																																																																																																																																																																																																																
Bald Hills	326,400	259,400	5,200																																																																																																																																																																																																																																																																
Hamlin Valley	143,700	101,500	6,600																																																																																																																																																																																																																																																																
Sheeprocks	534,600	381,100	111,200																																																																																																																																																																																																																																																																
Ibapah	88,800	48,000	700																																																																																																																																																																																																																																																																
Box Elder	1,227,800	439,200	195,800																																																																																																																																																																																																																																																																
Rich	1,015,400	167,000	153,700																																																																																																																																																																																																																																																																
Lucerne	0	0	0																																																																																																																																																																																																																																																																
Strawberry	161,500	0	40,900																																																																																																																																																																																																																																																																
Statewide ⁵	5,495,800	2,080,400	1,332,400																																																																																																																																																																																																																																																																
Population Area	Acres																																																																																																																																																																																																																																																																		
	PHMA																																																																																																																																																																																																																																																																		
	Total Surface ¹	BLM Surface ²	Split Estate ³																																																																																																																																																																																																																																																																
Uintah	566,800	263,200	140,800																																																																																																																																																																																																																																																																
Carbon ⁴	260,100	43,500	124,200																																																																																																																																																																																																																																																																
Emery	85,500	100	84,000																																																																																																																																																																																																																																																																
Parker Mtn.	741,300	214,200	378,300																																																																																																																																																																																																																																																																
Panguitch	343,900	163,200	91,000																																																																																																																																																																																																																																																																
Bald Hills	326,400	259,400	5,200																																																																																																																																																																																																																																																																
Hamlin Valley	143,700	101,500	6,600																																																																																																																																																																																																																																																																
Sheeprocks	534,600	381,100	111,200																																																																																																																																																																																																																																																																
Ibapah	88,800	48,000	700																																																																																																																																																																																																																																																																
Box Elder	1,227,800	439,200	195,800																																																																																																																																																																																																																																																																
Rich	1,015,400	167,000	153,700																																																																																																																																																																																																																																																																
Lucerne	0	0	0																																																																																																																																																																																																																																																																
Strawberry	161,500	0	40,900																																																																																																																																																																																																																																																																
Statewide ⁵	5,495,800	2,080,400	1,332,400																																																																																																																																																																																																																																																																
	<p>¹ Acreage associated with total PHMA/GHMA polygon, regardless of land ownership.</p> <p>² Acreage within PHMA/GHMA where the BLM has managerial authority on the surface estate.</p> <p>³ Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM (e.g., private, state, tribal, and Forest Service), but that have a federal mineral estate administered by the BLM. Most minerals decisions apply to the combination of the BLM surface and mineral estates.</p> <p>⁴ The 41,200 acres of National Forest System lands in the Anthro Mountain area would be managed as neither PHMA nor GHMA. These areas would be identified as "Anthro Mountain." In the BLM's RMPPA, these areas are considered split-estate, where the BLM administers the mineral estate.</p>	<p>¹ Acreage associated with total PHMA polygon, regardless of land ownership.</p> <p>² Acreage within PHMA where the BLM has managerial authority on the surface estate.</p> <p>³ Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM (e.g., private, state, tribal, and Forest Service), but that have a federal mineral estate administered by the BLM. Most minerals decisions apply to the combination of the BLM surface and mineral estates.</p> <p>⁴ The 41,200 acres of National Forest System lands in the Anthro Mountain area would not be managed PHMA. These areas would be identified as "Anthro Mountain." In the BLM's RMPPA, these areas are considered split-estate, where the BLM administers the mineral estate.</p> <p>⁵ PHMA were mapped to exclude all incorporated towns/cities.</p>	<p>¹ Acreage associated with total PHMA polygon, regardless of land ownership.</p> <p>² Acreage within PHMA where the BLM has managerial authority on the surface estate.</p> <p>³ Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM (e.g., private, state, tribal, and Forest Service), but that have a federal mineral estate administered by the BLM. Most minerals decisions apply to the combination of the BLM surface and mineral estates.</p> <p>⁴ The 41,200 acres of National Forest System lands in the Anthro Mountain area would not be managed PHMA. These areas would be identified as "Anthro Mountain." In the BLM's RMPPA, these areas are considered split-estate, where the BLM administers the mineral estate.</p> <p>⁵ PHMA were mapped to exclude all incorporated towns/cities.</p>																																																																																																																																																																																																																																																																

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-5	<p>In GHMA, apply the following management to meet the objective of a net conservation gain for discretionary actions that can result in habitat loss and degradation:</p> <p><u>A- Existing Management:</u> Implement Greater Sage-Grouse management actions included in the existing RMPs and project-specific mitigation measures associated with existing decisions.</p> <p><u>B- Net Conservation Gain:</u> In all Greater Sage-Grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for Greater Sage-Grouse may be made for vegetation treatments to benefit Utah prairie dog.</p> <p>Mitigation will be conducted according to the mitigation framework contained in Appendix F [of the 2015 Final EIS].</p> <p><u>C- Buffers:</u> In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B [of the 2015 Final EIS].</p> <p><u>D- Required Design Features/Best Management Practices:</u> In GHMA, apply the fluid mineral RDFs that are associated with GHMA identified in Appendix C [of the 2015 Final EIS] when authorizing/permitting site-specific fluid mineral development activities/projects.</p> <p>The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity:</p> <ul style="list-style-type: none"> • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable • An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for Greater Sage-Grouse or its habitat • A specific RDF will provide no additional protection to Greater Sage-Grouse or its habitat 	No similar action. [GHMA would not be designated.]	No similar action. [GHMA would not be designated.]

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-6	<p><u>Sage-Grouse Management Outside PHMA/GHMA</u> Proposed projects within State of Utah Greater Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on Greater Sage-Grouse and implement measures to mitigate impacts when preparing site-specific planning and environmental compliance documents.</p> <p>Outside of PHMA, prior to site-specific authorizations, the BLM will evaluate habitat conditions and may require surveys to determine if the project area contains Greater Sage-Grouse habitat (FLPMA, 43 United States Code (USC) 1701 Sec. 201 (a); BLM Manual 6840.04 D3; BLM-M-6840.04 E2). Surveys will be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in existing sagebrush.</p> <p>If an area is determined to be Greater Sage-Grouse habitat (e.g., nesting, brood-rearing, winter, transition), mitigation will be considered as part of the project level NEPA analysis and will be attached as conditions of approval to new discretionary actions, if deemed necessary to protect the habitat (BLM Manual 6840.04 D 5). Measures that may be considered include those identified in Appendix C [of the 2015 Final EIS].</p> <p>Outside of PHMA, but within SGMA and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to Greater Sage-Grouse movement; these areas may be used by Greater Sage-Grouse to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species.</p> <p>Outside of PHMA, but within SGMA and PACs, consider noise and permanent structure stipulations around leks.</p> <p>Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4) within 4 miles of a lek that is located in PHMA will be managed with the following allocations:</p> <ul style="list-style-type: none"> Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). Lands ROWs, permits, and leases will be avoided, applying avoidance criteria for noise and tall structures. <p>Do not site wind energy development in opportunity areas within 5 miles from occupied Greater Sage-Grouse leks that are in PHMA.</p> <p>Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new Greater Sage-Grouse habitat. Evaluate conditions in the treated area to determine if it is providing habitat for Greater Sage-Grouse and if additional measures are necessary to protect the habitat.</p>	<p><u>Sage-Grouse Management Outside PHMA</u> Outside PHMA, implement Greater Sage-Grouse management actions included in the RMPs and project-specific mitigation measures associated with decisions that pre-dated the 2015 amendments.</p> <p>Proposed projects within State of Utah Greater Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on Greater Sage-Grouse and may implement measures to mitigate impacts on Greater Sage-Grouse populations within adjacent PHMA when preparing site-specific planning and environmental compliance documents.</p> <p>Outside of PHMA, but within SGMAs and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to Greater Sage-Grouse movement; these areas may be used by Greater Sage-Grouse to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species.</p> <p>Outside of PHMA, but within SGMAs and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4), after analyzing the impacts of any allocations using the buffer distances identified in Appendix B [of the 2018 Draft EIS] of a lek that is located in PHMA will be managed with the following allocations:</p> <ul style="list-style-type: none"> Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). Lands ROWs, permits, and leases will apply avoidance criteria for noise and tall structures. <p>Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA.</p> <p>Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new Greater Sage-Grouse habitat. Evaluate conditions in the treated area to determine if it is providing habitat for Greater Sage-Grouse and if additional measures are necessary to protect the habitat.</p> <p>Outside of PHMA, provide that acres of occupied Greater Sage-Grouse habitat lost to habitat degradation actions (Appendix C, Table C.2 [of the 2018 Draft EIS]) are replaced by creating/improving Greater Sage-Grouse habitat within PHMA.</p>	<p><u>Sage-Grouse Management Outside PHMA</u> Outside PHMA, implement Greater Sage-Grouse management actions included in the RMPs and project-specific mitigation measures associated with decisions that pre-dated the 2015 amendments.</p> <p>Proposed projects within State of Utah Greater Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on Greater Sage-Grouse and may implement measures to mitigate impacts on Greater Sage-Grouse populations within adjacent PHMA when preparing site-specific planning and environmental compliance documents.</p> <p>Outside of PHMA, but within SGMA and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to Greater Sage-Grouse movement; these areas may be used by Greater Sage-Grouse to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species.</p> <p>Outside of PHMA, but within SGMA and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, after analyzing the impacts using the buffer distances identified in Appendix B [of the 2018 Final EIS] from a lek that is located in PHMA, portions of State of Utah opportunity areas, will be managed with the following allocations:</p> <ul style="list-style-type: none"> Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). Lands ROWs, permits, and leases will apply avoidance criteria for noise and tall structures. <p>Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA.</p> <p>Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new Greater Sage-Grouse habitat. Evaluate conditions in the treated area to determine if it is providing habitat for Greater Sage-Grouse and if additional measures are necessary to protect the habitat.</p> <p>Outside of PHMA, provide that acres of Greater Sage-Grouse seasonal habitat (based on best available maps, then confirmed to be regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements through coordination with the appropriate State of Utah agency and through on-the-ground information) that is lost to habitat degradation actions (Appendix C, Table C.2 of the 2015 ROD/ARMPA) are replaced by creating/improving Greater Sage-Grouse habitat within PHMA.</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-FIRE-8	PHMA will be viewed as more valuable than GHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in GHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H [of the 2015 Final EIS]. In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	PHMA will be viewed as more valuable than non-PHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth outside and adjacent to PHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H [of the 2018 Draft EIS]. Outside PHMA or in areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	PHMA will be viewed as more valuable than non-PHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth outside and adjacent to PHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H [of the 2018 Final EIS]. Outside PHMA or in areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.
MA-LG-1	PHMA and GHMA will be available... [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether or not an area is available for livestock grazing or the active AUMs.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether an area is available for livestock grazing or the active AUMs.]
MA-WHB-2	[Remainder of this action is unchanged from the 2015 ARMPA.]...The priorities for conducting assessments are: 1. HMA containing PHMA; 2. HMA containing only GHMA; 3. HMA containing sagebrush habitat outside of PHMA and GHMA mapped habitat; and 4. HMA without Greater Sage-Grouse habitat.	[Remainder of this action is unchanged from the 2015 ARMPA.]...The priorities for conducting assessments are: 1. HMAs containing PHMA; 2. HMAs containing sagebrush habitat outside of PHMA mapped habitat; and 3. HMAs without Greater Sage-Grouse habitat.	[Remainder of this action is unchanged from the 2015 ARMPA.]...The priorities for conducting assessments are: 1. HMA containing PHMA; 2. HMA containing sagebrush habitat outside of PHMA mapped habitat; and 3. HMA without Greater Sage-Grouse habitat.
MA-MR-1 Mineral Exploration	[Remainder of this action is unchanged from 2015 ARMPA.]... In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3) and GHMA (MA-SSS-5).	[Remainder of this action is unchanged from the 2015 ARMPA.]... In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3).	[Remainder of this action is unchanged from the 2015 ARMPA.]... In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3).
MA-MR-4 Unleased Federal Fluid Mineral Estate	<u>Unleased Areas within GHMA</u> Manage fluid mineral leasing in GHMA as follows (Figure 2-4): <ul style="list-style-type: none"> Open to leasing, subject to standard stipulations: 188,600 acres Open to leasing, subject to CSU and/or TL stipulations: 261,300 acres Open to leasing, subject to NSO stipulations: 32,700 acres Closed to leasing: 28,400 acres Planning decision not mapped: 104,600 acres In GHMA, new development of fluid mineral leases could be considered if they apply the pertinent management for discretionary activities in GHMA identified in MA-SSS-5.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-4 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-4 would change.]
MA-MR-7 Leased Federal Fluid Mineral Estate	To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation, buffers, and RDFs).	To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).
MA-MR-12 Locatable Minerals	[Remainder of this action is unchanged from the 2015 ARMPA.]...To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation and buffers).	[Remainder of this action is unchanged from the 2015 ARMPA.]...To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	[Remainder of this action is unchanged from the 2015 ARMPA.]...To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).
MA-MR-14 Saleable Minerals	In GHMA, new mineral material developments can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action.	No similar action.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-MR-16 Non-Energy Leasable Minerals	In GHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (Figure 2-7): <ul style="list-style-type: none"> Open to leasing consideration—587,400 acres Closed to leasing—8,200 acres <p>New leasing and development in GHMA can be considered if consistent with the pertinent management for discretionary activities described in MA-SS-5.</p>	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-15 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-16 would change.]
MA-MR-20 Coal	New leasing for underground mining of coal in GHMA can be considered if consistent with the pertinent management for discretionary activities described in MA-SS-5.	No similar action.	No similar action.
MA-MR-21 Coal	For coal mining operations on existing leases: In GHMA, new disturbances could be considered if consistent with the pertinent management for discretionary activities described in MA-SS-5.	No similar action.	No similar action.
MA-MR-24 Mineral Split-Estate	Where the federal government manages the mineral estate in PHMA and GHMA... [Remainder of this action is unchanged from the 2015 ARMPA.] Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA and GHMA... [Remainder of this action is unchanged from the 2015 ARMPA.]	Where the federal government manages the mineral estate in PHMA... [Remainder of this action is unchanged from the 2015 ARMPA.] Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA... [Remainder of this action is unchanged from the 2015 ARMPA.]	Where the federal government manages the mineral estate in PHMA... [Remainder of this action is unchanged from the 2015 ARMPA.] Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA... [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-RE-1 Renewable Energy	Manage wind energy development in GHMA as follows: <ul style="list-style-type: none"> Open—430,900 acres Avoided—0 acres Excluded—17,600 acres <p>New wind ROW authorizations can be allowed in GHMA if they apply the pertinent management for discretionary activities identified in MA-SS-5.</p>	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-RE-1 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-RE-1 would change.]
MA-LR-7 Rights-of-Way	In GHMA, manage ROWs, permits, and leases as follows (Figure 2-11): <ul style="list-style-type: none"> Open—430,900 acres Avoided—0 acres Excluded—17,600 acres <p>New ROWs (including permits and leases) authorizations will be allowed if they apply the pertinent management for discretionary activities in GHMA identified in MA-SS-5.</p>	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-7 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-7 would change.]
MA-LR-8 Right-of-Way Corridors	In GHMA, retain 74,700 acres of designated ROW corridors as identified on Figure 2-10.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any designated corridors in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-8 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SS-5 did not include any designated corridors in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-8 would change.]
MA-LR-9 Land Tenure	Lands classified as PHMA and GHMA for Greater Sage-Grouse will be retained in federal management unless... [Remainder of this action is unchanged from the 2015 ARMPA.]	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management unless... [Remainder of this action is unchanged from the 2015 ARMPA.]	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management unless... [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-LR-11 Recommended Withdrawal	[Remainder of this action is unchanged from the 2015 ARMPA.]...federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry.	[Remainder of this action is unchanged from the 2015 ARMPA.]...federal lands or non-federal lands with federal mineral interests within PHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry.	[Remainder of this action is unchanged from the 2015 ARMPA.]...federal lands or non-federal lands with federal mineral interests within PHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-TTM-1 OHV Area Designations	<p>Manage off-highway vehicle (OHV) use in Greater Sage-Grouse habitat as follows:</p> <ul style="list-style-type: none"> Open to cross-country use: 525 acres (one area each in Parker Mountain and Uintah Population Areas) Limited to existing routes: 1,274,700 acres Limited to designated routes: 1,220,500 acres Closed: 33,200 acres 	<p>Manage off-highway vehicle (OHV) use in Greater Sage-Grouse habitat as follows:</p> <ul style="list-style-type: none"> Open to cross-country use: 525 acres in PHMA (one area each in Parker Mountain and Uintah Population Areas); two areas outside of PHMA in the Sheeprocks Population Area, associated with 5-Mile Pass (6,320 acres) and Little Sahara Sand Dunes (7,900 acres)) Limited to existing routes: 1,260,500 acres Limited to designated routes: 1,220,500 acres Closed: 33,200 acres 	<p>Manage off-highway vehicle (OHV) use in Greater Sage-Grouse habitat as follows:</p> <ul style="list-style-type: none"> Open to cross-country use: 525 acres in PHMA (one area each in Parker Mountain and Uintah Population Areas); two areas outside of PHMA in the Sheeprocks Population Area, associated with 5-Mile Pass (6,320 acres) and Little Sahara Sand Dunes (7,900 acres)) Limited to existing routes: 1,260,500 acres Limited to designated routes: 1,220,500 acres Closed: 33,200 acres
MA-TTM-2 OHV Area Designations	<p>PHMA and GHMA that do not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use).</p>	<p>PHMA that does not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use). [Two areas that were GHMA previously will remain limited to existing routes, though they would no longer be GHMA: 7,400 acres in the Bald Hills area, and 13,500 acres in the Fillmore Field Office portions of Sheeprocks area, east of Highway 6. Two other areas of former GHMA would return to being open to cross-country use – 6,320 acres in the 5-Mile Pass area and 7,900 acres in the Little Sahara Recreation Area.]</p>	<p>PHMA that does not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use). [Two areas that were GHMA previously will remain limited to existing routes, though they would no longer be GHMA: 7,400 acres in the Bald Hills area, and 13,500 acres in the Fillmore Field Office portions of Sheeprocks area, east of Highway 6. Two other areas of former GHMA would return to being open to cross-country use – 6,320 acres in the 5-Mile Pass area and 7,900 acres in the Little Sahara Recreation Area.]</p>
MA-TTM-10 Temporary closures	<p>In PHMA and GHMA, temporary closures will be considered in accordance with...[Remainder of this action is unchanged from the 2015 ARMPA.]</p>	<p>In PHMA, temporary closures will be considered in accordance with...[Remainder of this action is unchanged from the 2015 ARMPA.]</p>	<p>In PHMA, temporary closures will be considered in accordance with...[Remainder of this action is unchanged from the 2015 ARMPA.]</p>
<p>Issue: Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA</p>			
MA-SSS-1	<p>The PHMA and GHMA objectives and management actions would apply to existing sagebrush areas and areas with ecological sagebrush potential within the respective PHMA and GHMA polygons. In the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, and pinyon-juniper ecological sites. These are areas that do not have existing sagebrush or ecological potential to contain sagebrush. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency.</p> <p>Because of the importance of PHMA to conserve, enhance and restore Greater Sage-Grouse and its habitat, objectives and management actions will apply to all the areas within the respective PHMA polygons. The GHMA objectives and management actions will apply to the areas of identified non-habitat within the GHMA polygons unless all the following conditions are met:</p> <ul style="list-style-type: none"> the non-habitat does not provide important connectivity between areas with existing or potential habitat; all direct and indirect impacts that impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document. <p>Exceptions in non-habitat may be approved by the Authorized Officer, but only with the concurrence of one level of delegated authority above the Authorized Officer.</p>	<p>The PHMA objectives and management actions apply to ecological sites that currently provide Greater Sage-Grouse habitat within the respective PHMA polygons, as well as areas with ecological potential for Greater Sage-Grouse habitat that have not crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community.</p> <p>Mapped PHMA may also include areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, and areas that have crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community (e.g., monoculture cheatgrass, pinyon/juniper woodland). These are areas that do not contain sagebrush or other vegetation necessary for the various Greater Sage-Grouse seasonal habitats. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency.</p> <p>The PHMA objectives and management actions will apply to the areas of identified non-habitat within the PHMA polygons unless both the following conditions are met:</p> <ul style="list-style-type: none"> the non-habitat does not provide important connectivity between occupied habitats; and direct and indirect impacts that impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document. 	<p>The PHMA objectives and management actions apply to ecological sites that currently provide Greater Sage-Grouse habitat within the respective PHMA polygons, as well as areas with ecological potential for Greater Sage-Grouse habitat that have not crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community.</p> <p>Mapped PHMA may also include areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, and areas that have crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community, such as cheatgrass monocultures or pinyon/juniper woodlands (phase 3, absent sagebrush understory) (Chambers et al. 2014; Bestelmeyer et al. 2010; Bestelmeyer, et al. 2011). These are areas that do not contain sagebrush or other vegetation necessary for the various Greater Sage-Grouse seasonal habitats. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency.</p> <p>The PHMA objectives and management actions will apply to the areas of identified non-habitat within the PHMA polygons unless both the following conditions are met:</p> <ul style="list-style-type: none"> the non-habitat does not provide important connectivity between seasonal habitats; and direct and indirect impacts on adjacent seasonal habitats (disturbance to or disruption of) that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-1 (continued)	Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with Greater Sage-Grouse management in an area of non-habitat would not change the boundaries of PHMA or GHMA.	Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with Greater Sage-Grouse management in an area of non-habitat would not change the boundaries of PHMA.	Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with Greater Sage-Grouse management in an area of non-habitat would not change the boundaries of PHMA.
Same language added to the following actions: MA-MR-6 (Leased Federal Fluid Mineral Estate) MA-MR-14 (Saleable Minerals) MA-MR-15 (Non-Energy Leasable Minerals)	No similar action	Inserted the following text into the actions noted to the left: (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA)	Inserted the following text into the actions noted to the left: (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA)
Issue: Application of Lek Buffers			
MA-SSS-3H	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will assess and address impacts within the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will assess and address impacts within the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239
MA-SSS-6	Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4) within 4 miles of a lek that is located in PHMA will be managed with the following allocations... [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4), after analyzing the impacts of any allocations using the buffer distances identified in Appendix B [of the 2018 Draft EIS] of a lek that is located in PHMA will be managed with the following allocations... [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, after analyzing the impacts using the buffer distances identified in Appendix B [of the 2018 Final EIS] from a lek that is located in PHMA, portions of State of Utah opportunity areas will be managed with the following allocations... [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-SSS-6	Do not site wind energy development in opportunity areas within 5 miles from occupied Greater Sage-Grouse leks that are in PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA.
MA-MR-3	Outside PHMA, portions of opportunity areas within 4 miles of a lek that is located in PHMA will be... [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] of a lek that is located in PHMA will be... [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] of a lek that is located in PHMA will be... [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-RE-1	Do not site wind energy development in opportunity areas within 5 miles from occupied Greater Sage-Grouse leks that are in PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] from occupied Greater Sage-Grouse leks that are in PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B from occupied Greater Sage-Grouse leks that are in PHMA.
Issue: Adaptive Management			
MA-SSS-7	<p data-bbox="428 1477 655 1503"><u>Adaptive Management</u></p> <p data-bbox="428 1509 1205 1685">This plan establishes soft and hard triggers for both Greater Sage-Grouse populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management [of the 2015 Final EIS]. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.</p> <p data-bbox="428 1711 1205 1818">If monitoring indicates the soft trigger is met, the BLM will determine if there is a specific cause or causes that are contributing to the decline. If it is determined that the decline is related to a natural population variation, no specific management actions will be required. However, if BLM</p>	<p data-bbox="1240 1477 1466 1503"><u>Adaptive Management</u></p> <p data-bbox="1240 1509 2048 1624">This plan establishes soft and hard triggers for both Greater Sage-Grouse populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management [of the 2018 Draft EIS]. The hard and soft trigger data will be analyzed annually.</p> <p data-bbox="1240 1651 2048 1818">If monitoring indicates the soft trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines within six months of identifying that the trigger has been met. If it is determined that the decline is related to a natural population variation, no</p>	<p data-bbox="2082 1477 2309 1503"><u>Adaptive Management</u></p> <p data-bbox="2082 1509 2890 1624">This plan establishes soft and hard triggers for both Greater Sage-Grouse populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management [of the 2018 Final EIS]. The hard and soft trigger data will be analyzed annually.</p> <p data-bbox="2082 1651 2890 1818">If monitoring indicates the soft trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines within 6 months of identifying that the trigger has been met. If it is determined that the decline is related to a natural population variation, no specific management</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-7 (continued)	<p>management actions are determined to cause or contribute to the decline, the BLM manager will apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats.</p> <p>If monitoring indicates the hard trigger is met, a set of specific management actions from the BLM Proposed Plan will immediately be replaced with or adjusted by different management actions in the area where the trigger has been met. Table I.1 of Appendix I [of the 2015 Final EIS] identifies the management actions from the BLM Proposed Plan, and the corresponding new management actions that will be immediately implemented to the specific area in the event a hard trigger is met. In addition to these specific changes, the BLM will review available and pertinent data for the area, in coordination Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFWS, and NRCS, to determine the causal factor(s) and implement a corrective strategy. The final strategy associated with a hard trigger being met will be the changes identified in Table I.1 of Appendix I, and may also include the need to further amend or revise the RMP to address the situation and modify management accordingly, for the area where the trigger was met.</p>	<p>specific management actions will be required; however, if BLM management actions are determined to cause or contribute to the decline, the BLM manager will apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats.</p> <p>If monitoring indicates the hard trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factor(s) and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in Table I.1 of Appendix I [of the 2018 Draft EIS] that address the causal factor, and could also include other management actions, which may require the need to amend the RMP to address the situation and modify management. If determining the causal factor and development of a corrective strategy is not completed within six months of documenting that the trigger has been met, all the plan level responses identified in Table I.1 will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that do not address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in Table I.1, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed.</p> <p>The management identified in the corrective strategy would be implemented until ten-year population trends reflect natural fluctuations anticipated for the area. The BLM would determine the area reflects natural fluctuations in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon determination, the management would revert to the RMPA.</p> <p>If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized.</p>	<p>actions will be required; however, if BLM management actions are determined to cause or contribute to the decline, the BLM will work with the appropriate State of Utah agency and public land users to identify and apply management to slow down or stop the population decline. Such measures would be applied by the BLM manager within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. Such measures could also include other management actions which may require the need to amend the RMP to address the situation and modify management.</p> <p>If monitoring indicates the hard trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factor(s) and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in Table I.1 of Appendix I [of the 2018 Final EIS] that address the causal factor, and could also include other management actions, which may require the need to amend the RMP to address the situation and modify management. If determining the causal factor and development of a corrective strategy is not completed within 6 months of documenting that the trigger has been met, all the plan level responses identified in Table I.1 will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that do not address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in Table I.1, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed.</p> <p>The management identified in the corrective strategy would be implemented until ten-year population trends reflect natural fluctuations anticipated for the area. The BLM would determine the area reflects natural fluctuations in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon determination, the management would revert to the RMPA.</p> <p>If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized.</p> <p>For any area that has met a soft or hard trigger, the BLM, the appropriate State of Utah agency, and other members of the technical team will annually review monitoring data regarding population and habitat trends to verify that management actions implemented to mitigate declines are being successful. If monitoring indicates continued declines, the causal factor analysis will be reviewed, updated if needed, and applicable additional management would be identified and implemented.</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Issue: Prioritization of Mineral Leasing			
Objective MR-1	Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 USC 226(p) and 43 CFR, Part 3162.3-1(h).	No similar objective.	No similar objective.
Issue: Land Disposal and Exchanges			
MA-MR-10	In PHMA, identify areas where acquisitions (including federal mineral rights) or conservation easements, will benefit Greater Sage-Grouse habitat.	No similar action.	No similar action.
MA-LR-9	Lands classified as PHMA and GHMA for Greater Sage-Grouse will be retained in federal management (Figure 2-12, Land Tenure [Appendix A] [of the 2015 Final EIS]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will provide a net conservation gain to the Greater Sage-Grouse or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse.	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management (Figure 2-12, Land Tenure [Appendix A] [of the 2018 Draft EIS]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will improve the condition of Greater Sage-Grouse habitat or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will not compromise the persistence of Greater Sage-Grouse populations within a PHMA.	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management (Figure 2-12, Land Tenure [Appendix A] [of the 2018 Final EIS]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will improve the condition of Greater Sage-Grouse habitat or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will not compromise the persistence of Greater Sage-Grouse populations within a PHMA.
Issue: Managing Habitats to Manage Predation			
MA-SSS-3D	No similar action.	When conducting habitat treatments, remove trees that have corvid nests that could impact PHMA nesting and brood-rearing habitat when in compliance with the Migratory Bird Treaty Act (e.g., when the nest is unoccupied and outside of migratory bird nesting season).	When conducting habitat treatments, remove trees that have corvid nests that could impact PHMA nesting and brood-rearing habitat when in compliance with the Migratory Bird Treaty Act (e.g., when the nest is unoccupied and outside of migratory bird nesting season).
MA-VEG-2	No similar action.	When conducting conifer treatments: Remove trees with corvid nests when in compliance with the Migratory Bird Treaty Act (e.g., when unoccupied and outside of migratory bird nesting season).	When conducting conifer treatments: Remove trees with corvid nests when in compliance with the Migratory Bird Treaty Act (e.g., when unoccupied and outside of migratory bird nesting season).
Issue: Burial of Transmission Lines			
MA-LR-2	In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on Greater Sage-Grouse. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint. In PHMA outside of designated corridors, new transmission lines must be buried where technically feasible. Where burying transmission lines is not technically feasible: <ul style="list-style-type: none"> new transmission lines must be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on Greater Sage-Grouse; and they will be subject to Greater Sage-Grouse ROW avoidance criteria described above. 	In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment or construction method (e.g., burial) better minimizes impacts on Greater Sage-Grouse. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint.	In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment or construction method (e.g., burial) better minimizes impacts on Greater Sage-Grouse. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-LR-5	<p>... In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure. Where technically feasible, require ROW holders to bury or relocate existing power lines to minimize long-term impacts on Greater Sage-Grouse habitat. Where the potential long-term impacts of relocating or burying the line will be greater than the existing impacts, do not pursue the mitigation. If relocation or burying is not feasible or will result in severe short-term or greater long-term impacts on Greater Sage-Grouse habitat, incorporate additional terms and conditions in the ROW authorization for protection of Greater Sage-Grouse habitat. ... [Remainder of this action is unchanged from the 2015 ARMPA.]</p>	<p>...In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure on Greater Sage-Grouse (e.g., predator deterrents, maintenance schedules, relocation, burial, etc.). Where the potential long-term impacts of mitigation will be greater than the existing impacts, do not pursue the mitigation.... [Remainder of this action is unchanged from the 2015 ARMPA.]</p>	<p>...In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure on Greater Sage-Grouse (e.g., predator deterrents, maintenance schedules, relocation, burial, etc.). Where the potential long-term impacts of mitigation will be greater than the existing impacts, do not pursue the mitigation.... [Remainder of this action is unchanged from the 2015 ARMPA.]</p>
Issue: Modifying Habitat Management Area Boundaries			
MA-SSS-1	<p>The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate.</p> <p>Minor adjustments to PHMA/GHMA external boundaries can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential Greater Sage-Grouse habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting occupied habitat and PHMA/GHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol [of the 2015 Final EIS].</p>	<p>The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate.</p> <p>The PHMA boundaries are not intended to represent a survey-grade boundary and are not expected to be used exclusively at a project-level. In accordance with the adaptive management framework and existing law, regulation and policy, inventories will continue to be conducted to provide information on Greater Sage-Grouse habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Prior to considering proposed actions within PHMA, a field investigation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat management areas. If in the review of a proposed action, there are discrepancies between the PHMA maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied.</p> <p>Minor adjustments to PHMA external boundaries (increases or decreases) can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential Greater Sage-Grouse habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting occupied habitat and PHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol [of the 2018 Draft EIS].</p>	<p>The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate.</p> <p>The PHMA boundaries are not intended to represent a survey-grade boundary and are not expected to be used exclusively at a project-level. In accordance with the adaptive management framework and existing law, regulation and policy, inventories will continue to be conducted to provide information on Greater Sage-Grouse habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Prior to considering proposed actions within PHMA, a field investigation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat management areas. If in the review of a proposed action, there are discrepancies between the PHMA maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied.</p> <p>Minor adjustments to PHMA external boundaries (increases or decreases) can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential Greater Sage-Grouse habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting seasonal habitat and PHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol [of the 2018 Final EIS].</p>
Issue: Modifying Mitigation Standard			
Objective SSS-2	<p>In all Greater Sage-Grouse habitat, manage activities that result in habitat loss and degradation to provide a net conservation gain of Greater Sage-Grouse habitat. Exceptions to net conservation gain for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.</p>	<p>In PHMA, manage activities that result in habitat loss and degradation to improve the condition of Greater Sage-Grouse habitat. Exceptions to this mitigation standard for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.</p>	<p>In PHMA, manage activities that result in habitat loss and degradation to improve the condition of Greater Sage-Grouse habitat across the planning area. Exceptions to this mitigation standard for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.</p>
MA-SSS-3A	<p><u>A- Net Conservation Gain:</u> In all Greater Sage-Grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation</p>	<p><u>A- Mitigation Strategy:</u> In PHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that improves the condition of Greater Sage-Grouse habitat, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, or compensating for impacts by applying beneficial mitigation actions. Exceptions to this standard may be made for vegetation treatments to benefit Utah prairie dog.</p>	<p><u>A- Mitigation Strategy:</u> In PHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions. Under this Proposed Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-3A (continued)	<p>actions. Exceptions to net conservation gain for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.</p> <p>Mitigation will be conducted according to the mitigation framework contained in Appendix F, Mitigation Strategy: Utah Greater Sage-Grouse RMPA [of the 2015 ROD/ARMPA].</p> <p>Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table D.2 of the Monitoring Framework (Appendix D [of the 2015 Final EIS]) – under valid existing rights prior to authorizing new projects in PHMA.</p>	<p>The BLM, in coordination with the State of Utah, will develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. The Strategy should be based on the State-level Greater Sage-Grouse mitigation approach to the extent it is consistent with other agency regulations and policies. The BLM will include the avoidance, minimization, and compensatory recommendations from the Mitigation Strategy in one or more of the NEPA analysis alternatives, and the necessary measures needed to improve the condition of Greater Sage-Grouse habitat will be applied. The Mitigation Strategy will be implemented to provide an improvement to Greater Sage-Grouse habitat at a state level (as opposed to a WAFWA Management Zone, a Field Office, or a Forest), in collaboration with applicable partners (e.g., federal, tribal, and state agencies).</p> <p>Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table D.2 of the Monitoring Framework (Appendix D [of the 2018 Draft EIS])—under valid existing rights prior to authorizing new projects in PHMA.</p>	<p>planning decisions, actions and authorizations “to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat” across the planning area. Exceptions to this standard may be made for vegetation treatments to benefit Utah prairie dog.</p> <p>The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law other than FLPMA, while recognizing that State authorities may also require compensatory mitigation (IM 2018-093, <i>Compensatory Mitigation</i>, July 24, 2018). Therefore, consistent with valid existing rights and applicable law, when considering third-party actions that result in habitat loss and degradation, the BLM will consider compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent. Accordingly, before authorizing third-party actions that result in habitat loss and degradation in PHMA or State of Utah SGMAs, the BLM will complete the following steps:</p> <ol style="list-style-type: none"> 1) Notify the appropriate State of Utah agency to determine if the State of Utah requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse; 2) Recommend to the project proponent that it coordinate with the appropriate State of Utah agency to ensure it complies with all applicable State requirements relating to its proposal; 3) Consider the State’s recommendations – if the State of Utah determines that there are unacceptable residual impacts on Greater Sage-Grouse or its habitat and compensatory mitigation is required as a part of State policy or authorization, or if a proponent voluntarily offers mitigation, the BLM will incorporate that mitigation into the BLM’s NEPA and decision-making process; 4) The BLM will ensure mitigation outcomes are consistent with the State of Utah’s mitigation strategy and principles outlined in the State’s Conservation Plan for Greater Sage-Grouse, including, but not limited to: <ol style="list-style-type: none"> a) Creating, restoring and/or protecting functional habitat or habitat corridors to offset the impacts of unavoidable disturbance to Greater Sage-Grouse habitat, b) In most cases, compensatory mitigation projects should be completed before the project occurs, c) Compensatory mitigation projects should account for the risk that the mitigation may fail or not persist for the full duration of the project it is intended to offset, d) Compensatory mitigation projects should provide habitat that is in place for at least the duration of the project it is intended to offset. <p>Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.</p> <p>The BLM will not deny a proposed authorization in Greater Sage-Grouse habitat solely on the grounds that the proponent has not proposed or agreed</p>

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-3A (continued)	(see above)	(see above)	to undertake voluntary compensatory mitigation. In cases where waivers, exceptions, or modification may be granted for projects with a residual impact, voluntary compensatory mitigation consistent with the State's management goals can be one mechanism by which a proponent achieves the RMPA goals, objectives, and waiver, exception, or modification criteria. When a proponent volunteers compensatory mitigation as their chosen approach to address residual impacts, the BLM can incorporate those actions into the rationale used to grant a waiver, exception, or modification. The final decision to grant a waiver, exception, or modification will be based, in part, on criteria consistent with the State's Greater Sage-Grouse management plans and policies.
Issue: Changing Grazing Systems and Prioritization of Grazing Permits			
Objective SSS-4	Within PHMA, increase the amount and functionality of seasonal habitats by: Reducing the extent of annual grasslands.	Within PHMA, increase the amount and functionality of seasonal habitats by: Reducing the extent of invasive annual grasslands.	Within PHMA, increase the amount and functionality of seasonal habitats by: Reducing the extent of invasive annual grasslands.
MA-VEG-1	[Remainder of this action is unchanged from the 2015 ARMPA.]...treat areas to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas and annual grasslands).	[Remainder of this action is unchanged from the 2015 ARMPA.]...treat areas to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas and invasive annual grasslands).	[Remainder of this action is unchanged from the 2015 ARMPA.]...treat areas to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas and invasive annual grasslands).
MA-LG-1	PHMA and GHMA will be available for livestock grazing (Figure 2-3, Livestock Grazing [Appendix A [of the 2015 Final EIS]). Active animal unit months (AUMs) for livestock grazing will be 329,521 on BLM lands.... [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether or not an area is available for livestock grazing or the active AUMs.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether an area is available for livestock grazing or the active AUMs.]
MA-LG-2	The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in SFA first followed by PHMA outside SFA. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (ex., fire) and legal obligations.	No similar action.	No similar action.
MA-LG-3	In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for landscape level approaches to habitat improvement. Manage unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use as a single unit that will have the same management as the public lands.	No similar action.	No similar action.
MA-LG-4	Evaluate Utah's Rangeland Health Standards and process grazing permits. Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards where livestock grazing is identified as a causal factor and that have the best opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse. Use ecological site descriptions and/or other appropriate information to determine the desired plant community within proper functioning ecological processes for conducting land health assessments to evaluate the achievement or non-achievement of rangeland health standards.	No similar action.	No similar action.
MA-LG-5	In PHMA and GHMA, conduct land health assessments that include indicators and measurements of structure, condition, composition, etc., of vegetation specific to achieving Greater Sage-Grouse habitat objectives (Objective SSS-3), including within wetlands and riparian areas. Prioritize land health assessments in SFA, followed by PHMA outside of the SFA. Conduct land health assessments at the watershed scale and use the Greater Sage-Grouse habitat objectives when assessing the applicable standard in Greater Sage-Grouse habitats.	No similar action.	No similar action.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-LG-6	<p>In PHMA, when livestock management practices are determined to not be compatible with meeting or making progress towards achievable habitat objectives following appropriate consultation, cooperating and coordination, implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in:</p> <ul style="list-style-type: none"> • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). <p><i>*Not in priority order</i></p>	<p>In PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in:</p> <ul style="list-style-type: none"> • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). <p><i>*Not in priority order</i></p>	<p>In PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards, and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in:</p> <ul style="list-style-type: none"> • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). <p><i>*Not in priority order</i></p>
MA-LG-7	<p>In PHMA, during drought periods, prioritize evaluating effects of the drought relative to Greater Sage-Grouse needs for food and cover.</p> <p>Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect Greater Sage-Grouse habitat, in accordance with Instruction Memorandum 2013-094 (Resource Management During Drought), or other agency policies.</p> <p>Implement post-drought management to allow for vegetation recovery that meets Greater Sage-Grouse needs.</p>	No similar action.	No similar action.
MA-LG-8	In PHMA, manage riparian areas and wet meadows for proper functioning condition.	No similar action.	No similar action.
MA-LG-9	<p>In PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring, and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by Greater Sage-Grouse in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution).</p> <p>Allotments within SFA, followed by those within PHMA, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits.</p> <p>Field checks could include monitoring for actual use, utilization, and use supervision.</p>	No similar action.	No similar action.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-LG-12	In PHMA, ensure that vegetation treatments conserve, enhance or restore Greater Sage-Grouse habitat (this includes treatments that benefit livestock).	No similar action.	No similar action.
MA-LG-13	In PHMA, evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If existing seedings provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration will be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments.	No similar action.	No similar action.
MA-LG-14	In PHMA, design new structural range improvements to have a neutral effect or conserve, enhance, or restore Greater Sage-Grouse habitat through an improved grazing management system relative to Greater Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	No similar action.	No similar action.
MA-LG-15	In PHMA, evaluate existing structural range improvements to make sure they have a neutral effect or conserve, enhance or restore Greater Sage-Grouse habitat.	No similar action.	No similar action.
MA-LG-17	In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.	No similar action.	No similar action.
MA-LG-18	At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR, Part 4110.2-3.	No similar action.	No similar action.
MA-VEG-3	In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing.	In PHMA manage riparian areas for proper functioning condition. In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing.	In PHMA manage riparian areas for proper functioning condition. In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing.
Issue: Clarifying Management of Water Developments for Livestock			
MA-LG-10	In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain riparian or wet meadow vegetation and hydrology to meet Greater Sage-Grouse needs.	In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas).	In PHMA, manage existing and new water developments to have a neutral or a beneficial effect to Greater Sage-Grouse habitat.
MA-LG-11	In PHMA, evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and Greater Sage-Grouse habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to Greater Sage-Grouse.	(Not mentioned in the Draft EIS)	No similar action.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Issue: Clarifying the Role of the BLM, State of Utah and Counties with Respect to Travel Management Planning			
MA-TTM-3	During subsequent travel management planning, consultation “with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration.” Consequently, a public outreach plan to fully engage all interested stakeholders will be incorporated into future travel management plans.	During subsequent travel management planning, consultation “with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration.” Consequently, an outreach plan to fully engage all interested stakeholders, including state, local and tribal governments, will be incorporated into future travel management plans.	During subsequent travel management planning, consultation “with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration.” Consequently, an outreach plan to fully engage all interested stakeholders, including state, local and tribal governments, will be incorporated into future travel management plans.
Issue: Clarifying the Role of the BLM, State of Utah and Counties with Respect to Predator Control			
MA-SSS-3D	[Remainder of this action is unchanged from the 2015 ARMPA.]... Collaborate with applicable government entities to implement programs to control predator populations of Greater Sage-Grouse (e.g., ravens, red fox, badgers, and raccoons).	[Remainder of this action is unchanged from the 2015 ARMPA.]... Efforts by other agencies to minimize impacts from predators on the Greater Sage-Grouse should be supported and encouraged where needs have been documented. Collaborate with applicable government entities to implement programs to control predator populations of Greater Sage-Grouse (e.g., ravens, red fox, badgers, and raccoons).	[Remainder of this action is unchanged from the 2015 ARMPA.]... Efforts by other agencies to minimize impacts from predators on the Greater Sage-Grouse should be supported and encouraged where needs have been documented. Collaborate with applicable government entities to implement programs to control predator populations of Greater Sage-Grouse (e.g., ravens, red fox, badgers, and raccoons).
Issue: Clarifying Management of Surface Coal Mining			
MA-MR-18	<u>Leases Associated with Surface Mining</u> At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is “unsuitable” for all or certain coal mining methods pursuant to 43 CFR, Part 3461.5. PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1).	<u>Leases Associated with Surface Mining</u> At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is “unsuitable” for all or certain coal mining methods pursuant to 43 CFR, Part 3461.5. Coordination with the appropriate State of Utah agency and the determination of essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1) will consider site-specific information associated with potential lease nomination areas as part of the unsuitability process identified above.	<u>Leases Associated with Surface Mining</u> At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is “unsuitable” for all or certain coal mining methods pursuant to 43 CFR, Part 3461.5. Coordination with the appropriate State of Utah agency and the determination of essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1) will consider site-specific information associated with potential lease nomination areas as part of the unsuitability process identified above.
Issue: Decisions that Require Analysis of Specific Alternatives during Implementation			
MA-FIRE-3	Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.	Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, targeted livestock grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.	Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, targeted livestock grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.
MA-FIRE-5	MA-FIRE-5: In PHMA, during fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.	No similar action.	No similar action.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-TTM-3	<ul style="list-style-type: none"> • During subsequent travel management planning, all routes will undergo a route evaluation to determine its purpose and need and the potential resource and/or user conflicts from motorized travel. Where resource and/or user conflicts outweigh the purpose and need for the route, the route will be considered for closure or considered for relocation outside of sensitive Greater Sage-Grouse habitat. • During subsequent travel planning, threats to Greater Sage-Grouse and their habitat will be considered when evaluating route designations and/or closures. • During subsequent travel management planning, routes that do not have a purpose or need will be considered for closure. • During subsequent travel management, planning, routes that are duplicative, parallel, or redundant will be considered for closure. • During subsequent travel management planning, seasonal restrictions on OHV use will be considered in important seasonal habitats where OHV use is a threat. During subsequent travel management planning, consider limiting over snow vehicles designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow to designated routes or consider seasonal closures in Greater Sage-Grouse wintering areas from November 1 through March 31. • During subsequent travel management planning, routes not required for public access or recreation with a current administrative/agency purpose or need will be evaluated for administrative access only. • During subsequent travel management planning, consider prioritizing restoration of routes not designated in a Travel Management Plan. • During subsequent travel management plan implementation, consider using seed mixes or transplant techniques that will maintain or enhance Greater Sage-Grouse habitat when rehabilitating linear disturbances. • During subsequent travel management plan implementation, consider scheduling road maintenance to avoid disturbance during sensitive periods and times to the extent practicable. Consider using time of day limits (e.g., no use between 6:00 pm and 9:00 am) to reduce impacts on Greater Sage-Grouse during breeding periods. 	No similar action.	No similar action.
MA-TTM-6	In PHMA, when considering upgrade of existing routes that will change route category (BLM route categories: road, primitive road, or trail) or capacity, consider the larger transportation network while providing for protection of Greater Sage-Grouse habitat.	No similar action. [Doesn't provide any different direction than MA-TTM-5.]	No similar action. [Doesn't provide any different direction than MA-TTM-5.]
MA-TTM-8	In PHMA, when reseeding roads, primitive roads and trails, use appropriate seed mixes and consider the use of transplanted sagebrush.	No similar action. [Selection of seed mix is already covered by MA-VEG-5 and MA-VEG-8.]	No similar action. [Selection of seed mix is already covered by MA-VEG-5 and MA-VEG-8.]

2.6 ALTERNATIVES ANALYZED IN DETAIL IN THE 2015 FINAL EIS AND CARRIED FORWARD FOR CONSIDERATION IN THE 2019 EFFORT

Table 2-4 describes the alternatives analyzed in detail as part of the 2015 planning effort that were also considered in the 2019 planning process. The 2015 Proposed Plan was developed from this range of alternatives.

**Table 2-4
Description of Alternatives Analyzed in Detail and Carried Forward for Consideration from the 2015 Final EIS**

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Special Status Species – Greater Sage-Grouse Greater Sage-Grouse					
GOAL:					
With exception of the Uinta LRMP, goals have not been developed specifically for Greater Sage-Grouse. However, all LUPs include a goal to work with partners to protect, maintain, and enhance habitat for special status species.	Maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners.	Maintain and increase current Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem.	Maintain and/or increase abundance and distribution of Greater Sage-Grouse by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend, in collaboration with other conservation partners.	Protect, maintain, improve and enhance Greater Sage-Grouse populations and habitats within the State of Utah established SGMAs.	Conserve, recover, and enhance Greater Sage-Grouse habitat on a landscape scale consistent with local, state, and federal management plans and policies, as practical, while providing for multiple use of BLM-administered and National Forest System lands. Maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in cooperation with other state, local, industry, permittee and conservation partners.
Objectives:					
In general, older plans do not include objectives specific to Greater Sage-Grouse. More recent plans (those completed after 2000) may include an objective to advance conservation of the Greater Sage-Grouse and Greater Sage-Grouse habitat, although a mechanism for achieving Greater Sage-Grouse specific objectives is infrequently identified.	Designate PHMA for each WAFWA MZ across the current geographic range of Greater Sage-Grouse that are large enough to stabilize populations in the short term and enhance populations over the long term. Greater Sage-Grouse habitat in Utah overlaps 4 WAFWA MZs: <ul style="list-style-type: none"> • MZ II – Wyoming Basins • MZ III – Southern Great Basin • MZ IV – Snake River Plain • MZ VII – Colorado Plateau Protect PHMA from anthropogenic disturbances that will reduce distribution or abundance of Greater Sage-Grouse.	Establish a system of sagebrush reserves to anchor recovery efforts by protecting the highest quality habitats.	Identify and protect PHMA from anthropogenic and natural disturbances that will reduce distribution or abundance of Greater Sage-Grouse.	Protect habitat which provides for the year-round life-cycle needs of the Greater Sage-Grouse. Sustain the best-of-the-best existing Greater Sage-Grouse populations. Perpetuate conditions necessary to ensure recruitment of a continuing population within the aggregate state population. Enhance or improve Greater Sage-Grouse habitat that has been impaired or altered through restoration or rehabilitation activities. Eliminate the threats facing the Greater Sage-Grouse while balancing the economic and social needs of the residents of Utah. Sustain the best-of-the-best existing Greater Sage-Grouse populations and increase populations through habitat restoration and rehabilitation.	Identify and prioritize opportunities for habitat enhancement and conservation within core areas based on threats and the ability to manage Greater Sage-Grouse Greater Sage-Grouse habitat.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy, and recommendations from local Greater Sage-Grouse working groups, to protect, maintain, enhance, and restore Greater Sage-Grouse populations and habitat.</p> <p>A few plans including more detailed habitat objectives that include land cover.</p>	<p>To maintain or increase current populations of Greater Sage-Grouse, manage or restore PHMA so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet Greater Sage-Grouse needs.</p>	<p>Restore and maintain sagebrush steppe to its ecological potential in Greater Sage-Grouse habitat.</p>	<p>Manage or restore PHMA so that at least 50 percent of the landscape (mapped occupied habitat within a population area) provides sagebrush cover to meet Greater Sage-Grouse needs.</p> <p>Within PHMA where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ESD – or comparable Forest Service methods, maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas. Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.</p>	<p>Enhance an average of 25,000 acres of Greater Sage-Grouse habitat in SGMAs annually.</p> <p>Increase the total amount of Greater Sage-Grouse habitat acreage within and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas.</p>	<p>Restore native (or desirable) plants and create landscape patterns which most benefit Greater Sage-Grouse. Write specific LUP objectives for vegetation that connects habitats and creates patterns that benefit Greater Sage-Grouse. Write specific vegetation management objectives relative to invasive annual grass spread and woody plant removal where these are of concern in Greater Sage-Grouse habitat. Consider management objectives in buffers around intact core areas that detect and rapidly respond to invasions in the buffer zones.</p> <p>Establish measurable objectives related to Greater Sage-Grouse habitat from baseline monitoring data, ESDs (or comparable Forest Service methods), or land health assessments/evaluations.</p> <p>Incorporate available site information collected using the Greater Sage-Grouse Habitat Assessment Framework or similar methods to evaluate existing resource conditions and to develop any necessary resource solutions.</p> <p>Incorporate management practices that will provide for maintenance and/or enhancement of Greater Sage-Grouse habitats, including specific attention to maintenance of desired understories of sagebrush plant communities. When developing objectives for residual cover and species diversity, identify the ecological site types within the planning area and refer to the appropriate ESDs) (Forest Service may use other methods).</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	No similar action.	Increase Greater Sage-Grouse populations to a level where they are viable and secure from local extirpation events, and eventually to a level that allows for an annual harvestable surplus.	No similar action.	Sustain an average male lek count of 4,100 males (based on a 10-year rolling average on a minimum of 200 monitored leks) in the SGMAs, and increase the population of males to an average of 5,000 (based on the same 10-year rolling average on a minimum of 200 monitored leks) within the SGMAs. Maintain viable populations within each SGMA. Ensure a path for birds to migrate within SGMAs on a seasonal basis, and ensure a long-term genetic connection between populations as needed. Should the population trends within a population area temporarily or permanently suffer from the effects of factors such as wildfire, management controls in the other SGMAs will be adjusted to achieve the other objectives listed above.	Enhance quality/suitable habitat to support the expansion of Greater Sage-Grouse populations on federally-administered lands within the planning areas. Manage Greater Sage-Grouse seasonal habitats and maintain habitat connectivity to support population objectives set by the WGFD.
Under current management, there are no designated GHMA.	Quantify and delineate GHMA for capability to provide connectivity among and between PHMA.	No similar action because all mapped occupied habitat would be PHMA	Delineate and manage mapped occupied Greater Sage-Grouse habitat outside PHMA as GHMA.	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
All LUPs include a general commitment to coordinate management actions with state and local governments and non-governmental organizations.	No similar action.	No similar action.	Participate in local Greater Sage-Grouse conservation efforts (e.g., UDWR, NRCS, local working groups) to implement landscape-scale habitat conservation, to implement consistent management to benefit Greater Sage-Grouse, and to gather and use local research and monitoring to promote the conservation of Greater Sage-Grouse.	The State of Utah will coordinate the efforts of BLM, Forest Service, USFWS, state agencies, local government, and others to accomplish the purposes of this Plan. The State will convene a Working Group with membership including the Dept. of Natural Resources, Dept. of Agriculture and Food, State Institutional Trust Lands Administration, BLM, Forest Service, NRCS, USFWS, and others as needed. The Working Group will meet as often as needed to coordinate the implementation of the State Greater Sage-Grouse Plan (included in this alternative). The Working Group will initiate and coordinate the efforts of necessary technical teams to assure scientific and monitoring information is shared by all management agencies, and that efforts to achieve the necessary conservation goals are progressing.	In cooperation with local Greater Sage-Grouse working groups, partners and stakeholders, develop site-specific conservation strategies to maintain or enhance Greater Sage-Grouse habitats and habitat connectivity. Continue to support the development of statewide Greater Sage-Grouse seasonal habitat models for the State of Wyoming. Utilize Local Working Group plans, analyses, and other sources of information to guide development of conservation objectives for local management of Greater Sage-Grouse habitats.

Alternative A		Alternative B			Alternative C			Alternative D			Alternative E1			Alternative E2	
Management Actions (BLM/Forest Service managed lands):															
Acreage of mapped occupied Greater Sage-Grouse habitat is as follows:		Identify PHMA and GHMA as follows (Map 2.1):			Identify PHMA and GHMA as follows (Map 2.2):			Identify PHMA and GHMA as follows (Map 2.3):			Identify Greater Sage-Grouse habitat within SGMA and core areas, as well as Greater Sage-Grouse habitat outside SGMA and non-core areas, as follows (Map 2.4 and Map 2.5):				
Population Area	Acres of BLM/ Forest Service Surface Estate	Population Area	Acres		Population Area	Acres		Population Area	Acres		Population Area	Acres			
			PHMA	GHMA		PHMA	GHMA		PHMA	GHMA		SGMA/ Core	Non-SGMA/ Noncore		
Uintah	642,600	Uintah	348,400	294,200	Uintah	642,600	0	Uintah	348,400	294,200	Uintah	340,800	301,800		
Carbon	174,800	Carbon	128,200	46,600	Carbon	174,800	0	Carbon	136,200	38,600	Carbon	27,700	147,100		
Emery	87,700	Emery	81,500	6,200	Emery	87,700	0	Emery	81,500	6,200	Emery (SGMA merged with Parker)	80,600	7,100		
Parker Mountain	531,800	Parker Mountain	524,800	7,000	Parker Mountain	531,800	0	Parker Mountain	524,800	7,000	Parker Mountain (SGMA merged with Emery)	520,700	8,480		
Panguitch	221,600	Panguitch	221,600	0	Panguitch	221,600	0	Panguitch	198,100	23,500	Panguitch	221,600	0		
Bald Hills	267,500	Bald Hills	256,800	10,700	Bald Hills	267,500	0	Bald Hills	256,800	10,700	Bald Hills	265,400	2,000		
Hamlin Valley	101,000	Hamlin Valley	101,000	0	Hamlin Valley	101,000	0	Hamlin Valley	101,000	0	Hamlin Valley	101,000	0		
Sheeprocks	515,900	Sheeprocks	463,100	52,800	Sheeprocks	515,900	0	Sheeprocks	409,200	106,700	Sheeprocks	417,700	109,500		
Ibapah	57,100	Ibapah	47,000	10,100	Ibapah	57,100	0	Ibapah	47,000	10,100	Ibapah	48,000	10,100		
Box Elder	413,100	Box Elder	364,100	49,000	Box Elder	413,100	0	Box Elder	412,100	1,000	Box Elder	439,200	5,800		
Rich	181,400	Rich	180,200	1,200	Rich	181,400	0	Rich	180,200	1,200	Rich	183,000	4,500		
Lucerne	2,300	Lucerne	0	2,300	Lucerne	2,300	0	Lucerne	0	2,300	Lucerne (Utah does not include)	0	2,300		
Strawberry	40,200	Strawberry	40,200	0	Strawberry	40,200	0	Strawberry	40,200	0	Strawberry	40,700	0		
WY-Uinta	22,000	WY-Uinta	1,100	20,900	WY-Uinta	22,000	0	WY-Uinta	1,100	20,900	WY-Uinta (E2 only)	1,100	20,900		
WY-Blacks Fork	54,800	WY-Blacks Fork	23,700	31,100	WY-Blacks Fork	54,800	0	WY-Blacks Fork	23,700	31,100	WY-Blacks Fork (E2 only)	23,700	31,100		
Statewide	3,313,800	Statewide	2,781,700	532,100	Statewide	3,313,800	0	Statewide	2,760,300	553,500	Statewide	2,711,200	650,680		
		% Occupied	84%	16%	% Occupied	100%	0%	% Occupied	83%	17%	% Occupied	82%	20%		
Under current management, there are no designated PHMA or GHMA.											<p>Note: Though the State of Utah and BLM began their processes with Greater Sage-Grouse occupied habitat data from March 27, 2012, over the course of the State's process developing their SGMA, several modifications were made to the occupied habitat boundaries. Though the BLM was provided various versions of the SGMA data, the changes to occupied habitat were not provided for use in this process. As a result, the combined acres of PHMA and GHMA for Alternatives B, C and D (which is the occupied habitat used throughout this EIS) differ from the combined acres of habitat within SGMA and habitat outside SGMA for Alternative E1.</p>				
No similar action.		No similar action.			No similar action.			<p>Within the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, or towns. These areas of non-habitat would be identified during site-specific project review by agency biologists, in discussion with the State of Utah and other agencies, as appropriate. Decisions associated with PHMA or GHMA would apply to areas with or ecologically capable of supporting Greater Sage-Grouse habitat. The decisions may be excepted if it can be shown that the action would occur in a non-habitat area and the following conditions are met:</p> <ul style="list-style-type: none"> access through Greater Sage-Grouse habitat to the activity in the non-habitat area occurs only on existing routes, and no new roads, maintenance, or improvements to roads 			<p>Non-habitat areas within the SGMA include lands that do not contribute to the annual life-cycle of Greater Sage-Grouse. Effort has been made to minimize the amount of non-habitat within the SGMA, but given the topographic, physiographic and land cover features within Utah and the scale and detail of mapping, the inclusion of some non-habitat was unavoidable.</p> <p>No specific management provisions are proposed for non-habitat areas within the SGMA, except to consider noise and permanent structure stipulations around a lek, and to note that, birds may fly over the non-habitat as they connect to other populations or seasonal habitat areas. (Corridors may or may not be included as habitat within the population area, depending on local conditions, topography, and other</p>		<p>As new occupied Greater Sage-Grouse habitat is found or occurs either through additional inventories or expansion into previously un-occupied habitat, the agencies will incorporate these areas into the non-core category and manage them as such, until the earliest review occurs by the SGIT. At that time they will be considered for core status or will continue to be managed as non-core, and will be added to the statewide map at that time.</p> <p>Include the collection of baseline data and outline post-project monitoring components into the project planning.</p> <p>Contribute to actions that help to ground-truth the statewide Greater Sage-Grouse seasonal habitat models for the State of Wyoming.</p>		

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>would be required within Greater Sage-Grouse habitat,</p> <ul style="list-style-type: none"> • no activity would be permitted or authorized if it would establish a valid existing right that would subsequently require construction of new routes within Greater Sage-Grouse habitat for access, • access to the activity for construction, maintenance, etc. would be required to avoid applicable Greater Sage-Grouse sensitive seasons (i.e., breeding, brood-rearing, winter) and time periods (2-hours before sunrise to 2-hours after sunrise near leks during breeding season), • the non-habitat does not provide important connectivity between habitats, • impacts on areas adjacent to PHMA can be reduced or eliminated (e.g., sound, tall structures). <p>Proposed projects within population areas will consider impacts on Greater Sage-Grouse and potential mitigation measures when preparing site-specific planning and environmental compliance documents.</p> <p><u>Additional Greater Sage-Grouse Habitat</u></p> <p>Outside of mapped occupied habitat, prior to site-specific authorizations, the BLM or Forest Service would evaluate habitat conditions and may require surveys to determine if the project area contains Greater Sage-Grouse habitat (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Surveys would be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in areas that ecologically could provide Greater Sage-Grouse habitat.</p> <p>If an area is determined to contribute to the Greater Sage-Grouse life-cycle, mitigation will be considered as part of the project level NEPA analysis (BLM Manual 6840 .04 D 5). Measures that may be considered include those identified in Appendices H, I, J, K, or L of the Draft LUPA/EIS. On National Forest System lands these areas will be analyzed at the site-specific level and will be covered in the specialist report and Biological Evaluation. Changes to maps and associated acreages would occur through the appropriate BLM and Forest Service planning processes (e.g., plan maintenance, simple plan amendments, etc.).</p>	<p>factors. Corridors are important to Greater Sage-Grouse, but may not require restrictions on human activity. As a general rule, it will be adequate to avoid removal of sagebrush and to minimize development that would create a physical barrier to Greater Sage-Grouse movement in these areas.)</p> <p>SGMAs should be reviewed annually through the coordination efforts of the Public Lands Policy Coordination Office. Review should include, for example, changes in the distribution of disturbance, the increases in habitat through enhancement or improvement, decreases in habitat through wildfire or other events, status of population numbers, and related items. Adjustments to SGMAs will be reviewed every 5 years, unless large-scale events such as wildfire, and successful annual events, such as habitat enhancement or improvement, necessitate a more frequent adjustment. Adjustments may include expansion or constriction of the external boundaries and a redrawing of the internal boundaries among habitat, non-habitat and opportunity areas.</p>	<p>The official Wyoming Greater Sage-Grouse lek database is maintained by the WGFD in accordance with Appendix 4B of the Umbrella Memorandum of Understanding between the WGFD and BLM (WGFD and BLM 1990). The action agencies will meet at least annually to coordinate and review the accuracy of data and incorporate the most up-to-date information.</p> <p>Ensure site-specific, measurable, conservation and mitigation objectives are included in project planning within Greater Sage-Grouse habitats.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy, and recommendations from local Greater Sage-Grouse working groups, to protect, maintain, enhance, and restore Greater Sage-Grouse populations and habitat.</p> <p>A few plans (e.g., Vernal RMP, Uinta LRMP) including more detailed habitat objectives such as desired seral sage, percent canopy cover, or height.</p> <p>Other than the abovementioned decision, and basic planning allocations, management actions specific to Greater Sage-Grouse are not present in most LUPs.</p>	<p>Develop quantifiable habitat and population objectives with WAFWA and other conservation partners at the MZ and/or other appropriate scales. Develop a monitoring and adaptive management strategy to track whether these objectives are being met, and allow for revisions to management approaches if they are not.</p>	<p>No similar action.</p>	<p>Increase the amount and functionality of seasonal habitats within PHMA:</p> <ul style="list-style-type: none"> • Maintain or increase canopy cover and average patch size of sagebrush in perennial grasslands unless there's conflict with other special status species (e.g., Utah prairie dog and black footed ferrets). • Maintain or increase the amount, condition and connectivity of seasonal habitats within, and where applicable, between population areas. • Protect and improve Greater Sage-Grouse migration/ movement corridors. • Reduce conifer encroachment within PHMA. • Maintain or improve understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats. • Reduce the extent of annual grasslands adjacent to PHMA where objectives are not being met. 	<p>Enhance an average of 25,000 acres of Greater Sage-Grouse habitat in SGMAs annually.</p> <p>Increase Greater Sage-Grouse habitat acreage within and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas.</p> <p>Manage activities within SGMAs based on a hierarchical protocol that provides as follows:</p> <ol style="list-style-type: none"> 1. Avoidance of disturbance to habitat or birds by an activity is the preferred option; 2. Minimization of the disturbance is desired if the disturbance cannot be avoided in Greater Sage-Grouse habitat, with mitigation for the effects of the minimization decisions; and finally 3. Mitigation of the disturbance from an activity within Greater Sage-Grouse habitat is required if a disturbance cannot be avoided. <p>Manage areas identified as SGMAs to avoid surface disturbance to the greatest degree possible. Coordinate with the UDWR when land use which may result in a disturbance is contemplated.</p> <p>All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.</p>	<p>Work with project proponents, partners, and stakeholders to avoid or minimize impacts and/or implement direct mitigation (e.g. relocating disturbance, timing restrictions, etc.), and utilize BMPs and off-site compensatory mitigation where appropriate (Greater Sage-Grouse Wyoming Executive Orders 2011-05 and 2013-03 and BLM IM WY-2010-012, Policy Statement 3, page 7).</p> <p>The Forest Service will coordinate new recommendations, mitigation, and conservation measures applied for Greater Sage-Grouse with the WGFD and other appropriate agencies. These measures will be analyzed in site-specific NEPA documents, as necessary.</p> <p>Where applicable and technically feasible, apply BMPs as mandatory COAs within core Greater Sage-Grouse habitat for Fluid Minerals, travel management, Lands and Realty, Range Management, Wild Horse and Burro, Solid Minerals-Coal, Locatable Minerals, West Nile, mineral materials, nonenergy solid leasables, Vegetation Management, Fire and Fuels Management, and Noise.</p> <p>Use the Greater Sage-Grouse Habitat Assessment Framework or best available assessment tool (approved by the Responsible Official) when assessing or evaluating Greater Sage-Grouse habitats at multiple scales.</p> <p>Ranger District staff will work with project proponents (including those within Forest Service) to site their projects in locations that meet the purpose and need for their project, but have been determined to contain the least sensitive habitats whether inside or outside of core areas.</p> <p>Forest Service district offices, in coordination with WGFD and other partners, will establish monitoring protocols for Greater Sage-Grouse populations and habitat that will be incorporated into individual project approvals as appropriate and necessary. Small or in-house projects within core areas will also have a monitoring plan for Greater Sage-Grouse incorporated in the approval document.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>No similar action.</p>	<p>Manage PHMA so that discrete anthropogenic disturbances (whether temporary or permanent) cover less than 3 percent of the total Greater Sage-Grouse habitat regardless of ownership. Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines.</p> <ul style="list-style-type: none"> In PHMA where the 3 percent disturbance threshold is already exceeded from any source, no further anthropogenic disturbances will be permitted by the BLM or the Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). In this instance, an additional objective will be designated for the PHMA to prioritize and reclaim/restore anthropogenic disturbances so that 3 percent or less of the total PHMA area is disturbed within 10 years. 	<p>Limit discrete surface disturbance (whether temporary or permanent) in occupied Greater Sage-Grouse habitat to one instance per section regardless of ownership, with no more than 3 percent surface disturbance (or, where stipulated, implement the disturbance cap prescribed in the applicable state conservation plan, whichever is more protective). The 3 percent cap includes existing and all new initial disturbance to the landscape, interim mitigation and restoration efforts notwithstanding. Discrete disturbances include but are not limited to highways, roads, transmission lines, substations, wind turbines, oil and gas wells, heavily grazed areas, range developments, severely burned areas, pipelines, landfills, mines, fences (with a 100 foot buffer, each side), and water developments (with a 1,000 foot radius buffer), and vegetation treatment that reduces sagebrush cover. As additional research on the 3 percent cap becomes available, revise this prescription, as necessary, to conserve Greater Sage-Grouse.</p> <p>For an area to no longer be considered disturbed under the 3 percent cap, disturbances need to be restored/reclaimed, where technically and legally feasible (e.g., valid existing rights, split estate lands). The objective of long-term restoration/reclamation is to make areas with disturbance useable by Greater Sage-Grouse. For long-term restoration of PHMA with discrete surface disturbances to be considered successful, Greater Sage-Grouse must be documented to have used the area.</p>	<p>Protect PHMA from fragmentation by anthropogenic disturbances (whether temporary or permanent) that will reduce distribution or abundance of Greater Sage-Grouse by managing PHMA so that discrete anthropogenic disturbances cover less than 5 percent of the area within the PHMA used by a population of Greater Sage-Grouse, regardless of ownership. While the BLM and Forest Service do not have any regulatory authority to influence the amount of disturbance that will occur on state or private land, when determining whether development is appropriate on federal lands, disturbances on private and state lands will count towards the 5 percent disturbance cap.</p> <p>When considering implementation-level actions, the 5 percent disturbance calculation would include all discrete anthropogenic disturbances within a biologically based disturbance calculation area, which must be contained within the PHMA of a Greater Sage-Grouse population area. The disturbance calculation area would be identified during the site-specific project planning/NEPA phase, but the following would be taken into account when determining what would be included/excluded:</p> <ul style="list-style-type: none"> Existing developed agriculture lands should generally be excluded. Areas in PHMA that have burned but have not recovered to the extent of being able to provide habitat for Greater Sage-Grouse should generally be excluded from the baseline disturbance calculation area for which the 5 percent is calculated (though the burned areas are still part of the PHMA), unless the proposed disturbance is within the burned area. (For example, a potential disturbance calculation area is 2,000 acres and does not have any existing disturbance, thereby allowing up to 100 acres of total disturbance. If 1,000 acres of the area burns, the calculation area should be adjusted to exclude the 1,000 burned acres, reducing potential disturbance in the remaining area to 50 acres. If the proposed disturbance is within the burned area, the calculation area should include the entire 2,000 acres, but the disturbance would still be limited to 50 acres.) However, just because the burned area could be excluded 	<p>The provisions of this alternative include, under certain circumstances, a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMA. The fundamental purpose of this provision is to limit the effects of a large amount of disturbance to the existing habitat or activities of the Greater Sage-Grouse. The cumulative calculation of permanent disturbance in any population area, and specific habitats within a population area, is the aggregate of the various project, land use, or natural event disturbances, as modified by the effects of rehabilitation, restoration or other mitigation actions.</p> <p>Many of the SGMAs extend into two or more counties. In such cases, the 5 percent limitation shall be apportioned to each county in proportion to the total amount of habitat within the larger area.</p> <p>Because of the highly discontinuous nature of Greater Sage-Grouse habitat in Utah, each of the SGMAs is a composite of habitat, non-habitat and opportunity areas. In many cases, it may be difficult to discern whether an existing dispersed use is part of habitat or non-habitat, and thereby make an accurate calculation of the base for the limitation calculation difficult to determine. As part of the implementation of this alternative, such issues should be brought to the interagency review effort coordinated by the Public Lands Policy Coordination Office to insure consistency in interpretation throughout the state. In addition, if it should become sufficiently apparent that an accurate determination of the base for the limitation calculation is not feasible, then the interagency coordination effort may propose and seek approval for an alternative measurement of, or technique to measure, the cumulative effects of disturbance.</p> <p>The area of permanent disturbance is the area within a spatial polygon defined by the outside limits of the actual disturbed area, plus the area outside of this polygon where effects of the project, based on the type of project, could be expected to cause a</p>	<p>Inside core areas the density and disturbance goals include:</p> <ul style="list-style-type: none"> The Forest Service will consider and evaluate measures that limit or reduce the density of oil and gas or mining activities to no more than an average of 1 location per 640 acres across the Density Disturbance Calculation Tool; and to limit all surface disturbance (any program area) to no more than 5 percent of the core area landscape using the Density Disturbance Calculation Tool.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>from the disturbance calculation area, any existing disturbances within the burned areas would still be counted against the disturbance cap of the revised disturbance calculation area.</p> <ul style="list-style-type: none"> Developed private lands that are no longer used by Greater Sage-Grouse (e.g., towns, airports, reservoirs) would be excluded. However, other dispersed disturbances would be considered disturbance (e.g., cabins, access roads, community pits, etc.). <p>Discrete disturbances should be consolidated and localized as much as possible, though total areas with discrete disturbances cannot exceed 5 percent in the identified disturbance calculation area. This could result in small areas where existing and proposed disturbances exceed 5 percent if total disturbances in the identified disturbance calculation area equals or is less than 5 percent.</p> <p>Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. In PHMA where the 5 percent disturbance threshold is already exceeded from any source, no further discrete anthropogenic disturbances will be permitted by the BLM or the Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). In these areas, reclaim and/or restore discrete anthropogenic disturbances, where technically and legally feasible, so that 5 percent or less of the disturbance calculation area is disturbed.</p> <p><u>Restoration/Reclamation of Surface Disturbances:</u> An area with surface disturbance is not excluded from the 5 percent until it has been successfully reclaimed (short-term) and restored (long-term). The objective of long-term restoration/reclamation in PHMA is to provide for the needs of Greater Sage-Grouse. Providing habitat could include, but is not limited to restoring landforms and vegetative communities to reflect the potential for the given ecological site, as well</p>	<p>disturbance to Greater Sage-Grouse. Allowances must be made to include the temporal effects of any temporary disturbance, if any such effects are expected. The calculation of the spatial extent of each proposed project or land use, or the area of a natural event, such as wildfire, to be employed in this calculation, is defined as part of the definition of disturbance. The base upon which this calculation is made may be increased through successful rehabilitation or restoration of habitat, or other mitigation actions as appropriate.</p>	<p><u>Restoration/Reclamation of Surface Disturbances:</u> Reclamation of surface disturbances in Greater Sage-Grouse habitats will be in accordance with the Wyoming Reclamation Policy and Forest Service Reclamation policy.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>as restoring hydrologic systems and other wildlife habitat components. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for soil site stability, hydrologic function, and integrity of the biotic communities. Specific restoration/reclamation objectives will be identified through the NEPA process, but for final restoration/reclamation to be judged successful within PHMA, all the following objectives must be met:</p> <ul style="list-style-type: none"> • Areas where the landform has been altered (e.g., well pads, production facilities, roads, pipelines, utility corridors, etc.) have been re-contoured to blend in with adjacent undisturbed areas, approximating the original landform. • A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and invasive plants (e.g., cheatgrass, non-native thistles, knapweeds) and can reestablish wildlife habitat and/or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation. Permanent vegetative cover will be determined successful when the percent cover of desirable perennial species is consistent with Greater Sage-Grouse habitat objectives and the ESD (or comparable Forest Service methods). Monitoring for restoration must extend for a reasonable time frame, considering ecological site potential and environmental conditions (e.g., drought). Plants must be resilient as evidenced by well-developed root systems and flowers; shrubs must be well established and not comprised mainly of seedlings that may not survive until the following year. • Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gulying, headcutting, slumping, and deep or excessive rilling (greater than 3 inches) is not observed. • The site is free of State- or county-listed noxious weeds, anthropogenic debris and equipment, and contaminated soil. 	(see above)	(see above)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>[Exception of site-specific requirement: Given that some weeds, such as cheatgrass, are common in portions of the planning area, it may not be possible to totally eliminate invasive species from the reclaimed area.]</p> <ul style="list-style-type: none"> Final reclamation success and approval for abandonment for disturbances caused by permitted activities will be subject to an interdisciplinary review of available monitoring data and final monitoring reports. Monitoring teams must consist of, at a minimum, a wildlife biologist, a rangeland management specialist, and another resource specialist (e.g., natural resources specialist) will evaluate the monitoring plan (from the NEPA or POD documents), and review the regular and final monitoring reports and provide the Authorized Officer with a recommendation as to whether or not objectives have been met. For non-permitted activities (e.g., reclamation of user created roads), successful restoration/reclamation occurs when the area meets the four criteria noted above, as determined by an interdisciplinary review of inventory/monitoring information. 	(see above)	(see above)
<p>Most LUPs include a management action that prohibits surface disturbing or other disruptive within Greater Sage-Grouse breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.5 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer.</p> <p>Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.</p>	No similar action.	No similar action.	<p>Do not allow discrete anthropogenic disturbances or activities disruptive to Greater Sage-Grouse (including scheduled maintenance activities) within PHMA in seasonal Greater Sage-Grouse habitats during the corresponding seasonal use periods, current authorized uses excepted:</p> <ul style="list-style-type: none"> In breeding and nesting habitat from Feb 15 – Jun 15 In brood rearing habitat from Apr 15 – Jul 15 In winter habitat from Nov 15 – Mar 15 <p>In addition, the following use requirements would be applied to discretionary activities within PHMA, as applicable:</p> <ul style="list-style-type: none"> the activity meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season); the activity meets permanent (structure persists through subsequent breeding season) tall structure restrictions (a tall structure is any man-made structure that has the potential to disrupt lekking or 	<p>Within SGMAs in seasonal Greater Sage-Grouse habitats during the corresponding seasonal use periods, avoid activities (construction, vehicle noise, etc.) that will disturb Greater Sage-Grouse use of the seasonal area by employing seasonal stipulations as follows:</p> <ul style="list-style-type: none"> In leks (for lek attendance or breeding) from Feb 15 – May 15. In nesting or brood-rearing areas from Apr 1 – Aug 15. In winter habitat from Nov 15 – Mar 15. <p>Specific time and distance determinations for all these seasonal stipulations would be based on site-specific conditions for all these seasonal stipulations, in coordination with the local UDWR biologist.</p> <p>In addition, the following management provisions would be applied to the applicable areas within Greater Sage-Grouse habitat in SGMAs (Map 2.4):</p> <p><u>Leks</u></p> <ul style="list-style-type: none"> Avoid disturbance within this area, if possible. Project proponents must 	<p><u>Leks – core habitat</u></p> <ul style="list-style-type: none"> Permanent surface occupancy and surface disturbing activities would be prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks. Temporary disruptive activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks from March 15 – June 30. Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise from 6:00 pm to 8:00 am from March 15 – June 30. <p><u>Nesting/Early Brood-Rearing Habitat – core habitat</u></p> <ul style="list-style-type: none"> Surface disturbing and/or disruptive activities are prohibited from March 15– June 30 within core areas regardless of distance from a lek and the suitability of the habitat. Where credible data support different timeframes for this seasonal restriction,

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>nesting birds by creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography); and</p> <ul style="list-style-type: none"> environmental compliance documents associated with the activity analyze limitations to habitat fragmentation. <p>Exceptions to the seasonal restrictions could be granted by the Authorized Officer under the following conditions:</p> <ul style="list-style-type: none"> if surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity will not result in a permanent disturbance and will not take place beyond the season being excepted; if surveys determine that the lek is no longer occupied, and the proposed activity will not take place beyond the season being excepted; if the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of Greater Sage-Grouse; if the potential short-term impacts from vegetation treatment are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedings, juniper reduction). <p>Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions:</p> <ul style="list-style-type: none"> if portions of the area do not include habitat (lacking the principle habitat components of Greater Sage-Grouse habitat) or are outside the defined area, as determined by the BLM and Forest Service in discussion with the State of Utah, and indirect impacts would be mitigated; if documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when Greater Sage-Grouse use a given area, and the proposed activity will not take place beyond the season being excepted. 	<p>demonstrate why avoidance is not possible.</p> <ul style="list-style-type: none"> If avoidance is not possible, use minimization as appropriate to the area. If minimization is not sufficient, mitigation is required (see mitigation section). New permanent disturbance, including structures, fences, and buildings, should not be located within the lek itself. No permanent disturbance within 1 mile of the lek, unless it is not visible to the Greater Sage-Grouse using the lek. Fences should not be located on or adjacent to leks where bird collisions would be expected to occur. If required, the construction of any fences near the lek should follow the standards identified in the NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication “Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes”). A disturbance outside the lek should not produce noise which rises more than 10 decibels above the background level at the edge of the lek during breeding season. Implement time-of-day stipulations during the season when the lek is occupied (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise). <p><u>Nesting and Brood-Rearing Areas</u></p> <ul style="list-style-type: none"> Avoid disturbance within these areas, if possible. Project proponents must demonstrate why avoidance is not possible. If avoidance is not possible, use minimization as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic features to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation to provide food and shelter). If minimization is not sufficient, mitigation is required (see mitigation section). Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting habitat within the SGMA. 	<p>dates may be expanded by up to 14 days prior to or subsequent to the above dates.</p> <p><u>Winter Concentration Areas</u></p> <ul style="list-style-type: none"> Surface disturbing and/or disruptive activities in Greater Sage-Grouse winter concentration areas are prohibited from December 1–March 14 to protect core populations of Greater Sage-Grouse that use these winter concentration habitats (independent of habitat suitability). Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of Greater Sage-Grouse that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability). <p><u>Noise</u></p> <p>The Forest Service will work with proponents to limit project related noise where it would be expected to reduce functionality of habitats that support core area populations. The Forest Service will evaluate the potential for limitation of new noise sources on a case-by-case basis as appropriate. Forest Service’s near-term goal is to limit noise sources that would be expected to negatively impact core area Greater Sage-Grouse populations and to continue to support the establishment of ambient baseline noise levels for occupied core area leks. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate limitations will be implemented where necessary to minimize potential for noise impacts on Greater Sage-Grouse core-area population behavioral cycles.</p> <p>As new research is completed, new specific limitations would be coordinated with the WGFD and partners.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	<ul style="list-style-type: none"> • Employ noise stipulations which allow no more than 10-decibel rise above ambient noise levels at the edge of the lek. <p><u>Winter Habitat</u></p> <ul style="list-style-type: none"> • Avoid disturbance within the area, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, minimize as appropriate to the area. Minimization provisions include, for example, the location of development in habitat of least importance, or by locating development to take advantage of topographic screening. • If minimization is not sufficient, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of the surface area of winter habitat within the SGMA. • Manage the area to maintain maximum amount of sagebrush, especially tall sagebrush, which would be available to Greater Sage-Grouse above snow during a severe winter. Tall sagebrush is capable of standing above heavier than normal snowfall. • Sagebrush treatment projects within this area need pre-approval by the appropriate regulatory agency in coordination with the UDWR. Sagebrush treatment projects within winter habitat should maintain 80 percent of the available habitat as tall sagebrush; 20 percent of the habitat can be managed for younger age classes, if appropriate. <p><u>Other Habitats</u></p> <ul style="list-style-type: none"> • Avoid disturbance in the area if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, minimize as appropriate to the area. Minimization provisions include, for example, the location of development in habitat of least importance, or by locating development to take advantage of topographic screening. • If minimization is not sufficient, mitigation is required (see mitigation section). • Mitigation must produce lands capable of supporting Greater Sage-Grouse as habitat before the proposed disturbance 	(see above)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	occurs, though birds do not need to be using the mitigated area. The proponent of the disturbance must demonstrate that the mitigation conditions have been met. <ul style="list-style-type: none"> • Cumulative new permanent disturbance should not exceed 5 percent of the surface area of other habitat within the SGMA. • Manage the lands to avoid barriers to migration, if applicable. 	(see above)
No similar action.	No similar action.	No similar action.	Apply standards for development activities within PHMA and GHMA to reduce opportunities for Greater Sage-Grouse predators, such as limiting food sources (trash reduction), nesting, cover, or perches. Apply actions specific to the predators of concern for the given Greater Sage-Grouse population (e.g., ravens, red fox, badgers, raccoons, raptors).	Eliminate or minimize external food sources for corvids, particularly dumps, waste transfer facilities, and road kill. Apply habitat management practices (e.g. grazing management, vegetation treatments) that decrease the effectiveness of predators.	The Forest Service will implement strategies and techniques in land management decisions that address predators shown to pose a threat to Greater Sage-Grouse. The Forest Service will support and encourage other agencies in their efforts to minimize impacts from predators on Greater Sage-Grouse where needs have been documented.
Under current management plans, there are no designated GHMA.	Conserve, enhance or restore GHMA and connectivity to promote movement and genetic diversity, with emphasis on those habitats occupied by Greater Sage-Grouse.	No similar action.	Conserve GHMA to maintain existing habitat and maintain connectivity between populations, or if necessary, to provide for opportunities to improve PHMA. Do not allow discrete anthropogenic disturbances or activities disruptive to Greater Sage-Grouse (including scheduled maintenance activities) within GHMA in seasonal Greater Sage-Grouse habitats during the corresponding seasonal use periods: <ul style="list-style-type: none"> • In breeding and nesting habitat from February 15 – June 15 • In brood rearing habitat from April 15 – July 15 • In winter habitat from November 15 – March 15 In addition, the following use requirements would be applied to discretionary activities within GHMA, as applicable: <ul style="list-style-type: none"> • the activity meets noise restrictions; • the activity meets permanent tall structure restrictions; and • environmental compliance documents associated with the activity consider how to limit habitat fragmentation. Exceptions to the seasonal restrictions could be granted Authorized Officer under the following conditions: <ul style="list-style-type: none"> • if surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity 	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>Leks – non-core habitat</u> Surface occupancy and surface disturbing activities would be prohibited or restricted on or within one-quarter (0.25) mile radius of the perimeter of occupied Greater Sage-Grouse leks. <u>Nesting/Early Brood-Rearing Habitat – non-core habitat</u> <ul style="list-style-type: none"> • Surface disturbing and/or disruptive activities are limited from March 15–June 30 to protect Greater Sage-Grouse nesting and early brood rearing habitats within 2 miles of the lek perimeter of any occupied lek located outside core areas. • Where credible data support different timeframes for this restriction, dates may be expanded by 14 days prior or subsequent to the above dates. <u>Winter Concentration Areas</u> <ul style="list-style-type: none"> • Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of Greater Sage-Grouse that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability).

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>will not take place beyond the season being excepted;</p> <ul style="list-style-type: none"> • if surveys determine that the lek is no longer occupied, and the proposed activity will not take place beyond the season being excepted; • if the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of Greater Sage-Grouse; • if the potential short-term impacts from the action are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedings, juniper reduction). <p>Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions:</p> <ul style="list-style-type: none"> • if portions of the area do not include habitat (lacking the principle habitat components of Greater Sage-Grouse habitat) or are outside the current defined area, as determined by the BLM and Forest Service in discussion with the State of Utah, and indirect impacts would be mitigated; • if documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when Greater Sage-Grouse use a given area, and the proposed activity will not take place beyond the season being excepted. <p>Application of the above use restrictions and meeting objectives within GHMA may be waived by the Authorized Officer if off-site mitigation is successfully completed in PHMA, following discussion with the BLM and Forest Service and the State of Utah. Even in situations where use restrictions are waived in GHMA, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.</p>	(see above)	(see above)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>No opportunity areas identified in current management plans.</p> <p>Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP.</p> <p>All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros.</p> <p>Recent plans may include management actions that purposely restore or enhance Greater Sage-Grouse habitat.</p>	<p>Assess GHMA to determine potential to replace lost PHMA caused by perturbations and/or disturbances and provide connectivity between PHMA.</p> <ul style="list-style-type: none"> • These habitats should be given some priority over other GHMA that provide marginal or substandard Greater Sage-Grouse habitat. • Restore historical habitat functionality to support Greater Sage-Grouse populations guided by objectives to maintain or enhance connectivity. • Enhance GHMA such that population declines in one area are replaced elsewhere within the habitat. 	<p>Identify Greater Sage-Grouse restoration habitat and prioritize areas for implementation of restoration projects based on environmental variables that improve chances for project success. Restoration habitat is degraded or fragmented habitat that is currently unoccupied by Greater Sage-Grouse, but might be useful to the species if restored to its potential natural community.</p> <p>Prioritize areas for restoration based on their potential importance to Greater Sage-Grouse and the likelihood of successfully restoring sagebrush communities. Passive restoration is preferred for restoring these areas over active restoration methods.</p>	<p>Restore historical habitat to support Greater Sage-Grouse populations to maintain or enhance connectivity. Vegetation treatments may be applied to meet Greater Sage-Grouse habitat objectives and provide additional Greater Sage-Grouse habitat. Discrete anthropogenic disturbances should not be authorized in areas that have been previously treated with the intent of improving or creating new Greater Sage-Grouse habitat.</p>	<p>Opportunity areas are those portions of an SGMA that currently do not contribute to the life cycle of Greater Sage-Grouse but are areas where restoration or rehabilitation efforts can provide additional habitat when linked to existing Greater Sage-Grouse populations. Opportunity areas may be transformed into either habitat or non-habitat based upon natural events or management choices, and may be used to mitigate disturbance within habitat as appropriate.</p> <p>Opportunity areas may be employed to meet improvement, restoration, or rehabilitation goals, or as mitigation areas for disturbance within habitat. If this occurs, an opportunity area may become habitat and be managed as such, especially as part of the calculation for disturbance limitations. Alternatively, opportunity areas may be employed as the site for disturbances which are diverted from habitat, or other economic proposals not involving habitat, and become non-habitat. In either event, boundaries of the SGMA, or the land types within, should be adjusted accordingly.</p>	<p>Each office will develop landscape-scale restoration/ conservation strategies, including special management of seasonal habitats and connectivity zones outside of core areas, working with voluntary partners.</p> <p>These strategies must be coordinated and reconciled with adjoining management entities that share habitats or populations.</p>
<p>No similar action.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>The use restrictions, stipulations, seasonal constraints, etc. included for Greater Sage-Grouse habitat are intended to be the initial and not the entirety of the protections. Project proponents and BLM and Forest Service offices should develop additional mitigation measures at the project level to address the site-specific issues and impacts associated with local effects of specific projects. The mitigation actions developed at the project level must be based on current scientific recommendations. Mitigation actions could include some or all of the following:</p> <ul style="list-style-type: none"> • avoiding the impact altogether by not taking a certain action or parts of an action, • minimizing impacts by limiting the degree of magnitude of the action and its implementation, • repairing, rehabilitation, or restoring the affected area, • reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, or • compensating for the impact by replacing or providing substitute resources or environments. 	<p>Mitigation actions are designed to create new habitat or ameliorate disturbances by the creation of or protection of other habitat. Mitigation for a disturbance must be shown to be effective in the time-frame of the activity, not at some future date. Effective mitigation does not require that birds are immediately present using the land, only that the habitat is capable of supporting birds as part of their yearly life-cycle. However mitigation should be performed in areas which have the highest likelihood of occupation by the species. The amount of mitigation, if required, should be calculated based on the effects generated within SGMAs.</p> <p>Prioritize areas for habitat improvement to make best use of mitigation funds.</p> <p>Mitigation for a disturbance should not necessarily be tied to reclamation efforts at the actual site of the disturbance. Mitigation may occur locally, elsewhere in the same population area, or in another population area, based on the location, which offers greater potential for enhancing Greater</p>	<p>Within core areas, when mitigation is required, the agencies in coordination with WGFD and partners would use the following mitigation hierarchy: in-kind and onsite mitigation as first priority or in-kind mitigation offsite mitigation as second priority.</p> <p>When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per 2006 WAFWA Strategy as the impact.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>Money for research or monitoring within PHMA will not be counted as mitigation.</p> <p>Mitigation includes actions that are designed to create new habitat or ameliorate disturbances by the creation of or protection of other habitat, either within the same population or in other areas of the State. The preference is that mitigation for impacts within PHMA will occur within the same population area of the impact. For off-site mitigation associated with mitigation of actions within GHMA, project proponents will work closely with the BLM and the State of Utah to identify PHMA where off-site mitigation could occur. The ratio for mitigation, either onsite or off-site, will be set at the project level and will depend on the type and quality of the habitat being affected and the nature of the action affecting the habitat. While mitigative exchange values will not be set in this planning process, they need to follow the guiding principles of not trading short-term gains for long-term losses.</p> <p>For compensatory mitigation (either onsite or off-site), actions should consider the type and quality of habitat being impacted by a project and the proportional impact a project will have the population. In turn, proposed mitigation actions should address the same type and quality of habitat that may be impacted (e.g., breeding, nesting, brood-rearing, wintering, transitional habitats). The value of the habitat may increase if the birds use the area for more than one time of the year, if it is relatively higher in quality, or if the type of habitat is a limiting factor for the local population. Similarly, mitigation should account for the proportional impact a project will have to a specific population (if a given project impacts 1 percent of wintering habitat versus 30 percent of the wintering habitat).</p> <p>Mitigation that trades impacts on areas that are meeting habitat objectives with creation of areas that do not meet habitat objectives, even in high offsetting ratios, will not be accepted. Mitigation does not require that birds are immediately present using the land, only that the habitat meets habitat objectives for grasses and forbs. However mitigation should be performed in areas which have the</p>	<p>Sage-Grouse populations, so long as the location of the mitigation does not result in the loss of resiliency, representation or redundancy of the species in Utah. The Public Lands Policy Coordination Office, with assistance from the UDWR, BLM, Forest Service, NRCS, Department of Natural Resources, Department of Agriculture and Food, and other entities, shall coordinate and oversee the creation and operation of a Greater Sage-Grouse Mitigation Bank in Utah. The operation of this Mitigation Bank will seek to rehabilitate or restore lands as habitat prior to need, as well as coordinate the mitigation for development or other effects upon the habitat of the Greater Sage-Grouse. Once operational, contributions to the Bank will be welcome.</p> <p>Mitigation may be required in nesting and brood-rearing areas, winter habitat, and other habitat. Examples of successful mitigation for various Greater Sage-Grouse habitat types include the following:</p> <p><u>Leks</u></p> <ul style="list-style-type: none"> • Removal of trees on or adjacent to the lek. • Removal or marking of fences on or adjacent to the lek. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). <p><u>Nesting and Brood-Rearing Areas</u></p> <ul style="list-style-type: none"> • Removal of trees to no more than 5 percent cover (the closer to 0 percent the better) and maintenance of at least 10 percent sagebrush cover. • Maintain forb cover greater than 10 percent and greater than 10 percent grass cover during nesting and brood-rearing season. • Maintain or improve wet meadows, when present. • Installation of green-strips or firebreaks to protect existing nesting habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). <p>Mitigation should be calculated at a minimum of a 4:1 ratio starting with the first acre disturbed.</p>	(see above)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	highest likelihood of occupation by the species.	<p><u>Winter Habitat</u></p> <ul style="list-style-type: none"> • Removal of trees to less than 5 percent cover (the closer to 0 percent the better) and maintenance of at least 10 percent sagebrush cover. • Installation of green-strips or firebreaks to protect existing winter habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a 4:1 ratio starting with the first acre disturbed. <p><u>Other Habitats</u></p> <ul style="list-style-type: none"> • Removal of trees to less than 5 percent cover and maintenance of at least 10 percent sage brush cover. • Maintain forb cover greater than 10 percent and grass cover greater than 10 percent during nesting/brood-rearing season. • Maintain or improve wet meadows, when present. • Installation of green-strips or firebreaks to protect existing habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a 1:1 ratio with first acre disturbed. <p>Mitigation must produce lands capable of supporting Greater Sage-Grouse habitat before the proposed disturbance occurs, though birds do not need to be using the mitigated area. The proponent of the disturbance must demonstrate that the conditions have been met.</p> <p>Before mitigated areas are considered to be habitat within an SGMA, a preponderance of the evidence must indicate that Greater Sage-Grouse are occupying the mitigated area. Habitat altered by fire shall not be removed from SGMAs until rehabilitation or restoration of the burned areas is determined to be unsuccessful or not feasible.</p>	(see above)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Vegetation Management					
<p>In most LUPs, either no priorities are established or prioritization is given to projects that benefit multiple resources (e.g., livestock, wildlife, wild horses and burros, special status species).</p>	<p>Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse.</p> <p>Prioritize restoration in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance.</p>	<p>Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse.</p> <p>Prioritize restoration in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance and where factors causing degradation have already been addressed.</p>	<p>Where necessary to meet habitat objectives, treat PHMA to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas, areas with or at threat to be converted to annual grasslands, areas without a proper shrub/grass/forb composition for the applicable seasonal habitat and ecological site, fuel breaks, areas without a healthy mosaic of habitat types for the various Greater Sage-Grouse life stages).</p> <p>Prioritize implementation of restoration/treatment projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse.</p> <p>Prioritize restoration in seasonal habitats that are identified as the limiting factor for Greater Sage-Grouse distribution and/or abundance.</p> <p>Use collaborative planning efforts to develop and implement habitat restoration projects. Expertise and ideas from entities such as local landowners, local Greater Sage-Grouse working groups, and other federal, state, county, and private organizations should be solicited and considered in development of restoration projects.</p> <p>Consider design features that will contribute to the most favorable conditions for success when planning and implementing restoration/vegetation treatment projects. Considerations should include:</p> <ul style="list-style-type: none"> • Review of available plant species and their adaptation to the site when developing seed mixes. • The need to reduce non-native annual grass densities and competition through herbicide, targeted grazing, tillage, prescribed fire, etc. • Assessment of on-site vegetation to ascertain if enough desirable perennial vegetation exists to consider the use of passive restoration techniques. • Use of site preparation techniques that retain existing desirable vegetation. • Use of “mother plant” techniques or planting of satellite populations of desirable plants to serve as seed sources. • The need for post-treatment control of non-native annual grass and other invasive species. 	<p>Protection of Greater Sage-Grouse habitat is the primary focus of conservation efforts, but many locations can be reclaimed or restored by active vegetation management actions. For example:</p> <ul style="list-style-type: none"> • removal of encroaching conifers and other plant species may create new habitat or increase the carrying capacity of habitat and thereby expand Greater Sage-Grouse populations, or • the distribution of water into wet meadow areas may improve seasonal brood-rearing range and enhance Greater Sage-Grouse recruitment. <p>Aggressively remove encroaching conifers and other plant species to expand Greater Sage-Grouse habitat where possible.</p> <p>Sagebrush treatment projects within nesting and winter habitat should be limited and require pre-approval by the appropriate regulatory agency in discussions with UDWR. Sagebrush treatment projects should maintain 80 percent of the available habitat as sagebrush within the project area; 20 percent of the habitat can be managed for younger age classes of sagebrush, if appropriate. These treatments are generally recommended only to improve brood-rearing habitat, but need to be carefully considered before use in winter and other habitat.</p> <p>Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.</p> <p>Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.</p>	<p>Within core areas, prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse.</p> <p>Prioritize restoration in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance.</p> <p>Apply appropriate seasonal restrictions for implementing vegetation management treatments according to the type of seasonal habitats present in a core area. Vegetation treatments must include monitoring to determine achievement of objectives and their long-term success.</p> <p>In core areas, design and implement vegetation treatments with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems. For vegetation treatments, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and BLM IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management), or applicable Forest Service counterpart. These recommended protocols will be used in determining whether proposed treatment constitutes a “disturbance” that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP.</p> <p>All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros.</p> <p>Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy.</p> <p>A few plans (e.g., Vernal RMP, Uinta LRMP) including more detailed habitat objectives such as desired seral sage, percent canopy cover, or height.</p>	<p>Include Greater Sage-Grouse habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007) or if available, State Greater Sage-Grouse Conservation plans and appropriate local information in habitat restoration objectives. Make meeting these objectives within PHMA the highest restoration priority.</p>	<p>Include Greater Sage-Grouse habitat objectives in habitat restoration projects. Make meeting these objectives within mapped occupied Greater Sage-Grouse habitat the highest restoration priority.</p>	<p>Include Greater Sage-Grouse habitat objectives in restoration/treatment projects within PHMA. There will be objectives for short-term and long-term habitat conditions, and they should include specific objectives for the establishment of sagebrush cover and height, as well as cover and heights for understory perennial grasses and forbs necessary for Greater Sage-Grouse seasonal habitats. The restoration/treatment objectives should take into consideration ecological site potential of the area(s) and the need for a mosaic of habitat conditions across the landscape.</p> <p>Make meeting the Greater Sage-Grouse objectives for the restoration/ treatment project one of the primary priorities for the project and subsequent land uses, recognizing that managing for other special status species may result in treatment objectives that may not meet Greater Sage-Grouse seasonal habitat objectives (e.g., winter habitat cover requirements vs. creation of Utah prairie dog habitat). Where Greater Sage-Grouse habitat overlaps with that of federally listed threatened or endangered species (e.g., Utah prairie dogs), assemble species-specific experts to develop conservation and recovery objectives and allow habitat treatments that will benefit both species.</p>	<p>No similar action.</p>	<p>Identify areas for vegetation restoration and/or identify restoration criteria that include State Greater Sage-Grouse conservation plans and appropriate local information.</p>
<p>All recent LUPs include management actions that promote use of native species where possible.</p> <p>Older plans typically do not include a similar management action.</p>	<p>Require use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, non-native seeds may be used as long as they support Greater Sage-Grouse habitat objectives.</p>	<p>Same as Alternative B.</p>	<p>Prioritize the use of native seeds for restoration in PHMA based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used as long as they support Greater Sage-Grouse habitat objectives. Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, should be the principle objective for rehabilitation efforts.</p>	<p>No similar action.</p>	<p>Require use of native seeds for restoration unless the probability for success is low (desirable non-native seeds may be used as long as they meet Greater Sage-Grouse habitat objectives), and design restoration management to obtain long term persistence.</p>
<p>All LUPs, which are written in accordance with applicable program direction, include management actions that allow the administrating agency to make adjustments to livestock grazing, wild horse and burro management, and travel management on a case-by case basis following restoration activities.</p>	<p>Design post restoration management to ensure long term persistence and habitat objectives. This could include changes in livestock grazing management, wild horse and burro management and travel management, etc., to achieve and maintain the desired condition of the restoration effort that benefits Greater Sage-Grouse.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>No similar action.</p>	<p>Identify areas for vegetation restoration and/or identify restoration criteria that include State Greater Sage-Grouse conservation plans and appropriate local information. Require use of native seeds for restoration unless the probability for success is low (desirable non-native seeds may be used as long as they meet Greater Sage-Grouse habitat objectives), and design restoration management to obtain long term persistence.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Allow commercial seed collection on a case-by-case basis.	No similar action.	No similar action.	Identify areas where commercial seed or live plant collection in PHMA could occur. Limit commercial collection to levels that ensure long-term maintenance of the Greater Sage-Grouse habitat objectives. Locations, species allowed for collection, and limits on the amounts to be collected will be developed on a case-by-case basis following environmental review of annual site-specific conditions. Commercial collection during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter) will include mitigation, developed to reflect the site-specific conditions on the ground, that could include, but is not necessarily limited to, restrictions on the timing and method of collection activities, limiting the number of individuals collecting, providing portions of collected seeds for use in local restoration projects, etc.	No similar action.	No similar action.
Most LUPs do not include a similar action. A few plans include management actions that encourage use of native species from local sources when possible.	Consider potential changes in climate when proposing restoration seedings when using native plants. Consider collection from the warmer component of the species current range when selecting native species.	Same as Alternative B.	Allow for seed collection and use in restoration/reclamation activities. Prioritize use of seed from areas as close as possible to where the seed will be used to capture local adaptations.	No similar action.	No similar action.
No similar action. Most LUPs do not include specific management actions related to seedings. Plans do include generic decisions that allow maintenance of existing range improvements, which includes maintenance of historical seedings. Recently completed LUPs promote use of native species when conducting restoration activities. This would include restoration projects conducted in areas that have perennial grass cover. Older plans do not include a similar management action.	Restore native (or desirable) plants and create landscape patterns which most benefit Greater Sage-Grouse.	Exotic seedings will be rehabbed, interseeded, or restored to recover sagebrush in areas to expand occupied habitats. Complete active restoration of crested wheatgrass seedings. This can be accomplished, following targeted restoration planning to expand, reconnect or recover habitats required by Greater Sage-Grouse by: <ul style="list-style-type: none"> • Inter-seeding sagebrush seed or seedlings. • Removal of crested wheatgrass through plowing while minimizing use of herbicides. Subsequent re-seeding with local native ecotypes. In all cases, local native plant ecotype seeds and seedlings must be used. Perform active restoration of cheatgrass infestation areas.	Diversify the perennial grass and forb components through additional seeding in areas where monotypic stands resulting from historical seedings (e.g., crested wheatgrass) have been recolonized by sagebrush.	No similar action.	Restore native plants and create landscape patterns that most benefit Greater Sage-Grouse, considering potential changes in climate.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>The practices found in Appendix H, Required Design Features for Fire and Fuels, of the Draft LUPA/EIS were provided as BMPs as part of BLM IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.</p>	<p>Follow the RDFs for fire and fuels (BLM IM 2013-128; see Appendix H of the Draft LUPA/EIS)</p>	<p>Same as Alternative B.</p>	<p>Follow the applicable and technically feasible RDFs and policies for fire and fuels outlined in Appendix H of the Draft LUPA/EIS.</p>	<p>Aggressively remove cheatgrass and other invasive species, and rehabilitate areas to provide additional habitat for Greater Sage-Grouse where possible.</p>	<p>Give priority for implementing specific Greater Sage-Grouse habitat restoration projects in annual grasslands first to sites which are adjacent to or surrounded by core areas. Annual grasslands are second priority for restoration when the sites not adjacent to core areas, but within 2 miles of core areas. The third priority for annual grasslands habitat restoration projects are sites beyond 2 miles of core areas. The intent is to focus restoration outward from existing, intact habitat.</p>
<p>Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP.</p> <p>All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros.</p> <p>Recent LUPs may include management actions that purposely restore or enhance Greater Sage-Grouse habitat.</p>	<p>Make re-establishment of sagebrush cover and desirable understory plants (relative to ecological site potential) the highest priority for restoration efforts.</p>	<p>Composition, function, and structure of native vegetation communities will meet ESD (or the Forest Service equivalent) and will provide for healthy, resilient, and recovering Greater Sage-Grouse habitat components.</p>	<p>Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000, Hagen et al. 2007), where such can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.</p>	<p>No similar action.</p>	<p>Make reestablishment of sagebrush cover and desirable understory plants the highest priority for restoration efforts</p>
<p>No similar action.</p>	<p>In fire prone areas where sagebrush seed is required for Greater Sage-Grouse habitat restoration, consider establishing seed harvest areas that are managed for seed production and are a priority for protection from outside disturbances.</p>	<p>Same as Alternative B.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>Same as Alternative B.</p>
<p>No similar action.</p>	<p>No similar action.</p>	<p>Avoid sagebrush reduction/treatments to increase livestock or big game forage in occupied habitat and include plans to restore high-quality habitat in areas with invasive species.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>No similar action.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Recently completed LUPs promote use of native species when conducting restoration activities.	Prioritize native seed allocation for use in Greater Sage-Grouse habitat in years when preferred native seed is in short supply. This may require reallocation of native seed from Emergency Stabilization and Rehabilitation (BLM) and/or Burn Area Emergency Rehabilitation (Forest Service) projects outside of PHMA to those inside it. Use of native plant seeds for Emergency Stabilization and Rehabilitation or Burn Area Emergency Rehabilitation seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet Greater Sage-Grouse habitat conservation objectives (Pyke 2011). Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts.	Same as Alternative B.	Prioritize the use of native seeds for restoration in PHMA based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used to meet Greater Sage-Grouse habitat objectives to trend toward restoring the fire regime. Re-establishment of appropriate sagebrush species/ subspecies and important understory plants, relative to site potential, shall be the principle objective for rehabilitation efforts.	Allow use of fire-retardant vegetation that will buffer areas of high quality Greater Sage-Grouse habitat from catastrophic fire.	Where probability of success or native seed availability is low or where there is a specific identified purpose that cannot be met with natives, (desirable non-native seeds may be used as long as they meet Greater Sage-Grouse habitat conservation objectives).
All LUPs, which are written in accordance with applicable program direction, include management actions that allow the administrating agency to make adjustments to livestock grazing, wild horse and burro management, and travel management on a case-by case basis following restoration activities.	Design post Emergency Stabilization and Rehabilitation/ Burn Area Emergency Rehabilitation management to ensure long term persistence of seeded or pre-burn native plants. This may require temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain the desired condition of Emergency Stabilization and Rehabilitation projects to benefit Greater Sage-Grouse (Eiswerth and Shonkwiler 2006).	Same as Alternative B.	Same as Alternative B. Monitor and control invasive vegetation post-wildfire for at least 3 years.	Immediate, proactive means to reduce or eliminate the spread of invasive species, particularly cheatgrass, after a wildfire, is a high priority.	Same as Alternative B.
No similar action.	Consider potential changes in climate (Miller et al. 2011) when proposing post-fire seedings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed. (Kramer and Havens 2009).	Same as Alternative B.	No similar action.	No similar action.	Restore native plants and create landscape patterns that most benefit Greater Sage-Grouse, considering potential changes in climate.
No similar action.	No similar action.	Establish and strengthen networks with seed growers to assure availability of native seed for Emergency Stabilization and Rehabilitation projects.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	Post fire recovery must include establishing adequately sized exclosures (free of livestock grazing) that can be used to assess recovery.	No similar action.	No similar action.	No similar action.
<u>Integrated Invasive Species Management</u> Implement noxious weed and invasive species control using integrated weed management actions per national guidance and local weed management plans in collaboration with state and federal agencies, affected counties, and adjoining private lands owners.	<u>Integrated Invasive Species Management</u> Integrated Vegetation Management would be used to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2 and Forest Service Manual 2080.	<u>Integrated Invasive Species Management</u> Same as Alternative B.	<u>Integrated Invasive Species Management</u> Same as Alternative B.	<u>Integrated Invasive Species Management</u> No similar action.	<u>Integrated Invasive Species Management</u> Same as Alternative B.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
In most LUPs, either no priorities are established or prioritization is given to projects that benefit multiple resources (e.g., livestock, wildlife, wild horses and burros, special status species).	No similar action.	Develop and implement methods for prioritizing and restoring sagebrush steppe invaded by nonnative plants.	Same as Alternative C.	Aggressively respond to new infestations to keeping invasive species from spreading. Every effort should be made to identify and treat new infestations before they become larger problems. Additionally containment of known infestations in or near sagebrush habitats should be a high priority for all land management agencies.	No similar action.
No similar action.	No similar action.	In Greater Sage-Grouse habitat, ensure that soil cover and native herbaceous plants are at their ESD potential (or comparable Forest Service methods) to help protect against invasive plants.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	No similar action.	No similar action.	No similar action.	Field offices/district offices may implement treatments within core areas where outbreaks of grasshopper or Mormon cricket populations are expected to rise above economic levels. Treatments must be conducted only following reduced agent-area treatments protocols. The Forest Service will work collaboratively with partners at the federal, state, and local levels to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation. Field offices/district offices are directed to utilize Wyoming Grasshopper and Mormon Cricket Control website as a resource for updated information when conducting analysis of grasshopper and Mormon cricket control in Greater Sage-Grouse habitats.
Wild Horses and Burros					
Manage wild horse and burro population levels within established AMLs to ensure a balance among wild horses, wildlife, livestock, and other resources.	Manage wild horse and burro population levels within established AMLs.	<u>Alt C1:</u> Same as Alternative B.	<u>Alt C2:</u> Associated with the reduction in livestock grazing, reduce wild horse AMLs by 25 percent for management areas that overlap mapped occupied Greater Sage-Grouse habitat to reduce grazing pressure on vegetation.	Same as Alternative B.	Same as Alternative A.
Prioritize wild horse/burro gathers based on monitoring data.	Prioritize wild horse/burro gathers in PHMA, unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health impacts.	Same as Alternative B.	Same as Alternative B.	Same as Alternative A.	There are no Forest Service wild horse ranges in the Wyoming-Blacks Fork or Wyoming-Uinta population areas. As such, this section is not applicable to Alternative E2. This section is not applicable to Alternative E2.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Prepare or amend herd management plans on an as needed basis	Within PHMA, develop or amend herd management plans to incorporate Greater Sage-Grouse habitat objectives and management considerations for all BLM HMAs.	Same as Alternative B.	No similar action.	Same as Alternative A.	This section is not applicable to Alternative E2.
Periodically evaluate and make adjustments to AMLs based on monitoring data.	For all HMAs within PHMA, prioritize the evaluation of all AMLs based on indicators that address structure/condition/ composition of vegetation and measurements specific to achieving Greater Sage-Grouse habitat objectives.	No similar action.	Same as Alternative B.	Same as Alternative A.	This section is not applicable to Alternative E2.
No similar action.	Coordinate with other resources (e.g., range, wildlife, and riparian) to conduct land health assessments to determine existing structure/condition/ composition of vegetation within all BLM HMAs.	Same as Alternative B.	Same as Alternative B.	No similar action.	This section is not applicable to Alternative E2.
No similar action.	When conducting NEPA analysis for wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PHMA, address the direct and indirect effect on Greater Sage-Grouse populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PHMA.	Same as Alternative B.	When considering wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PHMA, use the criteria identified for domestic livestock in PHMA.	No similar action.	This section is not applicable to Alternative E2.
Wildland Fire Management					
No similar action.	No similar action.	No similar action.	BLM and Forest Service planning units (Districts and Forests), in collaboration with the USFWS and relevant state agencies, would complete and maintain Greater Sage-Grouse Landscape Wildfire & Invasive Species Habitat Assessments to prioritize at risk habitats, and identify fuels management, preparedness, suppression and restoration priorities necessary to maintain sagebrush habitat to support interconnecting Greater Sage-Grouse populations. These assessments and subsequent assessment updates would also be a collaborative effort with an interdisciplinary team to take into account other Greater Sage-Grouse priorities identified in this plan. Appendix M, Draft Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, of the Draft LUPA/EIS describes a minimal framework example and suggested approach for this assessment. Implementation actions will be tiered to the Local (District/Forest) Greater Sage-Grouse Landscape Wildfire & Invasive Species Assessment, using best available science	Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to Greater Sage-Grouse in Utah. Create and implement a statewide fire agency agreement(s) that will eliminate jurisdictional boundaries and allow for immediate response to natural fire in Greater Sage-Grouse habitat within SGMAs. These should include fire suppression actions recommended locally, including, but not limited to: <ul style="list-style-type: none"> • first strike agreements that allow aggressive fire control on an all-land jurisdictional basis; • allocation of resources to maintain enhanced abilities of all fire agencies to combat ignitions in Greater Sage-Grouse habitat within SGMAs. • allocation of resources to immediately commence restoration of habitats impacted by wildfire by all responsible agencies; and • removal or establishment of waiver provisions for procedural barriers that may impact the ability of responsible agencies to respond to wildfire with effective reclamation or rehabilitation, 	Work collaboratively with partners at the State and local level to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>related to the conservation of Greater Sage-Grouse.</p> <p>In collaboration with USFWS and relevant state agencies, BLM/Forest Service planning units (Districts/Forests) would identify annual treatment needs for wildfire and invasive species management as identified in local unit level Landscape Wildfire and Invasive Species Assessments. Annual treatment needs would be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of Greater Sage-Grouse.</p> <p>Annually complete a review of landscape assessment implementation efforts with appropriate USFWS and state agency personnel.</p>	such as federal raptor stipulations, cultural assessments, and the like.	(see above)
<p>Fuels Management The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.</p>	<p>Fuels Management Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.</p>	<p>Fuels Management Same as Alternative B.</p>	<p>Fuels Management Follow the applicable and technically feasible RDFs for fuels management in Appendix H of the Draft LUPA/EIS.</p>	<p>Fuels Management No similar action.</p>	<p>Fuels Management Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.</p>
<p>Design projects to minimize the size of wildfire and prevent the further loss of sagebrush.</p> <p>Existing LUPs typically do not include specific management decisions regarding implementation of fuels treatments in sagebrush habitat. In general, both prescribed fire and non-fire fuels treatments are allowed.</p> <p>Rest treated areas from grazing for two full growing seasons (per BLM policy).</p>	<p>In PHMA, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems.</p> <ul style="list-style-type: none"> Do not reduce sagebrush canopy cover to less than 15 percent unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of PHMA and conserve habitat quality for the species. Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in the environmental assessment process. Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present in PHMA. Allow no treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and will maintain winter range habitat quality. Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000; Hagen et al. 2007; Beck et al. 2009). 	<p>Design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems.</p> <ul style="list-style-type: none"> Do not reduce sagebrush canopy cover to less than 15 percent unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of mapped occupied Greater Sage-Grouse habitat and conserve habitat quality for the species. Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in the assessment process. Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present. Allow no fuels treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and will maintain winter range habitat quality. Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000; 	<p>Fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, and protect Greater Sage-Grouse habitat.</p> <ul style="list-style-type: none"> Use green strips and/or fuel breaks, where appropriate, to protect seeding efforts from subsequent fire events. In collaboration with USFWS and relevant state agencies, BLM/Forest Service planning units (Districts/Forests) with large blocks of Greater Sage-Grouse habitat will develop, using the assessment process described in Appendix M of the Draft LUPA/EIS, a fuels management strategy which considers an up-to-date fuels profile, LUP direction, current and potential habitat fragmentation, sagebrush and Greater Sage-Grouse ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity, where appropriate. When developing this strategy, planning units will consider the risk of increased habitat fragmentation from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken. 	<p>Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to Greater Sage-Grouse in Utah. While unscheduled fires may occur, response to fire can have a large impact on the severity of the effects, especially over time as rehabilitation or restoration continues. Implement the following:</p> <ul style="list-style-type: none"> Allow use of fire-retardant vegetation that will buffer areas of high quality Greater Sage-Grouse habitat from catastrophic fire. Use prescriptive fire with caution in sagebrush habitat. The WAFWA has prepared information that explains the risks from using prescribed fire in xeric sagebrush habitats. Prescribed fire should only be used at higher elevations and in a manner designed prescriptively to benefit Greater Sage-Grouse. Conduct effective research into controlling fire size and protecting remaining Greater Sage-Grouse areas that are adjacent to high-risk cheatgrass areas. 	<p>In core areas, design and implement vegetation and fuels treatments with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems. For vegetation and fuels treatments, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and BLM IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management), or applicable Forest Service counterpart. These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	<p>However, if as a last resort and after all other treatment opportunities have been explored and site specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory.</p> <ul style="list-style-type: none"> • Monitor and control invasive vegetation post-treatment. • Rest treated areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise. • Require use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet Greater Sage-Grouse habitat objectives (Pyke 2011). • Design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006). • Design fuels management projects in PHMA to strategically and effectively reduce wildfire threats in the greatest area. This may require fuels treatments implemented in a more linear versus block design. 	<p>Hagen et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory (Brown 1982).</p> <ul style="list-style-type: none"> • Livestock grazing should be excluded from burned areas until woody and herbaceous plants achieve Greater Sage-Grouse habitat objectives. • Where burned Greater Sage-Grouse habitat cannot be fenced from other unburned habitat, the entire area (e.g., allotment/pasture) should be closed to grazing until recovered. • Design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants, including sagebrush. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006). • Mowing of grass will be used in any fuelbreak fuels reduction project (roadsides or other areas). 	<ul style="list-style-type: none"> • Avoid constructing fuel breaks through large areas of intact Greater Sage-Grouse habitat. • When possible, locate fuel breaks along existing roads, ROWs, and other suitable topographic or natural features (e.g., areas devoid of vegetation, rock outcrops). • Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as grazing, prescribed fire, chemical, biological and mechanical treatments are acceptable. • Allow the use of prescribed fire within PHMA if other treatment opportunities have been explored, where site specific variables allow (will not likely result in long-term loss of sagebrush), and in areas where risk of conversion to exotic annual dominance is low and/or could be mitigated by chemical or other means. Prescribed fire in areas of low elevation Wyoming sagebrush would be avoided. • Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low, desirable non-native seeds may be used to meet Greater Sage-Grouse habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and desirable non-native species, as appropriate, to provide for fire breaks. • Upon project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components. Control invasive vegetation post-treatment. • Apply seasonal restrictions, as needed, for implementing fuels management treatments according to the type of seasonal habitats present. • Prior to conducting any fuels/habitat treatments in known winter range, work closely with the State of Utah to design the treatment to either strategically reduce wildfire risk around or in the winter range or to specifically maintain, increase, or enhance areas of vegetation to function as important winter range (for habitat associated with years of average snowfall and habitat for years with abnormally high snowfall amounts). 	<ul style="list-style-type: none"> • Focus research efforts on effective reclamation and restoration of landscapes altered by wildfire. • Within winter habitat, manage to maintain maximum amount of sagebrush, especially tall sagebrush, which would be available to Greater Sage-Grouse above snow during a severe winter. Tall sagebrush is capable of standing above heavier than normal snowfall. • Sagebrush treatment projects within winter habitat need pre-approval by the appropriate regulatory agency in coordination with the UDWR. Sagebrush treatment projects within winter habitat should maintain 80 percent of the available habitat as tall sagebrush; 20 percent of the habitat can be managed for younger age classes, if appropriate. • Coordinate the needs and efforts related to Greater Sage-Grouse with the State of Utah committee that was formed to develop a collaborative process to protect the health and welfare by reducing the size and frequency of catastrophic fires. 	<p>In addition to Alternative A, for fuels management, consider multiple tools for fuels reduction and analyze in NEPA compliance documentation before electing to implement prescribed fire in core areas. Avoid the use of prescribed fire in areas of Wyoming big sagebrush, other xeric sagebrush species, or where cheatgrass or other fire-invasive species occur and/or within areas of less than 12 inches of annual precipitation.</p> <p>Defer grazing on treated areas for two full growing seasons unless vegetation objectives or vegetation recovery indicates a shorter or longer rest period is necessary based on vegetation monitoring results.</p> <p>In addition to Alternative A, restore and recover burned areas that are within core areas.</p> <p>The Forest Service will bring in Burn Area Emergency Rehabilitation teams who will work collaboratively with partners at the federal, state, and local level to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation. Conduct Density Disturbance Calculation Tool reviews in coordination with the WGFD - Habitat Protection Program located in Cheyenne at the WGFD headquarters. Areas within core habitat are high priority for restoration of Greater Sage-Grouse habitat beyond immediate response.</p> <p>Within core areas, design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	During fuels management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond et al. 2009), and implement grazing management that will accomplish this objective (Davies et al. 2011; Launchbaugh et al. 2007). Consult with ecologists to minimize impacts on native perennial grasses.	No similar action.	During fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.	Consider the use of prescriptive grazing to specifically reduce fire size and intensity on all types of landownership, where appropriate. This could be particularly effective in areas where cheatgrass is encroaching on sagebrush habitat. This will require cooperation and coordination among different land managers and owners and livestock owners. In some cases feed supplementation and water hauling may need to be utilized to obtain the desired results.	No similar action.
<p><u>Preparedness</u> The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.</p>	<p><u>Preparedness</u> Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.</p>	<p><u>Preparedness</u> Same as Alternative B.</p>	<p><u>Preparedness</u> Follow the applicable and technically feasible RDFs for fire and fuels management in Appendix H of the Draft LUPA/EIS.</p> <p>Implement a coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions and predicted weather patterns) for Greater Sage-Grouse habitat.</p> <p>Develop wildfire prevention plans that explain the resource value of Greater Sage-Grouse habitat and include fire prevention messages and actions to reduce human-caused ignitions.</p>	<p><u>Preparedness</u> Create and implement a statewide fire agency agreement(s) that will eliminate jurisdictional boundaries and allow for immediate response to natural fire in Greater Sage-Grouse habitat within SGMAs. These should include fire suppression actions recommended locally, including, but not limited to:</p> <ul style="list-style-type: none"> • first strike agreements that allow aggressive fire control on an all-land jurisdictional basis; • allocation of resources to maintain enhanced abilities of all fire agencies to combat ignitions in Greater Sage-Grouse habitat within SGMAs. • allocation of resources to immediately commence restoration of habitats impacted by wildfire by all responsible agencies; and • removal or establishment of waiver provisions for procedural barriers that may impact the ability of responsible agencies to respond to wildfire with effective reclamation or rehabilitation, such as federal raptor stipulations, cultural assessments, and the like. 	<p><u>Preparedness</u> Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.</p>
<p><u>Fire Management – (Suppression)</u> The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.</p>	<p><u>Fire Management – (Suppression)</u> Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.</p>	<p><u>Fire Management – (Suppression)</u> Same as Alternative B.</p>	<p><u>Fire Management – (Suppression)</u> Follow the applicable and technically feasible RDFs for fuels management in Appendix H of the Draft LUPA/EIS.</p>	<p><u>Fire Management – (Suppression)</u> No similar action.</p>	<p><u>Fire Management – (Suppression)</u> Where applicable and technically feasible, apply BMPs within core areas for Vegetation Management and Fire and Fuels Management.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
<p>Under current management there is no designated PHMA or GHMA.</p> <p>Prioritize fire suppression to protect human life and high value resources.</p>	<p>In PHMA, prioritize suppression, immediately after life and property, to conserve the habitat.</p> <p>In GHMA, prioritize suppression where wildfires threaten PHMA.</p>	<p>Same as Alternative B for PHMA. There is no GHMA in this alternative.</p>	<p>Fire fighter and public safety are the highest priority. Greater Sage-Grouse habitat will be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for Greater Sage-Grouse.</p> <p>Within Greater Sage-Grouse habitat, PHMA are the highest priority for conservation and protection during fire operations and fuels management decision making. The PHMA will be viewed as more valuable than GHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in GHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildfire and Invasive Species Habitat Assessments described in Appendix M of the Draft LUPA/EIS.</p> <p>Limit placement of fire infrastructure (e.g., fire camps, helipads, etc.) in areas of solid sagebrush.</p> <p>In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.</p>	<p>Fire by natural ignition should be addressed as a serious threat.</p> <p>Greater Sage-Grouse habitat outside of SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.</p>	<p>In core areas, prioritize suppression, immediately after firefighter and public safety to conserve the habitat.</p> <p>Non-core areas would be assigned a priority commensurate with its importance in the local fire plan.</p>	
<p>No similar action.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>Within acceptable risk levels use a full range of fire management strategies and tactics, including the management of wildfires to achieve resource objectives, across the range of Greater Sage-Grouse habitat consistent with LUP direction.</p> <p>Conduct burn-out/backfiring operations in a manner that minimizes the loss of sagebrush when possible (e.g., rather than using established roads when creating anchor lines, consider using bulldozers to create anchor lines closer to the fire that decrease the size of burnout operations and loss of sagebrush).</p>	<p>No similar action.</p>	<p>No similar action.</p>	
Livestock Grazing/Range Management						
<p>Continue to make Greater Sage-Grouse habitat available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands, though the number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals,</p>	<p>Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands. Permit and annual adjustments to those AUMs would be made consistent with regulation and the direction identified below.</p>	<p><u>Alt C1:</u> Make mapped occupied Greater Sage-Grouse habitat unavailable to livestock grazing for the life of the plan. This would result in a</p>	<p><u>Alt C2:</u> Within allotments that overlap mapped occupied Greater Sage-Grouse habitat, reduce permitted AUMs by 131,808 permitted AUMs on</p>	<p>Continue to make Greater Sage-Grouse PHMA and GHMA available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands, though the number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals,</p>	<p>Continue to make Greater Sage-Grouse habitat within and outside of SGMAs available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands. Existing grazing operations would utilize recognized rangeland BMPs to increase the necessary vegetation, and</p>	<p>For those portions of the planning area in Wyoming, continue to make core and non-core areas available for livestock grazing. Active AUMs for livestock grazing would be included with the 265,373 AUMs on National Forest System lands noted for Alternative A, though the number of AUMs (head-months) on a permit may be adjusted</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>allotment management plan development, or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the permittees livestock operation and/or an evaluation of a variety of forage and resource site-specific conditions.</p>	<p>(see above)</p>	<p>reduction of up to 329,521 permitted AUMs on BLM lands and 265,373 permitted AUMs on National Forest System lands (if all allotments with any overlap with Greater Sage-Grouse habitat were closed in their entirety; closing just the portions of allotments within Greater Sage-Grouse habitats, if possible, could reduce this number).</p>	<p>BLM lands and 106,149 permitted AUMs on National Forest System lands. Reductions by allotment will occur by Field Office based on a review of the site-specific information (e.g., range condition, utilization levels, type and condition of Greater Sage-Grouse habitat). Based on the Field Office review, the reductions in AUMs would occur in allotments that overlap mapped occupied Greater Sage-Grouse habitat, whether partial reductions in active use or closing specific allotments. The reductions would be implemented during renewal of term grazing permits.</p> <p>The resulting AUMs available for permitting for livestock grazing would be 197,713 on BLM lands and 159,224 on National Forest System lands.</p>	<p>allotment management plan development, or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the site specific resource and Greater Sage-Grouse habitat conditions as indicated by monitoring, or permittees' livestock operation.</p>	<p>thereby increase the potential for nesting success and population recruitment</p> <p>Should site-specific concerns be raised about the effect of grazing upon Greater Sage-Grouse habitat, and such effects are documented over a sufficiently long time-frame, corrective management actions should be addressed through the application of BMPs, including consideration of those identified by the Department of Agriculture and Food's Grazing Improvement Program.</p> <p>during site-specific evaluations conducted during term permit renewals, allotment management plan development (or the Forest Service equivalent), or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the permittees livestock operation and/or an evaluation of a variety of forage and resource site-specific conditions.</p> <p>In determining appropriate management actions that will be considered, refer to the document, "Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat" (Cagney et al. 2010) for guidance. This peer reviewed document is the result of a collaborative effort in Wyoming to ensure proper livestock grazing practices with Greater Sage-Grouse habitats. It is the culmination of efforts to gather and integrate current knowledge and practices regarding livestock grazing in respect to important Greater Sage-Grouse habitats within Wyoming.</p> <p>Wyoming Executive Order 2011-05 considers grazing activities compatible with Greater Sage-Grouse conservation. The State of Wyoming will collaborate with appropriate federal agencies in defining a framework for evaluating situations to determine if a causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives where conservation objectives are not being achieved on federal lands. The State of Wyoming will also collaborate with appropriate federal agencies on appropriate site based actions to achieve Greater Sage-Grouse conservation objectives within the framework. Monitoring data will at a minimum reflect 5 years of information, include rangeland health assessments and require conclusion or action to be based on 3 out of 5 years of data (Executive Order 2013-03).</p>

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	Within PHMA, incorporate Greater Sage-Grouse habitat objectives and management considerations into all BLM and Forest Service grazing allotments through allotment management plans or permit renewals and/or Forest Service Annual Operating Instructions.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	Same as Alternative B.	No similar action.	Ensure site-specific, measurable, conservation and mitigation objectives are included in project planning within core Greater Sage-Grouse habitats.
Consider adjustments to allotment boundaries that provide for single unit or landscape level grazing approaches to habitat improvement on a case-by-case basis.	In PHMA, work collaboratively on integrated ranch planning within Greater Sage-Grouse habitat so operations with deeded/BLM and/or Forest Service allotments can be planned as single units.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for single unit or landscape level approaches to habitat improvement. In PHMA with unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use, manage the allotment as a single unit that will have the same management as the public lands.	No similar action.	Evaluate opportunities to coordinate management plans and strategies on multiple allotments where coordination under a single management plan/strategy would result in enhancing Greater Sage-Grouse populations or its habitat as determined in coordination with the State of Wyoming and the State wildlife agency.
<p>Manage rangeland resources to maintain healthy, sustainable, rangeland ecosystems and to restore degraded rangelands in accordance with Utah's Standards for Rangeland Health or standards or guidelines established in individual Forest Service LRMPs.</p> <p>Monitor vegetation trends (including composition, cover, and age class), noxious weeds, riparian Proper Functioning Condition, etc. as part of the grazing management program.</p> <p>BLM plans do not contain grazing management decisions specific to conserving Greater Sage-Grouse habitat.</p> <p>Forest Service LUPs contain specific management actions for permitted livestock grazing that take in to consideration established habitat management objectives.</p>	Prioritize completion of land health assessments (Forest Service may use other analyses) and processing grazing permits within PHMA. Focus this process on allotments that have the best opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse. Utilize BLM ESDs (or comparable Forest Service methods) to conduct land health assessments to determine if standards of range-land health are being met.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	<p>Evaluate Utah's Rangeland Health Standards (Forest Service may use other analyses) and process grazing permits within PHMA. Focus management activities on allotments found not to be achieving Utah's Rangeland Health Standards and that have the best opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse.</p> <p>When completing land health assessments, incorporate appropriate indicators and protocols to assess the condition of Greater Sage-Grouse habitat considering the objectives (e.g., percent cover and height of sagebrush, grasses, forbs, other shrubs, etc.) (Doherty et al. 2011).</p> <p>Use ESDs or Forest Service equivalent and/or other appropriate information, including Greater Sage-Grouse habitat objectives, as the basis to determine the desired plant community or other community within proper functioning ecological processes for conducting land health assessments to evaluate the achievement or non-achievement of rangeland health standards.</p>	No similar action.	<p>In cooperation, consultation, and coordination with permittees / lessees, cooperators, and stakeholders, including interested parties, develop and implement appropriate livestock grazing management actions to address the Wyoming Standards for Healthy Rangelands, improve forage for livestock, and enhance rangeland health. Consider the application of BMPs for the protection of Greater Sage-Grouse as terms and conditions of grazing permit/lease renewals. In areas where Wyoming Standards for Healthy Rangelands are not being met or are not making progress towards meeting standards, because of current livestock grazing management, modify existing permits or condition the issuance of new permits on the implementation of new grazing strategies to meet standards in accordance with grazing regulations. Apply appropriate BMPs as terms and conditions of the permit.</p> <p>Within core areas, incorporate Greater Sage-Grouse habitat objectives and management considerations into all Forest Service grazing allotments containing Greater Sage-Grouse habitat through allotment management plans or permit renewals. Consider the application of BMPs for the protection of Greater Sage-Grouse as terms and conditions of grazing permit/lease renewals. The Forest Service will collaborate with the State of Wyoming and appropriate federal agencies to develop appropriate conservation objectives. The Forest Service will collaborate with appropriate federal and State agencies, as directed under Governor Executive Order 2013-3.</p>

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	In PHMA, conduct land health assessments that include (at a minimum) indicators and measurements of structure/condition/composition of vegetation specific to achieving Greater Sage-Grouse habitat objectives. If local/state seasonal habitat objectives are not available, use Greater Sage-Grouse habitat recommendations from Connelly et al. 2000 and Hagen et al. 2007.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	Within PHMA where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ESD (or comparable Forest Service methods), maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas. Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.	No similar action.	Implement direction from Executive Order 2013-03, as described in MA GRA-4.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	Develop specific objectives to conserve, enhance or restore PHMA based on ESDs (or comparable Forest Service methods) and assessments (including within wetlands and riparian areas). If an effective grazing system that meets Greater Sage-Grouse habitat requirements is not already in place, analyze at least one alternative that conserves, restores or enhances Greater Sage-Grouse habitat in the NEPA document prepared for the permit renewal.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Develop specific objectives to conserve, enhance or restore occupied Greater Sage-Grouse habitat based on Greater Sage-Grouse habitat objectives (including within wetlands and riparian areas).	Same as Alternative B.	<p>Consider Greater Sage-Grouse seasonal habitat requirements when managing sagebrush rangelands. Considerations to be taken into account include the following:</p> <p><u>Leks</u></p> <ul style="list-style-type: none"> • Be cautious of man-made structures on lek sites. • Reduce shrub encroachment and maintain the “open” area that characterizes a typical lek site. • Identify the location of leks through discussions with UDWR biologists. <p><u>Nesting/Early Brood-Rearing</u></p> <ul style="list-style-type: none"> • Maintain and enhance the existing sagebrush/plant communities. • Manage these areas to increase herbaceous cover by sustaining a mosaic of sagebrush and open areas. • Avoid repeated, annual heavy use of these areas by implementing periodic rest and/or deferment periods during the critical growing season. <p><u>Late Brood-Rearing</u></p> <ul style="list-style-type: none"> • Avoid continuous (season-long) grazing of wet meadows and riparian habitats, especially under drought conditions when temperatures are high. <p><u>Winter</u></p> <ul style="list-style-type: none"> • Carefully manage levels of browsing or activities in sagebrush areas that constitute Greater Sage-Grouse habitat that would reduce Greater Sage-Grouse access to these areas for food and cover. • The potential impact of livestock grazing on winter habitat can be positive or negative depending on scale and location of use 	Implement direction from Executive Order 2013-03, as described in MA GRA-4.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
Consider changes to season of use on a case-by-case basis when resource conditions indicate that a change is needed.	No similar action.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Within Greater Sage-Grouse habitat, change season of use so that no grazing occurs during the growing season. Based on sub-regional climate variations, growing season will be determined on a permit-by-permit basis.	No similar action.	No similar action.	No similar action.
Consider range improvements and/or adjust permit terms and conditions on a case-by-case basis as necessary to meet land health standards or habitat objectives identified in individual LUPs. Changes may include, but are not limited to: 1. Rotation systems (e.g., rest rotation, deferred rotation) 2. Season or timing of use 3. Distribution of livestock use 4. Type of livestock 5. Class of livestock 6. Duration of grazing use and rest periods	In PHMA, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve Greater Sage-Grouse seasonal habitat objectives. Implement management actions (grazing decisions, Annual Operating Instructions [Forest Service only], allotment management plan development, or other agreements) to modify grazing management to meet seasonal Greater Sage-Grouse habitat requirements. Consider singly, or in combination, changes in: 1. Season or timing of use 2. Numbers of livestock (includes temporary non-use or livestock removal) 3. Distribution of livestock use; 4. Intensity of use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats)	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> In mapped occupied Greater Sage-Grouse habitat, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve Greater Sage-Grouse habitat objectives. Implement management actions (grazing decisions, allotment management plan/conservation plan development, or other plans or agreements) to modify grazing management to meet seasonal Greater Sage-Grouse habitat requirements. Consider singly, or in combination, changes in: 1. Season, timing, and/or frequency of livestock use 2. Numbers/ AUMs of livestock (includes temporary non-	In PHMA, manage for vegetation composition and structure consistent with the objectives for Greater Sage-Grouse seasonal habitats, as described above. Develop and implement the terms and conditions needed to meet these objectives through the permit renewal process or other appropriate implementation action. In GHMA, consider Greater Sage-Grouse habitat objectives when making livestock grazing decisions. As necessary to meet land health standards and objectives for PHMA, implement management actions (e.g., allotment management plans, term permit renewals, grazing decisions, other agreements) to modify grazing management to meet seasonal Greater Sage-Grouse habitat objectives. Consider singly, or in combination, changes in the following: 1. Rotation systems (e.g., rest rotation, deferred rotation) 2. Season or timing of use 3. Distribution of livestock use; 4. Intensity of use (e.g., objectives for utilization or stubble height) 5. Type of livestock (e.g., cattle, sheep, horses, and goats), unless such a change conflicts with other species management 6. Class of livestock (e.g., yearlings vs. cow-calf pairs) 7. Duration of grazing use and rest periods	Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Carefully manage the “time,” “timing,” and “intensity” of grazing in sagebrush/ Greater Sage-Grouse habitats to provide for the seasonal needs of Greater Sage-Grouse. Specific prescriptions can be applied through more intensive management to address special needs or weak links in the biological year of Greater Sage-Grouse production. Where time controlled grazing is not an option, moderate use of occupied Greater Sage-Grouse habitats will usually leave mosaic or patchy areas where some plants are ungrazed. Managing for moderate utilization levels (40 percent) after the period of rapid vegetation growth may provide enough residual cover for Greater Sage-Grouse nesting and early brood-rearing the subsequent spring. Evaluation of Greater Sage-Grouse nesting and escape cover must be determined on a site-specific basis. Livestock operations with a small amount of nesting habitat should consider special management activities to protect nesting and early brood-rearing areas. Lighter use of areas may be warranted. In areas with large tracts of contiguous habitat, livestock producers should manage the vegetation on a rotational grazing basis, which may leave 10 - 20 percent of the area ungrazed periodically in combination with deferring or	Implement direction from Executive Order 2013-03, as described in MA GRA-4 Within core areas, manage for vegetation composition and structure that reflects ESD or other methods that reference site potential or comparable standard to achieve Greater Sage-Grouse and other resource objectives. Manage for vegetation composition and structure consistent with ecological site potential to achieve Greater Sage-Grouse seasonal habitat objectives. In determining appropriate management actions that will be considered, refer to the document, “Grazing Influence, Management, and Objective Development in Wyoming’s Greater Sage-Grouse Habitat” (Cagney et al. 2010) for guidance. This peer reviewed document is the result of a collaborative effort in Wyoming to ensure proper livestock grazing practices with Greater Sage-Grouse habitats. It is the culmination of efforts to gather and integrate current knowledge and practices regarding livestock grazing in respect to important Greater Sage-Grouse habitats within Wyoming. Use the BLM policy in IM 2009-007 and BLM Handbook H-4180-1 and the equivalent Annual Operating Instructions for the Forest Service to evaluate land health standards achievement in Greater Sage-Grouse core habitats and, where not achieved, to determine if existing grazing management practices or levels of grazing use on public lands are causal factors in failing to achieve

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	use or livestock removal) 3. Distribution of livestock use 4. Intensity of livestock use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats).	(see above)	altering timing of grazing in other areas. In areas where Greater Sage-Grouse nesting is common, managing for moderate use of plant growth across the landscape would be appropriate. Well-managed ranches with comprehensive grazing strategies that include short-term or duration grazing, higher levels of use may be acceptable, provided these higher levels of use include rested vegetation in nearby areas.
Livestock grazing program/policy direction allows the BLM/Forest Service to make changes to livestock grazing in response to drought conditions. Changes may include adjusting livestock numbers based on available forage or shortening the season of use.	During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover. Since there is a lag in vegetation recovery following drought, ensure that post-drought management allows for vegetation recovery that meets Greater Sage-Grouse needs in PHMA.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> During drought periods, prioritize evaluating effects of drought in Greater Sage-Grouse habitat areas relative to their biological needs, as well as drought effects on ungrazed reference areas. During severe or worse drought conditions, for allotments in Greater Sage-Grouse habitat that are not meeting or making progress toward meeting standard, prohibit livestock grazing. Since there is a lag in vegetation recovery following drought (Thurrow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets Greater Sage-Grouse needs in Greater Sage-Grouse habitat areas based on Greater Sage-Grouse habitat objectives.	During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover. Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect Greater Sage-Grouse habitat, in accordance with the Resource Management During Drought Handbook (BLM Handbook 1730-1). Implement post-drought management to allow for vegetation recovery that meets Greater Sage-Grouse needs in PHMA.	No similar action. In addition to Alternative A, if periods of drought occur, where appropriate, the Authorized Officer will evaluate the season of use and stocking rate and adjust through coordination with grazing permittee/lessee and annual billings processes.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition.	Manage riparian areas and wet meadows for proper functioning condition (Forest Service or other similar methodology) within PHMA.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	Same as Alternative B.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Same as Alternative A.
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition (or Forest Service equivalent method).	Within PHMA and GHMA, manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase amount of edge and cover within that edge to minimize elevated mortality during the late brood rearing period.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Within Greater Sage-Grouse habitats, manage wet meadows to maintain a component of perennial forbs with diverse species richness and productivity relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase the amount of edge and cover within that edge to minimize elevated mortality during the late brood-rearing period.	Same as Alternative B.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMA, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Same as Alternative A.
No similar action.	Where riparian areas and wet meadows meet proper functioning condition (Forest Service – or meet standards using other similar methodology), strive to attain reference state vegetation relative to the ESD.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	No similar action.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Consider the use of range improvement projects to maintain or enhance wet meadows.
Manage rangeland resources to maintain healthy, sustainable, rangeland ecosystems and to restore degraded rangelands in accordance with Utah’s Standards for Rangeland Health or standards or guidelines established in individual Forest Service LRMPs. Rangeland health standards require that riparian areas be managed for proper functioning condition.	Within PHMA, reduce hot season grazing on riparian and meadow complexes to promote recovery or maintenance of appropriate vegetation and water quality. Utilize fencing/herding techniques or seasonal use or livestock distribution changes to reduce pressure on riparian or wet meadow vegetation used by Greater Sage-Grouse in the hot season (summer).	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> No similar action.	Within PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by Greater Sage-Grouse in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution).	Continue livestock grazing strategies that have proven effective in maintaining and enhancing Greater Sage-Grouse habitat, unless compelling and credible cause-and-effect evidence indicates a disturbance exists. Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in	Same as Alternative A. If the causal factor of not meeting a standard is due to livestock grazing then follow Executive Order 2013-03.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	(see above)	wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.
Consider authorization of new water developments on a case-by-case basis taking into consideration impacts on other resources and resource values.	Authorize new water development for diversion from spring or seep source only when Greater Sage-Grouse habitat within PHMA would benefit from the development. This includes developing new water sources for livestock as part of an allotment management plan/ conservation plan to improve Greater Sage-Grouse habitat.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Authorize no new water developments for diversion from spring or seep sources within Greater Sage-Grouse habitat.	Limit authorization of new water developments within PHMA to projects that would have a neutral effect or be beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain continuity of predevelopment riparian or wet meadow vegetation and hydrology.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law. Continue to authorize water developments in core areas; evaluate all positives and negatives for both upland and riparian habitat. Plan and authorize range improvement projects on BLM and National Forest System lands in a way that maintains and/or improves Greater Sage-Grouse and its habitat within core areas. Analyze through a range of reasonable alternatives any direct, indirect, and cumulative effects of grazing on Greater Sage-Grouse and its habitats through the NEPA process.
Consider modifications to existing water developments on a case-by-case basis taking into consideration impacts on other resources.	Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within PHMA. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to Greater Sage-Grouse.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Analyze springs, seeps and associated water developments to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within Greater Sage-Grouse habitats. Make modifications where necessary, including dismantling water.	Within PHMA evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and Greater Sage-Grouse habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to Greater Sage-Grouse.	No similar action. Evaluate existing water developments associated with springs and seeps and modify associated pipelines/structures to those developments having an impact on core areas.
Allow treatments that provide benefits for multiple resources. Additional forage will be appropriate to livestock, wild horses and burros (where applicable), and wildlife.	In PHMA, only allow treatments that conserve, enhance or restore Greater Sage-Grouse habitat (this includes treatments that benefit livestock as part of an allotment management plan/ conservation plan to improve Greater Sage-Grouse habitat).	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Ensure that vegetation creates landscape patterns which most benefit Greater Sage-Grouse. Only allow treatments that are demonstrated to benefit Greater Sage-Grouse and retain sagebrush height and cover consistent with Greater Sage-Grouse habitat objectives (this includes treatments that benefit livestock as part of an allotment management plan/	In PHMA, ensure that vegetation and rangeland treatments conserve, enhance or restore Greater Sage-Grouse habitat (this includes treatments that benefit livestock).	No similar action. For vegetation treatments in sagebrush within core areas, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management). These recommended protocols will be used in determining whether proposed treatment constitutes a “disturbance” that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	conservation plan to improve Greater Sage-Grouse habitat). Defer grazing in Greater Sage-Grouse habitat until monitoring indicates treatment and habitat objectives have been met. This may take more than 2 years.	(see above)	Greater Sage-Grouse will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. Work collaboratively with partners at the State and local level to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation.
<p>Most LUPs do not include specific management actions related to seedings.</p> <p>Plans do include generic decisions that allow maintenance of existing range improvements, which includes maintenance of historical seedings.</p> <p>Recently completed LUPs promote use of native species when conducting restoration activities. This would include restoration projects conducted in areas that have perennial grass cover.</p> <p>Older plans do not include a similar management action.</p>	<p>Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PHMA to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these seedings are part of an allotment management plan/conservation plan or if they provide value in conserving or enhancing the rest of the PHMA, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat or as a component of a grazing system during the land health assessments.</p>	<p><u>Alt C1:</u> No similar action.</p>	<p><u>Alt C2:</u> Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to Greater Sage-Grouse habitat to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these seedings provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments.</p>	<p>Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PHMA to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments.</p>	<p>No similar action.</p>
<p>Consider structural range improvements on a case-by-case basis to provide for livestock grazing while maintaining rangeland health.</p>	<p>In PHMA, design any new structural range improvements and location of supplements (salt or protein blocks) to conserve, enhance, or restore Greater Sage-Grouse habitat through an improved grazing management system relative to Greater Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following</p>	<p><u>Alt C1:</u> No similar action.</p>	<p><u>Alt C2:</u> Avoid all new structural range developments and location of supplements (salt or protein blocks) in mapped occupied Greater Sage-Grouse habitat unless independent peer-reviewed studies show that the range improvement structure or nutrient</p>	<p>In PHMA, design any new structural range improvements to conserve, enhance, or restore Greater Sage-Grouse habitat through an improved grazing management system relative to Greater Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the</p>	<p>Locate livestock fences away from leks and employ the NRCS fence standards (see NRCS/CEAP Conservation Insight Publication “Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes.”)</p> <p>In core areas, continue to evaluate and modify when necessary, existing range improvement (e.g., fences, watering facilities) associated with grazing management operations for impacts on Greater Sage-Grouse and its habitat, while recognizing the importance of such structures and activities to meet, maintain or make progress towards meeting rangeland health standards or ESDs (or Forest Service equivalent).</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	construction must be considered in the project planning process and monitored and treated post-construction.	(see above)	supplement placement benefits Greater Sage-Grouse. Structural range developments, in this context, include but are not limited to cattleguards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/ reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction. Consider the comparative cost of changing grazing management instead of constructing additional range developments.	project planning process and monitored and treated post-construction.	(see above)
Consider modifications to existing structural range improvements on a case-by-case basis taking into consideration impacts on other resources.	In PHMA, evaluate existing structural range improvements and location of supplements (salt or protein blocks) to make sure they conserve, enhance or restore Greater Sage-Grouse habitat.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	In PHMA, evaluate and assess the need to modify existing improvements to make sure they are neutral, conserve, enhance, or restore Greater Sage-Grouse habitat.	No similar action.
No similar action.	To reduce outright Greater Sage-Grouse strikes and mortality, remove, modify or mark fences in high risk areas within PHMA based on proximity to lek, lek size, and topography.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Remove, modify or mark fences in areas of moderate or high risk of Greater Sage-Grouse strikes within Greater Sage-Grouse habitat based on proximity to lek, lek size, and topography.	Same as Alternative B.	Fences should not be located on or adjacent to leks where bird collisions would be expected to occur. Employ NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
Implement noxious weed and invasive species control using integrated weed management actions per national guidance and local weed management plans in collaboration with state and federal agencies, affected counties, and adjoining private lands owners.	In PHMA, monitor for, and treat invasive species associated with existing range improvements.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.	Aggressively respond to new infestations to keeping invasive species from spreading. Every effort should be made to identify and treat new infestations before they become larger problems. Additionally containment of known infestations in or near sagebrush habitats should be a high priority for all land management agencies.	Design all range projects in a manner that minimizes potential for invasive species establishment. Monitor for, and treat invasive species associated with existing range improvements
Consider voluntary relinquishment of grazing permits and preferences, in whole or in part, on a case-by-case basis.	Maintain retirement of grazing privileges as an option in PHMA when the current permittee is willing to retire grazing on all or part of an allotment. Analyze the impacts of no livestock use on wildfire and invasive species threats in evaluating retirement proposals.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	Within PHMA, when grazing permits are offered for relinquishment, consider reassigning the available preference and forage allocation if the issuance of a grazing permit implements improved grazing management practices that will enhance and restore Greater Sage-Grouse habitat.	No similar action.	<p>Within core areas, incorporate Greater Sage-Grouse habitat objectives and management considerations into all BLM and Forest Service grazing allotments through allotment management plans or permit renewals and/or Forest Service Annual Operating Instructions.</p> <p>When livestock grazing permits and/or grazing preference are voluntarily relinquished in portions of or all of an allotment, determine appropriate grazing management including consideration of closure to livestock grazing, based on soil, vegetation and other resources.</p> <p>Temporary use may be allowed in allotments where grazing preference has been relinquished or non-use warrants, to rest other allotments that include important Greater Sage-Grouse habitat.</p>
No similar action.	No similar action.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Establish and maintain sufficiently large areas free of livestock as reference areas to aid in describing ecological site potential and as a measure of the comparative effects of livestock grazing—and relief from livestock grazing—on Greater Sage-Grouse populations.	No similar action.	No similar action.	No similar action.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	No similar action.	Alt C1: No similar action.	Alt C2: Any vegetation treatment plan must include pretreatment data on wildlife and habitat condition, establish non-grazing exclosures, and include long-term monitoring where treated areas are monitored for at least 3 years before grazing returns. Continue monitoring for 5 years after livestock are returned to the area, and compare to treated, ungrazed exclosures, as well as untreated areas.	No similar action.	No similar action.	No similar action.
While most plans are silent on trailing decisions, some include language such as “encourage the avoidance of suitable habitats and known populations of all special status species during herding, trailing...”	No similar action.	No similar action.	No similar action.	No similar action.	No similar action.	Livestock trailing that is authorized through crossing permits will include a trailing plan that is designed to avoid sensitive areas and/or time periods for Greater Sage-Grouse. The plan will include specific routes and timeframes for trailing.
Recreation						
Consider BLM SRPs and Forest Service recreation SUPs on a case-by-case basis. Consider measures that will minimize impacts on important resources or resource values.	Only allow BLM SRPs and Forest Service recreation SUPs in PHMA that have neutral or beneficial effect on PHMA.	Only allow BLM SRPs and Forest Service recreation SUPs that have demonstrated neutral or beneficial affects to mapped occupied habitat areas.	Only allow BLM SRPs and Forest Service recreation SUPs in PHMA that have neutral or beneficial effect on PHMA. Evaluate existing SRPs/and Forest Service recreation SUPs for adverse effect on Greater Sage-Grouse and their habitat. Modify or cancel the permit, as appropriate and where possible to avoid or mitigate effects of habitat alterations or other physical disturbances to Greater Sage-Grouse (e.g., breeding, brood-rearing, migration patterns, or winter survival). Identify permit stipulations that require the permittee to implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with Greater Sage-Grouse habitat objectives as determined by the BLM field office/National Forest in collaboration with the State of Utah.	Limit or ameliorate impacts from recreation activities through the use of the following stipulations: <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: 	In addition to Alternative A, allow Forest Service recreation SUPs in core areas unless negative impacts on Greater Sage-Grouse cannot be adequately mitigated.	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	<ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. ● Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. ● If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). ● After minimization, mitigation is required (see mitigation section). ● Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. ● Manage SGMAs to avoid barriers to migration, if applicable. 	(see above)
No similar action.	No similar action.	Seasonally prohibit camping and other nonmotorized recreation within 4 miles of occupied Greater Sage-Grouse leks.	No similar action.	No similar action.	No similar action.
Comprehensive Travel and Transportation Management					
<p>Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.54, OHV Area Designations–Alternative A):</p> <ul style="list-style-type: none"> ● Open to cross-country use: 797,000 acres ● Limited to existing routes: 437,400 acres ● Limited to designated routes: 1,217,700 acres ● Closed: 32,200 acres ● No decision mapped: 15,100 acres ● Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.) 	<p>Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.55, OHV Area Designations–Alternative B):</p> <ul style="list-style-type: none"> ● Open to cross-country use: 34,600 acres ● Limited to existing routes: 1,213,500 acres ● Limited to designated routes: 1,217,700 acres ● Closed: 32,200 acres ● No decision mapped: 1,400 acres ● Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.) 	<p>Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.56, OHV Area Designations–Alternative C):</p> <ul style="list-style-type: none"> ● Open to cross-country use: 0 acres ● Limited to existing routes: 1,016,700 acres ● Limited to designated routes: 927,000 acres ● Closed: 555,700 acres ● No decision mapped: 0 acres ● Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.) 	<p>Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.57, OHV Area Designations–Alternative D):</p> <ul style="list-style-type: none"> ● Open to cross-country use: 0 acres ● Limited to existing routes: 1,249,500 acres ● Limited to designated routes: 1,217,700 acres ● Closed: 32,200 acres ● No decision mapped: 0 acres ● Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.) 	<p>Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.58, OHV Area Designations–Alternative E):</p> <ul style="list-style-type: none"> ● Open to cross-country use: 351,700 acres ● Limited to existing routes: 888,000 acres ● Limited to designated routes: 1,217,700 acres ● Closed: 32,200 acres ● No decision mapped: 9,800 acres ● Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.) 	<p>All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process. As such, all acres of the planning area within Wyoming are included in the Alternative E1 bullet that addresses the Forest Service.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Under current management, there are no PHMA.</p> <p>OHV use will be managed as identified in the area-designations above.</p>	<p>In PHMA, limit motorized travel to existing roads, primitive roads, and trails at a minimum, until such time as travel management planning is complete and routes are either designated or closed.</p>	<p>Same as Alternative B.</p>	<p>PHMA and GHMA that do not have designated routes in a Travel Management Plan would be managed at least as limited to existing routes (i.e., could maintain existing OHV closures) until a Travel Management Plan designates routes.</p> <p>PHMA that have undergone Travel Management Planning with route designation would be managed at least as limited to designated routes (i.e., would maintain existing OHV closures). In these areas, existing route designations would be reviewed and adjusted through future travel management planning efforts where impacts on Greater Sage-Grouse from route presence or use may exist.</p>	<p>SGMAs with nesting and winter habitat that do not have designated routes in a Travel Management Plan would be managed at least as limited to existing routes (i.e., could maintain existing OHV closures) until a Travel Management Plan designates routes.</p> <p>SGMAs with nesting and winter habitat that have undergone Travel Management Planning with route designation would be managed at least as limited to designated routes (i.e., could maintain existing OHV closures). In these areas, existing route designations would be reviewed and adjusted where impacts on Greater Sage-Grouse from route presence or use may exist.</p>	<p>All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.</p>
<p>Under current management there are no designated PHMA.</p> <p>No similar action. Under current policy, the need for permanent or seasonal road closures is evaluated during travel management planning.</p>	<p>In PHMA, travel management should evaluate the need for permanent or seasonal road closures.</p>	<p>Close approximately 555,700 acres of mapped occupied habitat to OHV use. In addition, during implementation-level travel planning, consider additional route closures.</p>	<p>During implementation-level travel planning, threats to Greater Sage-Grouse and their habitat would be considered when evaluating route designations and/or closures.</p>	<p>No similar action.</p>	<p>No similar action.</p>
<p>Consider route and trail modifications (new or existing) on a case-by-case basis.</p> <p>Identify travel management areas and prioritize travel management planning in areas where it would provide the most resource benefit.</p>	<p>Complete activity level plans within 5 years of the ROD. During activity level planning, where appropriate, designate routes in PHMA with current administrative/agency purpose or need to administrative access only.</p>	<p>Same as Alternative B.</p>	<p>Complete transportation plans in accordance with National BLM Travel Management guidance, requiring the BLM to maintain a current action plan and planning schedule to most effectively target available resources. The following Greater Sage-Grouse population areas are Utah's top priority areas to designate comprehensive travel plans:</p> <ul style="list-style-type: none"> • Sheeprocks • Bald Hills • Box Elder • Rich • Ibapah • Hamlin Valley 	<p>Counties should adopt and enforce travel management plans that include consideration for Greater Sage-Grouse.</p>	<p>All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Under current management there are no designated PHMA.</p> <p>Consider route and trail modifications (new or existing) on a case-by-case basis using the designation criteria.</p>	<p>In PHMA, limit route construction to realignments of existing designated routes if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety.</p>	<p>Limit route construction to realignments of existing designated routes if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety. Mitigate any impacts on offset the loss of Greater Sage-Grouse habitat.</p>	<p>Travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on Greater Sage-Grouse, maintain motorist safety, and prevent unauthorized cross country travel while meeting access needs. To do so, it may be necessary to improve portions of existing routes, close existing routes or create new routes that meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning within PHMA would be placed on having a neutral or positive effect on Greater Sage-Grouse habitat.</p>	<p>No similar action.</p>	<p>Construct roads to minimum design standards needed for production activities within core areas.</p>
<p>No similar action. Allow upgrades to existing roads on a case-by-case basis subject to site-specific environmental review.</p>	<p>In PHMA, allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless the upgrading would have minimal impact on Greater Sage-Grouse habitat, is necessary for motorist safety, or eliminates the need to construct a new road.</p>	<p>Allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless it is necessary for motorist safety, or eliminates the need to construct a new road. Any impacts shall be mitigated with methods that have been demonstrated to be effective to offset the loss of Greater Sage-Grouse habitat.</p>	<p>In PHMA, when considering upgrade of existing routes that would change route category (BLM route category: road, primitive road, or trail; Forest Service route category: level 1, level 2, or level 3) or capacity, consider the larger transportation network while providing for protection of Greater Sage-Grouse habitat.</p>	<p>No similar action.</p>	<p>Within core areas, allow no upgrading of existing routes that would change route category (BLM route category: road, primitive road, or trail; Forest Service route category: level 1, level 2, or level 3) or capacity unless the upgrading would have minimal impact on Greater Sage-Grouse in core areas, is necessary for motorist safety, or eliminates the need to construct a new road.</p>
<p>All LUPs include management actions that encourage the administrating agency to follow BMPs that reduce or minimize the impacts of development, including use of existing roads where possible.</p>	<p>In PHMA, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional, effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse habitat.</p>	<p>Prohibit new road construction in mapped occupied Greater Sage-Grouse habitat within 4 miles of occupied Greater Sage-Grouse leks, and avoid new road construction in mapped occupied Greater Sage-Grouse habitat.</p> <p>In mapped occupied habitat, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then, following the 4-mile prohibition from leks, build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional, mitigation necessary to offset the resulting loss of Greater Sage-Grouse habitat.</p>	<p>In PHMA, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. Apply additional effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse habitat. Plan for new routes in consideration of the larger transportation network objectives and needs while providing for protection of Greater Sage-Grouse habitat.</p>	<p>No similar action.</p>	<p>In core areas, limit route construction to realignments of existing designated routes if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety.</p> <p>New primary and secondary roads would avoid areas within 1.9 miles of the perimeter of occupied Greater Sage-Grouse leks within core areas.</p> <p>Other new roads would avoid areas within 0.6-mile of the perimeter of occupied Greater Sage-Grouse leks within core areas.</p>
<p>No similar action. The need for restoration of linear disturbances (unauthorized routes) is identified during the implementation-level travel management process or on a case-by-case basis.</p>	<p>In PHMA, conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in WSAs and within lands with wilderness characteristics that have been selected for protection.</p>	<p>Same as Alternative B.</p>	<p>In PHMA, conduct restoration of roads, primitive roads and trails not designated for motorized or nonmotorized travel in travel management plans.</p>	<p>No similar action.</p>	<p>Within core areas, allow natural deterioration of roads or conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in WSAs and within lands with wilderness characteristics that have been selected to be managed to retain those characteristics for protection.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
When reseeding roads, primitive roads and trails use appropriate seed mixes and consider the use of transplanted sagebrush.	When reseeding roads, primitive roads and trails in PHMA, use appropriate seed mixes and consider the use of transplanted sagebrush.	When reseeding closed roads, primitive roads and trails, use appropriate native seed mixes and require the use of transplanted sagebrush.	Same as Alternative B.	No similar action.	Within Greater Sage-Grouse habitats, when reseeding, use appropriate seed mixtures and consider the use of transplanted sagebrush.
No similar action.	No similar action.	No similar action.	No similar action.	Develop an educational process to advise OHV users of the potential for conflict with Greater Sage-Grouse.	No similar action.
Lands and Realty					
<p>Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.8, ROW Avoidance and Exclusion Areas–Alternative A):</p> <ul style="list-style-type: none"> • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres <p>Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.8):</p> <ul style="list-style-type: none"> • Open: 2,344,400 acres • Avoided: 50,800 acres • Excluded: 74,900 acres 	<p>Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.9, ROW Avoidance and Exclusion Areas–Alternative B):</p> <ul style="list-style-type: none"> • Open: 0 acres • Avoided: 529,600 acres • Excluded: 2,784,200 acres <p>Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.</p>	<p>Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.10, ROW Avoidance and Exclusion Areas–Alternative C):</p> <ul style="list-style-type: none"> • Open: 0 acres • Avoided: 0 acres • Excluded: 3,313,800 acres <p>Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.</p>	<p>Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows:</p> <p><u>Above-Ground Linear ROWs/SUAs</u> (Map 2.11, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D)</p> <ul style="list-style-type: none"> • Open – 522,600 acres • Avoided – 1,368,900 acres • Excluded – 1,422,300 acres <p><u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.12, Avoidance and Exclusion Areas for Surface and Underground ROWs–Alternative D)</p> <ul style="list-style-type: none"> • Open – 532,000 acres • Avoided – 2,754,200 acres • Excluded – 27,600 acres <p><u>Above-Ground Site-Type ROWs/SUAs (non-wind or solar)</u> (Map 2.13, Avoidance and Exclusion Areas for Above Ground Site Types–Alternative D)</p> <ul style="list-style-type: none"> • Open – 531,900 acres • Avoided – 2,562,000 acres • Excluded – 219,900 acres <p>Manage ROWs outside of Greater Sage-Grouse habitat but in population areas as follows:</p> <p><u>Above-Ground Linear ROWs/SUAs</u> (Map 2.11)</p> <ul style="list-style-type: none"> • Open – 1,925,900 acres • Avoided – 462,500 acres • Excluded – 81,700 acres <p><u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.12)</p> <ul style="list-style-type: none"> • Open – 2,337,000 acres • Avoided – 58,200 acres • Excluded – 74,900 acres <p><u>Above-Ground Site-Type ROWs/SUAs (non-wind or solar)</u> (Map 2.13)</p> <ul style="list-style-type: none"> • Open – 2,337,100 acres • Avoided – 51,700 acres • Excluded – 81,300 acres 	<p>Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.14, ROW Avoidance and Exclusion Areas–Alternative E):</p> <ul style="list-style-type: none"> • Open: 632,200 acres • Avoided: 2,654,000 acres • Excluded: 27,600 acres <p>Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.14):</p> <ul style="list-style-type: none"> • Open: 2,292,000 acres • Avoided: 103,200 acres • Excluded: 74,900 acres 	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>No similar action.</p>	<p>All ROWs/SUAs in PHMA Make PHMA exclusion areas for new ROWs/SUAs.</p>	<p>All ROWs/SUAs in PHMA Mapped occupied Greater Sage-Grouse habitat areas shall be exclusion areas for new ROWs/SUAs.</p>	<p><u>Above-Ground Linear ROWs/SUAs (e.g., transmission lines, distribution lines, telephone lines):</u> PHMA within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as an exclusion area for new above-ground linear ROWs/SUAs, unless there is a designated corridor present.</p> <p>PHMA beyond 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as an avoidance area for new above-ground linear ROWs/SUAs. Development within the avoidance areas could occur if:</p> <ul style="list-style-type: none"> • the Greater Sage-Grouse population trend within the disturbance calculation area is stable; • the development meets noise restrictions; • the development meets tall structure restrictions; • the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the development does not exceed the 5 percent disturbance limit. <p>Areas outside PHMA but within 1 mile of an occupied lek, if the lek is located within PHMA would be designated as an exclusion area for new above-ground linear ROWs/SUAs.</p> <p>Areas outside PHMA and between 1 and 4 miles of an occupied lek, if the lek is located within PHMA, would require surveys for Greater Sage-Grouse habitat in areas that ecologically could provide Greater Sage-Grouse habitat. If the area is determined to provide habitat that contributes to Greater Sage-Grouse life-cycle, the area would be designated as an exclusion area. If inventories do not identify Greater Sage-Grouse habitat, the area would be designated as an avoidance area (to address indirect impacts) for new ROWs/SUAs. Development within the avoidance areas could occur if:</p> <ul style="list-style-type: none"> • the development meets noise restrictions; and 	<p>All ROWs/SUAs in Habitat within SGMAs Management stipulations and conditions should focus on mitigating direct disturbance during construction. Should new research demonstrate indirect impacts on Greater Sage-Grouse production, additional mitigation measures may be required.</p> <p>SGMAs would be designated as an avoidance area for new ROWs/SUAs. Apply stipulations as follows, as well as BMPs accepted by industry and state and federal agencies:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> • On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. <ul style="list-style-type: none"> ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or 	<p>All SUAs in Core Habitat Greater Sage-Grouse core areas would be managed as an exclusion area for new SUAs.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<ul style="list-style-type: none"> the development meets tall structure restrictions. <p><u>Above-Ground Site-Type ROWs/SUAs (not wind/solar) (e.g., communication towers, cell towers):</u> Areas outside PHMA but within 1 mile of an occupied lek that is located within PHMA would be designated as an exclusion area for new above-ground site-type ROWs/SUAs (excluding wind or solar).</p> <p>PHMA beyond 1 mile of an occupied lek, if the lek is located within PHMA, would be designated as an avoidance area for new above-ground site-type ROWs/SUAs. Development within the avoidance areas could occur if:</p> <ul style="list-style-type: none"> the development meets noise restrictions; the development meets tall structure restrictions; the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and the development does not exceed the 5 percent disturbance limit. <p>Exceptions to the avoidance area could be granted by the Authorized Officer if the new ROW/SUA were constructed entirely within the footprint of an existing site-type ROW/SUA or an existing designated communication site, if the new development meets noise restrictions, and if the development does not occur during sensitive seasonal periods.</p> <p><u>Underground/On-Ground ROWs/SUAs (e.g., buried and surface pipelines, roads)</u> PHMA would be designated as an avoidance area for new permanent underground and on-ground linear ROWs/SUAs. Development within the avoidance areas could occur if:</p> <ul style="list-style-type: none"> the Greater Sage-Grouse population trend within the disturbance calculation area is stable; the long-term development meets noise restrictions; 	<p>maintaining and enhancing wet meadow and riparian vegetation).</p> <ul style="list-style-type: none"> After minimization, mitigation is required (see mitigation section). Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within the SGMAs. Manage SGMAs to avoid barriers to migration, if applicable. <p>Engage in reclamation efforts as projects are completed.</p> <p>Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.</p>	(see above)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<ul style="list-style-type: none"> • there are no above ground structures or operational facilities associated with the ROW/SUA; • the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the surface disturbance from the development does not exceed the 5 percent disturbance limit. 	(see above)	(see above)
No similar action.	<p>Consider the following exceptions:</p> <ul style="list-style-type: none"> • Within designated ROW/SUA corridors encumbered by existing ROW/SUA authorizations: new ROWs may be collocated only if the entire footprint of the proposed project (including construction and staging), can be completed within the existing disturbance associated with the authorized ROWs/SUAs. • Subject to valid, existing rights: where new ROWs/SUAs associated with valid existing rights are required, collocate new ROWs within existing ROWs or where it best minimizes Greater Sage-Grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse. 	<p>Consider the following exceptions:</p> <ul style="list-style-type: none"> • In mapped occupied Greater Sage-Grouse habitat within 4 miles of active Greater Sage-Grouse leks, there would be no exceptions to the exclusion area, unless legally required. • In mapped occupied Greater Sage-Grouse habitat beyond 4 miles of active Greater Sage-Grouse leks, subject to valid, existing rights: where new ROWs/SUAs associated with valid existing rights are required, collocate new ROWs within existing ROWs or where it best minimizes Greater Sage-Grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional mitigation that has been demonstrated to be effective to offset the resulting loss of Greater Sage-Grouse habitat. 	<p>The BLM may grant new FLPMA Title 5 ROWs for existing roads within PHMA so long as the road would remain in the existing condition and same physical location (as is, where is), unless a realignment would benefit Greater Sage-Grouse. Seasonal restrictions (breeding and nesting, brood rearing, winter) would be placed on maintenance of new Title 5 ROWs to minimize disruption of Greater Sage-Grouse, subject to the exceptions noted in the Greater Sage-Grouse section.</p> <p>Where new ROWs/SUAs associated with valid existing rights are required within PHMA, collocate new ROWs as close as technically possible to existing ROWs or where it best minimizes Greater Sage-Grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights within PHMA that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 5 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse.</p>	<p>For electrical transmission lines, and where feasible and consistent with federally required electrical separation standards, site new linear transmission features in existing corridors, or at a minimum, in concert with existing linear features in Greater Sage-Grouse habitat. Siting linear features accordingly shall be deemed to be mitigation for the siting of that linear feature. Mitigation for the direct effects of construction is still required.</p>	<p>Consider the following exceptions:</p> <p>Existing designated ROW/SUA corridors crossing core areas could be retained in the following circumstance: New SUAs may be issued in existing designated corridors for buried utilities with appropriate Greater Sage-Grouse seasonal timing constraints applied.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Designate ROW corridors within Greater Sage-Grouse habitat as identified on Map 2.16, Designated ROW Corridors–Alternative A (177,700 acres)	Designate ROW corridors as identified on Map 2.17, Designated ROW Corridors–Alternative B (130,200 acres). Undesignate ROW corridors that currently do not have any ROWs authorized in them (47,500 acres).	Undesignate all designated ROW corridors within Greater Sage-Grouse mapped occupied habitat as identified on Map 2.18, Designated ROW Corridors–Alternative C. New ROWs are excluded from Greater Sage-Grouse mapped occupied habitat.	<p>Designate ROW corridors as identified on Map 2.19, Designated ROW Corridors–Alternative D :</p> <ul style="list-style-type: none"> • Retain 89,400 acres of existing designated ROW corridor • Retain 48,400 acres of existing designated ROW corridor, but stipulate new developments be limited to underground use only • Undesignate 39,700 acres of existing designated ROW corridor • Designate 31,700 acres as new designated ROW corridor (where new corridors would be designated, there are existing lines or disturbance already in place) <p>While new ROWs can be developed within designated ROW corridors, the preference is to avoid Greater Sage-Grouse habitat altogether. If this is not possible, development will be limited to the designated corridors.</p> <p>New designated corridors within PHMA will not exceed 3,500 feet in width. New above-ground ROWs within designated corridors will be constructed as close as technically feasible to existing above-ground lines to limit disturbance to the smallest footprint. Mitigation will be required for construction of new lines in designated corridors located in Greater Sage-Grouse habitat in PHMA.</p>	No similar action.	<p>Within Greater Sage-Grouse core areas new transmission projects would be considered where it can be demonstrated that declines in Greater Sage-Grouse populations could be avoided through project design and/or mitigation (e.g., raptor perch and nest deterrents). In conducting review of powerline transmission proposals, the use of the Framework for Greater Sage-Grouse Impacts Analysis for Interstate Transmission Lines or other appropriate documents, is necessary.</p> <p>New transmission projects would be allowed within 1/2 mile on either side of existing 115 kV or larger transmission lines creating a corridor no wider than 1 mile. Construction should occur between July 1 and March 14 (or between July 1 and November 30 in winter concentration areas).</p>
No similar action.	Evaluate and take advantage of opportunities, to remove, bury, or modify existing power lines within PHMA.	Same as Alternative B.	During renewal, amendment, or reauthorization of existing permits, evaluate and where appropriate, work with existing ROW holders to modify existing power lines within PHMA to mitigate impacts of existing powerlines, taking into account the potential impacts of the mitigation (relocation, burying, etc.) with the existing impacts of the line.	No similar action.	<p>Maintenance/replacement of existing structures would be allowed subject to valid and existing rights. Upgrades would be considered, subject to mandatory BMPs.</p> <p>Any new or replaced powerline or powerpole will be fitted with anti-perching devices.</p>
All LUPs include management actions that require reclamation/restoration of disturbed areas that are no longer used in support of authorized actions.	Where existing leases or ROWs/SUAs have had some level of development (road, fence, well, etc.) and are no longer in use, reclaim the site by removing these features and restoring the habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Same as Alternative B.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	<p><u>All ROWs/SUAs:</u> Make GHMA “avoidance areas” for new ROWs/SUAs.</p>	No similar action.	<p><u>All ROWs/SUAs:</u> GHMA within 1 mile of an occupied lek, if the lek is located within GHMA, would be designated as an avoidance area for new ROWs (Maps 2.11, Avoidance and Exclusion Areas for Above Ground Linear ROWs—Alternative D, Map 2.12 and Map 2.13). Development within the avoidance areas could occur if:</p> <ul style="list-style-type: none"> • the development (during construction and after) meets noise restrictions; • the structures remaining after development meet tall structure restrictions; • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). <p>GHMA within and beyond the 1 mile avoidance area would require discussion with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors).</p> <p>The avoidance area could be waived, except for the seasonal restrictions, if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.</p>	Greater Sage-Grouse habitat outside SGMA would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<p><u>All SUAs:</u> Noncore areas would be managed as SUA avoidance areas for new SUAs, except for areas currently managed as SUA exclusion areas.</p> <p>Develop criteria that would be used to determine if a proposed SUA could be sited in an avoidance area or not.</p>
Most LUPs include a management action that encourages placement of new ROWs in designated utility corridors and/or collocation of new ROWs adjacent to existing ROWs.	Where new ROWs/SUAs are necessary in GHMA, co-locate new ROWs/SUAs within existing ROWs/SUAs, where possible.	No similar action.	Same as Alternative B.	Greater Sage-Grouse habitat outside SGMA would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	Same as Alternative B.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Land Tenure (BLM land only): Make approximately 24,400 acres of land within in Greater Sage-Grouse habitat available for FLPMA Section 203 sale (Map 2.21, Land Tenure Adjustments–Alternative A).</p> <p>In order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in FLPMA and in each LUP.</p>	<p>Land Tenure (BLM land only): Retain public ownership of PHMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or more contiguous federal ownership patterns within PHMA.</p> <p>Under PHMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. As a final preservation measure consideration should be given to pursuing a permanent conservation easement.</p> <p>For BLM lands, approximately 5,490 acres of GHMA would still be available for disposal through FLMPA Section 203 sale (Map 2.22, Land Tenure Adjustments–Alternative B).</p>	<p>Land Tenure (BLM land only): Same as Alternative B, without exceptions for disposal to consolidate ownership that would be beneficial to Greater Sage-Grouse. No BLM or National Forest System lands within mapped occupied habitat would be available for land tenure adjustments (Map 2.23, Land Tenure Adjustments–Alternative C).</p>	<p>Land Tenure (BLM land only): Retain public ownership of PHMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or more contiguous federal ownership patterns within PHMA, so long as potential land tenure adjustments benefit Greater Sage-Grouse, and do not negatively impact other federally listed threatened or endangered species.</p> <p>Under PHMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land.</p> <p>For BLM lands, approximately 5,540 acres of GHMA would still be available for disposal through FLMPA Section 203 sale (Map 2.24, Land Tenure Adjustments–Alternative D).</p>	<p>Land Tenure (BLM land only): No similar action.</p>	Same as Alternative B, except no specific acreages would apply.
Most LUPs include a management action that allows for acquisition of lands that have important resource values including crucial wildlife habitat and land tenure adjustments to improve the manageability of public lands.	Where suitable conservation actions cannot be achieved in PHMA, seek to acquire state and private lands with intact federal mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore Greater Sage-Grouse habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Utilize Greater Sage-Grouse habitat requirements for acquisition within core areas.
<p>Withdrawal: Recommend approximately 498,700 acres of federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat for mineral withdrawal (Map 2.26, Locatable Mineral Withdrawals–Alternative A).</p>	<p>Withdrawal: Recommend federal lands and non-federal lands with federal mineral interests within PHMA for mineral withdrawal (3,650,900 acres of new Recommended withdrawals) (Map 2.27, Locatable Mineral Withdrawals–Alternative B).</p>	<p>Withdrawal: Recommend federal lands and non-federal lands with federal mineral interests within mapped occupied Greater Sage-Grouse habitat for mineral withdrawal (4,008,580 acres) (Map 2.28, Locatable Mineral Withdrawals–Alternative C).</p>	<p>Withdrawal: Do not recommend additional federal lands or non-federal lands with federal mineral interests within PHMA or GHMA for locatable mineral withdrawal.</p>	<p>Withdrawal: Same as Alternative D.</p>	<p>Withdrawal: Recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat in core areas from conflicting locatable mineral potential and development, and the ability to meet the Density Disturbance Calculation Tool thresholds.</p>
No similar action.	In PHMA, do not recommend withdrawal proposals not associated with mineral activity unless the land management is consistent with Greater Sage-Grouse conservation measures. (For example; in a recommended withdrawal for a military training range buffer area, manage the buffer area with Greater Sage-Grouse conservation measures.)	Do not approve withdrawal proposals not associated with mineral activity unless the land management is consistent with Greater Sage-Grouse conservation measures. (For example, in a recommended withdrawal for a military training range buffer area, manage the buffer area with Greater Sage-Grouse conservation measures that have been demonstrated to be effective, or according to the joint BLM-DOD management.)	No similar action.	No similar action.	Recommend withdrawal proposals not associated with mineral activity, assessing the need to protect Greater Sage-Grouse habitat versus the recommended withdrawal activity.
<p>Wind Energy Development Evaluate wind energy development on a case-by-case basis, subject to other ROW/SUA management decisions.</p> <p>Manage ROWs/SUAs in Greater Sage-Grouse habitat as follows (Map 2.8):</p> <ul style="list-style-type: none"> • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres 	<p>Wind Energy Development Make PHMA exclusion areas for new leases or ROWs/SUAs permits (2,781,700 acres) (Map 2.9).</p>	<p>Wind Energy Development Do not site wind energy development in mapped occupied Greater Sage-Grouse habitat (3,313,800 acres) (Map 2.10).</p>	<p>Wind Energy Development PHMA would be designated as exclusion areas for wind energy development (2,760,300 acres) (Map 2.30, Avoidance and Exclusion Areas for Wind Energy–Alternative D).</p> <p>Manage wind energy development in Greater Sage-Grouse habitat as follows (Map 2.30):</p> <ul style="list-style-type: none"> • Open – 522,500 acres • Avoided – 9,400 acres 	<p>Wind Energy Development SGMAs would be available for wind energy development, though they would be designated as avoidance areas for wind energy development.</p> <p>Manage wind energy development in Greater Sage-Grouse habitat as follows (Map 2.14):</p> <ul style="list-style-type: none"> • Open: 632,200 acres • Avoided: 2,654,000 acres 	<p>Wind Energy Development Acreages associated with the Wyoming-Uinta and Wyoming-Blacks Fork population areas are included in the acreages for Alternative E1, as avoidance areas with the stipulation on development as described below.</p> <p>Wind Energy development is not allowed inside core areas unless it can be sufficiently demonstrated that the development activity</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.8)</p> <ul style="list-style-type: none"> • Open: 2,344,400 acres • Avoided: 50,800 acres Excluded: 74,900 acres 	<p>(see above)</p>	<p>(see above)</p>	<ul style="list-style-type: none"> • Excluded – 2,781,900 acres <p>Manage wind energy development outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.30):</p> <ul style="list-style-type: none"> • Open – 1,925,200 acres • Avoided – 462,500 acres • Excluded – 82,400 acres <p>Areas outside PHMA but within 1.0 mile of an occupied lek, if the lek is located within PHMA, would also be excluded from wind energy development.</p> <p>Areas outside PHMA but within 4 miles of an occupied lek located within PHMA (not including the 1.0 mile exclusion) would be designated as an avoidance area for wind energy development. Development within the avoidance areas can occur if:</p> <ul style="list-style-type: none"> • the development meets noise restrictions; and • the development meets tall structure restrictions; <p>Exclude wind energy development within 1.0 mile of an occupied lek located in GHMA, whether mapped occupied Greater Sage-Grouse habitat or not.</p> <p>The exclusion could be waived outside of GHMA if applicable seasonal restrictions are implemented (breeding and nesting, brood rearing, winter) and if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.</p> <p>Development within GHMA beyond the 1.0 mile exclusion area would require discussion with the State of Utah during project implementation, and implementation of BMPs, including potential off-site mitigation in PHMA.</p>	<ul style="list-style-type: none"> • Excluded: 27,600 acres <p>Manage wind energy development outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.14):</p> <ul style="list-style-type: none"> • Open: 2,292,000 acres • Avoided: 103,200 acres • Excluded: 74,900 acres <p>Apply stipulations as follows, as well as BMPs accepted by industry and state and federal agencies:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). 	<p>would not result in declines of core area populations. Sufficient demonstration of “no declines” should be coordinated with the WGFD and USFWS. Areas that are currently unavailable due to the need to protect sensitive resources would remain unavailable to wind energy development.</p> <p>Avoid the use of guy wires for turbines or MET tower supports within core areas. All existing and any new unavoidable guy wires should be marked with recommended bird deterrent devices.</p> <p>The siting of new temporary MET towers within core areas will be avoided within 2 miles of active Greater Sage-Grouse leks, unless they are out of the direct line of sight of the active lek.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	<ul style="list-style-type: none"> • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within the SGMA. • Manage SGMAs to avoid barriers to migration, if applicable. <p>Engage in reclamation efforts as projects are completed.</p> <p>Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.</p>	(see above)
No similar action.	No similar action.	Site wind energy development at least 5 miles from occupied Greater Sage-Grouse leks.	No similar action.	No similar action.	No similar action.
Mineral Development (applicable to all types of minerals and all minerals development activities)					
No similar action.	No similar action.	No similar action.	No similar action.	<p>Within SGMAs, limit or ameliorate impacts through the use of the general stipulations identified in the Greater Sage-Grouse section.</p> <p>Engage in reclamation efforts as projects advance or are completed.</p> <p>Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.</p> <p>Prioritize areas for habitat improvement to make best use of mitigation funds.</p>	No similar action.
Allow geophysical exploration in areas that are not closed to fluid mineral leasing. Geophysical exploration in Greater Sage-Grouse habitat shall be subject to seasonal restrictions discussed above.	<p>Allow geophysical exploration within PHMA to obtain exploratory information for areas outside of and adjacent to PHMA.</p> <p>Allow geophysical operations only by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply.</p>	No new geophysical exploration permits will be issued.	Allow geophysical exploration within mapped occupied Greater Sage-Grouse habitat areas to obtain exploratory information. Geophysical exploration shall be subject to seasonal restrictions that preclude activities in breeding, nesting, brood rearing and winter habitats during their season of use by Greater Sage-Grouse.	Allow geophysical exploration within SGMAs to obtain exploratory information. Geophysical exploration would be subject to the same seasonal (TL), NSO, and CSU stipulations as would be applied to leases within SGMAs.	In addition to Alternative A, geophysical exploration projects that are designed to minimize habitat fragmentation within core areas would be allowed, except were prohibited or restricted by existing LUP decisions.
Nonenergy Leasable Minerals					
Under current management there are no designated PHMA. Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.33,	Close federal lands and non-federal lands with federal mineral interests within PHMA to nonenergy leasable mineral leasing. This includes not permitting any new leases to expand an existing mine.	Close federal lands and non-federal lands with federal mineral interests within mapped occupied Greater Sage-Grouse habitat to nonenergy leasable mineral leasing (4,008,580 acres) (Map 2.35, Non-Energy Solid Leasable Minerals–Alternative C). This	<u>Proposed Leases Associated with Surface Mining:</u> Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.36, Non-	Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.37, Non-Energy Solid Leasable Minerals–Alternative E):	Acreages associated with the Wyoming-Uinta and Wyoming-Blacks Fork population areas are included in the acreages for Alternative E1, though the stipulations on development will be as described below.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Non-Energy Solid Leasable Minerals–Alternative A):</p> <ul style="list-style-type: none"> • Open to Leasing Consideration – 3,870,080 acres • Closed to Leasing – 138,500 acres <p>Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.</p>	<p>Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.34, Non-Energy Solid Leasable Minerals–Alternative B):</p> <ul style="list-style-type: none"> • Open to Leasing Consideration – 667,280 acres • Closed to Leasing – 3,341,300 acres 	<p>includes not permitting any new leases to expand an existing mine.</p>	<p>Energy Solid Leasable Minerals–Alternative D):</p> <ul style="list-style-type: none"> • Open to Leasing Consideration – 705,680 acres • Closed to Leasing with Development by Surface Mining – 2,905,100 acres • Closed to All Leasing– 397,800 acres <p>PHMA would be closed to new leasing or lease modification of surface nonenergy leasable minerals. This includes not issuing or modifying leases to expand existing mines that would result in surface mining.</p> <p>New or modified leases in areas outside PHMA and within 4 miles of an occupied lek located within PHMA would have use stipulations attached. Development within these areas could occur if:</p> <ul style="list-style-type: none"> • the development meets noise restrictions both during development and after development; and • the structures remaining after development meet tall structure restrictions. <p>GHMA within 1 mile of an occupied lek, if the lek is located within GHMA, would have no surface disturbance stipulations associated with leasing of surface nonenergy leasable minerals.</p> <p><u>Leases Associated with Underground Mining:</u> Consider leasing PHMA for nonenergy leasable minerals that would be extracted through underground mining. Require the following stipulations, as applicable, as part of any new mining leases or lease modification for underground nonenergy mines:</p> <ul style="list-style-type: none"> • Appurtenant facilities would not be placed within PHMA, where technically feasible. • If placement of facilities outside of PHMA is not technically feasible while still protecting Greater Sage-Grouse habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: <ul style="list-style-type: none"> • No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within 1 mile of an occupied lek that is located within PHMA. • the long-term development meets noise restrictions, including from supporting traffic along roads; 	<ul style="list-style-type: none"> • Open to Leasing Consideration – 3,870,080 acres • Closed to Leasing – 138,500 acres <p>Consider leasing federal lands and non-federal lands with federal mineral interests within SGMAs for nonenergy leasable minerals. Limit or ameliorate impacts from mineral leasing and development through the use of the following stipulations:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or 	<p>In addition to Alternative A, core area would be open to new nonenergy leasing provided that the development of the lease would be consistent with the disturbance limitations as calculated by the Density Disturbance Calculation Tool and project implementation is developed with appropriate Greater Sage-Grouse protections / management strategies. Within project areas where the Density Disturbance Calculation Tool analysis is approved, modification of existing leases is allowed without additional, density analyses if the project is maintained within the original Density Disturbance Calculation Tool analysis area and Density Disturbance Calculation Tool disturbance acreage limits would be maintained through reclamation/restoration to suitable Greater Sage-Grouse habitat.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<ul style="list-style-type: none"> • restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by Greater Sage-Grouse; • the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); avoidance periods and necessary mitigation may be dependent on site specific conditions and noise levels; • the surface disturbance from the development does not exceed the 5 percent disturbance limit; and • Additional mitigation methods applicable to the specific project are conducted, including off-site mitigation. <p>If the above criteria cannot be met, do not grant new leases or modifications.</p>	<p>maintaining and enhancing wet meadow and riparian vegetation).</p> <ul style="list-style-type: none"> • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. <p>Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.</p>	(see above)
<p>Under current management there are no designated GHMA.</p> <p>Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.</p>	No similar action.	No similar action.	<p>Consider leasing GHMA for nonenergy leasable minerals that would be extracted through underground mining. Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on Greater Sage-Grouse habitats. Use additional, onsite or off-site mitigation to offset impacts as technically appropriate (determined by local options/needs). Determine which measures are needed to protect GHMA during activity level planning, which may include applying the criteria identified for PHMA.</p> <p>The above stipulations may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.</p>	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
<p>Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.</p>	No similar action.	No similar action.	<p>Prospecting and exploration activities associated with nonenergy leasable minerals would be required to comply to the following criteria within PHMA:</p> <ul style="list-style-type: none"> • Surface disturbance from the activity does not exceed the 5 percent disturbance limit; • The non-casual use activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • Any facilities associated with prospecting activities will be removed before the next breeding season; and • Any disturbances will be reclaimed. 	Prospecting and exploration activities associated with nonenergy leasable minerals would be required to comply with the same stipulations identified for leasing and development, above.	Exploration licenses and prospecting permits would be considered with appropriate mitigating measures (e.g., TLs, Density Disturbance Calculation Tool thresholds).

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>No similar action.</p> <p>Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.</p>	<p>For existing nonenergy leasable mineral leases in PHMA, in addition to the solid minerals RDFs (Appendix I, Best Management Practices for Locatable Minerals and Required Design Features for Other Solid Minerals, of the Draft LUPA/EIS), follow the same RDFs applied to Fluid Minerals (Appendix J, Required Design Features for Fluid Minerals, of the Draft LUPA/EIS), when wells are used for solution mining.</p>	<p>Same as Alternative B.</p>	<p>For existing nonenergy leasable mineral leases in PHMA, apply the applicable solid minerals RDFs (Appendix I of the Draft LUPA/EIS) and Fluid Minerals RDFs (Appendix J of the Draft LUPA/EIS) when permitting site-specific projects on the lease (e.g., wells used for solution mining), unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:</p> <ul style="list-style-type: none"> • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. 	<p>No similar action.</p>	<p>Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for nonenergy solid leasables.</p>
Coal					
<p><u>Leases Associated with Surface Mining:</u> Under current management there are no designated PHMA.</p> <p>Approximately 22,900 acres of mapped occupied Greater Sage-Grouse habitat is unacceptable for further consideration for leasing Map 2.39, Coal Suitability–Alternative A).</p> <p>For all other areas, upon receipt of a coal lease application in Greater Sage-Grouse habitat, the BLM will review criterion 15 set forth in 43 CFR 3461.5 to determine if the specific area being proposed for lease is suitable. If the BLM and the State of Utah “jointly agree” the federal lands do not contain Greater Sage-Grouse habitat that is “of high interest to the state and which are essential for maintaining [this] priority wildlife...species,” the area shall be considered suitable for further coal leasing consideration. The determination would be that “all or certain stipulated methods of coal mining would not have a significant long-term impact” on the Greater Sage-Grouse. However, special conditions, conservation measures, and pre-project mitigation requirements that include successful criteria of habitat suitability and Greater Sage-Grouse occupancy could be required as</p>	<p><u>Leases Associated with Surface Mining:</u> In PHMA, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (3,328,760 acres) (Map 2.40, Coal Suitability–Alternative B).</p>	<p><u>Leases Associated with Surface Mining:</u> In mapped occupied habitat, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (4,008,580 acres) (Map 2.41, Coal Suitability–Alternative C).</p>	<p><u>Leases Associated with Surface Mining:</u> No areas of Greater Sage-Grouse mapped occupied habitat would meet the unsuitability criterion 15. The 22,900 acres of mapped occupied Greater Sage-Grouse habitat that are currently unsuitable for surface mining of coal resources would continue to be unsuitable. The remainder of the mapped occupied Greater Sage-Grouse habitat would not be unsuitable for further consideration of coal leasing under surface mining methods.</p> <p>Where coal leasing that involves surface mining methods is considered in PHMA, apply the following stipulations:</p> <ul style="list-style-type: none"> • new disturbance associated with the development does not result in total disturbance exceeding the 5 percent disturbance limit. • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • where possible, the development is located adjacent to the footprint of existing disturbances; and • extraction or crushing operations do not occur in Greater Sage-Grouse habitat during seasonal restriction times; however, 	<p><u>Leases Associated with Surface Mining:</u> SGMAs would be considered to be suitable for further coal leasing consideration. However, special conditions, conservation measures, and pre-project mitigation requirements that include successful criteria of habitat suitability and Greater Sage-Grouse occupancy could be required as identified during the leasing process to protect Greater Sage-Grouse habitat. Impacts on Greater Sage-Grouse within leasing areas would be limited or ameliorated through the use of the following stipulations:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) 	<p><u>Leases Associated with Surface Mining:</u> Upon receipt of a coal lease application on which underground mining methods that include associated surface uses and impacts in Greater Sage-Grouse core areas are foreseen, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the Greater Sage-Grouse. Special conditions could be required as identified during the leasing process to protect Greater Sage-Grouse resources.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>identified during the leasing process to protect Greater Sage-Grouse habitat.</p> <p>If, upon receipt of a coal lease application, the BLM and the State of Utah “jointly agree” that the federal lands contain Greater Sage-Grouse habitat that is “of high interest to the state and which are essential for maintaining [this] priority wildlife...species,” the area shall be considered unsuitable for further coal leasing consideration.</p>	<p>(see above)</p>	<p>(see above)</p>	<p>removal of material from existing stockpiles would be allowed.</p>	<ul style="list-style-type: none"> • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. 	<p>(see above)</p>
<p><u>Leases Associated with Underground Mining:</u> Under current management there are no designated PHMA.</p> <p>Most LUPs do not identify areas that are specifically closed to coal leasing.</p> <p>Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have coal-specific stipulations, or mineral specific standards and guidelines. Surface use stipulations may also be identified during site-specific NEPA, or be identified through Unsuitability Determination at 43 CFR 3461.</p>	<p><u>Leases Associated with Underground Mining:</u> Grant no new mining leases unless all surface disturbances (appurtenant facilities) are placed outside of the PHMA.</p>	<p><u>Leases Associated with Underground Mining:</u> Same as Alternative B.</p>	<p><u>Leases Associated with Underground Mining:</u> Consider leasing PHMA for coal that would be extracted through <u>underground</u> mining. Require the following stipulations, as applicable, as part of any new mining leases or lease modification for <u>underground</u> coal mines:</p> <ul style="list-style-type: none"> • Appurtenant facilities would not be placed within PHMA, where technically feasible. • If placement of facilities outside of PHMA is not technically feasible while still protecting Greater Sage-Grouse habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: <ul style="list-style-type: none"> ○ No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within 	<p><u>Leases Associated with Underground Mining:</u> Consider leasing SGMAs for coal that would be extracted through underground mining. Impacts would be limited or ameliorated through adherence to the following stipulations:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. 	<p><u>Leases Associated with Underground Mining:</u> Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within Greater Sage-Grouse core areas, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the Greater Sage-Grouse. Stipulated methods may include (but not limited to) underground mining methods with no placement of surface facilities.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>1 mile of an occupied lek that is located within PHMA.</p> <ul style="list-style-type: none"> ○ the long-term development meets noise restrictions, including from supporting traffic along roads; ○ restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by Greater Sage-Grouse; ○ the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); avoidance periods and necessary mitigation may be dependent on site specific conditions and noise levels; ○ Surface disturbance from the development does not exceed the 5 percent disturbance limit; and ○ Additional mitigation methods applicable to the specific project are conducted, including off-site mitigation. <p>If the above criteria cannot be met, do not grant new leases or modifications.</p>	<ul style="list-style-type: none"> • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative. 	<p>Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1). This would be consistent with BLM IM WY-2012-019, which says that the BLM will assess potential impacts on Greater Sage-Grouse through the NEPA process, and that the State regulatory agency would apply this mitigation, as well protective measures consistent with the State Policy for solid leasable mining action at the permitting stage.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>Under current management there are no designated GHMA.</p> <p>Most LUPs do not identify areas that are specifically closed to coal leasing.</p> <p>Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have coal-specific stipulations, or minerals-specific standards and guidelines. Surface use stipulations may also be identified during site-specific NEPA, or be identified through Unsuitability Determination at 43 CFR 3461.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>Consider leasing GHMA for coal that would be extracted through underground mining. Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on Greater Sage-Grouse habitats. Use additional, onsite or off-site mitigation to offset impacts as technically appropriate (determined by local options/needs). Determine which measures are needed to protect GHMA during activity level planning, which may include applying the criteria identified for PHMA.</p> <p>The above restrictions may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.</p>	<p>Greater Sage-Grouse habitat outside SGMA would not be managed for the conservation of the species. No specific management actions are provided for this habitat.</p>	<p>No similar action.</p>
<p>Under current management there are no designated PHMA. Exploration activities are required to comply with season stipulations (i.e., brooding/nesting and winter) included in existing plans, where such exists.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>Exploration activities within PHMA needed to meet data adequacy standards associated with potential coal leasing would be required to comply to the following criteria:</p> <ul style="list-style-type: none"> • Surface disturbance from the activity does not exceed the 5 percent disturbance limit; • The activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • Any facilities associated with exploration activities will be removed before the next breeding season; and • Any disturbances will be reclaimed. 	<p>Exploration activities within SGMA would be required to comply with the same stipulations identified for leasing and development, above.</p>	<p>Coal exploration activities are allowed in Greater Sage-Grouse core areas if acceptable after density calculation with applicable stipulations.</p>
<p>No similar action.</p>	<p>For coal mining operations on existing leases:</p> <p>Underground mining: in PHMA, place any new appurtenant facilities outside of PHMA. Where new appurtenant facilities associated with the existing lease cannot be located outside the PHMA, collocate new facilities within existing disturbed areas. If this is not possible, then build any new appurtenant facilities to the absolute minimum standard necessary.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B</p>	<p>No similar action.</p>	<p>Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within Greater Sage-Grouse core area, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the Greater Sage-Grouse. Stipulated methods may include (but not limited to) underground mining methods with no placement of surface facilities.</p> <p>Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1) This would be consistent with BLM IM WY-2012-019 says that BLM will assess potential impacts on Greater Sage-Grouse through the NEPA process, and that the State regulatory agency would apply this .</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	(see above)	mitigation, as well protective measures consistent with the State Policy for solid leasable mining action at the permitting stage
All LUPs include management actions based on specific program direction. These management actions require the BLM to consider measures that would reduce or eliminate impact of human activities during activity level planning.	For coal mining operations on existing leases: In GHMA, apply minimization of surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on important seasonal Greater Sage-Grouse habitats. Apply these measures during activity level planning. Use additional, effective mitigation to offset impacts as appropriate (determined by local options/needs).	Same as Alternative B.	Same as Alternative B	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
Locatable Minerals					
Under current management there are no designated PHMA. Approximately 498,700 acres of mapped occupied Greater Sage-Grouse habitat are recommended for withdrawal from mineral entry (Map 2.26).	In PHMA, recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat from conflicting locatable mineral potential and development (3,650,900 acres) (Map 2.27). <ul style="list-style-type: none"> • Make any existing claims within the withdrawal area subject to validity exams or buy out. Include claims that have been subsequently determined to be null and void in the recommended withdrawal. • In plans of operations required prior to any proposed surface disturbing activities, include the following: <ul style="list-style-type: none"> ○ Additional, effective mitigation in perpetuity for conservation (In accordance with existing policy, BLM IM 2008-204). Example: purchase private land and mineral rights or severed federal mineral rights within the PHMA and deed to US Government). ○ Consider seasonal restrictions if deemed effective. 	In mapped occupied habitat, recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat from conflicting locatable mineral potential and development (4,008,580 acres) (Map 2.28). Everything else, same as Alternative B.	PHMA and GHMA that are not already withdrawn or recommended for withdrawal would be available for locatable mineral entry. To the extent allowable by law, work with claimants to apply the seasonal restrictions and use restrictions for PHMA and GHMA identified in the Greater Sage-Grouse section. To the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development in PHMA within leks, nesting habitat, and early brood-rearing habitat and as possible, limit surface disturbance to under the 5 percent disturbance limit, or provide for enhancement of PHMA through on-site and/or off-site mitigation. Regardless of whether agreements with the claimant incorporates the 5 percent disturbance limit, disturbance from locatable mineral development would be included as disturbance when calculating disturbance for other land uses.	Greater Sage-Grouse habitat within or outside of SGMAs that is not already withdrawn or recommended for withdrawal would be available for locatable mineral entry. To the extent allowable by laws and regulations and to the extent the claimant would be willing to apply the standards, impacts would be limited or ameliorated through the use of the following conservation measures: <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. 	Recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat in core areas from conflicting locatable mineral potential and development, and the ability to meet the Density Disturbance Calculation Tool thresholds. Operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact Greater Sage-Grouse core area habitats. The Authorized Officer may convey to the operator suggested conservation measures, based upon the notice or plan level operations and the geographic area of those operations [also called the project area which is defined in 43 CFR 3809.5]. These suggested conservation measures include measures that support the overall goals and objectives of the core population area strategy, though measures listed for protection of Greater Sage-Grouse breeding, nesting, brood-rearing, and wintering may not be reasonable or applicable to the BLM's determination of whether the proposed operations will cause unnecessary or undue degradation under 43 CFR 3809.5. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory. Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15 day completeness review of notices [or

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	<p>In nesting and brood-rearing areas from Apr 1 – Aug 15.</p> <ul style="list-style-type: none"> ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. ● Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. ● If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). ● After minimization, mitigation is required (see mitigation section). ● Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. ● Manage SGMAs to avoid barriers to migration, if applicable. ● Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative. 	<p>modifications thereto] and 30 day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation would take place should be reviewed for overlap of Greater Sage-Grouse core areas in the corporate geographic information systems (GIS) database. If there is overlap, the BLM/Forest Service Authorized Officer may notify the operator of ways that they may minimize impacts on core area habitats and request the operator to amend its notice or plan to include such measures. The request to amend the submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of acceptance of the notice or approval of the plan of operations.</p> <p><u>Existing Notices and Approved Plans of Operations under 43 CFR 3809²:</u> For projects that overlap core areas, operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact core area habitats. The Authorized Officer may convey to the operator suggested conservation measures, based upon the notice or plan level operations and the geographic area of those operations [also called the project area which is defined in CFR 3809.5]. These suggested conservation measures include measures that support the overall goals and objectives of the core population area strategy may not be reasonable or applicable to the BLM's determination of whether the proposed operations will cause unnecessary or undue degradation under 43 CFR 3809.5. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory.</p> <p>Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15 day completeness review of notices [or</p>

² These regulations apply to the exploration and development of locatable minerals on placer claims and lode claims, as well as exploration on tunnel sites and mineral processing operations on mill sites. The location and maintenance of claims and sites are regulated under 43 CFR Subpart 3830.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	(see above)	modifications thereto] and 30 day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation would take place should be reviewed for overlap of Greater Sage-Grouse core areas in the corporate GIS database. If there is overlap, the BLM Authorized Officer may notify the operator of ways that they may minimize impacts on core area habitats and request the operator to amend its notice or plan to include such measures. The request to amend the submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of acceptance of the notice or approval of the plan of operations.
No similar action.	BMPs outlined in Appendix I of the Draft LUPA/EIS would be applied as appropriate and to the extent allowable by law within PHMA.	Same as Alternative B.	Apply the BMPs identified in Appendix E (of the NTT report) (included as Appendix I of the Draft LUPA/EIS), to the extent allowable by law, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: <ul style="list-style-type: none"> • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. 	No similar action.	Where applicable and technically feasible, BMPs would be applied as appropriate and to the extent allowable by law within core Greater Sage-Grouse habitat for Locatable Minerals.
Mineral Materials					
<p>Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.42, Saleable Minerals Materials–Alternative A):</p> <ul style="list-style-type: none"> • open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres <p>Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have mineral-specific standards and guidelines. Surface use restrictions may also be identified during site-specific NEPA.</p>	<p>Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.43, Saleable Minerals Materials–Alternative B):</p> <ul style="list-style-type: none"> • open to mineral materials development: 668,580 acres • closed to mineral materials development: 3,340,000 acres 	<p>Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.44, Saleable Minerals Materials–Alternative C):</p> <ul style="list-style-type: none"> • open to mineral materials development: 0 acres • closed to mineral materials development: 4,008,580 acres 	<p>Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.45, Saleable Minerals Materials–Alternative D):</p> <ul style="list-style-type: none"> • open to mineral materials development: 688,280 acres • closed to commercial mineral materials development, open to non-commercial: 2,967,500 acres • closed to mineral materials development: 352,800 acres 	<p>Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.46, Saleable Minerals Materials–Alternative E):</p> <ul style="list-style-type: none"> • open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres 	<p>Acres for mineral materials under Alternative E2 are reported under E1. The portions of the decision area specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Same as previous decision.	Close PHMA to mineral material sales.	Close mapped occupied habitat to mineral material sales.	<p>Areas, whether within mapped occupied habitat or not, within 1 mile of an occupied lek in either PHMA or GHMA would be closed new to mineral material development.</p> <p>PHMA beyond 1 mile of an occupied lek that is located within PHMA would be closed to commercial development of mineral materials.</p> <p>Non-commercial development of mineral materials (e.g., community pits, free-use permits) within PHMA beyond 1 mile of an occupied lek, if the lek is located within PHMA, could only occur if the following conditions are met:</p> <ul style="list-style-type: none"> • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • new disturbance associated with the development does not result in total disturbance exceeding the 5 percent disturbance limit. • where possible, the development is located adjacent to the footprint of existing disturbances; and • extraction or crushing operations do not occur in Greater Sage-Grouse habitat during seasonal restriction times; however, removal of material from existing stockpiles would be allowed. • new developments are located within 0.25 mile of existing roads. <p>Development of mineral materials within GHMA beyond 1 mile of an occupied lek, if the lek is located within GHMA, could occur if:</p> <ul style="list-style-type: none"> • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). <p>PHMA and GHMA beyond the 1 mile closures would require discussion with the State of Utah during project implementation,</p>	<p>SGMAs would be open to mineral materials. Impacts would be limited or ameliorated through the use of the following stipulations:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface 	<p>Core areas would be open to mineral material exploration, sales, and free use permits, except in areas that are closed to leasing or NSO due to the need to protect other resources values.</p> <p>In core areas, locate, where possible, mineral material mining sites in or adjacent to existing disturbances to minimize number of disturbances, in order to not exceed the 1 site per 640 acres and Density Disturbance Calculation Tool 5 percent disturbance threshold.</p> <p>Mineral material extraction or crushing operations would be prohibited in core areas during seasonal restriction times; however, removal of material from existing stockpiles would be allowed.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	and implementation of BMPs (e.g., anti-perch devices for raptors, etc.). The stipulations within GHMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with the proponent, BLM/Forest Service and the State of Utah is successfully completed in PHMA.	area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	(see above)
No similar action.	In PHMA, restore mineral materials pits no longer in use to meet Greater Sage-Grouse habitat conservation objectives.	Same as Alternative B.	No similar action.	No similar action.	Consider restoration of saleable mineral pits no longer in use to meet Greater Sage-Grouse habitat conservation objectives. Emphasis needs to be given to reclamation/restoration of core areas as a viable long term goal to improve the Greater Sage-Grouse habitat.
Fluid Minerals					
<p>Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.48, Fluid Minerals Leasing Categories–Alternative A):</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 1,333,380 acres • open to leasing, subject to CSU and/or timing (TL) stipulations: 1,300,400 acres • open to leasing, subject to NSO stipulations: 483,500 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 565,800 acres <p>Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas as follows:</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 893,100 acres • open to leasing, subject to CSU and/or TL stipulations: 580,700 acres • open to leasing, subject to NSO stipulations: 594,100 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 234,500 acres 	<p>Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.49, Fluid Minerals Leasing Categories–Alternative B):</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 246,680 acres • open to leasing, subject to CSU and/or TL stipulations: 255,900 acres • open to leasing, subject to NSO stipulations: 24,400 acres • closed to leasing: 3,341,300 acres • no fluid minerals allocation: 43,400 acres • planning decision not mapped: 96,900 acres <p>Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.</p>	<p>Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.50, Fluid Minerals Leasing Categories–Alternative C):</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 0 acres • open to leasing, subject to NSO stipulations: 0 acres • closed to leasing: 3,821,580 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 0 acres <p>Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.</p>	<p>Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.51, Fluid Minerals Leasing Categories–Alternative D):</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 1,829,980 acres • open to leasing, subject to NSO stipulations: 1,853,100 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 0 acres <p>Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas as follows:</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 761,100 acres • open to leasing, subject to CSU and/or TL stipulations: 765,300 acres • open to leasing, subject to NSO stipulations: 598,800 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 177,200 acres 	<p>Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.52, Fluid Minerals Leasing Categories–Alternative E):</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 247,200 acres • open to leasing, subject to CSU and/or TL stipulations: 2,637,580 acres • open to leasing, subject to NSO stipulations: 688,100 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 110,200 acres <p>Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas as follows:</p> <ul style="list-style-type: none"> • open to leasing, subject to standard stipulations: 858,600 acres • open to leasing, subject to CSU and/or TL stipulations: 630,100 acres • open to leasing, subject to NSO stipulations: 594,100 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 219,600 acres 	<p>Acres for fluid minerals under Alternative E2 are reported under E1. The portions of the decision area specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2.</p> <p>Exceptions waivers, and modifications to lease stipulations, COAs, terms and conditions, etc. for Greater Sage-Grouse will continue to be considered on a case-by-case basis consistent with approved LUPs and other BLM/Forest Service policy and regulations as they relate to exceptions within Greater Sage-Grouse core and non-core areas.</p>
Unleased Federal Fluid Mineral Estate					
<p>Unleased Areas within PHMA: Under current management there are no designated PHMA. Fluid mineral leasing in Greater Sage-Grouse mapped occupied habitat will be managed as discussed above.</p> <p>Most LUPs include a management action that prohibits surface disturbing or other</p>	<p>Unleased Areas within PHMA: Close PHMA areas to fluid mineral leasing. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within PHMA.</p>	<p>Unleased Areas within PHMA: No new leases or permits will be issued in mapped occupied Greater Sage-Grouse habitat. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within mapped occupied habitat.</p>	<p>Unleased Areas within PHMA: Areas outside PHMA but within 1 mile of an occupied lek, if the lek is located within PHMA, would be open to leasing fluid minerals, subject to NSO stipulations.</p> <p>PHMA within 4 miles of an occupied lek, if the lek is located within PHMA, would be</p>	<p>Unleased Areas within SGMAs Habitat: SGMAs would be designated as open to oil and gas leasing subject to NSO and CSU stipulations (see list below) and the timing stipulations.</p> <p>Habitat within SGMAs would have no permanent disturbance (NSO stipulation)</p>	<p>Unleased Areas within Core Areas: Fluid mineral leasing would be allowed in core areas, except in areas that are unavailable for leasing due to the need to protect other sensitive resources (Map 2.52).</p> <p>Work with project proponents to site their projects in locations that minimize impacts</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>disruptive within Greater Sage-Grouse breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.25 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer.</p> <p>Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.</p>	<p>(see above)</p>	<p>(see above)</p>	<p>designated as open to oil and gas leasing subject to NSO stipulations (see Appendix K, Stipulations Associated with Land Use Authorizations, of the Draft LUPA/EIS for modifications, waivers, and exceptions).</p> <p>PHMA beyond 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to CSU stipulations (see list below) and the following timing stipulations:</p> <ul style="list-style-type: none"> • Winter habitat from Nov 15 – Mar 15 • Brood rearing habitat from Apr 15 – Jul 15 • Breeding and nesting habitat from Feb 15 – Jun 15 <p>Where leasing/development is allowed within PHMA, development could occur if it adhered to the following CSU stipulations:</p> <ul style="list-style-type: none"> • the development meets noise restrictions; • the development meets tall structure restrictions; • operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any development being authorized; this plan should outline how development on the lease will limit habitat fragmentation; and • the development does not exceed the 5 percent disturbance limit. <p>Areas outside PHMA and within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to CSU stipulations. Development in these areas could occur if it adhered to the following CSU stipulations:</p> <ul style="list-style-type: none"> • the development meets noise restrictions; and • the development meets tall structure restrictions. <p>The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as lease notices to all new leases in PHMA and would be applied during the permitting process as COAs, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:</p> <ul style="list-style-type: none"> • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better 	<p>within 1 mile of an occupied lek, if the lek is located with an SGMA, unless the disturbance is not visible to the Greater Sage-Grouse using the lek (see Appendix K of the Draft LUPA/EIS for modifications, waivers, and exceptions).</p> <p>Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats (specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist):</p> <ul style="list-style-type: none"> • Winter habitat from Nov 15 – Mar 15. • Nesting and brood-rearing areas from Apr 1 – Aug 15. • On leks from Feb 15 – May 15 <p>Where leasing/development is allowed within SGMAs, impacts from development would be limited or ameliorated through the use of the following CSU stipulations:</p> <ul style="list-style-type: none"> • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: <ul style="list-style-type: none"> ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, 	<p>on sensitive resources. If the lease is partially or entirely within core areas, subject to topographic and other environmental constraints, require any development within core habitat to be placed in the area least harmful to Greater Sage-Grouse based on vegetation, topography, or other habitat features.</p> <p>Greater Sage-Grouse leks inside core areas, surface occupancy and surface disturbing activities would be prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks. Additionally, disruptive activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks from 6:00 pm to 8:00 am from March 1 – May 15, except for production/maintenance activities for existing permits. Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise.</p> <p>Surface disturbing and/or disruptive activities are prohibited from March 15–June 30 within core areas, regardless of distance from a lek and the suitability of the habitat. Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.</p> <p>Within winter concentration areas, surface disturbing and/or disruptive activities in Greater Sage-Grouse winter concentration areas are prohibited from December 1– March 14 to protect priority populations of Greater Sage-Grouse that use these winter concentration habitats (independent of habitat suitability). Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of Greater Sage-Grouse that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability).</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>protection for Greater Sage-Grouse or its habitat;</p> <ul style="list-style-type: none"> Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. <p>A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within PHMA. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy; for example, to protect the federal mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.</p>	<p>other habitat), if possible. Project proponents must demonstrate why avoidance is not possible.</p> <ul style="list-style-type: none"> If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). After minimization, mitigation is required (see mitigation section). Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. Manage SGMAs to avoid barriers to migration, if applicable. 	<p>Work with proponents to limit project related noise where it would be expected to reduce functionality of habitats that support core area populations. Evaluate the potential for limitation of new noise sources on a case-by-case basis as appropriate. Forest Service's near-term goal is to limit noise sources that would be expected to negatively impact core area Greater Sage-Grouse populations and to continue to support the establishment of ambient baseline noise levels for occupied core area leks. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate limitations will be implemented where necessary to minimize potential for noise impacts on Greater Sage-Grouse core population behavioral cycles.</p> <p>A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within core areas. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy; for example, to protect the federal mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.</p>
<p>Under current management there are no designated GHMA. Fluid mineral leasing in Greater Sage-Grouse mapped occupied habitat will be managed as discussed above.</p>	<p>No similar action.</p>	<p>No GHMA are identified.</p>	<p><u>Unleased Areas within GHMA:</u> Any areas, whether within mapped occupied Greater Sage-Grouse habitat or not, within 1 mile of an occupied lek, if the lek is located within GHMA, would be open to leasing fluid minerals, subject to NSO stipulations.</p> <p>GHMA beyond 1 mile of an occupied lek, if the lek is located within GHMA, would be designated as open to oil and gas leasing subject to CSU stipulations (see list below) and the following timing stipulations:</p> <ul style="list-style-type: none"> Winter habitat from Nov 15 – Mar 15 Brood rearing habitat from Apr 15-Jul 15 Breeding and nesting habitat from Feb 15-Jun 15 <p>Where leasing/development is allowed within GHMA, development could occur if it adhered to the following CSU stipulations:</p> <ul style="list-style-type: none"> the development meets noise restrictions; and 	<p>Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.</p>	<p><u>Unleased Areas within Non-Core Areas:</u> Greater Sage-Grouse leks in non-core areas, surface occupancy and Surface occupancy and surface disturbing activities would be prohibited or restricted on or within a one-quarter (0.25) mile radius of the perimeter of occupied Greater Sage-Grouse leks.</p> <p>In nesting/early brood-rearing habitat in non-core areas, surface disturbing and/or disruptive activities are limited from March 15–June 30 to protect Greater Sage-Grouse nesting and early brood rearing habitats within 2 miles of the lek perimeter of any occupied lek located outside core areas. Where credible data support different timeframes for this restriction, dates may be expanded by 14 days prior or subsequent to the above dates.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<ul style="list-style-type: none"> the development meets tall structure restrictions. <p>GHMA within and beyond the 1.0 mile NSO area would require collaboration with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors).</p> <p>The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as lease notices to all new leases in GHMA and would be applied as COAs during the permitting process, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:</p> <ul style="list-style-type: none"> A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. <p>The stipulations within GHMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.</p>	(see above)	(see above)
Leased Federal Fluid Mineral Estate					
No similar action.	In PHMA, apply the following conservation measures through RMP implementation decisions (e.g., approval of an APD, Sundry Notice, Master Development Plans, Surface Use Plan of Operations {Forest Service}, etc.) and upon completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is “reasonable” (43 CFR 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	Apply the following conservation measures as COAs at the project and well permitting stages, and through RMP implementation decisions and upon completion of the environmental record of review (43 CFR § 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is “reasonable” (43 CFR § 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	In PHMA, apply the following conservation measures through implementation decisions (e.g., approval of an APD, Sundry Notice, Master Development Plans, Surface Use Plan of Operations {Forest Service}, etc.) and upon completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is “reasonable” (43 CFR 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Overall consideration shall be given to minimizing the impact on Greater Sage-Grouse through a project design that avoids, minimizes, reduces, rectifies, and/or adequately compensates for direct and indirect impacts on Greater Sage-Grouse habitat or use and includes applicable and technical COAs. Selection and application of these measures shall be based on current science and research on the effect on important breeding, nesting, brood-rearing, and wintering areas. For proposed operations in core areas, the Surface Use Plan of Operations (see 43CFR 3162.3-1(f)) shall address, at a minimum, the anticipated noise, density and amount of disturbance, mechanical movement (e.g., pump jacks), permanent and temporary facilities, traffic,

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	(see above)	(see above)	<p>phases of development over time, offsite mitigation, and expected periods of use associated with the proposed project. Seasonal habitats or project features related to potential Greater Sage-Grouse impacts that are not addressed in the Surface Use Plan of Operations based on site-specific or project-specific considerations shall be noted in the project file, along with a rationale for not including them. In this process evaluate, among other things:</p> <ol style="list-style-type: none"> 1. Whether the conservation measure is “reasonable” (43 CFR 3101.1-2) and consistent with valid existing rights; 2. Whether the action is in conformance with the approved LUP; and the effectiveness of the proposed mitigation measures. <p>In cases where federal oil and gas leases have been issued without adequate stipulations for the protection of Greater Sage-Grouse or their habitats being provided in the applicable LUP decision, as revised or amended, consider their inclusion as permit COAs when approving exploration and development activities through completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA.</p>
<p>No similar action. Measures that reduce or eliminate impacts on Greater Sage-Grouse are considered on a case-by-case basis during implementation-level planning.</p>	<p>Do not allow new surface occupancy on federal leases within PHMA, this includes winter concentration areas (Doherty et al. 2008; Carpenter et al. 2010) during any time of the year. Consider an exception:</p> <ul style="list-style-type: none"> • If the lease is entirely within PHMA, apply a 4-mile NSO around the lek, and limit permitted disturbances to 1 per section with no more than 3 percent surface disturbance in that section. • If the entire lease is within the 4 mile lek perimeter, limit permitted disturbances to 1 per section with no more than 3 percent surface disturbance in that section. Require any development to be placed at the most distal part of the lease from the lek, or, depending on topography and other habitat aspects, in an area that is less demonstrably harmful to Greater Sage-Grouse. 	<p>Same as Alternative B.</p>	<p>Apply the 5 percent disturbance limitation for development within PHMA.</p> <p>Where Greater Sage-Grouse conservation opportunities exist, work in collaboration with operators in PHMA and GHMA to minimize habitat loss, fragmentation, and direct and indirect effect on Greater Sage-Grouse and habitat.</p> <p>Issue Written Orders of the Authorized Officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize effect on Greater Sage-Grouse populations and habitat.</p> <p>In areas where Greater Sage-Grouse populations have been substantially diminished, and where few birds remain, include actions in the authorization (e.g., siting/designing infrastructure, hastened habitat restoration) that will minimize habitat</p>	<p>All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.</p>	<p>Many Greater Sage-Grouse seasonal habitats within and outside of core areas are encumbered by valid existing rights, such as mineral leases or existing ROW. Fluid mineral leases often will include less stringent lease stipulations than the timing, distance, and density requirements identified for consideration in this policy. Agencies (BLM/Forest Service) will work with proponents holding valid existing leases that include less stringent lease stipulations than the timing, distance, and density restrictions described within this plan to ensure that measurable Greater Sage-Grouse conservation objectives such as, but not limited to, consolidation of infrastructure to reduce habitat fragmentation and loss, and effective conservation of seasonal habitats and habitat connectivity to support population management objectives set by the WGFD, are included in all project proposals.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	(see above)	<p>loss and promote restoration of habitat when development activities cease.</p> <p>In addition to considering opportunities for onsite mitigation, collaboration with project proponents to develop and consider implementing appropriate off-site mitigation that the BLM/Forest Service, collaborating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects. Where possible, off-site mitigation should occur within the same population area where the impact is incurred. When developing such mitigation, consider compensating for the short-term and long-term direct and indirect loss of Greater Sage-Grouse and its habitat.</p> <p>For geophysical exploration activities, include seasonal TLs and RDFs as permit COAs to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas.</p> <p>Ensure authorizations under Onshore Oil and Gas Order No. 7 (Disposal of Produced Water) consider the potential impacts on Greater Sage-Grouse from West Nile virus and develop appropriate mitigation measures and apply RDFs (Appendix L, Required Design Features for Preventing West Nile Virus, of the Draft LUPA/EIS).</p>	(see above)	(see above)
<p>Most LUPs include a management action that prohibits surface disturbing or other disruptive within Greater Sage-Grouse breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.25 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer.</p> <p>Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.</p>	<p>Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and early brood-rearing season in all PHMA during this period.</p>	<p>Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and brood-rearing season in mapped occupied Greater Sage-Grouse habitat during this period. This seasonal restriction shall also apply to related activities that are disruptive to Greater Sage-Grouse, including vehicle traffic and other human presence.</p>	<p>Same as Alternative B.</p>	<p>Allow exploratory drilling within SGMA, subject to the same seasonal, NSO and CSU stipulations as would be applied to leases within SGMA.</p>	<p>Greater Sage-Grouse nesting/early brood-rearing habitat in core areas:</p> <ul style="list-style-type: none"> • Surface disturbing and/or disruptive activities are prohibited from March 15–June 30 within core areas regardless of distance from a lek and the suitability of the habitat. <p>Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.</p>
<p>No similar action.</p>	<p>Closely examine the applicability of categorical exclusions in PHMA. If extraordinary circumstances review is applicable, determine whether those circumstances exist.</p>	<p>Same as Alternative B.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>Within core and non-core areas, BLM/Forest Service should closely examine the applicability of categorical exclusions. If extraordinary circumstances review is applicable, BLM/Forest Service should determine whether those circumstances exist.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	Complete Master Development Plans in lieu of APD-by-APD processing for all but wildcat wells.	Same as Alternative B.	Within PHMA, operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any development being authorized. The BLM/Forest Service will evaluate the plan through the NEPA process.	No similar action.	Consider or encourage Master Development Plans for projects involving multiple proposed disturbances within a lease or core area.
No similar action.	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3 percent for that area. Consider an exception if: <ul style="list-style-type: none"> Additional, effective mitigation is demonstrated to offset the resulting loss of Greater Sage-Grouse (see Objectives). <ul style="list-style-type: none"> When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase Greater Sage-Grouse populations). Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17). 	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3 percent per section for that area. Consider an exception if: <ul style="list-style-type: none"> Additional, effective mitigation is demonstrated to offset the resulting loss of Greater Sage-Grouse (see Objectives). <ul style="list-style-type: none"> When necessary, conduct additional, effective mitigation in PHMA. Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17). 	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 5 percent for that area. Consider an exception if: <ul style="list-style-type: none"> Additional, effective mitigation is demonstrated to offset the resulting loss of Greater Sage-Grouse (see Objectives). <ul style="list-style-type: none"> When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase Greater Sage-Grouse populations). Conduct additional, effective mitigation prioritized first onsite where the impacts occurred, then within the disturbance calculation area, then within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17). 	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Within core areas, when mitigation is required, the agencies in coordination with WGFD and partners would use the following mitigation hierarchy: in-kind and onsite mitigation as first priority or in-kind mitigation offsite mitigation as second priority. When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per 2006 WAFWA Strategy as the impact.
No similar action. Current policy allows unitization to occur on a case-by-case basis.	Require unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on Greater Sage-Grouse according to the Federal Lease Form, 3100-11, Sections 4 and 6.	Same as Alternative B.	Encourage unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on Greater Sage-Grouse according to the Federal Lease Form, 3100-11, Sections 4 and 6.	No similar action.	Within core areas, encourage unitization as a means of minimizing adverse impacts on Greater Sage-Grouse to reduce fragmentation and surface disturbing and disruptive activities.
Most LUPs include a management action that allows for acquisition of lands that have important resource values including crucial wildlife habitat and land tenure adjustments to improve the manageability of public lands. In order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in the LUPs.	Identify areas where acquisitions (including federal mineral rights) or conservation easements, would benefit Greater Sage-Grouse habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Same as Alternative B.
No similar action. Current policy provides for the establishment of reclamation bonds on a case-by-case basis.	For future actions, require a full reclamation bond specific to the site in accordance with 43 CFR 3104.2, 3104.3, 3104.5, and 36 CFR 228.109. Insure bonds are sufficient for costs relative to reclamation (Connelly et al. 2000 and Hagen et al. 2007) that would result in full restoration of the lands to the condition it was found prior to disturbance. Base the reclamation costs on the assumption that contractors will perform the work.	Same as Alternative B.	Same as Alternative B.	No similar action.	Require reclamation bond commensurate with the scope, scale, size of the project within core areas. Partial bonding may be appropriate depending on the above factors.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
<p>No similar action.</p> <p>Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.</p>	<p>Make applicable RDFs (see Appendix J of the Draft LUPA/EIS) mandatory as COAs within PHMA.</p>	<p>Same as Alternative B.</p>	<p>The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as mandatory COAs during development of a lease, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:</p> <ul style="list-style-type: none"> • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. 	<p>No similar action.</p>	<p>Where applicable and technically feasible, apply BMPs as mandatory COAs within core Greater Sage-Grouse habitat for Fluid Minerals, Lands and Realty, West Nile, and Noise.</p>
<p>No similar action.</p>	<p>No similar action.</p>	<p>Any oil, gas, geothermal activity will be conducted to maximize avoidance of impacts, based on evolving scientific knowledge of impacts.</p>	<p>No similar action.</p>	<p>No similar action.</p>	<p>No similar action.</p>
Mineral Split-Estate					
<p>Under current management, there are no PHMA. Decision included in current management plans apply to both federal surface and mineral estate.</p>	<p>Where the federal government owns the mineral estate in PHMA, and the surface is in non-federal ownership, apply the conservation measures applied on public lands.</p>	<p>Same as Alternative B.</p>	<p>Same as Alternative B.</p>	<p>Because the surface estate is the key to conservation of habitat, the Greater Sage-Grouse habitat has been mapped according to surface ownership. However, implementation of his alternative will have to accommodate the dominant nature of the mineral estate, and react accordingly.</p>	<p>Where the federal government owns the mineral estate, and the surface is non-federal ownership, apply the same Greater Sage-Grouse conservation measures as applied on public land, for core and non-core areas respectively, working cooperatively with permittees, lessees and other surface landowners.</p>
<p>No similar action.</p> <p>Under current management, there are no PHMA. Decision included in current management plans apply to both federal surface and mineral estate.</p> <p>Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.</p>	<p>Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PHMA, apply appropriate Fluid Mineral RDFs (see Appendix J of the Draft LUPA/EIS) to surface development.</p>	<p>Same as Alternative B.</p>	<p>Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PHMA, the RDFs identified in Appendix J of the Draft LUPA/EIS would be applied to surface developments, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:</p> <ul style="list-style-type: none"> • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. 	<p>No similar action.</p>	<p>Where the federal government owns the surface, and the mineral estate is in non-federal ownership, apply the same Greater Sage-Grouse conservation measures as applied on public land, for core and non-core areas respectively. Working cooperatively with permittees, lessees and other surface landowners.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Areas of Critical Environmental Concern (ACECs)					
<p>No existing ACECs include Greater Sage-Grouse as a relevant and important value.</p>	<p>No similar action.</p>	<p>Designate and manage the following 15 areas (2,233,800) as ACECs (BLM) and Greater Sage-Grouse Zoological Areas (Forest Service) to function as sagebrush reserves to conserve Greater Sage-Grouse (Map 2.60, Potential ACECs and Zoological Areas—Alternative C):</p> <ul style="list-style-type: none"> • Three Corners/Browns Park <ul style="list-style-type: none"> ○ Total acres – 72,600 ○ BLM acres – 50,100 ○ Forest Service acres – 22,500 • Diamond Mountain <ul style="list-style-type: none"> ○ Total acres – 139,500 ○ BLM acres – 110,300 ○ Forest Service acres – 29,200 • Little Mountain/Halfway Hollow <ul style="list-style-type: none"> ○ Total acres – 74,900 ○ BLM acres – 60,700 ○ Forest Service acres – 14,200 • Blue Mountain <ul style="list-style-type: none"> ○ Total acres – 18,900 ○ BLM acres – 18,900 ○ Forest Service acres – 0 • Emery <ul style="list-style-type: none"> ○ Total acres – 11,500 ○ BLM acres – 0 ○ Forest Service acres – 11,500 • Parker Mountain <ul style="list-style-type: none"> ○ Total acres – 350,500 ○ BLM acres – 201,800 ○ Forest Service acres – 148,700 • Southern Mountain Valleys <ul style="list-style-type: none"> ○ Total acres – 171,300 ○ BLM acres – 105,300 ○ Forest Service acres – 66,000 • Buckskin Valley <ul style="list-style-type: none"> ○ Total acres – 46,000 ○ BLM acres – 34,900 ○ Forest Service acres – 11,100 • Black Mountains <ul style="list-style-type: none"> ○ Total acres – 256,800 ○ BLM acres – 256,800 ○ Forest Service acres – 0 • Southern Great Basin <ul style="list-style-type: none"> ○ Total acres – 101,000 ○ BLM acres – 101,000 ○ Forest Service acres – 0 • Sheep Creek Mountains <ul style="list-style-type: none"> ○ Total acres – 398,100 ○ BLM acres – 316,700 ○ Forest Service acres – 81,400 	<p>No similar action.</p>	<p>No similar action.</p>	<p>No similar action.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
(see above)	(see above)	<ul style="list-style-type: none"> • Ibapah <ul style="list-style-type: none"> ○ Total acres – 47,000 ○ BLM acres – 47,000 ○ Forest Service acres – 0 • Box Elder/Grouse Creek <ul style="list-style-type: none"> ○ Total acres – 364,100 ○ BLM acres – 364,100 ○ Forest Service acres – none in planning area • Rich County <ul style="list-style-type: none"> ○ Total acres – 171,800 ○ BLM acres – 166,600 ○ Forest Service acres – 5,200 • Strawberry <ul style="list-style-type: none"> ○ Total acres – 9,800 ○ BLM acres – 0 ○ Forest Service acres – 9,800 	(see above)	(see above)	(see above)
No similar action.	No similar action.	<p>Manage the relevant and important value (Greater Sage-Grouse habitat) for the 15 Greater Sage-Grouse ACECs/ Greater Sage-Grouse Zoological Areas as prescribed in this table above. In addition, implement the following management for these areas:</p> <ul style="list-style-type: none"> • Manage the Greater Sage-Grouse ACECs/ Zoological Areas to minimize anthropogenic disturbances to Greater Sage-Grouse, consistent with valid existing rights. • Prioritize withdrawal from mineral location in the ACECs/Zoological Areas. Make any existing claims within the ACECs/Zoological Areas subject to validity patent examinations. • Require Plans of Operations for any Notice level locatable mineral development per 43 CFR 3809 regulations. • Prioritize the removal of unneeded infrastructure (including mining or ROW equipment, roads, range developments and fencing). 	No similar action.	No similar action.	No similar action.

This page intentionally left blank.

Chapter 3. Affected Environment

3.1 INTRODUCTION

The purpose of this chapter is to describe the existing biological, physical, and socioeconomic characteristics of the planning area, including human uses that could be affected by implementing the alternatives described in **Chapter 2**. The affected environment provides the context for assessing the potential impacts described in **Chapter 4**. The resource topics in this chapter reflect those that are identified in **Table I-3**, Issues and Related Resource Topics, as corresponding to an issue carried forward for detailed analysis in the 2019 planning process.

The BLM analyzed the management situation in full compliance with its regulations and policies. The BLM evaluated inventory and other data and information, partnering with USGS and coordinating extensively with States, to help provide a basis for formulating reasonable alternatives. The BLM described this process in its Report to the Secretary in response to SO 3353 (Aug. 4, 2017). Among other things, the Report describes how the BLM coordinated “with each State to gather information related to the [Secretary’s] Order, including State-specific issues and potential options for actions with respect to the 2015 Greater Sage-Grouse Plans and Instruction Memorandums (IMs) to identify opportunities to promote consistency with State plans.” (Report to the Secretary at 3.) This process overlapped to some degree with the BLM’s scoping process, which also assisted the BLM in identifying the scope of issues to be addressed and significant issues, and with coordination with the States occurring after the Report.

The geographic extent of this environmental analysis is substantially similar to that in the 2015 Final EIS, with the exception of the portions of the 2015 planning area that were in Wyoming. Approximately 54,800 acres administered by the Ashley National Forest and 22,000 acres administered by the Uinta/Wasatch/Cache National Forest that extended into Wyoming are not part of the planning area for this process. Additionally, approximately 71,900 acres administered by the Sawtooth National Forest in Box Elder County are included in the planning area for this process that were part of the Idaho planning area in 2015.

The BLM acknowledges that there have been changes to the landscape since 2015; however, since the context of this analysis covers 2,520,000 acres of BLM-administered lands and 1,497,400 acres of federal mineral estate, the data collected consistently across the range indicate that the extent of these changes is relatively minimal. For example, BLM monitoring data collected using nationally available datasets and analyzed annually at the biologically significant unit (BSU) scale, as outlined in the Greater Sage-Grouse Monitoring Framework (Appendix D of the 2015 ROD/ARMPA), indicate that there has been a less than 1 percent range-wide overall increase in estimated disturbance from 2015 through 2017 on PHMA and IHMA (Idaho Important Habitat Management Area). Moreover, there has been a range-wide overall decrease of less than 1 percent range-wide from 2012 through 2015 in sagebrush availability in PHMA within BSUs.

The estimates of habitat management areas burned in 2016 and 2017 indicate an increase in potential habitat availability loss in portions of the range (largely outside of Utah) compared with previous fire

seasons; however, the acres lost do not necessarily affect monitored PHMA in BSUs. For this reason, burned acres are most influential at scales below which the environmental analysis has been conducted.

Based on available information, including the USGS reports described below, the BLM has concluded that the existing condition is not substantially different from that of 2015; therefore, the data and information presented in the 2015 Final EIS are incorporated into this RMPA/EIS.

Actions that have been authorized since the 2015 plan were consistent with the 2015 Final EIS. The BLM would continue to implement the decisions in the 2015 plan unless those decisions are amended.

Acreage figures and other numbers were approximated using geographic information systems (GIS) technology; they do not reflect exact measurements or precise calculations.

USGS Reports

As part of the consideration of whether to amend some, all, or none of the 2015 Greater Sage-Grouse land use plans, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018)¹ and a report that synthesizes and outlines the potential management implications of this new science (Hanser et al. 2018).

Following the 2015 plans, the scientific community has continued to improve the knowledge available to inform management actions and an overall understanding of Greater Sage-Grouse populations, habitat requirements, and their response to human activity. The review discussed the science related to six major topics identified by USGS and BLM, as follows:

- Multiscale habitat suitability and mapping tools
- Discrete human activities
- Diffuse activities
- Fire and invasive species
- Restoration effectiveness
- Population estimation and genetics

Multiscale Habitat Suitability and Mapping Tools

The science developed since 2015 corroborates previous knowledge about Greater Sage-Grouse habitat selection. Advances in modeling and mapping techniques at the landscape scale can help inform allocations and targeting of land management resources to benefit Greater Sage-Grouse conservation. Similar improvements at the site scale facilitate a better understanding of the relationship of grass height to nest success, which indicates the potential need for a reevaluation of the existing habitat objectives (Hanser et al. 2018, p. 2).

The BLM has completed a plan maintenance action whereby the agency has clarified its ability to modify the habitat objective indicator values based upon local, site-specific information.

¹ Internet website: <https://doi.org/10.3133/ofr20181008>

Discrete Human Activities

The science developed since 2015 corroborates prior knowledge about the impact of discrete human activities on Greater Sage-Grouse. New science suggests that strategies to limit surface disturbance may be successful at limiting range-wide population declines; however, it is not expected to reverse the declines, particularly in areas of active oil and gas operations (Hanser et al. 2018, p. 2). This information may have relevance when considering the impact of changes to management actions designed to limit discrete disturbances.

Diffuse Activities

The science developed since 2015 does not appreciably change prior knowledge about diffuse activities, such as livestock grazing, predation, hunting, wild horses and burros, fences, recreation, and noise; however, some study authors questioned current assumptions, provided refinements, or corroborated existing understanding.

Studies have shown that the impacts of livestock grazing vary with grazing intensity and season. Predation from ravens can limit Greater Sage-Grouse populations in areas with overabundant predator numbers or degraded habitats. Applying predator control has potential short-term benefits in small, declining populations; however, reducing human subsidies (i.e., food sources resulting from human activities) may be necessary to generate long-term changes in raven numbers. This is because raven control has produced only short-term declines in local raven populations.

Finally, no new insights into the impacts of wild horses and burros, fence collision, recreation, or noise on Greater Sage-Grouse have been developed (Hanser et al. 2018, p. 2).

Fire and Invasive Species

Science since 2015 indicates that wildfire will continue to threaten Greater Sage-Grouse through loss of available habitat, reductions in multiple vital rates, and declining population trends, especially in the western part of its range. The concepts of resilience after wildfire and resistance to invasion by nonnative annual grasses have been mapped across the sagebrush ecosystem. These concepts inform restoration and management strategies and help prioritize application of Greater Sage-Grouse management resources (Hanser et al. 2018, p. 2).

Restoration Effectiveness

Since 2015, tools have been developed to help managers strategically place and design restoration treatments where they will have the greatest benefit for Greater Sage-Grouse. Studies conducted in Utah demonstrated that conifer removal benefited Greater Sage-Grouse through increased female survival and nest and brood success. Treatment method and site potential can affect posttreatment vegetation characteristics. Sagebrush manipulation treatments seemed to benefit Greater Sage-Grouse populations and brood-rearing habitat availability, but benefits may be limited to areas with high sagebrush cover at higher elevations and in mountain big sagebrush (*A. tridentata vaseyana*) communities. Studies indicate that Greater Sage-Grouse populations did not benefit from, or were negatively affected by, prescribed fire and mechanical sagebrush removal. (Hanser et al. 2018, p. 3)

Population Estimation and Genetics

The accuracy of estimating Greater Sage-Grouse populations has increased. This is because of improved sampling procedures used to complete count surveys at leks and the development of correction factors

for potential bias in lek count data. In addition, techniques have also improved to map Greater Sage-Grouse genetic structure at multiple spatial scales. These genetic data are used in statistical models to increase understanding of how landscape features and configuration affect gene flow. This understanding emphasizes the importance of maintaining connectivity between populations to ensure genetic diversity and distribution (Hanser et al. 2018, p. 3).

New Science and Information Considered by the BLM

After reviewing comments on the DSEISs, the BLM identified that best available science and the role of the NTT and COT reports in planning were reoccurring comment themes from the public. This heightened interest from commenters prompted the BLM to conduct a thorough review of new science and other information received during the DSEIS comment period. These articles and professional scientific papers were published subsequent to the USGS report that reviewed the new science published between January 1, 2015 and January 25, 2018.

The objective of the BLM's review effort was to assess whether any information and scientific literature identified by the public during the DSEIS comment period and any new scientific papers that were not included in the previous USGS science review would change the scope (i.e., issues, alternatives, and effects) of the 2019 planning process or conflict with the sage-grouse conservation measures in the NTT and COT Reports.

At regular intervals, the BLM has assessed and synthesized new science, using it to inform efforts to better align its management with state and local frameworks. The BLM first initiated its own assessment through the NTT as described above, followed by the USFWS efforts to develop the COT report. The BLM then commissioned a second synthesis from USGS in 2017 prior to initiating the 2019 planning process. Finally, the BLM coordinated with USGS in 2020 to review scientific literature presented during the DSEIS comment period. The USGS has continuously evaluated science published after 2018 and has maintained an annotated bibliography of scientific research on greater sage-grouse. The BLM relied upon USGS' annotated bibliography for the 2020 review. Out of the 75 articles considered by the BLM as new science, USGS had already reviewed 67 articles. BLM biologists summarized the remaining eight papers submitted by the public for validation. The BLM also accepted and reviewed comments that provided background information. These comments did not provide management recommendations or rigorous science-based information.

After the documents were reviewed and summarized, a team of BLM biologists and land use planners reviewed each summary to determine if the findings provided management recommendations that: 1) conflicted with the NTT and COT report recommendations; or 2) changed the scope (i.e., issues, alternatives, effects) of the 2019 plans resulting in a need for a new planning effort.

The BLM found that the most up-to-date Greater Sage-Grouse science and other information has incrementally increased, and built upon, the knowledgebase of Greater Sage-Grouse management evaluated by the BLM most recently in its 2019 land use plan amendments, but does not change the scope or direction of the BLM's management. While the NTT, the COT and this new science and information remain thus consistent with the scope of the 2019 planning decisions, new science does suggest adaptations to management may be warranted at site-specific scales.

The scientists and managers that authored the COT and NTT reports could not have anticipated all the variables that would affect sage grouse into the future when they provided their recommendations. Varying topographic factors, ecological site potential, changes in methodologies, technological advances, variation in vegetation types, and anthropogenic disturbance, to name a few, make it difficult to adequately address all factors that affect sage grouse populations and habitat. Therefore, where appropriate, the BLM will consider this science and information through implementation-level NEPA analysis, consistent with its approved land use plans, policies, and regulatory frameworks. This is precisely the approach envisioned by the NTT and COT reports as well as the BLM's decades long planning efforts to address local actions that may affect Greater Sage-Grouse.

3.2 RESOURCES AFFECTED

In accordance with **Chapter 1, Section 1.4.1**, Issues and Related Resource Topics Identified Through Scoping, the following resources may experience potential impacts based on the alternatives considered in **Chapter 2. Table 3-1**, Affected Environment Information Incorporated by Reference, below, provides the location of baseline information for these resources and uses in the 2015 Final EIS, and where applicable, additional information contained in the Sagebrush Focal Area Withdrawal Draft EIS (BLM 2016).

Table 3-1
Affected Environment Information Incorporated by Reference

Resource Topic	Location of Baseline Information
Greater Sage-Grouse	Chapter 3, Section 3.3 (Special Status Species – Greater Sage-Grouse), page 3-4 in the 2015 Final EIS (BLM 2015) Chapter 3, Section 3.7.1 (Special Status Species), page 3-156 in the 2016 Draft EIS (BLM 2016) Additional information regarding Greater Sage-Grouse is included in Section 3.3 of this chapter.
Air Quality	Chapter 3, Section 3.4, page 3-44 in the 2015 Final EIS (BLM 2015) Additional information regarding air quality is included in Section 3.4 of this chapter.
Soil Resources	Chapter 3, Section 3.6, page 3-57 (BLM 2015)
Water Resources	Chapter 3, Section 3.7, page 3-60 (BLM 2015)
Vegetation (including Noxious Weeds; Riparian and Wetlands)	Chapter 3, Section 3.8, page 3-64 (BLM 2015) Chapter 3, Sections 3.6.2 (Vegetation Communities), page 3-133 and Section 3.6.3 (Invasive and Noxious Species), page 3-138 in the 2016 Draft EIS (BLM 2016) Additional information regarding vegetation is included in Section 3.5 of this chapter.
Other Special Status Species	Chapter 3, Section 3.9, page 3-99 (BLM 2015) Chapter 3, Section 3.6.1 (Special Status Species), page 3-128 in the 2016 Draft EIS (BLM 2016) Additional information regarding other special status species is included in Section 3.6 of this chapter.
Fish and Wildlife	Chapter 3, Section 3.10, page 3-127 (BLM 2015)

3. Affected Environment (Table 3-1: Affected Environment Information Incorporated by Reference, *cont'd*)

Resource Topic	Location of Baseline Information
Wild Horses and Burros	Chapter 3, Section 3.11, page 3-142 (BLM 2015) Additional information regarding wild horses and burros is included in Section 3.7 of this chapter.
Cultural Resources	Chapter 3, Section 3.12, page 3-147 (BLM 2015)
Visual Resources	Chapter 3, Section 3.13, page 3-150 (BLM 2015)
Wildland Fire Management	Chapter 3, Section 3.14, page 3-154 (BLM 2015) Additional information regarding wildland fire management is included in Section 3.8 of this chapter.
Wilderness Characteristics	Chapter 3, Section 3.15, page 3-163 (BLM 2015) is updated with information regarding wilderness characteristics in Section 3.9 of this chapter.
Livestock Grazing/Range Management	Chapter 3, Section 3.16, page 3-165 (BLM 2015) Additional information regarding livestock grazing/range management is included in Section 3.10 of this chapter.
Recreation	Chapter 3, Section 3.17, page 3-171 (BLM 2015) Additional information regarding recreation is included in Section 3.11 of this chapter.
Comprehensive Travel and Transportation Management	Chapter 3, Section 3.18, page 3-177 (BLM 2015) Additional information regarding comprehensive travel and transportation management is included in Section 3.12 of this chapter.
Lands and Realty	Chapter 3, Section 3.19, page 3-180 (BLM 2015) Additional information regarding lands and realty is included in Section 3.13 of this chapter.
Renewable Energy	Chapter 3, Section 3.20, page 3-190 (BLM 2015) Additional information regarding renewable energy is included in Section 3.14 of this chapter.
Leasable Minerals (Oil and Gas, Nonenergy Leasable Minerals, Coal, and Oil Shale and Tar Sands)	Chapter 3, Section 3.21.1 (oil and gas), page 3-200 (BLM 2015) Chapter 3, Section 3.21.2 (nonenergy Leasable Minerals), page 3-208 (BLM 2015) Chapter 3, Section 3.21.3 (coal), page 3-212 (BLM 2015) Chapter 3, Section 3.21.6 (oil shale and tar sands), page 3-217 (BLM-2015) Additional information regarding leasable minerals is included in Section 3.15 of this chapter.
Locatable Minerals	Chapter 3, Section 3.21.4, page 3-215 (BLM 2015) Chapter 3, Section 3.4.3 (Mineral Resources), page 3-8 and Section 3.4.4 (Market Demand for Locatable Minerals), page 3-8 in the 2016 Draft EIS (BLM 2016)
Mineral Materials	Chapter 3, Section 3.21.5, page 3-216 (BLM 2015)

Resource Topic	Location of Baseline Information
Social and Economic Conditions	Chapter 3, Section 3.23 (Social and Economic Conditions (Including Environmental Justice)), page 3-231 (BLM 2015) Chapter 3, Section 3.5 (Social and Economic Conditions), page 3-9, and specifically Section 3.5.17, Section 3.5.18, and Section 3.5.19 in the 2016 Draft EIS (BLM 2016) Additional information regarding social and economic conditions is included in Section 3.16 of this chapter.
Tribal Interests	Chapter 3, Section 3.24, , page 3-267 (BLM 2015)

3.3 GREATER SAGE-GROUSE

Existing conditions for Greater Sage-Grouse in the planning area are described in the 2015 Final EIS in Section 3.3 (Special Status Species – Greater Sage-Grouse, pages 3-4 through 3-44), as well as in the 2016 Sagebrush Focal Areas Withdrawal Draft EIS in Section 3.7.1 (Special Status Species - pages 3-156 through 3-165). This section identifies additions or changes in research and data, specific to the planning area, which has become available in the last 3 years.

Based on the Fish and Wildlife Service’s 2015 listing determination, Greater Sage-Grouse is no longer a candidate species for listing; it remains, however, a BLM Utah sensitive species and under Utah law it is classified as an upland game species managed by the UDWR. The State of Utah’s 2015 Wildlife Action Plan identifies the Greater Sage-Grouse as an S3 (on a 1–5 scale).

3.3.1 Greater Sage-Grouse Population Trends

As of 2019, there are 363 occupied Greater Sage-Grouse leks in Utah. Long-term population trends were calculated for the 12 population areas with leks using the past 20 years of data in coordination with the Utah Division of Wildlife Resources and are presented in **Table 3-2**, Greater Sage-Grouse Population Trends for Areas in Utah. These trends were calculated for PHMA and General Habitat Management Areas (GHMA) (as identified in the 2015 Approved RMP Amendment) to allow comparisons between the two types of management area designations statewide, however, there are several factors that influence the dynamics and trends of individual populations that are described in detail in the 2015 Final EIS sections 3.3.3, 3.3.4, and 3.3.5.

Natural fluctuations over time are known to occur in Greater Sage-Grouse populations. In Utah, the populations tend to show a cyclic pattern over a roughly 10-year time frame. As such, short-term population trends are less important than long-term population trends; however, the Utah Division of Wildlife Resources, the BLM, and the Forest Service also monitor short-term trends using the adaptive management triggers identified in **Appendix I**. These triggers include monitoring trends in males per lek on key “trend leks,” as well as comparing very short-term year-to-year population fluctuations. The triggers are designed to identify emerging trends at their earliest stages and include monitoring for potentially different population trends (e.g., long-term gradual declines, sharp drops larger than natural levels, and substantial drops multiple years in a row with little to no increase between). A summary of triggers met since 2015 can be found below in Section 3.3.2.

Monitoring associated with the adaptive management triggers demonstrates that short-term trends (between 1 and 10 years) are within the range of anticipated natural variability for all Greater Sage-

Grouse populations throughout the state. The exception is the Sheeprocks area, where corrective management has been applied. **Table 3-2** demonstrates that, when looking beyond the short-term variability associated with natural population fluctuations, long-term trends indicate that the trend of the majority of Greater Sage-Grouse populations in Utah have been increasing over the last 20 years (approximately two complete population cycles), while recent certain populations have seen a decrease in a 20-year trend. As noted above, population trends are monitored annually as part of the adaptive management process, with corresponding evaluation when triggers are met and identification of the cause of such declines. Despite short-term recent decreases in numbers, the overall long-term trend for the majority of the populations continue to grow; besides the Sheeprocks population in 2016, no additional populations have met hard triggers. This is the benefit to having these warning points and triggers, so the interagency biologists can review this monitoring data and determine if management actions are necessary to turn an early decline around before meeting other triggers.

**Table 3-2
Greater Sage-Grouse Population Trends for Areas in Utah**

Population Area ^D	Occupied Leks—2019		Average Males per Lek—2019		Male Count on Leks—2019		20-Year Linear Regression Slope on Male Counts (Birds Added/Lost per Year)	
	PHMA	GHMA ^E	PHMA	GHMA	PHMA	GHMA	PHMA	GHMA
Bald Hills	14	0	6.1	N/A	73	0	6.1	N/A
Box Elder	72	0	12.7	N/A	350	0	-13.3	N/A
Carbon	20	0	9	N/A	135	0	7.0	N/A ^A
Emery	5	0	4.6	N/A	23	0	2.9	N/A
Hamlin Valley	8	0	11.3	N/A	68	0	-1.6	N/A
Ibapah	4	0	29.5	N/A	59	0	0.0	N/A
Panguitch	21	0	15.2	N/A	197	0	6.4	N/A
Parker Mountain	55	0	13.8	N/A	468	0	17.3	N/A
Rich	61	7	12.7	10.3	418	31	-26.7	16.1 ^C
Sheeprocks	9	0	6.8	N/A	41	0	-4.5 ^B	N/A
Strawberry	9	0	17.8	N/A	71	0	4.4	N/A
Uintah	67	11	7.6	17.3	242	52	17.3	1.4

Notes (information for this table provided by the Division of Wildlife Resources)

Occupied lek: A lek that has been active during at least one strutting season within the last 10 years

Number of occupied leks: The number of leks classified as occupied as of the 2019 lek count by UDWR.

Average males per lek: sum of high counts from leks with counts ≥ 1 in 2019 divided by the number of leks with ≥ 1 male counted. Includes counts from new (undetermined) leks.

Male count on lek: Sum of high male Counts for the 2019 season. Includes counts from new (undetermined) leks.

^A Single counts in 2000, 2002, 2004 only. No meaningful regression possible

^B Occupied leks in some portions of the Sheeprocks area were found in 2002 and 2008. Biased trend estimate for those areas.

^C 8 leks in Rich GHMA found in 2002. Biased trend estimate.

^D A statewide population trend summarization row was removed from this table to focus on the trends of individual populations, as was done in the 2015 Final EIS population trends section. Additionally, there is no evidence that birds in Utah regularly intermix between populations throughout the State. ^E See **Appendix 2** for maps depicting how leks are distributed in GHMA, including in relation to land ownership and administration.

3.3.2 Adaptive Management

The 2015 Approved RMP Amendment establishes soft and hard triggers for Greater Sage-Grouse habitat and populations (see MA-SSS-7). After evaluating the triggers for 2016 and 2017, eleven of the twelve Greater Sage-Grouse population areas with leks had not met any of the triggers. The Sheeprocks area met the hard trigger and a soft trigger in 2016. The soft trigger criteria met was a population Lambda of less than 1 in 4 consecutive years (2013–2016). The hard trigger criteria met was a population Lambda of less than 1 in 8 of a 10-year period (2008–2017). Both triggers reflect a long-term population decline in the Sheeprocks PHMA. A state-led collaborative effort by the West Desert Greater Sage-Grouse Local Working Group identified the potential causes of the population declines as predation and reductions in habitat availability due to fire, conifer encroachment, and invasive annual weeds. In addition, the BLM, in coordination with an interagency team of biologists and the local working group, is evaluating data to document if there are other causes that may be contributing to the decline. Preliminary actions by state and federal agencies have sought to address these threats, including the BLM applying the measures identified in the 2015 Approved RMP Amendment.

The major difference in management when meeting the adaptive management trigger was the change to the Sheeprock's PHMA to align with the boundaries mapped in Alternative B in the 2015 Final EIS. This resulted in 111,900 acres that were mapped as GHMA in the 2015 Proposed Plan being changed to be managed as PHMA, with all the corresponding management. Of the changed acres, only 53,900 (48 percent) are BLM-administered lands. The remainder are private (39,300 acres) or state (18,700 acres) lands. In the past four years, efforts by the BLM, State of Utah, Forest Service, and others have resulted in three years with a population Lambda greater than one in the Sheeprocks area (indicating an increasing population), with a nearly 43 percent population increase since focused efforts have been applied.

In 2018 the UDWR, the Governor's Public Land Policy Coordinating Office (PLPCO), and the BLM met to review population monitoring data for the 12 Greater Sage-Grouse population areas with leks in Utah (identified as PHMA for the BLM and Sage-Grouse Management Areas for the State). Population numbers were reviewed against the Utah BLM's 2015 ARMPA adaptive management decision process (**Appendix I**). Based on the review, no population criteria were met to initiate an adaptive management response.

In 2019 a population soft trigger for the Parker Mountain population was met. However, spring of 2019 had higher snow-pack than normal, and snow persisted later into the spring than an average year. Greater Sage-Grouse leks across the state were difficult to visit or totally inaccessible due to this late snow persistence. Several leks across the populations in Utah, including those in Parker Mountain, were not counted or were counted as soon as accessible, which was outside of the lekking season. Due to this counting discrepancy the BLM, United States Forest Service, and the UDWR determined that it would be more appropriate to defer from acting on this soft trigger in the absence of this information and wait one more year to assess population numbers when more complete data is available.

During the 2018 and 2019 meetings data associated with the adaptive management habitat triggers were also reviewed. In 2018, the Box Elder and Strawberry populations both met the criteria for a habitat soft trigger. In 2019, the Box Elder, Strawberry, and Bald Hills populations also met the criteria for a habitat soft trigger. These criteria were met due to the occurrence of wildfires in these population areas. Emergency stabilization and rehabilitation treatments were conducted in these populations on BLM-administered lands in coordination with UDWR. These treatments are expected to assist with recovery

of habitat in these populations. Monitoring is also being conducted to track recovery success and identify areas where stabilization or rehabilitation objectives are not met, which could trigger re-treatment under the Burned Area Rehabilitation program.

3.3.3 Greater Sage-Grouse Interim Seasonal Habitat Models

In 2017, an interagency effort to prepare maps of seasonal Greater Sage-Grouse habitat in Utah produced three maps of modeled seasonal habitats. These habitat maps were developed using a database of hundreds of lek locations paired with over 20,000 very high frequency (VHF) radio telemetry locations from Greater Sage-Grouse statewide. The resulting models were created using a method where 85 percent of the Greater Sage-Grouse VHF seasonal locations were captured within the habitat management areas, then the habitat conditions associated with those locations were identified throughout the state. It is important to note that these maps do not reflect occupied seasonal habitats (as identified by UDWR), but areas with vegetation characteristics similar to areas where the VHF locations were located; therefore, these models may not reflect every acre of seasonal habitat used by a given population, but they do identify areas of potential seasonal habitats.

The results of this modeling are presented in **Figure 3-2**, Utah Greater Sage-Grouse Breeding Habitat, **Figure 3-3**, Utah Greater Sage-Grouse Summer Habitat, and **Figure 3-4**, Utah Greater Sage-Grouse Winter Habitat. Acreages for these seasonal habitats are presented for PHMA and GHMA in **Table 3-3**. Breeding habitat is defined as areas used for lekking, nesting, and early brood-rearing from March 1 – June 14. Summer habitat is defined as areas used for brood-rearing from June 15 – August 31. Winter habitat is defined as areas used from November 1–February 29. For additional information on modeling methods, outcomes, and future efforts refer to the 2017 Annual Report for Utah’s Greater Sage-Grouse Local Working Groups (Messmer et al. 2018).

Table 3-3
Modeled Seasonal Habitat Acres in PHMA and GHMA

Population Area	Modeled Breeding		Modeled Summer		Modeled Winter	
	PHMA	GHMA	PHMA	GHMA	PHMA	GHMA
Bald Hills	85,600	100	201,700	200	187,300	3,600
Box Elder	769,300	0	581,000	0	740,000	0
Carbon	98,000	0	171,700	24,500	188,300	53,500
Emery	34,700	0	30,800	0	10,700	0
Hamlin Valley	94,400	0	67,600	0	102,000	0
Ibapah	28,800	0	38,100	0	48,600	3,700
Panguitch	125,500	0	127,200	0	172,700	0
Parker Mountain	421,900	0	279,500	2,300	425,100	2,400
Rich	575,800	47,000	656,600	40,000	662,700	45,600
Sheeprocks	106,100	0	232,500	0	387,000	3,000
Strawberry	81,500	5,500	99,800	10,800	12,400	16,500
Uintah	344,900	177,600	316,800	315,800	407,100	399,500

Note: There is substantial overlap in seasonal habitat acres/areas, therefore these are not a sum of total modeled habitat. See **Appendix 2** for maps of where the overlapping seasonal habitats intersect with GHMA.

The models and their associated maps are a preliminary step in a process to improve seasonal mapping throughout Utah. These preliminary models and maps will be updated as additional location data is collected. Currently, an interagency state-wide data collection effort is underway to increase knowledge

of how Greater Sage-Grouse populations use the fragmented landscapes throughout Utah; data from this effort will be used to refine the seasonal habitat models and maps. The 2017 seasonal models will be updated using data from global positioning system (GPS) transmitters that are fitted onto individual birds. To date, nearly 350 GPS transmitters have been deployed on Greater Sage-Grouse individuals statewide.

Compared to the labor-intensive process of collecting location data from VHF transmitters, the GPS transmitters collect 5 to 10 locations per day throughout the year eliminating the need for staff to physically locate the signal. This will result in over 1 million data points by 2019 that depict how Greater Sage-Grouse move and use different areas on a seasonal basis. This collaborative data collection effort will allow for increased information on seasonal habitat types used by Greater Sage-Grouse and will be used to refine seasonal habitat models and maps for Utah (Messmer et al. 2018).

3.3.4 Greater Sage-Grouse Seasonal Habitat Guidelines

A study by Dahlgren et al. (2019) develops habitat guidelines for Greater Sage-Grouse in Utah based on local Greater Sage-Grouse locations, differentiated by environmental variations. Their study pairs micro-site vegetation data (percent shrub cover, shrub height, forb cover, forb height, grass cover, grass height, and percent sagebrush composition) and Greater Sage-Grouse presence to spatial data such as climate, landscape vegetation maps, and elevation to formulate empirically-based habitat guidelines for Utah. The results of this study identified three distinct zones of Greater Sage-Grouse habitat conditions named Low, Mid, and High (see **Figure 3-1**, Utah Greater Sage-Grouse Habitat Objective Zones). For each zone they provide habitat guidelines for percent cover and heights of: sagebrush, shrub, grass, and forbs. According to Dahlgren et al., Greater Sage-Grouse “in Utah selected sites with sparser and lower vegetation conditions than Connelly et al.’s (2000) guidelines.”

3.3.5 Anthropogenic Disturbance

Anthropogenic disturbance was discussed in relation to Greater Sage-Grouse populations in the 2015 Final EIS (Section 3.3.5 – Conditions in Population Areas) and in Appendix L (Baseline Disturbance Inventory) of that document. That baseline inventory used a combination of data sources collected at multiple scales, from national-scale data sets to digitized disturbance of mining sites using aerial imagery. Since 2015, the disturbance inventory has been refined in several areas, specifically focusing on PHMA and areas where activities that needed to align with the disturbance cap were proposed. Anthropogenic disturbance has incrementally increased in some areas as a result of updating data sources and implementing projects; however, the more common effect over the last 3 years was that as disturbance data was refined with on-the-ground knowledge, the actual amount of disturbance using site-specific information was less than the amount identified from the coarser-scale data due to the removal of disturbances that were being double counted or not accounting for restored areas.

Another common correction during field verification was that the standard buffer-distance associated with linear features (e.g., roads) was usually larger in the estimated calculation than the actual disturbance footprint. Based on the current disturbance inventory maintained by the BLM Utah, no PHMA in any of the population areas has disturbance that is greater than 1.5 percent (see **Table 3-4**).

In addition to refining the disturbance inventory in portions of the planning area, implementing the disturbance cap over the last 3 years has provided valuable information related to its on-the-ground

effect of protecting Greater Sage-Grouse habitat. As noted in **Section 1.3**, PHMA in Utah were specifically designed to include more than just the areas of high-quality sagebrush types.

Because of the interspersed nature of habitat, non-habitat, and potential habitat in Utah's PHMA, it became evident that applying a static disturbance cap was resulting in missed opportunities to improve habitat conditions for local populations. While calculating disturbance for some projects, the BLM determined that after applying avoidance and minimization measures, remaining disturbance to habitat could have been offset by well-designed habitat improvement projects. Such projects could have created habitat for local Greater Sage-Grouse populations, replacing habitat that would have been lost to the proposed disturbances. Lessons learned from these on-the-ground experiences have been incorporated into the development of the Proposed Plan Amendment.

Table 3-4
Inventoried Disturbance in Greater Sage-Grouse Habitat Management Areas

Population Area	PHMA			GHMA*		
	Total Acres	Disturbance Acres	Percent Disturbance	Total Acres	Disturbance Acres	Percent Disturbance
Bald Hills	326,400	3,765	1.2%	21,200	427	2.0%
Box Elder	1,227,800	4,059	0.3%	0	0	-
Carbon	259,400	3,548	1.4%	198,600	3,238	1.6%
Emery	80,500	358	0.4%	11,400	126	1.1%
Hamlin Valley	143,700	1,071	0.7%	0	0	-
Ibapah	88,800	455	0.5%	10,800	81	0.8%
Panguitch	343,900	3,953	1.1%	37,500	144	0.4%
Parker Mountain	741,300	5,757	0.8%	0	62	-
Rich	1,015,400	6,039	0.6%	197,900	1,485	0.8%
Sheeprocks	646,600	4,322	0.7%	184,500	1,940	1.1%
Strawberry	161,500	646	0.4%	20,600	52	0.3%
Uintah	565,600	5,403	1.0%	989,400	12,529	1.3%
Statewide	5,600,900	39,376	0.7%	1,671,900	20,084	1.2%

Note: * - See **Appendix 2** for maps of disturbance in GHMA areas.

3.4 AIR QUALITY

Existing conditions for air quality in the planning area are described in the 2015 Final EIS in Section 3.4 (Air Quality, page 3-44). This section identifies additions or changes which are applicable to the analysis and decision-making process.

On October 26, 2015, the Environmental Protection Agency (EPA) issued a Final Rule adjusting the National Ambient Air Quality Standard (NAAQS) for ozone (O₃) from 75 parts per million to 70 parts per million. This results in a change in the cited NAAQS noted on page 3-45 and 3-48 (Table 3.5) in the 2015 Final EIS. This does not change whether there were exceedances, as presented in Table 3.5 of the 2015 Final EIS, nor does it change the conclusions of the impact analysis for air quality. Table 3.5 of the 2015 Final EIS has been updated with data from 2014–2017, and is included below as **Table 3-5**.

**Table 3-5
Air Quality Monitoring Values in Utah**

Pollutant	Averaging Time	2014	2015	2016	2017	4-Year Average	NAAQS	Percent of NAAQS ⁽³⁾
8600 West 24000 North Portage Monitor Site, Box Elder County								
Ozone	8-hour ⁽¹⁾	0.061 ppm	0.067 ppm	0.051 ppm	0.063 ppm	0.061 ppm	0.070 ppm	86%
Monitor Site 2 Miles South of Ouray and South of the White and Green River Confluence, Uintah County								
Ozone	8-hour ⁽¹⁾	0.079 ppm	0.068 ppm	0.096 ppm	0.065 ppm	0.077 ppm	0.070 ppm	109%
Nitrogen Dioxide	1-hour	29 ppb	23 ppb	20 ppb	16 ppb	22 ppb	100 ppb	20%
Monitor Site 2 Miles West of Redwash Atop Deadman's Bench, Uintah County								
Ozone	8-hour ⁽¹⁾	0.064 ppm	0.067 ppm	0.083 ppm	0.076 ppm	0.073 ppm	0.070 ppm	108%
Nitrogen Dioxide	1-hour ⁽²⁾	19 ppb	21 ppb	20 ppb	14 ppb	19 ppb	100 ppb	18%

Source: EPA 2015b

*Exceptional events have been excluded

ppb: parts per billion

ppm: parts per million

- (1) Fourth Highest Annual Daily Maximum 8-hour ozone concentration
- (2) 98th percentile of 1-hour daily maximum concentrations
- (3) Most recent 3-year average (20015 to 2017) percent of NAAQS

On December 20, 2017, the EPA sent Utah Governor Gary Herbert a letter responding to the state's recommendations in relation to designating Nonattainment areas for ozone in the state. In their letter, the EPA noted the following:

“After considering Utah’s September 29, 2016 ozone designation recommendations, which were based on 2013-2015 air quality data, as well as other relevant technical information (including 2014-2016 air quality data), the EPA intends to designate Salt Lake and Davis Counties as Nonattainment for ozone. Additionally, the EPA intends to designate portions of Weber, Tooele, Utah, Uintah, and Duchesne, Counties (including both state and tribal land) as Nonattainment for ozone.”

In August 2018 the EPA designated portions of Duchesne and Uintah Counties as nonattainment for ozone. Additionally, all federal actions in nonattainment areas, including those on BLM-administered lands, must comply with General Conformity Rules under the Clean Air Act to demonstrate that the action conforms with state or federal implementation plans. A 1-year grace period for conformity determinations is allowed for newly designated nonattainment areas, beginning August 2019 for the Uinta Basin nonattainment area. Air regulatory agencies have 36 months to meet the NAAQS or to develop an implementation plan to bring the area back into compliance with the standard.

The BLM is participating in the Uinta Basin Ozone Working Group, which includes tribal and government decision-makers, stakeholders, and other experts. The mission of the Uinta Basin Ozone Working Group is to prevent a moderate nonattainment designation in 2021, by identifying economically and effective measures at reducing ozone pollution in the Uinta Basin. Over time the problem-solving efforts of the Uinta Basin Ozone Working Group and implementation plans will help improve air quality in the nonattainment areas.

3.5 VEGETATION (INCLUDING NOXIOUS WEEDS, RIPARIAN AND WETLANDS)

Existing conditions for vegetation in the planning area are described in the 2015 Final EIS in Section 3.8 (Vegetation, page 3-64), as well as in the 2016 Draft EIS (BLM 2016), Chapter 3, Sections 3.6.2 (Vegetation Communities – page 3-133) and Section 3.6.3 (Invasive and Noxious Species – page 3-138). This section identifies additions or changes which are applicable to the analysis and decision-making process.

In the 2015 Greater Sage-Grouse ARMPA the BLM committed to “increase the amount and functionality of seasonal habitats” (Objective SSS-4) by implementing vegetation and fuels treatments (see also MA-SSS-VEG-1, MA-SSS-VEG-2, MA-SSS-VEG-3, MA-SSS-VEG-4, and MA-FIRE-3). Consistent with this management, the BLM has continued to implement projects to restore or improve Greater Sage-Grouse habitat. **Table 3-6** identifies the treatments conducted in the past 5 years in Utah specifically to manage for Greater Sage-Grouse. These projects are developed at the local level and are designed to improve the resistance and resilience of sagebrush habitats. Many of these projects are implemented through the State of Utah’s Watershed Restoration Initiative partnership.

**Table 3-6
Acres of Greater Sage-Grouse Conservation Actions**

Fiscal Year	Conifer Removal	Fuel Breaks	Invasive Species Removal	Habitat Protection	Habitat Restoration	Total
2013	8,463	805	1,502	538	5,073	16,381
2014	32,255	2,902	0	2,439	19,626	57,222
2015	16,505	4,150		1,494	10,148	32,297
2016	53,566	0	480	3,108	16,617	73,771
2017	51,219	2,001	10,391	24,991	1,800	90,402
2018	68,270	200	2,836	2,203	21,937	95,446
2019	58,194	0	10,119	0	20,475	88,788
Total	162,008	9,858	12,373	32,570	53,264	270,073

Source: National Fuels Reporting Operations Reporting System (NFPORS)

As the BLM has implemented its 2015 ROD/ARMPA, project proponents have contributed funds to the Watershed Restoration Initiative to help complete portions of some of these projects to be able to document that their individual projects meet the net conservation gain mitigation strategy. While important, none of those inputs have been a deciding factor for whether a project could be implemented or not; the largest financial contributors to completion of these habitat improvement projects has been the BLM and the State of Utah.

It is also critical to note that the acreages noted in **Table 3-6** are applicable only to BLM-administered lands. Additional treatments are conducted by private landowners on their own lands, either through their own means or through contacts with the Natural Resources Conservation Service, by the State of Utah on State and SITLA lands, and by the Forest Service. Treatments on the other lands are often coordinated through the State-run Watershed Restoration Initiative and Local Working Groups.

As noted in the table, the majority of treated acres relate to removal of encroaching conifer and restoring habitat. These treatments are intended to improve the condition of and connectivity between habitat patches. There are approximately 7.3 million acres mapped as PHMA and GHMA in Utah. According to state-wide LANDFIRE vegetation data reflecting existing vegetation, there are 3.1 million acres (approximately 41 percent) of these areas that are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species. The PHMA boundaries were drawn at a broad scale; thus, they include interspersed areas of habitat and non-habitat (see **Appendix K**). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations.

3.6 OTHER SPECIAL STATUS SPECIES

Existing conditions for other special status species in the planning area are described in the 2015 Final EIS in Section 3.9 (Other Special Status Species, page 3-99), as well as in the 2016 Draft EIS (BLM 2016), Chapter 3, Sections 3.6.1 (Special Status Species - page 3-128). This section identifies changes which are applicable to the analysis and decision-making process.

Table 3.33 in the 2015 Final EIS, the following species are no longer federally listed as threatened, endangered, proposed, petitioned, and candidate plant and animal species in the planning area:

- Greater Sage-Grouse
- Coral Pink Sand Dunes tiger beetle
- Least chub
- Boreal toad
- Goose Creek milk-vetch
- Graham's beardtongue
- White River beardtongue (penstemon)

3.7 WILD HORSES AND BURROS

Existing conditions for wild horses and burros in the planning area are described in the 2015 Final EIS in Section 3.11 (Wild Horses and Burros, page 3-142). This section identifies changes which are applicable to the analysis and decision-making process.

The acreage associated with the 19 herd management areas presented in Table 3.42 in the 2015 Final EIS are still accurate, however, the current size estimates have changed. **Table 3-7** displays the 2018 population estimates in comparison to appropriate management level by each herd management area. In addition, the table shows the last date a gather was conducted on the given herd management areas.

Table 3-7
Wild Horses and Burros Population Levels

Herd Management Area	Upper Appropriate Management Level		Current Herd Size (2019 Estimate)		Last Gather (month/year)	Greater Sage-Grouse Population Area
	Horses	Burros	Horses	Burros		
Bible Spring	60	0	44	0	Aug-18	Hamlin Valley
Canyon Lands	0	100	0	164	Aug-88	N/A
Cedar Mountain	390	0	548	0	Jul-18	N/A
Chloride Canyon	30	0	112	0	Nov-18	N/A
Chokecherry	30	0	278	0	Jan-11	Hamlin Valley
Confusion	115	0	415	0	Sep-10	N/A
Conger	80	0	206	0	Dec-17	N/A
Four Mile	60	0	50	0	Aug-18	Hamlin Valley
Frisco	60	0	173	0	Jan-17	N/A
Kingtop	40	0	4	0	Aug-00	N/A
Mount Elinor	25	0	154	0	Jan-11	N/A
Muddy Creek	125	0	76	0	Sep-18	N/A
North Hills	36	0	140	0	Dec-10	N/A
Onaqui Mountain	210	0	510	0	Feb-12	Sheeprocks
Range Creek	125	0	282	0	Jul-18	Carbon
Sinbad	0	70	0	175	Apr-16	N/A
Sulphur	250	0	994	0	Aug-18	Hamlin Valley
Swasey	100	0	601	0	Feb-13	N/A
Tilly Creek	50	0	192	0	Feb-18	Hamlin Valley
Total	1,786	170	4,779	339	N/A	N/A

3.8 WILDLAND FIRE MANAGEMENT

Existing conditions associated with wildland fire in the planning area are described in the 2015 Final EIS in Section 3.14 (Wildland Fire Management, page 3-154). Ongoing efforts for fuel treatments are described in Executive Order 13855, *Promoting Active Management of America's Forests, Rangelands, and other Federal Lands to Improve Conditions and Reduce Wildfire Risk* (December 21, 2018), and Secretary's Order 3372, *Reducing Wildlife Risks on Department of Interior Land through Active Management* (January 2, 2019), which provide direction to the BLM to address wildfire prevention and suppression, which the BLM has implemented by setting ambitious fuel treatment targets to protect and restore sagebrush ecosystems. This section identifies changes which are applicable to the analysis and decision-making process.

The geographic extent of fire and fuels analysis is the same as that of the 2015 Final EIS. The BLM acknowledges that there have been changes in vegetation modified by fires and fuels since the 2015 Final EIS. Habitat loss to fire and fuels was covered in the 2015 EIS. Fire and fuels reductions have and continue to occur.

From 2015-2019 there have been 233 additional wildfires that have burned approximately 181,159 acres of Greater Sage-Grouse PHMA and GHMA (see **Table 3-8** and **Table 3-9**). Nearly 73 percent of the wildfires were fully suppressed before they reached 10 acres in size.

Table 3-8
Wildfires in Greater Sage-Grouse Habitat Management Areas (2015–2019)

Size Class	PHMA		GHMA	
	Number of Fires	Population Areas Affected	Number of Fires	Population Areas Affected
A - 0 to .25 acres	81	Bald Hills, Box Elder, Carbon, Emery, Hamlin, Panguitch, Parker, Rich, Sheeprocks, Strawberry, Uintah	32	Carbon, Rich, Sheeprocks, Strawberry, Uintah
B - .26 to 9.9 acres	38	Bald Hills, Box Elder, Emery, Panguitch, Parker, Rich, Sheeprocks, Strawberry, Uintah	19	Carbon, Rich, Sheeprocks, Uintah
C – 10 to 99 acres	18	Bald Hills, Box Elder, Carbon, Rich, Sheeprocks, Uintah	10	Carbon, Sheeprocks, Uintah
D – 100 to 299 acres	9	Box Elder, Rich, Sheeprocks, Strawberry	1	Unitah
E – 300 to 999 acres	8	Parker, Rich, Sheeprocks, Box Elder, Uintah	3	Emery, Carbon, Sheeprocks
F – 1000 to 4999 acres	8	Parker, Sheeprocks, Box Elder, Uintah	0	N/A
G – 5000+ acres	6	Box Elder, Bald Hills, Rich, Strawberry	0	N/A
Total	168		65	

Source: BLM GIS Data

**Table 3-9
Acres of Wildfire in PHMA and GHMA (2015–2019)**

Population Area	PHMA	GHMA	Total
Bald Hills	18,817	0	18,817
Box Elder	100,218	0	100,218
Carbon	0	511	511
Emery	325	399	724
Hamlin Valley	0	0	0
Ibapah	0	0	0
Panguitch	9,192	0	9,192
Parker Mountain	10,810	0	10,810
Rich	9,345	0	9,345
Sheeprocks	12,473	439	12,912
Strawberry	15,034	0	15,034
Uintah	533	3,063	3,596
Total	176,747	4,412	181,159

Source: BLM GIS Data

From 2015-2019, approximately 380,704 acres in Greater Sage-Grouse habitat management areas have been treated on BLM-administered lands in Utah to improve habitat for the species. Since the BLM's 2015 plan amendment was completed for Utah, more acres in Greater Sage-Grouse habitat management areas have been treated with the goal of improving/creating habitat than has been lost to wildfire. Based on published accounts in Utah, treated areas can be quickly used by Greater Sage-Grouse as habitat, and can improve Greater Sage-Grouse vital rates (Sandford et al. 2017; Sandford et al. 2015).

3.9 WILDERNESS CHARACTERISTICS

Inventories for wilderness characteristics noted below were conducted between 1999 and the present and reflect the most up-to-date lands with wilderness characteristics baseline information for this planning area. In addition to the inventories conducted for the purposes of land use planning, lands with wilderness characteristics inventories will be updated for site-specific project environmental analyses that are conducted in the planning area to determine if a project will have impacts on lands with wilderness characteristics identified through previous or updated inventory efforts.

There are 52 units totaling 197,240 acres of BLM-administered lands in PHMA or GHMA outside of wilderness and WSAs that have been inventoried and found to have wilderness characteristics. Of those, 13 units totaling 52,240 acres are natural areas² managed for wilderness characteristics protection in the Greater Sage-Grouse Uintah Population Area (e.g., some land uses are restricted or prohibited under the Vernal RMP). The remaining 145,000 acres in 39 units are lands with wilderness characteristics where the BLM has made a determination not to apply specific management to protect the wilderness characteristics or are areas where no determination has yet been made in an RMP (see 2015 Final EIS Map 3.15-1). **Table 3-10** summarizes natural areas that overlap mapped PHMA habitat. GHMA habitat does not overlap any identified lands with wilderness characteristics that are managed to protect those

² In Utah, natural areas are lands with wilderness characteristics outside of WSAs that are identified in approved RMPs to be managed to maintain, preserve and protect those characteristics. This is an effort to recognize these discretionary decisions with a better, simpler reference. Wilderness Areas and WSAs are formal designations that are managed in a prescribed manner. To avoid confusing these official designations with discretionary decisions, the BLM Utah uses this term to distinguish between formal designations (e.g., Wilderness Areas) and a discretionary management category (i.e., natural areas).

characteristics (natural areas). **Tables 3-11** and **3-12** summarize lands with wilderness characteristics that overlap PHMA and GHMA, respectively.

Table 3-10
Natural Areas Overlapping PHMA

Natural Area	Acres Overlapping PHMA	Population Area
Bourdette Draw	6,231	Uintah
Bull Canyon	2,473	Uintah
Cold Spring Mountain	4,553	Uintah
Daniels Canyon	2,115	Uintah
Dead Horse Pass	886	Uintah
Diamond Breaks	507	Uintah
Diamond Mountain	24,469	Uintah
Lower Flaming Gorge	1,812	Uintah
Moonshine Draw	3,679	Uintah
Mountain Home	3,071	Uintah
Stuntz Draw	1,986	Uintah
Vivas Cake Hill	121	Uintah
Wild Mountain	336	Uintah

Table 3-11
Lands with Wilderness Characteristics Overlapping PHMA

Lands with Wilderness Characteristics Unit	Acres Overlapping PHMA	Population Area
Cold Spring Draw West	1,005	Carbon
Cottonwood Ridge	3,089	Carbon
Currant Canyon	465	Carbon
Deep Creek Mountains	1,521	Ibapah
Desolation Canyon	1,414	Carbon
Granite Peak	194	Bald Hills
Hamlin	468	Hamlin Valley
Indian Swale	3,662	Carbon
Limestone Cliffs Ext	180	Parker
Lion Peak	6,045	Sheeprocks
Needle Mountain	1,305	Hamlin Valley
Paradise Mountain	139	Hamlin Valley
Phonolite Hill	76	Parker
Pilot Range	36,617	Box Elder
Pole Canyon	2,220	Parker
Sheep Canyon	105	Carbon
South Horn Mtn. Unit B	28	Emery
South Wah Wah	1,725	Hamlin Valley
Split Mountain Benches	282	Uintah
Steamboat Mountain	2	Hamlin Valley
Tolivers #2	1,257	Uintah
Upper Kanab Creek	814	Panguitch
Wildcat Knolls Ext.	37	Emery

**Table 3-12
Lands with Wilderness Characteristics Overlapping GHMA**

Lands with Wilderness Characteristics Unit	Acres Overlapping GHMA	Greater Sage-Grouse Population
Archy Bench_A	1,395	Uintah
Badlands Cliffs	4,009	Carbon
Cold Spring Draw East	2,306	Carbon
Cold Spring Draw West	4,127	Carbon
Cottonwood Ridge	2,958	Carbon
Cripple Cowboy	1,245	Uintah
Currant Canyon	2,073	Carbon
Deep Creek Mountains	159	Ibapah
Desolation Canyon	9,801	Carbon
Duck Rock	51	Uintah
Flume Canyon	1	Uintah
Hideout Canyon	79	Uintah
Indian Swale	1,569	Carbon
Jack Canyon	1,222	Carbon
Lower Bitter Creek	252	Uintah
Mexico Point	290	Uintah
Pete's Wash	450	Carbon
Sheep Canyon	1,439	Carbon
Sheep Wash	395	Carbon
Sweet Water	2,495	Uintah
Westwater Creek	414	Uintah
White River	705	Uintah
Wolf Point	3,835	Uintah

3.10 LIVESTOCK GRAZING/RANGE MANAGEMENT

The existing condition of livestock grazing in the planning area is described in the 2015 Final EIS in Section 3.16 (pgs. 3-165 through 3-171). Since 2015, BLM has continued to manage livestock according to the grazing regulations (C.F.R. 4100) and the direction in the various RMPs. In general, the existing conditions of livestock grazing in Utah remain the same as described in the 2015 Final EIS. BLM has continued to issue grazing permit renewals consistent with the regulation and in conformance with the RMPs, including the management in the 2015 ROD/ARMPA.

3.11 RECREATION

The existing condition of recreation in the planning area is described in the 2015 Final EIS in Section 3.17 (pgs. 3-171 through 3-177). In general, recreation activities and levels in Utah remains the same as described in the 2015 EIS. BLM Utah has continued to issue special recreation permits at levels commensurate with the 2015 numbers. Special recreation permits authorized since 2015 have been in conformance with the actions in the 2015 amendment, resulting in neutral effects on Greater Sage-Grouse and its habitat.

Panguitch Population Area

On December 4, 2017, portions of the Grand Staircase-Escalante National Monument were modified by Proclamation 9682. Prior to the modification, approximately 5,860 acres of PHMA in the Panguitch Population Area overlapped the monument. After the modification, approximately 1,900 acres of PHMA overlap the monument boundaries. Given the dispersed nature of the recreation in the area of overlap it is not anticipated that the reduction will substantively change the nature or level of recreation on the acres of PHMA that no longer overlap the monument.

Sheeprocks Population Area

Due to the broad-scale nature of the state-wide habitat mapping efforts, portions of the GHMA identified in 2015 overlapped areas previously designated as open for cross-country OHV use. Portions of the Five Mile Pass area were designated as open to cross-country OHV use through a land use plan amendment that was completed in 1992. Since that time, the Five Mile Pass area has provided an important destination for motorized recreation. A portion of the designated open area was changed to limited as part of the 2015 amendment, creating a managerial conflict with an area recognized as a destination recreation resource for over 20 years.

Similarly, the Little Sahara Recreation Area was designated as open to cross-country OHV use in the sandy areas associated with the large dune complex. Like Five Mile Pass, this area is a recognized and well-known destination for motorized recreation and has been since before completion of the House Range Resource Area Resource Management Plan in 1987. Due to mapping in the 2015 Greater Sage-Grouse effort, small portions around the periphery of the designated recreation area were mapped as GHMA and OHV use was limited to existing routes. The 2015 amendment that changed the OHV area designation to “limited to existing routes” created a managerial conflict for this designated recreation area.

3.12 COMPREHENSIVE TRAVEL AND TRANSPORTATION MANAGEMENT

The existing condition of the travel and transportation network in the planning area is described in the 2015 Final EIS in Section 3.18 (pgs. 3-177 through 3-180). The language in the 2015 Final EIS is still applicable, with the following changes and information available since 2015.

Table 3.62 of the 2015 Final EIS displays OHV designations; those were changed as part of the September 2015 ROD/ARMPA. The updated acres are in MA-TTM-I in the 2015 ROD/ARMPA, and are also shown in **Chapter 2** of this RMPA/EIS under MA-TTM-I for the No Action Alternative. These area designations related to the conflicts identified in the recreation section above for the Five Mile Pass and Little Sahara areas.

Another change since the 2015 Final EIS was initiation of several travel management processes throughout the State of Utah, including several that overlap portions of both PHMA and GHMA in the Carbon, Uintah, and Sheeprocks areas. These implementation-level planning processes will address route designations and consideration of the travel network in areas that overlaps PHMA and some GHMA.

3.13 LANDS AND REALTY

The existing condition of Lands and Realty in the planning area is described in the 2015 Final EIS in Section 3.19 (Lands and Realty, pgs. 3-180 thru 3-190). The lands and realty program is essentially the

same as was described in the 2015 Final EIS and the program's impacts on Greater Sage-Grouse are also essentially the same. Land use authorization requests are customer driven. Within the planning area most authorizations processed are primarily for roads, electric distribution lines, small buried fiber optic lines, and communications sites. Occasionally ROWs are sought for major transmission lines (e.g., 500 kV electric transmission), large-scale pipeline projects, and other similar infrastructure to transport resources through the state.

Since 2015, several site-specific lands and realty actions have been completed while conforming to the avoidance, minimization (e.g., disturbance cap, tall structure, required design features, etc.), and compensation management in the 2015 ROD/ARMPA. This has included installing new local distribution power lines, adding new communication infrastructure to existing developed communication sites, development of pipelines that are aligned with existing disturbance and development of fiber-optic lines.

Additionally, two large interstate transmission line projects have been approved, both of which transverse a portion of both PHMA and GHMA. Construction has not yet begun on the TransWest Express Transmission Project. A description of the impacts of these projects on Greater Sage-Grouse is available in the associated environmental documents for each project. A smaller (138 kV) intrastate transmission line in southern Utah was approved during development of the 2015 ROD/ARMPA and construction is nearing completion.

Several sections of the 2015 Final EIS Chapter 3 for lands and realty displays land management decisions that predated completion of the 2015 ROD/ARMPA (e.g., avoidance and exclusion areas, number and acres of designated right-of-way corridors). Those numbers were changed as part of the September 2015 ROD/ARMPA. The updated acres are in the corresponding sections of the 2015 ROD/ARMPA.

3.14 RENEWABLE ENERGY

The existing condition of renewable energy in the planning area is described in the 2015 Final EIS in Section 3.20 (Renewable Energy, pgs. 3-190 thru 3-199). Similar to lands and realty, land use authorization requests for renewable energy projects are generally customer driven. The renewable energy program is essentially the same as was described in the 2015 Final EIS based on the generally low potential for renewable energy development on Greater Sage-Grouse habitat in the state. One new project since 2015 relates to a potential lease of an area north of the Bald Hills population for solar development. The consideration of that project is concurrent with this planning effort.

3.15 LEASABLE MINERALS (OIL AND GAS, NONENERGY LEASABLE MINERALS, COAL, AND OIL SHALE AND TAR SANDS)

Development of mineral resources has continued since 2015, largely focusing on maintaining existing operations while in some instances beginning the exploratory studies for expansion of existing operations. As a resource whose development is largely controlled by market demand, there has not been substantial changes in demand for leasable minerals since 2015. Based on these minimal changes, the existing conditions are essentially the same as described in the 2015 EIS.

3.15.1 Oil and Gas

Information related to mineral potential has not changed since the 2015 Final EIS. That information can be found in the 2015 Final EIS in Chapter 3, Section 3.21.1 in a series of tables applicable to the decision area, as well as four Greater Sage-Grouse population areas with high oil and gas development potential. Tables that

include oil and gas leasing categories and the acres of existing leases, leases held by production, and number of wells are updated below (Tables 3-13 through 3-22). The text surrounding the various tables is either repetitive of the table's content, or still describes the area's situation. The status of some designated Federal oil and gas units has changed since the 2018 Final EIS. Because of this, some leases that were held by production due to association with the designated unit were then evaluated on their own status rather than that of the unit, resulting in the lease expiring. As a result, the tables below have been updated to reflect the most up to date information on leases in PHMA and GHMA.

Table 3-13
Oil and Gas Federal Activity in the Decision Area (as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	106,599	304,864	411,463
Leases Held by Production (acres)	24,704	170,302	195,006
Percent Held by Production	23%	56%	47%
Number of Existing Wells	224	869	1,093

Source: BLM 2019

Table 3-14
Oil and Gas Leasing Categories in the Decision Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	188,600	188,600
CSU and/or TL	0	261,300	261,300
NSO	3,023,700	28,600	3,052,300
Closed to Leasing	100,400	27,800	128,200

Source: BLM 2015 (ARMPA data sets)

Table 3-15
Oil and Gas Federal Leases and Wells in the Uintah Population Area (as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	501,650	254,100	304,265
Leases Held by Production (acres)	8,985	137,882	146,867
Percent Held by Production	18%	54%	48%
Number of Existing Wells	54	552	606

Source: BLM 2019

Table 3-16
Oil and Gas Leasing Categories in the Uintah Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	104,000	104,000
CSU and/or TL	0	206,200	206,200
NSO	341,100	6,300	347,400
Closed to Leasing	56,400	12,400	68,800

Source: BLM 2015 (ARMPA data sets)

Table 3-17
Oil and Gas Federal Leases and Wells in the Carbon Population Area
(as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	13,981	45,021	59,002
Leases Held by Production (acres)	12,940	29,490	42,430
Percent Held by Production	93%	66%	72%
Number of Existing Wells	158	317	475

Source: BLM 2019

Table 3-18
Oil and Gas Leasing Categories in the Carbon Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	22,500	22,500
CSU and/or TL	0	43,300	43,300
NSO	154,100	9,300	163,400
Closed to Leasing	5,900	15,300	21,200

Source: BLM 2015 (ARMPA data sets)

Table 3-19
Oil and Gas Federal Leases and Wells in the Emery Population Area
(as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	12,252	2,928	15,180
Leases Held by Production (acres)	648	2,928	3,576
Percent Held by Production	5%	100%	24%
Number of Existing Wells	2	0	2

Source: BLM 2019

Table 3-20
Oil and Gas Leasing Categories in the Emery Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	7,900	7,900
CSU and/or TL	0	50	50
NSO	84,000	1,600	85,600
Closed to Leasing	0	0	0

Source: BLM 2015 (ARMPA data sets)

Table 3-21
Oil and Gas Federal Leases and Wells in the Rich Population Area
(as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	18,274	0	18,274
Leases Held by Production (acres)	2,116	0	2,116
Percent Held by Production	12%	-	12%
Number of Existing Wells	10	0	10

Source: BLM 2019

Table 3-22
Oil and Gas Leasing Categories in the Rich Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	0	0
CSU and/or TL	0	300	300
NSO	328,800	200	329,000
Closed to Leasing	0	0	0

Source: BLM 2015 (ARMPA data sets)

In addition to the updated oil and gas leasing categories, leases and wells, the 2015 Final EIS refers to the levels of reasonably foreseeable development associated with implementation of the 2015 Final EIS No action alternative (see 2015 Final EIS Section 3.21.7 on page 3.218). Because Alternative A (no action) was not selected in 2015, those numbers do not reflect the reasonably foreseeable development scenario given existing management in the 2015 ROD/ARMPA. The correct reasonably foreseeable development scenario for the 2015 Final EIS Proposed Plan is in Appendix R of that document. For this planning process, the reader is referred to Table R.1, Table R.2, and Table R.7 in the 2015 Final EIS Appendix R.

3.15.2 Nonenergy Leasable Minerals

Information related to mineral potential has generally not changed since completion of the 2015 Final EIS and can be found in Section 3.21.2 on page 3-208. A reference to a current leaseholder for a phosphate mine in PHMA is no longer accurate, since the company JR Simplot has changed its name to Simplot Phosphates LLC. This change, while making the document more accurate, does not change the existing environment and its relationship to the impact analysis.

Two aspects related to phosphate leasing were not specifically addressed in the 2015 Final EIS that have been raised during public comment on the 2018 Draft RMPA/EIS: fringe acreage leases and prospecting permits.

Page 3-208 of the 2015 Final EIS defines a fringe acreage lease, but the language stops short of noting the regulatory rights the holder of existing federal leases or mineral rights on adjacent private lands has to obtain the rights to such lands via a fringe acreage lease or a lease modification (43 CFR 3510.11). Such regulations would be considered in combination with management in the 2015 ROD/ARMPA, as amended by this planning process, when considering future requests for leases.

Page 3-208 of the 2015 Final EIS also addresses a preference right lease as a variety of a noncompetitive lease associated with a prospecting permit. As noted in the Mineral Leasing Act, Section 9(b), if the results of a prospecting permit are able to demonstrate that “valuable deposits of phosphate have been discovered within the area covered by his permit, the permittee shall be entitled to a lease for any or all of the land embraced in the prospecting permit.”

As noted on page 3-211 of the 2015 Final EIS, there are pending prospecting permit applications in PHMA. All these prospecting permits are outside the Ashley-Brush Creek Known Phosphate Leasing Area, and most of the acreage is east of and beyond the areas with mapped high, moderate, or low phosphate development potential. In addition, the areas with pending prospecting permits overlap or are within 1 mile of 12 occupied Greater Sage-Grouse leks (approximately 39 percent of occupied leks in the Diamond Mountain proper area). The pending permits also bisect areas with nine occupied leks to the south and 10 occupied leks to the north or east. Finally, the prospecting permits are in an area where mining techniques (surface vs. underground) that would be used are unclear, based on the amount of overburden and considering the existing phosphate mining methods in the region and more broadly in the United States.

3.15.3 Coal

Information related to mineral potential has generally not changed since completion of the 2015 Final EIS, and can be found in Section 3.21.3 on page 3-212. One change since the 2015 Final EIS is the removal of portions of the Grand Staircase-Escalante National Monument. The 2015 Final EIS notes that coal inside the monument boundaries is unacceptable for coal leasing. While the December 2017 proclamation may reduce the size of the monument’s boundaries, the specific management of those areas has not been determined and can therefore not be reported here.

3.15.4 Oil Shale and Tar Sands

Information related to mineral potential has not changed substantively since completion of the 2015 Final EIS, and can be found in Section 3.21.6 on page 3-217. An environmental document has been prepared to consider various rights-of-way across BLM-administered land in association with a potential oil shale project on private property.

3.15.5 Locatable Minerals

Existing conditions were described in the 2015 Final EIS in section 3.21.4 pages 3-215 through 3-216. Since FY2016 there has been an increase in the number of mining claims located in the State of Utah. The majority of those mining claims are located outside PHMA and GHMA, though there were two concentrations of new claims in the Sheeprocks area, with one concentration in the northeast GHMA portion and one in the southwest PHMA portion. In addition, since the completion of the 2015 Final EIS, thirteen locatable mineral notices have been accepted and four plans of operations authorized; however, only one notice is within either PHMA or GHMA, situated on the eastern edge PHMA in the Sheeprocks area.

3.16 SOCIAL AND ECONOMIC CONDITIONS

The Socioeconomic conditions within the planning area are described in the 2015 Final EIS in Section 3.23 (Social and Economic Conditions (Including Environmental Justice), pgs. 3-321 through thru 3-267). Social and economic conditions are further identified in the Draft EIS for the Sagebrush Focal Area

withdrawal in 2016, Chapter 3, Section 3.5 (Social and Economic Conditions), page 3-9, and specifically Section 3.5.17, Section 3.5.18, and Section 3.5.19.

BLM-administered lands provide a range of goods and services that benefit society in a variety of ways. Some of these goods and services, such as timber and minerals, are bought and sold in markets, and hence have a readily observed economic value (as documented in the sections above); others have a less clear connection to market activity, even though society derives benefits from them. In some cases, goods and services have both a market and a nonmarket component value to society. The socioeconomic conditions in Utah are essentially the same as described in the 2015 EIS, with the following changes.

Since 2015, all counties in Utah have prepared county-specific RMPs to identify the county's vision for management of public lands within their borders. This updates information on page 3-241 of the 2015 Final EIS Chapter 3. These plans are recognized and named in **Chapter I**.

The 2015 Final EIS assumed that the federal portion of the Alton coalfield would start production on federal minerals in 2016 (see page 3-255). This did not occur and the environmental review of the lease nomination is not complete.

Since 2015, there have been some changes in market conditions with respect to demand and prices of major mineral commodities that are commonly extracted in Utah. Prices for crude oil have risen to some degree, although prices for natural gas have remained fairly steady at a low level. In addition to these market factors, normal fluctuations in the prices of other commodities such as gold and other minerals will continue to play a role in the degree to which new exploration, development, and production will occur in Utah. The most up-to-date, detailed statistics and trends have been published in the 2018 Economic Report to the Governor, prepared by the Utah Economic Council (this report is available online at <http://gardner.utah.edu/wp-content/uploads/2018-ERG-Report.pdf>).

This page intentionally left blank.

Chapter 4. Environmental Consequences

4.1 INTRODUCTION

This chapter presents the anticipated direct, indirect, and cumulative impacts on the environment from implementing the alternatives in **Chapter 2**. The purpose of this chapter is to describe to the decision-maker and the public the differences between the entire range of alternatives considered in 2018, including the 2018 Draft Plan (Management Alignment Alternative), the 2018 Proposed Plan Amendment, as well as the range of alternatives incorporated by reference from the 2015 plan amendments. It is meant to clarify that Greater Sage-Grouse management was comprehensively analyzed in 2018 through multiple NEPA and planning processes.

This chapter is organized by topic, based on the affected resources identified in **Chapters 1** and **3**. Only those issues listed in **Table 1-3** are carried forward for analysis in this chapter.

Impact analysis is a cause-and-effect process. The detailed impact analyses are based on the following:

- The BLM planning team's knowledge of resources and the planning area
- Literature reviews
- Information provided by experts in the BLM, other agencies, cooperating agencies, interest groups, and concerned citizens

The baseline used for the impact analysis is the current condition or situation, as described in **Chapter 3**. Impacts on resources and resource uses are analyzed and discussed commensurate with resource issues and concerns identified through the NEPA process. At times, impacts are described in qualitative terms or using ranges of potential impacts.

This SEIS describes more explicitly the full range of alternatives that the BLM has evaluated, summarizing each action alternative contained in the 2015 and 2018 EISs.

4.2 ANALYTICAL ASSUMPTIONS

Several overarching assumptions have been made in order to facilitate the analysis of the potential impacts. These assumptions set guidelines and provide reasonably foreseeable projected levels of development that would occur in the planning area during the planning period. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative, as described in **Chapter 2**.

The following general assumptions apply to all resource categories:

- Sufficient funding and personnel would be available for implementing the final decision
- Implementation-level actions necessary to execute the RMP-level decisions in this RMPA/EIS would be subject to further environmental review, including that under NEPA
- Direct and indirect impacts of implementing the RMPA would primarily occur on public lands administered by the BLM in the planning area, though environmental effects may also affect

adjacent non-BLM-administered lands; as noted in **Chapter I**, the management actions apply only to BLM-administered public lands and mineral estates (minerals-related actions only)

- The BLM would carry out appropriate maintenance for the functional capability of all developments
- The discussion of impacts is based on best available data; Knowledge of the planning area and decision area and professional judgment, based on observation and analysis of conditions and responses in similar areas, are used for environmental impacts where data are limited
- Restrictions, such as siting and design features, would apply, where appropriate, to surface-disturbing activities associated with land use authorizations and permits issued on BLM-administered lands and federal mineral estate
- GIS data have been used in developing acreage calculations and to generate the figures in **Appendix A**
 - Calculations depend on the quality and availability of data
 - Acreage figures and other numbers are approximate projections for comparison and analysis only; readers should not infer that they reflect exact measurements or precise calculations
 - In the absence of quantitative data, best professional judgment was used
- Impacts were sometimes described using ranges of potential impacts, or they were described qualitatively, when appropriate

Analytical assumptions and indicators specific to individual resources and resource uses are the same as those identified in the methods of analysis section for each resource/use in the 2015 Final EIS. Assumptions or indicators specific to this analysis, if any, are presented under the applicable resources/resource uses sections below.

4.3 GENERAL METHOD FOR ANALYZING IMPACTS

Potential impacts are described in terms of type, context, duration, and intensity, which are generally defined below.

Type of impact—Impacts are characterized using the indicators described at the beginning of each resource impact section. The presentation of impacts for key planning issues is intended to provide the BLM decision-maker and reader with an understanding of the multiple use trade-offs associated with each alternative. Unless otherwise noted, the indicators used in this analysis correspond to the same indicators identified for resources and uses in the 2015 Final EIS.

Context—This describes the area or site-specific, local, planning area-wide, or regional location where the impact would occur. Site-specific impacts would occur at the location of the action; local impacts would occur in the general vicinity of the action area; planning area-wide impacts would affect a greater portion of decision area lands in Utah; and regional impacts would extend beyond the planning area boundaries.

The geographic extent of this environmental analysis is substantially similar to that in the 2015 Final EIS, with the exception of the portions of the 2015 planning area that were in Wyoming. Approximately 54,800 acres administered by the Ashley National Forest and 22,000 acres administered by the Uinta/Wasatch/Cache National Forest that extended into Wyoming are not part of the planning area for this process. Additionally, approximately 71,900 acres administered by the Sawtooth National Forest in

Box Elder County are included in the planning area for this process that were part of the Idaho planning area in 2015. This is a net decrease of approximately 4,900 acres (less than 0.01 percent of the planning area, and 0.12 percent of the decision area).

Additionally, as a result of implementing the adaptive management triggers, 111,900 acres (2 percent of all PHMA) changed from GHMA to PHMA compared with the 2015 Final EIS. Of this, only 53,900 acres are administered by the BLM (1.6 percent of PHMA on BLM-administered lands).

Because of these changes, acreage presented in this Draft EIS may not align with those in the 2015 Final EIS; however, given the small degree of change, the planning and decision area impacts described in the 2015 Final EIS are not different. Differences in potential site-level impacts will be called out as necessary.

Duration—This describes the associated time period of an impact, either short term or long term. Unless otherwise noted, short term is defined as anticipated to begin and end within the first 5 years after the action is implemented; long term is defined as lasting beyond 5 years to the end of or beyond the life of this RMPA/EIS.

Intensity—Rather than categorizing impacts with qualitative statements (e.g., major, moderate, or minor), this analysis describe the impact and its anticipated duration and context. Quantitative data is used to provide additional detail where possible.

Direct and indirect impacts—Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place; indirect impacts result from implementing an action or alternative but usually occur later in time or are removed in distance and are reasonably certain to occur.

For ease of reading, the impacts of the management actions for a particular alternative on a specific resource are generally compared with the status quo or baseline for that resource; however, in order to properly and meaningfully evaluate the impacts under each alternative, its expected impacts should be measured against those projected to occur under the No-Action Alternative. This alternative is the baseline for comparing the alternatives to one another. This is because it represents what is anticipated to occur should the RMPAs not take place.

Irreversible and irretrievable commitment of resources is discussed in **Section 4.8**, Irreversible and Irretrievable Commitment of Resources. Irreversible commitments of resources result from actions in which resources are considered permanently changed; irretrievable commitments of resources result from actions in which resources are considered permanently lost.

4.4 INCOMPLETE OR UNAVAILABLE INFORMATION

The CEQ established implementing regulations for NEPA, requiring that a federal agency identify relevant information that may be incomplete or unavailable for evaluating reasonably foreseeable significant adverse impacts in an EIS (40 CFR 1502.22). If the information is essential to a reasoned choice among alternatives, it must be included or addressed in an EIS, unless the cost of obtaining such information is exorbitant. Knowledge and information is, and would always be, incomplete, particularly with infinitely complex ecosystems considered at various scales.

The best available information pertinent to the decisions to be made was used in developing the RMPA/EIS. The BLM and Forest Service have made a considerable effort to acquire and convert

resource data into digital format for use in the RMPA/EIS, both from the BLM and Forest Service themselves and from outside sources.

Under the FLPMA, the inventory of public land resources is ongoing and continuously updated; however, certain information was unavailable for use in developing the RMPA/EIS. This was because inventories either had not been conducted or were not complete. Some of the major types of data that are incomplete or unavailable are the following:

- Comprehensive planning area-wide inventory of wildlife and special status species occurrence and condition
- GIS data used for disturbance calculations on private lands
- A comprehensive inventory of sagebrush lands, which meet the guidelines as recommended by the scientific community. This information is not monitored on a statewide level.
- Site-specific surveys of cultural and paleontological resources

For these resources, estimates were made concerning their number, type, and significance, based on previous surveys and existing knowledge.

In addition, some impacts could not be quantified, given the proposed management actions. Where there was this gap, impacts were projected in qualitative terms or, in some instances, were described as unknown. Subsequent site-specific project-level analyses would provide the opportunity to collect and examine site-specific inventory data to determine appropriate application of LUP-level guidance. In addition, the BLM and other agencies in the planning area continue to update and refine information used to implement this plan.

4.5 IMPACTS FROM THE 2018 PROPOSED RMPA/FINAL EIS NO-ACTION ALTERNATIVE

The impacts of the 2018 Proposed RMPA/Final EIS No-Action Alternative, or current management, were analyzed as the Proposed Plan in the 2015 Final EIS, and no new information had been identified that would invalidate or change the results of the existing analysis; therefore, impacts from implementing the 2018 Proposed RMPA/Final EIS No-Action Alternative were substantially the same as those analyzed in the 2015 Final EIS, and were incorporated into the 2018 RMPA/EIS by reference.

Table 4-1 shows where the description of the impacts of the 2018 Proposed RMPA/Final EIS No-Action Alternative can be found in the 2015 Final EIS, as well as the 2016 Sagebrush Focal Area Draft EIS (BLM 2016). The table is organized by issue, with rows for each resource topic related to the issue.

**Table 4-1
Environmental Consequences for the No-Action Alternative,
Incorporated by Reference**

Issue	Related Resource Topic	Location
Sagebrush Focal Area Designations/Withdrawal Recommendation	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Livestock Grazing/Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313
	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352 Further, based on analysis presented in Section 4.2 (Geology and Mineral Resources) of the 2016 Sagebrush Focal Area Draft EIS, withdrawal would not lead to any reduction of mining opportunities compared with not withdrawing.
	Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372 Further, based on analysis presented in Section 4.3.8 (Economic and Social Impacts in Utah) of the 2016 Sagebrush Focal Area Draft EIS, withdrawal would not lead to any broad economic impacts.
Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405	
Administering Disturbance and Density Caps	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172

4. Environmental Consequences (Table 4-1: Environmental Consequences for the No-Action Alternative, Incorporated by Reference, *cont'd*)

Issue	Related Resource Topic	Location
Administering Disturbance and Density Caps (<i>cont'd</i>)	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wild Horses and Burros	Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Visual Resources	Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
	Livestock Grazing/Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
	Recreation	Chapter 4, Section 4.17.2 (Recreation, Alternatives Analysis), page 4-253
	Comprehensive Travel and Transportation Management	Chapter 4, Section 4.18.2 (Comprehensive Travel and Transportation Management, Alternatives Analysis), page 4-256
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313 Chapter 4, Section 4.21.2 (Nonenergy Leasable Minerals, Proposed Plans), page 4-329 Chapter 4, Section 4.21.3 (Coal, Proposed Plans), page 4-344
	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352
	Mineral Materials	Chapter 4, Section 4.21.5 (Mineral Materials, Proposed Plans), page 4-361
	Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372
Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405	
Modifying Mitigation Strategy	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313 Chapter 4, Section 4.21.2 (Nonenergy Leasable Minerals, Proposed Plans), page 4-329 Chapter 4, Section 4.21.3 (Coal, Proposed Plans), page 4-344

4. Environmental Consequences (Table 4-1: Environmental Consequences for the No-Action Alternative, Incorporated by Reference, *cont'd*)

Issue	Related Resource Topic	Location
Modifying Mitigation Strategy (<i>cont'd</i>)	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352
	Mineral Materials	Chapter 4, Section 4.21.5 (Mineral Materials, Proposed Plans), page 4-361
Modifying Habitat Objectives	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wild Horses and Burros	Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
	Livestock Grazing/Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
	Waivers, Exceptions, and Modifications on NSO Stipulations	Greater Sage-Grouse
Air Quality		Chapter 4, Section 4.4.2 (Air Quality, Alternatives Analysis), page 4-136
Soil Resources		Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
Water Resources		Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
Vegetation (including Noxious weeds; Riparian and Wetlands)		Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
Other Special Status Species		Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
Fish and Wildlife		Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
Wild Horses and Burros		Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
Cultural Resources		Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
Visual Resources		Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203
Wildland Fire Management		Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
Lands with Wilderness Characteristics		Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
Leasable Minerals		Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313
Social and Economic Impacts		Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372
Tribal Interests		Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405

4. Environmental Consequences (Table 4-1: Environmental Consequences for the No-Action Alternative, Incorporated by Reference, *cont'd*)

Issue	Related Resource Topic	Location
General Habitat Management Areas in Utah	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Air Quality	Chapter 4, Section 4.4.2 (Air Quality, Alternatives Analysis), page 4-136
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Visual Resources	Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
	Comprehensive Travel and Transportation Management	Chapter 4, Section 4.18.2 (Comprehensive Travel and Transportation Management, Alternatives Analysis), page 4-256
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Renewable Energy	Chapter 4, Section 4.20.7 (Renewable Energy, Proposed Plans), page 4-287
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313 Chapter 4, Section 4.21.2 (Nonenergy Leasable Minerals, Proposed Plans), page 4-329 Chapter 4, Section 4.21.6 (Oil Shale and Tar Sands, Proposed Plans), page 4-366
	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352
	Mineral Materials	Chapter 4, Section 4.21.5 (Mineral Materials, Proposed Plans), page 4-361
Social and Economic Impacts	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372	
Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405	
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA	Air Quality	Chapter 4, Section 4.4.2 (Air Quality, Alternatives Analysis), page 4-136
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172

4. Environmental Consequences (Table 4-1: Environmental Consequences for the No-Action Alternative, Incorporated by Reference, *cont'd*)

Issue	Related Resource Topic	Location
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA (<i>cont'd</i>)	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wild Horses and Burros	Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Visual Resources	Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
	Recreation	Chapter 4, Section 4.17.2 (Recreation, Alternatives Analysis), page 4-253
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Renewable Energy	Chapter 4, Section 4.20.7 (Renewable Energy, Proposed Plans), page 4-287
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313
		Chapter 4, Section 4.21.2 (Nonenergy Leasable Minerals, Proposed Plans), page 4-329
		Chapter 4, Section 4.21.6 (Oil Shale and Tar Sands, Proposed Plans), page 4-366
	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352
	Mineral Materials	Chapter 4, Section 4.21.5 (Mineral Materials, Proposed Plans), page 4-361
Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372	
Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405	
Adaptive Management	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Air Quality	Chapter 4, Section 4.4.2 (Air Quality, Alternatives Analysis), page 4-136
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wild Horses and Burros	Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Visual Resources	Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203

4. Environmental Consequences (Table 4-1: Environmental Consequences for the No-Action Alternative, Incorporated by Reference, *cont'd*)

Issue	Related Resource Topic	Location
Adaptive Management (<i>cont'd</i>)	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
	Livestock Grazing/Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
	Recreation	Chapter 4, Section 4.17.2 (Recreation, Alternatives Analysis), page 4-253
	Comprehensive Travel and Transportation Management	Chapter 4, Section 4.18.2 (Comprehensive Travel and Transportation Management, Alternatives Analysis), page 4-256
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Renewable Energy	Chapter 4, Section 4.20.7 (Renewable Energy, Proposed Plans), page 4-287
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313 Chapter 4, Section 4.21.2 (Nonenergy Leasable Minerals, Proposed Plans), page 4-329 Chapter 4, Section 4.21.3 (Coal, Proposed Plans), page 4-344 Chapter 4, Section 4.21.6 (Oil Shale and Tar Sands, Proposed Plans), page 4-366
	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352
	Mineral Materials	Chapter 4, Section 4.21.5 (Mineral Materials, Proposed Plans), page 4-361
	Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372
Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405	
Prioritization of Mineral Leasing	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
Land Disposal and Exchanges	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Vegetation	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222

4. Environmental Consequences (Table 4-1: Environmental Consequences for the No-Action Alternative, Incorporated by Reference, *cont'd*)

Issue	Related Resource Topic	Location
Land Disposal and Exchanges (<i>cont'd</i>)	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Leasable Minerals	Chapter 4, Section 4.21.6 (Oil Shale and Tar Sands, Proposed Plans), page 4-366
	Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372
Managing Habitat to Manage Predation	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Vegetation	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
Burial of Transmission Lines	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Visual Resources	Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Renewable Energy	Chapter 4, Section 4.20.7 (Renewable Energy, Proposed Plans), page 4-287
	Socioeconomics	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372
Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405	

This page intentionally left blank.

Table 4-2 is a summary of the environmental consequences of the 2015 alternatives that were incorporated by reference into the 2019 planning effort and considered throughout the process. **Table 4-3**, presents a comparison summary of impacts from management actions proposed for the alternatives considered in 2015.

**Table 4-2
Summary of Environmental Consequences**

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Special Status Species – Greater Sage-Grouse						
<p>New ROWs could cause additional fragmentation to Greater Sage-Grouse habitat, habitat loss, and functional loss of the habitat, especially in areas adjacent to above-ground and site-type ROWs.</p>	<p>PHMA would be managed as ROW exclusion. Therefore, Greater Sage-Grouse habitat fragmentation, direct and indirect habitat loss, habitat degradation, and habitat disturbance from new ROWs in PHMA would be eliminated.</p> <p>New ROWs could be located in existing designated corridors within the footprint of existing disturbance. Concentrating disturbance into already disturbed area would prevent further habitat fragmentation and habitat loss.</p> <p>GHMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives. Fragmentation and degradation could occur in GHMA when new ROWs are constructed.</p>	<p>All Greater Sage-Grouse habitat would be managed as ROW exclusion; therefore, no further habitat fragmentation, indirect or direct loss, or habitat degradation would occur.</p>	<p>Restrictions on new ROWs would reduce Greater Sage-Grouse habitat fragmentation and direct and indirect habitat loss. In PHMA, the impacts on the lek and nesting and brood-rearing habitats would decrease by excluding above-ground linear ROWs within 4 miles of a lek.</p> <p>New above-ground ROWs would be limited to existing above-ground corridors. The impacts would be concentrated in one area.</p> <p>GHMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives and under specific circumstances. Fragmentation and degradation could occur in GHMA when new ROWs are constructed.</p>	<p>Implementation of ROW stipulations would protect leks by reducing impacts on leks and seasonal habitats during important periods of time. Where feasible, electrical transmission lines would be sited together in a corridor or in areas where there are already existing linear disturbances to lessen the direct disturbance of Greater Sage-Grouse habitat in SGMA.</p>	<p>The core Greater Sage-Grouse habitat would be managed as ROW exclusion or new ROWs can be collocated with existing disturbance. Concentrating disturbance into already disturbed area would prevent further Greater Sage-Grouse habitat fragmentation and habitat loss.</p>	<p>PHMA would be managed as ROW avoidance. Where avoidance is not possible, additional stipulations would apply. Large pipelines and transmission lines would only be located in existing corridors. These measures would protect all lekking and most nesting, early brooding habitat; minimize and mitigate loss and division of other seasonal habitat; and minimize disruption and displacement of Greater Sage-Grouse.</p> <p>GHMA would be open to new ROWs. Conservation measures would be applied as COAs. Lek buffers would protect lekking and some nesting, early brooding habitat. Fragmentation and degradation of habitat could occur where new ROWs are constructed.</p>
<p>Some Greater Sage-Grouse habitat is open to cross-country motorized travel. Cross-country travel and new route creation can result in habitat fragmentation, degradation, and loss.</p>	<p>In PHMA, habitat loss and fragmentation would be reduced by limiting travel to existing or designated routes. The habitat disturbance limitation of 3 percent would apply for new roads associated with valid existing rights. Not allowing upgrades of existing roads would also limit disturbance and degradation within Greater Sage-Grouse habitat. Routes would be evaluated for seasonal closure to reduce functional loss of habitat and habitat degradation from routes in important habitats.</p> <p>GHMA would be designated as per the travel management plan in the current planning document.</p>	<p>Impacts from roads are the same as Alternative B, except decisions would be applied to all occupied Greater Sage-Grouse habitat. Also no new routes would be allowed within 4 miles of a lek which would reduce impacts on nesting and early brood-rearing habitat.</p>	<p>All Greater Sage-Grouse habitat would be protected from loss and fragmentation caused by route proliferation by limiting travel to existing or designated routes. The habitat disturbance limitation of 5 percent would apply for new roads associated with valid existing rights. Upgrades of existing roads would protect Greater Sage-Grouse habitat while considering the needs of the larger transportation network. Travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on Greater Sage-Grouse.</p>	<p>Nesting and winter habitat would be managed as limited to existing routes. This would limit fragmentation and habitat loss in important seasonal habitats, though it would leave over 350,000 acres open to cross-country use which could result in some habitat fragmentation, degradation and loss in approximately 10 percent of Greater Sage-Grouse habitat.</p>	<p>All federal lands in the Utah Sub-region planning area located in State of Wyoming are National Forest System lands. The Forest Service addresses impacts on Greater Sage-Grouse from roads through implementation-level travel management plans.</p>	<p>Impacts would be similar to alternatives B and D. In PHMA, habitat loss and fragmentation would be reduced by limiting travel to existing or designated routes. The 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would apply to new roads associated with valid existing rights.</p> <p>Routes would be evaluated for seasonal closure to reduce loss and degradation of habitat. The overall travel network would be managed to minimize impacts on Greater Sage-Grouse.</p> <p>Stipulations would apply to new road ROWs. This includes a 3.1 mile lek buffer that would protect most lekking, nesting, and early brooding habitat. The lek buffer is 0.6 miles in PHMA and 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>Impacts on Greater Sage-Grouse from existing fences would continue.</p>	<p>The direct loss of Greater Sage-Grouse would be reduced by removing, modifying or marking fences in high risk areas within PHMA.</p>	<p>Under Alternative C1, the lack of livestock grazing and presence of ACECs with management to remove unneeded infrastructure would decrease the number of fences in Greater Sage-Grouse habitat.</p> <p>Under Alternative C2, impacts would be the similar to those described under Alternative B, but would be applied in areas where fences pose both high and moderate risks, so there would likely be less of impacts on Greater Sage-Grouse. In addition, there would be no new construction of range improvements including fences, therefore, less impacts from infrastructure development would occur.</p>	<p>Impacts from fences are the same as described for Alternative B.</p>	<p>New fences would generally not be located on or adjacent to leks where bird collisions would be expected to occur. Impacts from existing fences would be reduced by applying NRCS fence collision risk tool.</p>	<p>Impacts on Greater Sage-Grouse within core habitat would be reduced if the fence is found to be problematic for Greater Sage-Grouse.</p>	<p>Impacts would be similar to Alternative B and D. New fences would not be allowed within 1.2 miles of leks reducing bird collisions. The lek buffer is 0.6 miles in PHMA and 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.</p>
<p>Various fluid mineral stipulations apply, with protective buffers around leks ranging from 0.25-mile to 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activities or disruptive activities during certain dates in seasonal habitats.</p> <p>Surface disturbance estimated for this alternative (based on the RFD) is 16,285 acres. Continued impacts on Greater Sage-Grouse are anticipated such as habitat loss, fragmentation, disturbance to the birds and habitat degradation due to the variability and uncertainty of the application of restrictions.</p>	<p>PHMA would be closed to new fluid mineral leasing, eliminating habitat loss, degradation, and fragmentation.</p> <p>Development of existing leases in PHMA would still cause fragmentation, direct and indirect habitat loss, disruption of Greater Sage-Grouse, and degradation of habitat. The majority of the development would occur on existing leases.</p> <p>The amount of estimated disturbance would be 8,912 acres. RDFs would reduce the effects of development. Disturbance would be clustered on the landscape and would be limited to 3 percent per section on average. This would reduce habitat loss and fragmentation.</p>	<p>Impacts from fluid minerals are same as Alternative B, except a larger geographical area would be closed to leasing. The total amount of estimated disturbance would be 7,386 acres.</p>	<p>With the application of a 4-mile NSO around leks in PHMA and limitations on disturbance and seasonal stipulations in the remainder of PHMA, impacts from new leases on Greater Sage-Grouse nesting and early brood-rearing habitat would be reduced or eliminated.</p> <p>Impacts from development of existing leases would be similar to that described for Alternative B. The amount of estimated disturbance would be 9,302 acres.</p>	<p>SGMAs would include NSO within 1 mile of a lek and CSU/TL stipulations beyond that may reduce the impact on leks and seasonal habitats. The impacts on important habitat may be reduced to some degree under this alternative complete avoidance of impacts, but direct impacts from development may still occur if avoidance were not possible. In these cases, minimization and mitigation would reduce impacts and could result in additional habitat.</p> <p>Surface disturbance is the same as Alternative A. Existing leases are not affected by this alternative.</p> <p>Because the 5 percent disturbance limitation does not include existing disturbances, disturbance could occur at levels that have been shown to negatively affect long-term maintenance of population.</p>	<p>With an NSO within 0.6-mile of a lek and a CSU/TL in nesting and early brood-rearing habitat, impacts on the lek and seasonal habitat (such as direct habitat loss, fragmentation, and disruption to Greater Sage-Grouse) would continue.</p> <p>Estimated surface disturbance is the same as Alternative A.</p>	<p>Impacts would be similar to Alternative B. PHMA would be NSO to new fluid mineral leasing, eliminating habitat loss, degradation, and fragmentation except on National Forest System lands in the Wyoming portion of the planning area where PHMA would open to new fluid mineral leasing with major/moderate constraints.</p> <p>Development of existing leases in PHMA would still cause fragmentation, direct and indirect habitat loss, disruption of Greater Sage-Grouse, and degradation of habitat. To the extent practical, conservation measures would be applied as COAs.</p> <p>The amount of estimated disturbance would be 9,218 acres.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Continued impacts from solid mineral mining on Greater Sage-Grouse are anticipated such as habitat loss, fragmentation, disturbance to the Greater Sage-Grouse, and habitat degradation due to the variability of restrictions. There is no surface disturbance limitation recommendation included in this alternative.	PHMA would be determined unsuitable for surface coal mining, recommended withdrawal from locatable mineral entry, closed to mineral material disposal, and closed to nonenergy mineral leasing. Therefore, impacts from new minerals development in PHMA would be eliminated. Development of existing leases would result in habitat loss and fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on Greater Sage-Grouse.	Impacts from solid minerals are the same as Alternative B except decisions would be applied to a larger geographical area (all occupied habitat).	Greater Sage-Grouse habitat would not be unsuitable for surface coal mining, and would be open to locatable mineral entry. PHMA would be closed to commercial mineral material disposal but open to noncommercial, free use beyond 1 mile of leks. PHMA would be open to underground mining of nonenergy leasable minerals but closed to surface mining. Stipulations placed on the type, amount, timing, and location of mining would reduce the likelihood for habitat fragmentation and loss in important seasonal habitats. In general, no disturbance would be allowed within 1 mile of a lek, which would protect some nesting and early-brood rearing habitat. Development of existing leases would result in habitat loss and fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on Greater Sage-Grouse.	Greater Sage-Grouse habitat would not be unsuitable for surface coal mining, and would be open to locatable mineral entry, mineral material disposal, and nonenergy leasable minerals development. Stipulations would be applied to new leases. Seasonal stipulations would protect Greater Sage-Grouse during important seasons. The implementation of other temporal and spatial restrictions may lessen some of the impacts of mining. Since the 5 percent disturbance limitation does not include existing disturbances, disturbance could occur at levels that have been shown to negatively affect long-term maintenance of Greater Sage-Grouse populations.	Within core habitat, there is a 0.6-mile lek NSO stipulation that would protect the lek to a certain degree, and there is a 0.25-mile lek NSO stipulation outside of core habitat. There are also restrictions on seasonal habitats outside of the lek buffers that would provide some protection. In general, mining activities could continue and could cause habitat loss, degradation, and fragmentation.	PHMA would be closed to mineral materials sales and nonenergy leasable minerals except on National Forest System lands in the Wyoming portion of the planning area. SFA would be withdrawn from locatable mineral entry, the remainder of PHMA would remain open. Coal suitability determinations would be made on a case-by-case basis. Conservation measures would apply to all new mineral development activities. Closures would eliminate impacts from new mineral development in PHMA. In GHMA conservation measures would protect most lekking, nesting, early brooding habitat; minimize and mitigate loss and division of other seasonal habitat; and minimize disruption and displacement of Greater Sage-Grouse. Development of existing leases would result in habitat loss and fragmentation. Application of conservation measures, to the extent practical, would reduce impacts on Greater Sage-Grouse.
Most Greater Sage-Grouse habitat is open to wind development. In areas with high development potential, continued impacts on Greater Sage-Grouse, such as habitat loss and fragmentation, are anticipated.	Wind development would be excluded in PHMA under this alternative. Therefore, impacts such as habitat loss, degradation, and disturbance to Greater Sage-Grouse would be eliminated. There are no restrictions for GHMA under this alternative; however, there is also not high wind energy potential in GHMA.	Impacts from wind development are the same as Alternative B; however, under this alternative, all Greater Sage-Grouse habitat would be excluded from wind development; thus more habitat protected.	Impacts from wind development would be similar to Alternative B because all PHMA would be excluded from wind development; however, there would be additional protection because the area outside of PHMA but within 4 miles of a lek in PHMA would be managed as an avoidance area in order to reduce the indirect impacts from development. Direct habitat loss would be lessened in GHMA with the restriction to wind development within 1 mile of a lek.	Greater Sage-Grouse habitat within SGMAs would be an avoidance area from wind development. Protections would be afforded to the lek itself and within a 1-mile viewshed of the lek. Time-of-day stipulations and seasonal stipulations would assist in limiting some of the impacts on Greater Sage-Grouse, such as habitat loss and disturbance to GSRG during important times of the year.	Wind development is excluded in core habitat. Therefore impacts such as habitat loss, degradation, and disturbance to Greater Sage-Grouse would be eliminated.	On National Forest System lands in the Wyoming portion of the planning area, impacts from wind development would be less than Alternative A because wind energy development would be avoided in PHMA. In addition, the lek buffer of 0.6 miles in PHMA on National Forest System lands in the Wyoming portion of the planning area would further restrict such development. In the remainder of the planning area, impacts from wind development would be similar to Alternative B and D; however, there would be additional protection because no wind development would be allowed within 5 miles of occupied leks in PHMA. In GHMA, impacts would be less than under Alternatives B or D because additional conservation measures would be applied as COAs. These measures include a 3.1 mile lek buffer on energy developments. The lek buffer is 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>Varied fuels treatment options would continue.</p>	<p>Impacts such as habitat degradation and habitat loss from fuels treatments would be reduced because there would be no treatments in winter habitat, no prescribed fire in areas with less than 12 inches precipitation, and all projects would use native seeds. Habitat loss would decrease because of the restrictions on fuels management treatments and disruption of Greater Sage-Grouse would decrease with the treatments occurring outside of important seasons. Wildfire suppression efforts would be prioritized very high in Greater Sage-Grouse habitat. Following best practices will also limit impacts from firefighting activities.</p> <p>Requiring native seed and designing fuels treatments for long-term success would reduce the long-term impact of the short-term habitat loss and not have a negative long-term population impact.</p>	<p>Impacts are similar to Alternative B, except all occupied Greater Sage-Grouse habitat is PHMA. In addition, relies more on passive restoration efforts to indirectly reduce the risk of wildfires. Restores anthropogenic disturbance such as nonnative seeding, fences, and areas affected by livestock grazing.</p>	<p>Habitat loss would be reduced from the implementation of a system of fuel breaks. Fuel treatments would reduce impacts since they would need to be designed with the emphasis to maintain, protect, and expand sagebrush. Prescribed fire would not be allowed unless it is shown that noxious weeds will not be spread. Winter habitat loss would be limited by restricting when treatments could occur in these areas.</p> <p>Wildfire suppression planning would lessen the risk for habitat loss from wildfire. The emphasis on use of native seed or desirable plants would lessen the long-term habitat loss to GSRG habitat.</p>	<p>Prescribed fire would only be allowed if other treatments options have been explored, where site specific variables allow, and in areas where risk of conversion to exotic annual dominance is low and/or could be mitigate. Prescribed fire in area of low elevation Wyoming big sagebrush would be avoided. Changes in prescribed fire management would reduce the risk of fire escape or wild fire in Greater Sage-Grouse habitat. Implementation of a statewide fire agency agreement could decrease habitat loss by increasing response time to wildfires. Loss of winter habitat would be limited to approximately 20 percent. Therefore, 80 percent of the winter habitat would not be impacted by treatments, and Greater Sage-Grouse would be able to access that habitat in the winter.</p>	<p>Habitat loss would be reduced when prescribed fire actions are limited and Greater Sage-Grouse habitat is prioritized for suppression.</p>	<p>Management actions considered and impacts would be similar to Alternative D. The primary difference is that the Proposed Plans include quantifiable treatment objectives designed to meet vegetation objectives (70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover). Treatment of annual grasses and conifers as aimed under the Proposed Plans would further reduce the amount of fire.</p>
<p>Emergency Stabilization and Rehabilitation plans can help ameliorate the threat of invasive annuals and strategic wild and fire suppression can provide long-term protection to intact native vegetation, thereby preventing the spread and conversion to invasive annuals. Invasive annuals would continue to be introduced and spread as a result of ongoing vehicle traffic in and out of the planning area, recreational activities, wildlife, improper livestock grazing, fire, and surface-disturbing activities (energy and infrastructure).</p>	<p>Impacts on Greater Sage-Grouse habitats would be minimized by controlling, suppressing, and eradicating noxious and invasive weeds. Since this alternative would limit anthropogenic disturbance to 3 percent, this would likely limit the invasive annuals introduced. Native seed would be required for restoration efforts and the use of BMPs for fire and fuels treatments. Use of native species could reduce habitat degradation and loss from invasive species. On the other hand, native species may be unable to out-compete annual cheatgrass.</p>	<p>Impacts from invasive weeds are the same as Alternative B, except this alternative would also prioritize restoring sagebrush steppe invaded by nonnative plants, further reducing habitat degradation and loss from invasive species. In addition, passive restoration would result in decreasing the rate and scale of minimizing invasive species compared to other action alternatives.</p> <p>Local native plant ecotype seeds and seedlings would be used to restore treated habitats. It could take longer for these habitats to recover and could be a loss of habitat for a certain amount of time.</p>	<p>Impacts from invasive weeds are similar to Alternative B, except the disturbance limitation would be 5 percent instead of 3 percent. Disturbance thresholds would limit the invasive annuals introduced.</p>	<p>Agencies would be required to aggressively respond to new infestations to keeping invasive species from spreading, identify, and treat new infestations before they become larger problems, and contain known infestations of weeds in or near sagebrush habitats.</p>	<p>Giving priority for implementing specific Greater Sage-Grouse habitat restoration projects in annual grasslands would help degraded habitat be reclaimed to support sustainable Greater Sage-Grouse over the long-term.</p>	<p>Impacts would be similar to those described under Alternatives B and D. Similar to Alternative B, disturbance would be limited to 3 percent (5 percent on National Forest System lands in the Wyoming portion of the planning area). Limiting the amount of development would limit opportunities for introduction and spread of invasive species.</p> <p>Similar to Alternative D, native seeds would primarily be used for restoration; however, desirable nonnative species could be used where the probability of success for native species is low.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>Varying degrees of existing habitat objectives are identified for maintenance, improvement, and restoration of sagebrush communities. The objectives provide for improvements to wildlife habitat or to increase available forage for wildlife, livestock, and wild horses, which would also have varying benefits and impacts on Greater Sage-Grouse. There is no set standard for treatment in Greater Sage-Grouse habitat.</p>	<p>Prioritizing sagebrush restoration in seasonal habitats would reduce degradation, habitat loss, and fragmentation for Greater Sage-Grouse.</p>	<p>Passive sagebrush restoration is preferred for restoring these areas over active restoration methods.</p>	<p>Prioritizing sagebrush restoration in seasonal habitats plus reducing conifer encroachment in PHMA would improve and expand Greater Sage-Grouse habitat in these areas.</p>	<p>Aggressively removing encroaching conifers and other plant species would expand Greater Sage-Grouse habitat where possible, which in many instances would benefit GSRG and would decrease habitat degradation and habitat loss.</p>	<p>Following the guidelines in <i>WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse</i> would benefit Greater Sage-Grouse.</p>	<p>The Proposed Plans, similar to Alternative E, include quantifiable treatment objectives. These objectives are designed to ensure that 70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover.</p> <p>Except on National Forest System lands in the Wyoming portion of the planning area, within 0.6 miles of a lek include an objective of reducing conifer, where technically feasible, to less than 5 percent canopy cover.</p> <p>These measures would improve and expand Greater Sage-Grouse habitat.</p>
<p>Impacts on Greater Sage-Grouse vary on each allotment since there is no set direction to specifically consider Greater Sage-Grouse in grazing decisions. There could be localized to generalized landscape scale degradation to Greater Sage-Grouse habitat from grazing.</p> <p>Structural range improvements are considered on a case-by-case basis while maintaining rangeland health which could lead to Greater Sage-Grouse habitat degradation with the introduction of invasive species in some areas.</p> <p>Wild horses would be managed within AMLs, which could still affect site-specific areas of GSRG habitat.</p>	<p>Rangeland would be managed for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve Greater Sage-Grouse seasonal habitat guideline contained in Connelly et al. 2000 and Hagen et al. 2007. Greater Sage-Grouse habitat would move towards the structural components needed for Greater Sage-Grouse life cycle needs.</p> <p>Structural range improvements must conserve, maintain, enhance or restore Greater Sage-Grouse habitat through improved grazing management system.</p> <p>Water development would need to be neutral or beneficial to Greater Sage-Grouse.</p> <p>Wild horses would be managed similar to Alternative A.</p>	<p>Alternative C1 would make BLM-administered and National Forest System lands unavailable to livestock grazing, which could improve ground cover, leaving more grass and forbs. However, there would be associated changes in wildfire potential and invasive species risks.</p> <p>Alternative C2 requires a substantial reduction in livestock grazing. Some allotments would have a decrease in AUMs and some would be closed if deemed necessary upon review. The potential for short-term habitat impacts would be lessened by changing the season of grazing to outside of the growing season.</p> <p>Structural range improvements would be avoided to evade introduction of invasive species that would degrade GSRG habitat.</p> <p>No new water developments would be authorized and existing water developments that are harmful to Greater Sage-Grouse could be dismantled.</p> <p>A reduction of wild horse AMLs by 25 percent would also benefit the Greater Sage-Grouse by leaving more residual vegetation for cover.</p>	<p>Desired cover percentages and heights for sagebrush, grasses and forbs in seasonal habitats will be managed to achieve habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007) or local scientific literature and conditions, if applicable. Greater Sage-Grouse habitat would move towards the structural components needed for all Greater Sage-Grouse life cycle needs.</p>	<p>Livestock grazing would continue using BMPs that could help decrease any potential degradation to Greater Sage-Grouse nesting success and population recruitment. Repeated, annual heavy use during critical growing seasons and avoidance of season-long grazing on wet meadows and riparian areas would be avoided. This would decrease the impact on GSRG nesting and brood-rearing habitat. The use of special grazing systems and utilization level monitoring in nesting and brood-rearing habitat would also reduce the likelihood of degradation of Greater Sage-Grouse habitat. Water developments would enhance or maintain Greater Sage-Grouse mesic habitat.</p> <p>Range improvement structures would avoid the lek.</p> <p>Habitat degradation would be limited by aggressively responding to new infestations to keep invasive species from spreading if they were to occur with structural range improvements.</p>	<p>Following the practices outlined in <i>Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat</i> would reduce habitat degradation.</p> <p>Existing impacts from wild horses would continue.</p>	<p>Impacts would be similar to alternatives B and D, except the Proposed Plans include more detailed vegetation management objectives or grazing guidelines by seasonal habitat that take into consideration local ecology. The inclusion of more specific objectives creates additional parameters that could increase the amount of certainty when considering on the ground actions.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
(see above)	(see above)	(see above)	(see above)	Wild horses would be managed the same as Alternative A.	(see above)	(see above)
<p>Cross-country motorized travel could result in a loss of Greater Sage-Grouse habitat. Recreation, including motorized, could cause Greater Sage-Grouse displacement, habitat degradation, and effective habitat loss (e.g., vegetation trampling and soil erosion, and introduction or spread of invasive species and noxious weeds).</p>	<p>There would be no cross-country travel in PHMA. This would eliminate route proliferation and new direct disturbance of Greater Sage-Grouse habitat. Recreation, including motorized, could cause Greater Sage-Grouse displacement, habitat degradation, and effective habitat loss.</p> <p>Recreational permits would only be issued in PHMA that have neutral or beneficial effects; therefore, long-term degradation, disruption or loss of Greater Sage-Grouse habitat is unlikely to occur.</p>	<p>Impacts from recreation would be similar to those described under Alternative B except in PHMA camping and other nonmotorized recreation would be prohibited during certain seasons within 4 miles of a lek. In addition, there would be no new route construction within 4 miles of a lek. These decisions would reduce disturbance to nesting and brood-rearing Greater Sage-Grouse and their habitat.</p>	<p>All Greater Sage-Grouse habitat would be protected from loss and fragmentation by limiting travel to existing or designated routes.</p> <p>Impacts from recreational permits would be the same as those described for Alternative B. Impacts from other types of recreation, including recreation at developed recreation sites and dispersed recreation would be the same as those described under Alternative A.</p>	<p>Impacts on nesting and winter habitats would be decreased because routes would be limited in these areas. Route proliferation could continue in the other Greater Sage-Grouse habitats that are open to cross-country travel.</p> <p>Permitted recreation activities would have some restrictions that would likely reduce direct disturbance to GSRG and their habitat but would not change the overall amount of habitat degradation or habitat loss in the area. Disperse recreation and developed recreation sites would have impacts similar to Alternative A.</p>	<p>The Forest Service would address impacts on Greater Sage-Grouse from roads through future implementation-level travel management plans.</p> <p>SUAs would be allowed so long as impacts on Greater Sage-Grouse can be mitigated. Dispersed and developed recreation would result in similar impacts as described for Alternative A.</p>	<p>Impacts from recreation would be similar to Alternative B and D.</p> <p>On National Forest System lands in the Wyoming portion of the planning area SRPs that could disrupt Greater Sage-Grouse would be not allowed in all PHMA and within 2 miles of occupied leks in GHMA. In the remainder of the planning area, disruptive SRPs would not be allowed within 0.25 miles of occupied leks. This would reduce Greater Sage-Grouse from potential noise disruptions when Greater Sage-Grouse are on the lek.</p>
<p>Most LUPs include a management action that allows for acquisition of lands that have important resource values including Greater Sage-Grouse. Land tenure adjustments could result in consistent management across the landscape.</p> <p>Some lands with Greater Sage-Grouse habitat are identified for disposal. Typically these lands are located near the existing urbanized area where there are mixed land ownership patterns, which makes it difficult to manage for specific purposes including Greater Sage-Grouse protection.</p>	<p>PHMA would be retained in public ownership unless habitat in areas of mixed ownership could be consolidated with areas of PHMA with more contiguous federal ownership patterns so the public land management agencies could manage on a landscape scale. Because Greater Sage-Grouse is a landscape species, large contiguous tracts of land with management focusing on protection of Greater Sage-Grouse habitat would benefit both the species and its habitat.</p>	<p>Land tenure adjustments similar to Alternative B, However, there would be no option to consolidate ownership into areas where consistent management could benefit Greater Sage-Grouse.</p>	<p>Impacts from land tenure adjustments the same as Alternative B, except there could be some instances where Greater Sage-Grouse habitat could be disposed of to benefit other federally listed species.</p>	<p>No decisions related to land tenure adjustments, so impacts would be the same as what is already in the existing LUPs (Alternative A).</p>	<p>Impacts from land tenure adjustments is the same as described under Alternative B.</p>	<p>Impacts from land tenure adjustments would be the same as under Alternative D.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Air Quality						
Alternative A would result in a continuation of current impacts on air quality and would provide fewer protections than any of the action alternatives.	Alternative B would result in restrictions on activities that emit air pollutants as compared with the continuation of existing management under Alternative A. Indirect adverse impacts would result from restrictions on power line development in Uinta Basin and restrictions on mineral material development that resulted in longer haul distances.	Alternative C places the greatest level of restrictions on actions that would emit air pollutants compared with the other alternatives, and consequently could be expected to have the smallest impact on air quality. Alternative C could be expected to result in the largest change in air quality as compared to current conditions. Indirect adverse impacts would be similar to Alternative B.	Similar to Alternative B, Alternative D would result in restrictions on activities that emit air pollutants as compared with the continuation of existing management under Alternative A. Indirect adverse impacts would be similar to Alternative B.	Alternative E would have the fewest restrictions of the action alternatives and consequently could be expected to result in the smallest change in air quality as compared to current conditions.		The Proposed Plans would result in restrictions on activities that emit air pollutants as compared with continuation of existing management under Alternative A. Indirect adverse impacts would be similar to Alternative B.
Climate Change						
Alternative A would result in a continuation of current impacts on climate change and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on activities that emit GHGs as compared with the continuation of existing management under Alternative A.	Alternative C places the greatest level of restrictions on actions that would generate GHGs out of all the alternatives, and consequently could be expected to contribute the least to climate change.	Similar to Alternative B, Alternative D would result in greater restrictions on activities that emit GHGs as compared with the continuation of existing management under Alternative A.	Alternative E would result in fewer restrictions on activities that emit GHGs. Alternative E would have a great potential to reduce the carbon storing capacity of pinyon-juniper in the planning area, as this alternative would emphasize removal of encroaching pinyon-juniper to a greater extent than the other alternatives that seek to limit encroachment.		The Proposed Plans greatly restricts GHG generating actions, but to a slightly lesser extent than Alternatives B or Alternative C. The Proposed Plans would have the greatest potential to reduce carbon-storage capacity, as management would emphasize removal of encroaching pinyon-juniper to a greater extent than the other alternatives that seek to limit encroachment. Consequently, this alternative could be expected to result in the smallest improvements in carbon storage as compared to current conditions.
Soil Resources						
Alternative A would result in a continuation of current impacts on soil resources and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on compaction and erosion activities as compared with continuation of existing management under Alternative A.	Alternative C would result in the greatest restrictions on soil-disturbing activities, including livestock grazing, road construction, coal and fluid mineral leasing and development, and ROW development. This would result in the greatest protections of any alternative for soil conditions in the planning area. On the contrary, Alternative C emphasizes passive restoration over active restoration. This could increase potential for soil loss or degradation in areas where there is limited vegetative ground cover.	Similar to Alternative B, Alternative D would result in greater restrictions to surface disturbing activities that may result in impacts on soil resources.	Alternative E would result in the fewest restrictions of the action alternatives and protections for soil resources would be less stringent and widespread.		Similar to Alternative B, the Proposed Plans would result in greater restrictions to surface disturbing activities that may result in impacts on soil resources.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Water Resources						
<p>Alternative A would result in a continuation of current impacts on water resources and would provide fewer protections than any of the action alternatives.</p>	<p>Alternative B would result in greater restrictions on human activities as compared with the continuation of existing management, including such measures as reductions in acres available for livestock grazing, designation of ROW exclusion areas, and closure to mineral leasing and development. Implementation of this alternative would potentially result in overall improvements in water quality across the planning area. Since water consuming activities would be restricted, the action alternatives are all also likely to result in increased storage of water in the landscape. Restrictions would improve the likelihood of more waters meeting fully supporting beneficial uses and increase or maintain the level of stream miles meeting state and federal water quality standards and designated beneficial uses. This alternative is likely to protect, if not improve and restore, water sources for Greater Sage-Grouse, and are also likely to decrease the presence of mosquito breeding habitat.</p>	<p>Alternative C would result in the greatest restrictions on surface-disturbing activities, including livestock grazing, road construction, coal and fluid mineral leasing and development, and ROW development. This would result in the greatest protections of any alternative for water conditions in the planning area.</p>	<p>Impacts would be similar to those under Alternative B.</p>		<p>Alternative E would result in the fewest restrictions of the action alternatives and protections for water resources would be less stringent and widespread.</p>	<p>Similar to Alternative B, the Proposed Plans would result in greater restrictions to surface disturbing activities that may result in impacts on water resources.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Vegetation (Including Noxious Weeds; Riparian Areas and Wetlands)						
<p>In general, Alternative A provides only general direction to preserve and improve vegetation communities (as opposed to a strategic landscape-level approach). This could result in a number of impacts on vegetation, including vegetation removal, fragmentation of vegetation communities, loss of habitat for pollinators, and conversion of areas to an earlier seral stage, which could change vegetation community succession and reduce the extent of native plant communities. The remaining vegetation could have reduced vigor or productivity due to mechanical damage, soil compaction, and dust. Soil compaction would inhibit natural revegetation in areas without active reclamation efforts and would reduce plant vigor, making plants more susceptible to disease, drought, or insect attack.</p>	<p>The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would designate PHMA and GHMA within which management would be applied. Direct protection of sagebrush habitat to support Greater Sage-Grouse would limit or modify uses in this habitat type, improving the acreage and condition of desired vegetation communities. Use restrictions would reduce damage to native vegetation communities and individual native plant species in areas that are important for regional vegetation diversity and quality. Likewise, use restrictions would minimize loss of connectivity and would be more likely to retain existing age class distribution within these specific areas. Use restrictions could also minimize the spread of invasive species by limiting human activities that cause soil disturbance or seed introductions.</p>	<p>The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would designate PHMA within which management would be applied. Management and associated impacts would be largely similar to that described for Alternative B, though with more stringent guidance and restrictive management.</p>	<p>The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate PHMA and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though Alternative D would incorporate more flexibility and adaptive management to account for sub-regional conditions.</p>	<p>The BLM and Forest Service would manage lands to protect, maintain, improve, and enhance sagebrush ecosystems and would designate Greater Sage-Grouse habitat in SGMAs/core areas within which management would be applied. Management and impacts would be similar to Alternative D, though Alternative E would require less stringent use restrictions and would designate the least amount of Greater Sage-Grouse habitat in SGMAs/core areas when compared to the other alternatives. As a result, although the types of impacts would be similar, there would be fewer improvements in vegetation conditions as compared to Alternative D.</p>	<p>The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate SFA, PHMA, and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though the Proposed Plans would incorporate more flexibility and adaptive management to account for sub-regional conditions.</p> <p>Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting vegetation in Greater Sage-Grouse habitat, but impacting adjacent vegetation due to development outside of Greater Sage-Grouse habitat.</p> <p>Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies. In the short-term, vegetation treatment and habitat restoration efforts may result in early seral conditions; however, long-term benefits to vegetation condition would result.</p>	<p>The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate SFA, PHMA, and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though the Proposed Plans would incorporate more flexibility and adaptive management to account for sub-regional conditions.</p> <p>Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting vegetation in Greater Sage-Grouse habitat, but impacting adjacent vegetation due to development outside of Greater Sage-Grouse habitat.</p> <p>Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies. In the short-term, vegetation treatment and habitat restoration efforts may result in early seral conditions; however, long-term benefits to vegetation condition would result.</p>
Other Special Status Species						
<p>Alternative A would result in a continuation of current impacts on other special status species and would provide fewer protections than any of the action alternatives.</p>	<p>Alternatives B and C and the Proposed Plans would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap.</p> <p>Fluid mineral leasing closures on 3.3 million acres of unleased fluid mineral areas could make it uneconomical to develop the small remaining pockets of non-Greater Sage-Grouse habitat or adjacent private land in checkerboard ownership areas. Special status species in these areas would be unlikely to be affected from habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. In other areas, fluid mineral development could be pushed onto adjacent lands potentially causing more impacts on</p>	<p>In general, actions proposed under Alternative C would provide the greatest protections for other special status species which occupy Greater Sage-Grouse habitat.</p> <p>Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap in PHMA. Under Alternative C, however, disturbance would be collocated where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase the quality of protected habitat by reducing the potential for habitat fragmentation.</p> <p>Prohibiting any new future fluid mineral leases or permits in</p>	<p>A 5 percent disturbance cap would be imposed in PHMA, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C or the Proposed Plans.</p> <p>Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.</p> <p>Small areas of GHMA overlap with Utah prairie dog complexes within the Bald Hills and Panguitch population areas, and fewer habitat protections would be provided in these GHMA, making this</p>	<p>A 5 percent disturbance cap would be imposed in Greater Sage-Grouse habitat in SGMAs/core areas, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C or the Proposed Plans.</p> <p>Applying NSO stipulations on 483,500 acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.</p>	<p>Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B.</p> <p>Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.</p> <p>Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within</p>	<p>Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B.</p> <p>Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.</p> <p>Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
(see above)	special status species via habitat loss and fragmentation.	Greater Sage-Grouse habitat (over 3.8 million acres) would provide the most habitat protection of any alternative from fluid mineral leasing and development. However, these closures could make it economical to develop the small remaining pockets of non-Greater Sage-Grouse habitat or adjacent private land in checkerboard ownership areas. Special status species in these areas would be affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development.	species' habitat more susceptible to loss and/or fragmentation. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for sensitive fish and riparian species that occur within Greater Sage-Grouse habitat. These policies may increase habitat in the short-term for those special status species that rely on early seral sagebrush habitat, such as Utah prairie dog.	(see above)		Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for sensitive fish and riparian species that occur within Greater Sage-Grouse habitat. These actions may increase habitat in the short-term for those special status species that rely on early seral sagebrush habitat, such as Utah prairie dog.
Fish and Wildlife						
Alternative A would result in a continuation of current impacts on fish and wildlife and would provide fewer protections than any of the action alternatives.	Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap. Fluid mineral leasing closures on 3.3 million acres of unleased fluid mineral areas could make it uneconomical to develop the small remaining pockets of non-Greater Sage-Grouse habitat or adjacent private land in checkerboard ownership areas. Fish and wildlife species in these areas would be unlikely to be affected from habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. In other areas, fluid mineral development could be pushed onto adjacent lands potentially causing more impacts on fish and wildlife via habitat loss and fragmentation.	In general, actions proposed under Alternative C would provide the greatest protections for other fish and wildlife which occupy Greater Sage-Grouse habitat. Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap in PHMA. Under Alternative C, however, disturbance would be collocated where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase the quality of protected habitat by reducing the potential for habitat fragmentation. Prohibiting any new future fluid mineral leases or permits in Greater Sage-Grouse habitat (over 3.8 million acres) would provide the most habitat protection of any alternative from fluid mineral leasing and development. However, these closures could make it economical to develop the small remaining pockets of non-Greater Sage-Grouse habitat or	A 5 percent disturbance cap would be imposed in PHMA, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting fish and wildlife species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal of undesirable species near riparian areas within Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for fish and riparian species that occur within Greater Sage-Grouse habitat.	A 5 percent disturbance cap would be imposed in Greater Sage-Grouse habitat in SGMAs/core areas, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 483,500 acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other wildlife species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.	Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B. Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other wildlife species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for migratory birds, fish, and wildlife species that use riparian habitats within the range of Greater Sage-Grouse.	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
(see above)	(see above)	<p>adjacent private land in checkerboard ownership areas. Fish and wildlife in these areas would be affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development.</p> <p>Some big game populations that occur within the areas closed to grazing under Alternatives C1 and C2 may trend upwards due to the increased availability of forage. However, wildlife species in the population areas where livestock grazing is eliminated would not be able to access range water improvements. This may reduce the viability or of species that depend on water developments. There would be less of an impact on browsing species (e.g., mule deer) as a result of changes to livestock grazing practices.</p> <p>Big game habitat, including crucial winter and fawning/calving habitat, that occur within PHMA would receive the most protection under Alternative C, allowing populations to potentially increase.</p> <p>While land use restrictions being considered under alternative C would benefit wildlife, some management actions being considered could negatively impact wildlife. For example, under Alternative C, a focus would be placed on passive restoration. This could limit the ability of the BLM and Forest Service to improve wildlife habitat for other species.</p>	<p>Although these efforts would increase the availability of habitat for those fish and wildlife species that use Greater Sage-Grouse habitat, those species which occur in pinyon-juniper habitat would have reduced available habitat over the long-term.</p> <p>The proposed habitat restoration and vegetation management policies would develop habitat conservation objectives that would increase habitat quality for fish and wildlife as well as Greater Sage-Grouse.</p>	(see above)		<p>Habitat restoration and vegetation management under Alternative D and the Proposed Plans may result in increased beneficial impacts on big game and other wildlife species that inhabit Greater Sage-Grouse habitat through improvements in winter and fawning/calving habitat.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Wild Horses and Burros						
<p>All adjustments to HMAs, herd management plans and priorities of gathers would continue to be based on monitoring data. As a result, impacts on wild horses would continue to depend on the site-specific conditions as reported in monitoring data.</p>	<p>Alternative B would potentially result in indirect, long-term changes to wild horse and burro management should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros).</p>	<p>Direct impacts would occur in wild horse and burro management under Alternative C2 and indirect, long-term changes to wild horse and burro management could occur in both C1 and C2 should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros).</p> <p>Alternative C1 would be most protective of wild horses and burros because it proposed the most restrictions on resources uses.</p> <p>Under Alternative C2, AMLs would be directly reduced by 25 percent for HMAs within PHMA. This would result in a reduction of AMLs for the Chokecherry, Onaqui Mountain, Range Creek, Sulphur, and Tilly Creek HMAs. As a result, costs of wild horse and burro management would increase, due to a need for additional horse gathers for removal and/or fertility treatment.</p>	<p>Alternative D would potentially result in indirect, long-term changes to wild horse and burro management should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros).</p> <p>There would be further reduction of disturbance of wild horse and burros from management actions limiting other resource uses in opportunity habitat.</p>	<p>Many management actions would include site specific and seasonal variations based on the type of Greater Sage-Grouse habitat (i.e. breeding, winter, distance to leks, etc.) where they are proposed. As a result, the level to which surface disturbing activities would be reduced in each HMAs would depend on the Greater Sage-Grouse habitat category for each HMA.</p> <p>There are no wild horse and burros on National Forest System lands in Wyoming that are included in the Utah planning area.</p>	<p>The Proposed Plans would potentially result in indirect, long-term changes to wild horse and burro management should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions in the long-term. For example, conifer removal and noxious weed control as identified in the VDDT approach or the prioritization for treatment/restoration projects as identified in the FIAT assessment approach would improve forage conditions for wild horse and burros.</p> <p>There would be further reduction of disturbance and harassment of wild horse and burros in the five HMAs that fall within occupied Greater Sage-Grouse habitat where disturbance is restricted. Restricting land uses in PHMA could push development to areas outside of occupied Greater Sage-Grouse habitat, however, thus increasing disturbance and harassment of wild horses and burros in HMAs outside of PHMA.</p> <p>Placing a cap on anthropogenic disturbance within PHMA under the Proposed Plans would place an additional restriction on development in HMAs, which would limit forage degradation and reduce harassment of WHB.</p> <p>Implementing the Greater Sage-Grouse mitigation strategy and monitoring framework responses under the Proposed Plans would ensure that this increased level of protection of Greater Sage-Grouse habitat and indirectly forage and water resources for WHB would be maintained.</p>	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Cultural Resources						
<p>The BLM and Forest Service would continue to follow 36 CFR 800, Section 106 and BLM-Utah's statewide programmatic agreement when addressing federal undertakings; therefore, adverse effects on cultural resources would be appropriately mitigated.</p> <p>Alternative A would result in a continuation of current impacts on cultural resources and would provide fewer additional protections than any of the action alternatives.</p> <p>Actions that involve surface disturbing activities, such as the vegetation management and habitat restoration treatments, ROW development and construction, fire/fuels treatments, minerals development (including fluid, locatable, and saleable minerals) would have potential direct and indirect impacts on cultural resources, including damaging, destroying, and/or displacing artifacts and features, and construction of modern features out of character with a historic setting.</p>	<p>All action alternatives would provide some degree of indirect protection to cultural resources. Actions that provide protections for Greater Sage-Grouse or its habitat by limiting access into areas or excluding surface disturbing activities would indirectly protect cultural resources by preventing actions that cause disturbance or destruction of cultural resources and their settings. Measures to protect Greater Sage-Grouse include protective designations and stipulations and restrictions on surface and vehicle use that would protect cultural resources from effects due to surface disturbance, erosion, effects on setting and access leading to vandalism, inadvertent damage, and unauthorized collection of cultural resources. However, these protective measures could inhibit Native American cultural uses in some areas.</p> <p>Alternative B would provide more indirect protection to cultural resources than under Alternative A through management actions such as those listed above.</p>	<p>By providing the greatest restrictions on surface disturbing activities, Alternative C would indirectly protect cultural resources more than any other alternative but also inhibit Native American cultural uses in some areas.</p>	<p>Similar to Alternative B, Alternative D would provide indirect protection to cultural resources by limiting access into areas or excluding surface disturbing activities that could otherwise cause disturbance or destruction of cultural resources and their settings.</p>		<p>Alternative E would have the fewest restrictions on access and surface disturbing activities out of all the action alternatives and consequently could be expected to provide the least indirect protection to cultural resources out of the action alternatives. However, this could result in fewer restrictions on Native American cultural uses than under the other action alternatives.</p>	<p>Similar to Alternative B, the Proposed Plans would provide indirect protection to cultural resources by limiting access into areas or excluding surface disturbing activities that could otherwise cause disturbance or destruction of cultural resources and their settings.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Visual Resources						
<p>There would continue to be 102,500 acres of ROW exclusion and 177,700 acres of designated utility corridors. As a result, new utility corridor development, particularly electrical transmission lines, would impact visual quality through the placement of large vertical transmission line structures and associated ground disturbance. Fluid mineral development and surface mining would also impact visual quality through surface modifications and mining equipment.</p>	<p>The BLM and Forest Service would manage 2,784,200 acres of occupied habitat as ROW exclusion and would retain 130,200 acres of designated corridors. The remaining 529,600 acres of occupied habitat would be ROW avoidance areas. Additionally, 3,341,300 acres of occupied habitat would be closed to fluid mineral development and 3,328,760 acres unsuitable for surface mining. Management actions that would reduce new human modifications within Greater Sage-Grouse habitat, would result in little to no impact on visual resources.</p>	<p>Alternative C would result in the fewest alterations to visual resources when compared to Alternative A. All designated utility corridors in PHMA would be undesignated and all areas within PHMA (3,313,800 acres) would be ROW exclusion. BLM would manage 87 percent (3,821,580 acres) of PHMA as closed to fluid minerals and 4,008,580 acres (including 694,780 acres of mineral split estate) as unsuitable for surface mining. Prohibitions on new human modifications in PHMA would result in no impact on visual resources.</p>	<p>The BLM and Forest Service would manage ROW development based on the type of development. Refer to Table 2.3 for a comparison of agency management of ROW development by type. In particular, above-ground linear infrastructure would be excluded on 1,422,300 acres and avoided on 1,368,900 acres of occupied habitat. No areas in occupied habitat would be open to fluid mineral leasing; however, 3,383,080 acres would be available for fluid mineral leasing with either CSU/TL (1,829,980 acres) or NSO (1,853,100 acres) stipulations. Since Alternative D would result in greater restrictions on new human modifications to the landscape in comparison to Alternative A, BLM management under Alternative D would reduce impacts on visual resources.</p>	<p>Impacts on visual resources would be similar to Alternative A, but would include additional management actions to avoid or minimize new human modifications. Agency management would maintain 177,700 acres of designated corridors and manage 27,600 acres as ROW exclusion. However, the BLM and Forest Service would manage 2,654,000 acres in occupied habitat as ROW avoidance. Impacts from mineral development would be similar to Alternative A, with the exception that CSU/TL for fluid mineral leasing would apply to 2,842,180 acres of occupied habitat. Since Alternative E would result in only slightly greater restrictions on new human modifications to the landscape in comparison to Alternative A, there would be the potential for impacts on visual resources.</p>		<p>Compared to Alternative A, the Proposed Plans would minimize future surface disturbing activities (e.g., ROW and mineral development) if at all possible within PHMA and GHMA. Specific restrictions would be managed based on the type of development. Refer to Table 2.3, for a comparison of management of ROW development by type. Above-ground linear infrastructure would be excluded on 28,100 acres and avoided on 2,764,800 acres of PHMA and GHMA, with an additional 165,500 acres of avoidance adjacent to PHMA while 3.2 million would be open to fluid mineral leasing subject to NSO stipulations. Sagebrush habitat objectives to restore and maintain desirable landscapes to support Greater Sage-Grouse populations would result in greater restrictions on new human modifications to the landscape thereby reducing impacts on visual resources.</p>
Wildland Fire Management						
<p>Due to the flexibility in management of prescribed and wildland fires and lack of specific areas prioritized for protection, fire suppression costs are likely to be the lowest in Alternative A. As described in detail below, restriction on resource uses in the area would be limited, resulting in a higher chance for human-caused ignition in Greater Sage-Grouse habitat as compared to action alternatives.</p> <p>Management actions for energy and minerals and ROWs would generally be the least restrictive of any alternative, therefore resulting in the highest risk of human-caused ignition from development.</p> <p>There would continue to be a total of 329,521 permitted AUMs on BLM-administered lands and 265,373 AUMs permitted on National Forest System lands. Livestock grazing would continue to</p>	<p>Long-term frequency and intensity of wildland fire, as measured by fire regime condition class (FRCC), could be similar to historic conditions because post fuel and restoration management would be designed to ensure long-term persistence of seeded or pre-burn native plants.</p> <p>Greater Sage-Grouse management in PHMA would focus on fire suppression and limitations on fuels treatments, resulting in higher level of protection from wildland fire, but reduced wildland fire and fuels management options.</p> <p>Managing PHMA so that discrete anthropogenic disturbances cover less than 3 percent of the total PHMA regardless of ownership would decrease the chance of human-caused ignition in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions.</p>	<p>Impacts from fire management would be similar to those described under Alternative B. However, restricting fuels treatments on all PHMA and prioritizing protection of occupied Greater Sage-Grouse habitat would increase the cost of suppression. In addition, there would be increased risk to firefighter safety due to the larger firefighting organization that would be required to provide the increased level of protection.</p> <p>Impacts from Greater Sage-Grouse management would be similar in nature to those described in Alternative B, but increased restrictions on surface-disturbing activities would further reduce opportunities for human-caused ignitions in Greater Sage-Grouse habitat.</p> <p>Managing PHMA so that discrete anthropogenic disturbances cover less than 3 percent of the total PHMA regardless of ownership</p>	<p>Additional fuels treatments and other habitat treatments would be permitted with an emphasis on maintaining, protecting, and expanding sagebrush ecosystems in PHMA and opportunity habitat. This would result in a long-term reduction in the risk of high intensity fire in these areas</p> <p>Impacts from Greater Sage-Grouse management would be similar in nature to those described in Alternative B, but an added emphasis on region-specific habitat needs, as well as variations in requirements for specific Greater Sage-Grouse habitat types, would result in more site-specific fire management options.</p> <p>When compared to Alternative A, the risk of human-caused ignitions in this area would be reduced due to the 5 percent disturbance cap in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions.</p>	<p>Impacts from wildland fire management would be similar in nature to those described in Alternative B, but the emphasis on fire suppression in Greater Sage-Grouse habitat under Alternative E would require use of additional suppression resources, as described under Alternative B, and as such it is anticipated that suppression costs would be increased as compared to alternative A.</p> <p>Impacts from Greater Sage-Grouse management would be similar to those described under Alternative B, except that this alternative would allow for greater use of fuels treatments, providing more flexibility for wildfire management.</p> <p>Impacts from mineral development would be similar to those described in Alternative B.</p> <p>Greater Sage-Grouse seasonal habitat requirements would be considered when managing sagebrush rangelands for livestock grazing, resulting in more site specific variation in management and related variation in fuel levels and size, extent and occurrence of fire.</p> <p>Active vegetation treatments would be allowed under certain circumstances to improve sagebrush habitat. Where treatments occurred, fuels levels would be reduced and risk of high intensity fire decreased and size and extent of fire likely decreased. In particular, aggressive removal of cheat grass would reduce the risk of high intensity fire.</p>		<p>Management actions in the Proposed Plans and related impacts would be similar to those described in Alternative B and D but with the addition of more specific objectives for Greater Sage-Grouse habitat type and refined protocols for developing site specific management. These actions would result in a reduction in FRCC shift in Greater Sage-Grouse habitat and a trend towards more historic frequency and intensity of wildfire.</p> <p>Greater Sage-Grouse management would be similar to those described under Alternative B and D with the addition of specific indicators and desired conditions for Greater Sage-Grouse habitat type and treatment objectives in PHMA, resulting in the reduction of annual invasive grasses and a trend towards FRCC desired historic conditions.</p> <p>Impacts from mineral and energy development and ROW development would be similar to Alternative D. Anthropogenic disturbance cap, mitigation for net conservation gain, and</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>result in the reduction in fuels and the associated risk of wildland fire.</p> <p>Potential for vehicle-caused ignition would continue in the 797,000 acres of BLM-administered lands open to cross-country motorized travel, with reduced risk in the 437,400 acres of BLM-administered lands limited to existing routes and 1,217,700 acres limited to designated routes. Proposed allocations for motorized travel on National Forest Lands within the planning area would be the same across all alternatives, resulting in the same potential for vehicle-caused ignitions under each alternative.</p>	<p>In addition, managing or restoring PHMA so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet Greater Sage-Grouse needs would promote a shift towards historic FRCC in sagebrush ecosystems.</p> <p>Should development in other parts of the decision areas increase as a result of restrictions in PHMA, there is potential for a greater chance of human-caused ignition and shift away from historic FRCC in these areas.</p> <p>Restrictions on mineral development in PHMA (e.g., closure to nonenergy mineral leases, finding PHMA unsuitable to surface coal development, recommended for mineral withdrawal, and closure to mineral material sales and new fluid mineral leases) would reduce opportunities for human-caused ignitions.</p> <p>Limiting the types of range improvements allowed in PHMA would decrease opportunities for human-caused ignitions during construction or maintenance.</p> <p>Limiting motorized travel in PHMA to existing roads and trails until travel management planning is complete, as well as limiting road upgrades or new roads in this area, would reduce the risk of human-caused ignition in PHMA on BLM-administered lands.</p>	<p>would decrease the chance of human-caused ignition in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-caused ignitions.</p> <p>Under Alternative C1, no livestock grazing would be permitted within occupied Greater Sage-Grouse habitat. As a result, fine fuels would increase throughout occupied habitat and size, intensity, and occurrence of fire would increase. Under Alternative C2, impacts would be similar to those described for Alternative C1, but fire risk would be reduced in scale due to the allowance of limited grazing.</p> <p>Impacts from motorized travel would be similar to those described in Alternative B, but the risk of vehicle-caused ignition in this alternative would be further decreased due to the closure of all occupied habitat to cross-county motorized travel.</p>	<p>In addition, limitations on disturbance in specific habitat areas during specific time frames would reduce the chance of human-caused ignition in these areas, particularly when timing limitations apply during fire season.</p> <p>Impacts from mineral development would be similar to those described in Alternative B.</p> <p>Focusing livestock grazing management on allotments with the best opportunities for conserving, enhancing, or restoring habitat for Greater Sage-Grouse would result in an improvement in habitat and a return to historic FRCC in the long term.</p> <p>Prioritizing travel management planning in the Sheeprocks, Bald Hills, Box Elder, Rich, Ibapah, and Hamlin Valley areas would reduce the risk of human-caused ignition in these areas.</p>	<p>Limiting motorized travel to existing or designated routes within Greater Sage-Grouse habitat in SGMAs/core areas with nesting and winter habitat would reduce the risk of vehicle-caused ignitions in these areas.</p>		<p>conservation measures implemented such as RDFs and lek buffers would further minimize human-caused ignition.</p> <p>Management actions and related impacts from vegetation and fire management would be similar to Alternatives B and D, but with added emphasis on sub-regional specific habitat needs. Inclusion of the Fire and Invasives Assessment Tool (Appendix K) would allow for more accurate assessment of site specific conditions and more effective prioritization of fire management resources, reducing the size and intensity of wildland fires, and trend towards desired FRCC conditions for Greater Sage-Grouse habitat in the long term.</p> <p>Added measures for fuels treatment effectiveness and post fire rehabilitation activities and monitoring, such as requirements for burn plans, would increase both fuels management planning and post fire rehabilitation costs, but would increase effectiveness of treatments.</p> <p>Total acres available for grazing and permitted AUMs would be the same as described for Alternative D. However, there could be impacts (reductions in AUMs) on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site-specific basis.</p> <p>Review and processing of grazing permits/leases in SFA and PHMA would help to improve and protect habitat quality in SFA and PHMA, likely reducing the spread of invasive grasses and related fire risk.</p> <p>Limiting OHV travel in PHMA and GHMA to existing roads and trails, as well as temporary closures, would reduce the risk of human-caused ignition.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Wilderness Characteristics						
<p>Where surface-disturbing activities are not precluded, lands with wilderness characteristics would continue to be at risk of diminished wilderness characteristics if future activities are permitted in those areas.</p>	<p>Alternative B would apply similar management to PHMA as under Alternative C, and impacts would be the same in these areas. However, because fewer acres would be managed as PHMA under Alternative B, there is less potential for wilderness characteristics to be maintained on all 86,100 acres.</p> <p>Where lands with wilderness characteristics overlap GHMA, restrictions on surface-disturbing activities could be applied to permits at the project phase to protect Greater Sage-Grouse and its habitat; however, lands with wilderness characteristics could be at risk if surface-disturbing activities are not precluded.</p>	<p>Overall, management under Alternative C would have the greatest potential to maintain lands with characteristics. PHMA (i.e., all occupied habitat) would be recommended for withdrawal from locatable mineral entry. These types of activities and associated development can reduce the size of lands with wilderness characteristics and can impair the apparent naturalness of the area and the feeling of solitude. Precluding these types of activities would help protect wilderness characteristics on 86,100 acres of lands with wilderness characteristics. New disturbances would only result from vegetation or fuels treatments or wildland fire.</p>	<p>The majority of lands with wilderness characteristics fall within PHMA. In general, most types of surface-disturbing activities would be allowed with stipulations, design features, or BMPs. Although stipulations, design features, and BMPs could mitigate some impacts on wilderness characteristics, any long-term disturbance would likely result in the loss of the wilderness characteristics.</p>	<p>No surface-disturbing activities would be outright precluded, so risks to lands with wilderness characteristics would be greater than under Alternatives B, C, and D. During project-level permitting, considerations to protect Greater Sage-Grouse and its habitat could provide incidental protection to lands with wilderness characteristics by minimizing habitat disturbance and possibly avoiding certain areas altogether, depending upon the project.</p> <p>Where lands with wilderness characteristics overlap Greater Sage-Grouse habitat outside of SGMAs/noncore areas, impacts would be similar to those described for Alternative A because there would be no specific management in place to protect Greater Sage-Grouse and its habitat. As such, management would be at least as protective of lands with wilderness characteristics as Alternative A.</p>	<p>Where lands with wilderness characteristics overlap Greater Sage-Grouse habitat outside of SGMAs/noncore areas, impacts would be similar to those described for Alternative A because there would be no specific management in place to protect Greater Sage-Grouse and its habitat. As such, management would be at least as protective of lands with wilderness characteristics as Alternative A.</p>	<p>The majority of lands with wilderness characteristics would be closed to such surface-disturbing activities as nonenergy mineral leasing and mineral material disposal. They would also be either closed to fluid mineral leasing or open subject to NSO stipulations and exclusion areas for wind energy development and avoidance areas for other types of ROWs. Where surface-disturbing activities are allowed, RDFs could mitigate some impacts on wilderness characteristics. Because disturbance under the Proposed Plans would be mitigated in the long term, there would be no long-term impacts on wilderness characteristics.</p> <p>Compared with the action alternatives, impacts from the Proposed Plans would be similar to Alternative B, though fewer activities would be outright precluded under the Proposed Plans than under Alternative B.</p>
Livestock Grazing/Range Management						
<p>In general, Alternative A would be the least restrictive on alternative resource uses, including livestock grazing. Permittees would continue to have a range of management options to support grazing operations.</p> <p>Special provisions for Greater Sage-Grouse protection would continue to be limited. The nature and intensity of impacts on grazing management would depend on site specific restrictions in place under current LUPs, but is likely to be lower than other alternatives.</p> <p>Approximately 27,600 acres within Greater Sage-Grouse habitat are classified as ROW exclusion areas for new ROW development. Outside of occupied habitat in population areas, there is an additional 74,900 acres of ROW exclusion areas. Indirect impacts on livestock from development would be reduced where areas available for livestock grazing overlap these</p>	<p>Acres available for grazing and permitted AUMs would not be directly changed by management actions.</p> <p>PHMA would be managed so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet Greater Sage-Grouse needs. Where cover requirements do not meet forage objectives for livestock grazing, this would result in the need to modify grazing practices with increased costs for permittees.</p> <p>Consideration of Greater Sage-Grouse habitat objectives and management would be required in grazing management in PHMA and incorporated into all grazing allotments through allotment management plans or permit renewals or Forest Service NEPA processes. As a result, impacts (e.g., changes in livestock management, such as deferring or shortening grazing periods, adding range improvements, excluding grazing</p>	<p>Under Alternative C1, grazing would be eliminated from all allotments completely or partially within occupied habitat. Under Alternative C2, grazing would be reduced within allotments intersecting occupied habitat.</p> <p>Making areas unavailable for grazing and restrictions would impact permittees' current seasonal rotations or other management strategies that utilize both federal and private lands. The elimination of permitted grazing in PHMA under Alternative C1 may result in permittees going out of business, with impacts on both individual permittees as well as local communities as a whole. Additional details of the economic impacts are discussed in the Social and Economic Impacts (Including Environmental Justice) section of Chapter 4.</p> <p>Under Alternative C2, site specific closure of allotments would be</p>	<p>Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres available for grazing. However, many grazing management actions would be determined at the BLM District or Forest Service unit level in order to emphasize management appropriate for local vegetation communities and Greater Sage-Grouse habitats rather than at the planning unit scale. As a result, impacts on range management would vary across the decision area.</p> <p>A moderate decline in permitted grazing would be anticipated over time as grazing permits are modified to incorporate Greater Sage-Grouse objectives at renewal or allotment analysis. Collaboration with the state should decrease conflicts in standards and provide a location appropriate framework, assisting permittees ability to adopt these standards and reducing impacts.</p> <p>PHMA and opportunity habitat would be prioritized for restoration and vegetation</p>	<p>Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres available for grazing. However, Alternative E would allow for greater flexibility in management options, limiting impacts on range management.</p> <p>Changes could be required to grazing timing and intensity to meet Greater Sage-Grouse habitat requirements, with the potential for some increased time and costs to permittees as compared to Alternative A. However, however, due to the increased flexibility in management actions under this alternative, permittees would have more options to address Greater Sage-Grouse habitat requirements and impacts on range management would be limited.</p> <p>A 5 percent disturbance cap in Greater Sage-Grouse habitat in SGMAs/core areas would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements.</p> <p>Compared to Alternative A, additional year-round or seasonal limitations on mineral development would result in fewer disturbances there these limitations apply.</p> <p>Limiting motorized travel to existing or designated routes within Greater Sage-Grouse habitat in SGMAs/core areas with nesting and winter habitat would reduce disturbance of</p>	<p>Impacts would be similar to those described under Alternatives B and D. No direct changes would occur to permitted AUMs or acres available to grazing. Greater Sage-Grouse habitat objectives would be incorporated into grazing allotments through allotment management plans or permit renewals, or Forest Service NEPA processes, with consideration for local objectives. A moderate decline in permitted grazing is anticipated over time as permits are modified to meet objectives.</p> <p>Adjustments to grazing management or authorized grazing use level would be tailored to achieve Land Health Standards and specific management thresholds based on Greater Sage-Grouse Habitat Objectives. Modifications to grazing systems could be required to meet seasonal habitat objectives, increasing costs to lessees and permittees. Impacts would occur on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site specific</p>	<p>Impacts would be similar to those described under Alternatives B and D. No direct changes would occur to permitted AUMs or acres available to grazing. Greater Sage-Grouse habitat objectives would be incorporated into grazing allotments through allotment management plans or permit renewals, or Forest Service NEPA processes, with consideration for local objectives. A moderate decline in permitted grazing is anticipated over time as permits are modified to meet objectives.</p> <p>Adjustments to grazing management or authorized grazing use level would be tailored to achieve Land Health Standards and specific management thresholds based on Greater Sage-Grouse Habitat Objectives. Modifications to grazing systems could be required to meet seasonal habitat objectives, increasing costs to lessees and permittees. Impacts would occur on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site specific</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>areas. Some additional limitations on disturbance from development could occur in ROW avoidance areas.</p> <p>Alternative A is the least restrictive on energy and mineral development of all alternatives. As a result, indirect impacts including spread of noxious weeds and disturbance of livestock would be the greatest under this alternative.</p> <p>Conflicts between livestock grazing and OHV use are most likely to continue to occur in the 797,000 acres of BLM-administered lands open to cross-county travel on BLM-administered lands and to a lesser extent on the 437,400 acres of BLM-administered lands limited to existing routes.</p>	<p>from riparian areas, establishing riparian pastures, and increasing livestock herding) would occur over time at a site specific level as measures are incorporated into individual allotments.</p> <p>Land Health assessment and permit renewals would be prioritized in PHMA, therefore there is potential for further degradation of lands outside of PHMA that are not meeting land health standards or desired conditions.</p> <p>A 3 percent disturbance cap in PHMA would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements.</p> <p>Classifying PHMA as ROW exclusion would eliminate conflicts from future ROW development.</p> <p>PHMA would be recommended for withdrawal from mineral entry for locatable minerals, closed to mineral materials removal, and closed to new leasing for fluid minerals. For currently leased parcels, NSO stipulations would be applied in PHMA. As a result, indirect disturbance of livestock from mineral development would be minimized in PHMA.</p>	<p>determined when an allotment is analyzed as described in Alternative B. Impacts of closing allotments would be similar to those described in Alternative B. In areas where grazing is permitted, management would be similar to that described in Alternative B with the addition of other protective measures for Greater Sage-Grouse habitat (such as prohibition of grazing during the growing season, prohibition on new water developments and avoidance of structural range improvements).</p> <p>Beneficial or adverse impacts on range management from other resource uses (e.g., ROW or fluid mineral development) would be diminished in scale and intensity because of the elimination (Alternative C1) or curtailment (Alternative C2) of grazing in all allotments intersecting occupied habitat.</p>	<p>treatments. In most cases, treatment (e.g., conifer removal, etc.) would improve forage conditions in the long term. A 5 percent disturbance cap in PHMA would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Compared to Alternative A, additional restrictions and stipulations on energy and mineral development would be applied for seasonal habitat requirements as well as areas adjacent to leks in PHMA, GHMA, and opportunity habitat. As a result, disturbance to livestock grazing could be reduced in these areas.</p> <p>Motorized travel in PHMA would be limited to existing routes at minimum and road restoration would be prioritized. As a result, long-term disturbance to livestock is likely to be reduced, particularly in PHMA and in those population areas prioritized for travel management planning.</p>	<p>livestock from cross-country travel in these areas. However, the ability to access livestock or structural range improvements may be reduced.</p>	<p>basis. Monitoring of site conditions and the adaptive management strategy may result in adjustments to livestock grazing to achieve objectives outside of the permit renewal cycle.</p> <p>Voluntary relinquishments of grazing privileges would be permitted and may result in some reduction of overall available AUMs with potential economic impacts.</p> <p>PHMA would be prioritized for restoration and vegetation treatments and specific vegetation objectives would be established for Greater Sage-Grouse seasonal habitat. Impacts could occur should treatments for Greater Sage-Grouse not match with vegetation objectives for livestock grazing; however, in most cases, treatments (e.g., conifer removal) would improve forage conditions in the long term.</p> <p>Conservation measures including a 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) in PHMA, limitations on development in buffers around leks and RFDs would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. Prohibitions on new structural improvements could limit the ability of permittees to effectively distribute livestock resulting in increases in time and costs to permittees and potentially the ability to full use of permitted AUMs. Although these constraints could increase the amount of time permittees spend to manage livestock, it should allow sufficient flexibility that permittees could continue to utilize structural range improvements to effectively distribute livestock.</p> <p>Compared to Alternative A, additional restrictions and stipulations on energy and mineral development would be applied reducing indirect disturbance of livestock and livestock forage.</p> <p>Restrictions on cross-county travel and limitation of PHMA and GHMA to existing routes would reduce disturbance</p>	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans	
				E1: Utah	E2: Wyoming		
(see above)	(see above)	(see above)	(see above)	(see above)		to livestock. Temporary closures would further reduce disturbance livestock but have the potential to impact ability of permittees to access allotments and livestock.	
Recreation							
<p>The BLM and Forest Service would continue to manage recreation uses as identified in existing planning documents. The BLM and Forest Service would continue to review and approve recreation permits on a case-by-case basis, which would continue to meet current demand.</p>	<p>The BLM and Forest Service would only approve recreation permits in PHMA that have a neutral or beneficial effect on PHMA. As a result, some types of permitted activities (e.g., OHV races) that could negatively affect Greater Sage-Grouse habitat may be impacted under Alternative B. This would result in a reduction in the number and type of permits issued in the decision area and would result in fewer opportunities to engage in the types of events and activities affected.</p>	<p>Alternative C contains the most restrictions on recreational activities. For example, Alternative C would seasonally prohibit camping and other nonmotorized recreation within 4 miles of active leks. This would result in temporary reductions in recreational opportunities and decrease the area available for recreational opportunities such as camping, mountain biking, and hiking.</p> <p>Alternative C also contains the greatest restrictions on coal leasing, ROWs, fluid mineral leasing, and livestock grazing. These restrictions generally reduce the potential for conflict with recreational activities and settings.</p>	<p>Impacts would be the same as Alternative B, with the exception that the BLM and Forest Service would also evaluate existing recreation permits and modify or cancel those that are determined to have adverse effects on Greater Sage-Grouse habitat. In addition to restrictions on future activities and events, Alternative D would result in a loss of opportunities to continue engaging in current activities and events if they are found to have adverse effects on Greater Sage-Grouse habitat.</p> <p>Alternative D proposes several restrictions on surface-disturbing activities related to coal leasing, ROWs, fluid mineral leasing, and livestock grazing. These restrictions would affect recreation as described under Alternative C, although across a smaller portion of the decision area.</p>	<p>Permanent, seasonal, and time-of-day limitations on activities within 1 mile of occupied leks would be implemented if the activity disrupts Greater Sage-Grouse nesting and brood-rearing. This would result in temporary (or permanent) loss of recreational opportunities, particularly for activities that generate noise or result in surface disturbance.</p>		<p>Impacts would be similar to those under Alternative D, except that there would be additional restrictions on recreation facilities in PHMA, possibly leading to a partial inability to fulfill long-term recreation opportunities in those areas.</p>	
Comprehensive Travel and Transportation Management							
<p>Areas currently designated as open to cross-country OHV use would continue to be managed as such. There would be no new restrictions related to Greater Sage-Grouse habitat management and no change in current levels of access under Alternative A.</p>	<p>The BLM and Forest Service would limit motorized travel to existing roads and trails in PHMA. This would reduce cross-country access in those portions of PHMA that were previously managed as open for cross-country travel. Applications for the upgrading or realignment of existing routes would be required to meet certain design, location, and mitigation criteria intended to protect Greater Sage-Grouse habitat. These requirements may preclude the construction of some new routes, but would be unlikely to reduce access across the decision area.</p>	<p>Alternative C would result in the greatest reduction in access when compared to Alternative A. For example, Alternative C would prohibit motorized cross-country travel in all Greater Sage-Grouse habitat areas. Additionally, in PHMA, new road construction within 4 miles of active leks would be prohibited. These actions would result in site-specific losses of opportunity for motorized travel and future route construction and improved access.</p>	<p>Areas in PHMA that currently do not have designated routes would be designated in a Travel Management Plan. This would reduce cross-country access in those areas that were previously managed as open for cross-country travel.</p>	<p>Areas of Greater Sage-Grouse habitat in SGMAs/core areas with nesting and winter habitat that do not have designated routes in a Travel Management Plan would be designated as limited to existing routes. This would reduce cross-country access in those areas, but would occur across a smaller area than under Alternatives B or D.</p>		<p>Impacts would be similar to those under Alternative D, except that allocating 525 acres open to cross-country OHV use (one area each in the Parker Mountain and Uintah Population Areas) would preserve this type of access in the long-term. There would be slight (approximately one percent) differences in the number of acres allocated as limited to existing routes, limited to designated routes, and closed to OHV use, and, as a result, the impacts from these allocations would be similar to those under Alternative D.</p>	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans	
				E1: Utah	E2: Wyoming		
Lands and Realty							
<p>ROW avoidance and exclusion restrictions would not prevent the BLM or Forest Service from accommodating future demand for ROW development within the planning area.</p> <p>Since less than 1 percent of Greater Sage-Grouse habitat would be managed as ROW exclusion, the BLM and Forest Service lands and realty programs would be able to accommodate new ROW development associated with mineral activity. Therefore, little to no impacts on lands and realty from mineral development would occur under Alternative A.</p> <p>Existing transportation routes would continue to provide motorized access to ROW infrastructure and communication sites for construction and maintenance with no additional impacts on lands and realty from travel and transportation management.</p>	<p>Managing PHMA as ROW exclusion would prevent the BLM and Forest Service from accommodating new ROW development in those areas. With a continuing demand for new ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments would be diverted to adjacent nonfederal lands or prevented altogether. Development on adjacent lands could result in direct and indirect impacts on Greater Sage-Grouse populations and habitat (e.g. vehicle traffic on roads crossing BLM-administered and National Forest System lands), especially if the development is within close proximity to Greater Sage-Grouse habitat on BLM-administered or National Forest System lands.</p> <p>Within exclusion areas, BLM and Forest Service would only consider new ROW authorizations where the proposed infrastructure, including construction and staging during construction, could be collocated entirely within the footprint of an existing ROW. BLM and Forest Service would require collocation in GHMA where possible. Impacts on the lands and realty program under Alternative B would include the need to locate proposed facilities outside exclusion areas or within existing ROWs, which limits the BLM's ability to accommodate the demand for new infrastructure development, including any wind energy development.</p> <p>Prohibitions on new mineral development would decrease the number of ROW applications received by the BLM and Forest Service for roads, distribution lines, and related infrastructure necessary to support mineral activity. This impact would be especially notable east of Wasatch front where coal development potential is high.</p>	<p>Neither the BLM nor Forest Service would authorize new ROW development in occupied habitat. Therefore, Alternative C would further reduce opportunities for renewable energy, communication facilities, gas pipelines, fiber optic cables, electrical transmission lines, and similar ROW development from occurring in the planning area. There is a continuing demand for these ROWs in the planning area to meet energy and communication needs outside the planning area; Alternative C would prevent the BLM and Forest Service lands and realty program from meeting those needs.</p> <p>Impacts from mineral development would be the same as Alternative B, with the exception that all PHMA (4,008,580 acres) would be recommended for withdrawal from locatable mineral entry, meaning there would be a larger area with less demand for ROW infrastructure.</p> <p>BLM management would prohibit new road construction within 4 miles of active leks. Because of the density of active lek sites, new road construction would be limited throughout many areas in PHMA. Limitations on new road construction would limit the BLM's and Forest Service's ability to authorize new road ROW applications in PHMA.</p>	<p>Lands and Realty management under Alternative D would impact the BLM and Forest Service lands and realty programs by reducing the BLM and Forest Service's ability to authorize above-ground linear ROWs, such as electrical transmission lines, on 51 percent of PHMA. On the remaining 49 percent of PHMA, additional stipulations for the development of electrical transmission lines could result in denial of projects that cannot meet ROW grant requirements for the protection of Greater Sage-Grouse habitat. Alternative D could also result in an increase in the number of underground ROW applications received as ROW applicants seek opportunities to place ROW infrastructure in areas otherwise excluded for above-ground infrastructure.</p> <p>Impacts from mineral development would be similar to Alternative B, with the exceptions that underground coal mining would be allowed in Greater Sage-Grouse habitat with stipulations specifically related to surface disturbance; new mineral development in PHMA would place a demand on the lands and realty program through the need for new or modified ROW authorizations.</p> <p>Impacts from travel management would be the same as those described above under Alternative B.</p>	<p>Stipulations associated with ROW avoidance areas under Alternative E would limit the BLM and Forest Service's ability to accommodate the demand for new infrastructure development in Greater Sage-Grouse habitat. With demand for new ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments, expected to continue and increase over time, new ROW development would be diverted to adjacent nonfederal lands or would not occur at all. If new ROW development could not be feasibly developed, the result would be reduced energy and communication opportunities to meet growing demand.</p> <p>While the amount of land available for mineral development would be the same as under Alternative A, stipulations could reduce the number and distribution of ROW applications associated with new mineral development projects.</p> <p>Impacts from travel management would be the same as those described above under Alternative B.</p>	<p>Under the Proposed Plans, the BLM and Forest Service would manage for ROW development based on the type of ROW (e.g., major or minor; linear or site) and location within the planning area. New major ROWs, leases, and permits (except for roads) would only be allowed in PHMA where the proposal could demonstrate a net conservation gain to Greater Sage-Grouse habitat and application of RDFs and other Greater Sage-Grouse conservation strategies (e.g., tall structure limitations and buffering from leks) intended to reduce impacts on Greater Sage-Grouse habitat.</p> <p>The Proposed Plans could increase the number of ROWs proposed to be underground; however, RDFs and siting specifications could promote more collocated development, especially in existing corridors.</p> <p>Impacts from mineral development and travel management would be the same as Alternative D.</p> <p>Impacts from a 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) could result in direct and indirect long-term impacts where BSUs or project areas exceed the cap and ROWs become excluded.</p>		

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
(see above)	Limitations on new road construction and the incorporation of supplemental mitigation requirements could make certain areas impractical for new ROW development.	(see above)	(see above)	(see above)		(see above)
Renewable Energy						
<p>Under Alternative A, zero acres of lands with “Good” or better wind potential would be managed as ROW exclusion or avoidance areas.</p> <p>As a result, applications in these areas would likely continue to be accepted by the BLM with few restrictions. However, if, Greater Sage-Grouse becomes a federally listed species, the Section 7 Consultation process would be likely to result in substantial project constraints.</p> <p>All of the acres of high geothermal potential would continue to be open without restrictions or stipulations.</p> <p>However, there is still very little reasonably foreseeable development within the planning area. The limited resource potential and historic interest in wind and geothermal development reduces the magnitude of short- and long-term direct and indirect impacts on renewable energy.</p>	<p>Under Alternative B, 12,600 acres considered to have “Good” or better wind potential would be managed as ROW exclusion areas and, as a result, 7 percent reduction in the amount of developable windy lands across the State of Utah would be unavailable for development.</p> <p>Under Alternative B, an additional 22,900 acres considered to have “Good” or better wind potential would be managed as ROW avoidance areas and, as a result, an additional 12 percent of the developable windy lands across the State of Utah would be subject to restrictions on development.</p> <p>Under Alternative B, 136,170 acres would be closed to geothermal leasing, including 8,050 acres of high potential and 118,500 acres of moderate potential lands. Implementation of Alternative B would result in the closure of 83 percent of all high potential geothermal lands to leasing within the decision area that were open under Alternative A. This closure would continue to directly impact the fluid minerals program by prohibiting the development of geothermal energy on portions of federal mineral estate. Geothermal operations would be limited in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private</p>	<p>Under Alternative C, 35,500 acres considered to have “Good” or better wind potential would be managed as ROW exclusion areas and would not be open for ROW applications and, as a result, 19 percent reduction in the amount of developable windy lands across the State of Utah would be unavailable for development.</p> <p>Under Alternative C, 186,700 acres would be closed to geothermal leasing, including 9,700 acres of high potential and 166,800 acres of moderate potential lands. Implementation of Alternative C would result in the closure of 100 percent of all high and moderate potential geothermal lands to leasing within the decision area, likely eliminating geothermal energy development in the decision area.</p> <p>The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.</p>	<p>Impacts on wind energy from ROW exclusion management would be the same as under Alternative B.</p> <p>CSU and TL stipulations would be applied to all 9,720 acres of lands with high potential for geothermal energy. In addition all 29,600 acres of lands with moderate potential would be subject to NSO stipulations. As a result, geothermal operations would be limited in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing.</p> <p>The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.</p>	<p>Under Alternative E, 12,600 acres considered to have “Good” or better wind potential would be managed as ROW avoidance areas and, as a result, 7 percent of the developable windy lands across the State of Utah would be subject to restrictions on development.</p> <p>No additional acres of high or moderate potential would be closed to geothermal leasing as compared to Alternative A. NSO stipulations would be removed from 20 acres of moderate potential lands under Alternative E. There would also be an additional 8,100 acres of high potential lands and an additional 94,000 acres of moderate potential land that would be subject to CSU and TL stipulations, resulting in limitations on geothermal energy development in these areas.</p> <p>Existing leases would remain valid through their term but could not be renewed, resulting in a long-term loss of geothermal energy development opportunities.</p> <p>The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.</p>		<p>Impacts on wind energy from ROW exclusion management (avoidance management on National Forest System lands in the Wyoming portion of the planning area) would be similar to Alternative D; with the exception that wind energy would be further discouraged in GHMA due to RDFs, lek buffers, and mitigation requirements.</p> <p>Under the Proposed Plans, 120,600 acres of high and moderate geothermal development potential areas would be subject to NSO stipulations with waivers, exceptions, and modifications. Fewer acres would be closed compared to Alternative A. NSO stipulations, combined with RDFs, CSU stipulations, and TLs would limit geothermal development opportunities and may force development in areas that are challenging to access or have less economic resources. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing.</p> <p>The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
(see above)	<p>or state minerals that are open to leasing.</p> <p>The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.</p>	(see above)	(see above)	(see above)		(see above)
Minerals						
Fluid Minerals						
<p>Under Alternative A, 3,219,000 acres (97 percent) of BLM-administered and National Forest System surface within the decision area would continue to be open to ROW location. However, wherever there was overlap between federal oil and gas leases and the 94,800 acres (3 percent) of BLM-administered and National Forest System surface in the decision area that would continue to be managed as ROW avoidance or exclusion under this alternative, the fluid minerals program could be indirectly impacted by the resulting limits on the available means for transporting fluid minerals to processing facilities and markets.</p> <p>Under Alternative A, 31,600 acres with high development potential (5 percent of the federal mineral estate with high development potential) would remain closed to oil and gas leasing. Acres closed in this category would have the greatest impact on the fluid minerals program by prohibiting the development of oil and gas on portions of federal mineral estate with high potential for oil and gas development. In areas closed to leasing (totaling 138,500 acres of federal mineral estate for this alternative), oil and gas operations would be restricted in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of fluid mineral development in the</p>	<p>Because all PHMA would be closed to fluid mineral leasing under Alternative B, managing areas as ROW exclusion in PHMA would have no impact on fluid minerals.</p> <p>All federal mineral estate within PHMA (3,328,800 acres or 83 percent of the federal mineral estate decision area) would be closed to oil and gas leasing. These closures would include 407,100 acres with high potential (32 percent of the high potential acres in the decision area). Closure of these acres would directly impact the fluid minerals program in the manner described under Alternative A. However, because the acreage closed would increase under Alternative B, the magnitude of these impacts would also increase.</p> <p>Existing leases would remain valid through their term but could not be renewed, resulting in further long-term restrictions on the development of fluid mineral resources.</p> <p>Conservation measures in addition to RDFs would be applied as COAs to existing leases on 540,600 acres of PHMA overlying federal mineral estate, 213,000 acres of which are held by production. Application of these requirements through COAs would impact fluid mineral operations by increasing costs if it resulted in the application of additional requirements and/or use of more expensive technology (such as remote monitoring systems) than would otherwise have been used by operators. To avoid these costs,</p>	<p>Because the entire decision area would be closed to fluid mineral leasing under Alternative C, managing areas as ROW exclusion would have no impact on fluid minerals.</p> <p>All federal mineral estate in the decision area (4,008,600 acres) would be closed to oil and gas leasing. Closure of these acres would directly impact the fluid minerals program in the manner described under Alternative A; however, because Alternative C would close the most acres out of any alternative, the magnitude of these impacts would also increase.</p> <p>Management actions applicable to existing leases under Alternative C would be similar to those under Alternative B, but they would apply to 561,800 acres of existing leases on federal mineral estate (all existing leases in the decision area). In addition to applying the restrictive management under Alternative B to more acres, Alternative C would call for COAs implementing seasonal restrictions on vehicle traffic and human presence associated with exploratory drilling. This alternative also would limit new surface disturbance on existing leases to 3 percent per section, with some exceptions. Impacts of these operating and siting restrictions would be the same type as those described under Alternative B, although the magnitude of the impacts would increase.</p>	<p>All BLM-administered and National Forest System surfaces within PHMA not already managed as ROW exclusion would be managed as ROW avoidance for surface and underground linear ROWs (including pipelines and roads). As a result, 2,754,200 acres (83 percent) of BLM-administered and National Forest System surface in the decision area would be managed as ROW avoidance for these types of ROWs, and 27,600 acres (less than 1 percent) would be managed as ROW exclusion. Oil and gas leases beneath BLM-administered and National Forest System surface in PHMA would be indirectly impacted in the manner described under Alternative A; however because all BLM-administered and National Forest System surface would be managed as either ROW avoidance or ROW exclusion under Alternative D, the magnitude of impacts would increase.</p> <p>The BLM and Forest Service would apply a buffer system to manage oil and gas development in and adjacent to occupied habitat. Under this system, leks would be surrounded by buffers of varying sizes in which NSO and/or CSU/TL stipulations would apply. In addition, CSU and/or TL stipulations would apply to all areas within occupied habitat that are outside a lek buffer. The buffer system would result in application of these restrictions to some areas outside but adjacent to occupied habitat. Application of these surface disturbance restrictions, TLs, and other operating standards would limit the siting, design, and operations of oil and gas development projects in the manner described under Alternative A; however, because these restrictions and standards would be applied throughout</p>	<p>All BLM-administered and National Forest System surface within Greater Sage-Grouse habitat in SGMAs/core areas not already managed as ROW exclusion would be managed as ROW avoidance. As a result, 2,654,000 acres (80 percent) of BLM-administered and National Forest System surface in the decision area would be managed as ROW avoidance, and 27,600 acres (1 percent) would be managed as ROW exclusion. Oil and gas leases beneath BLM-administered and National Forest System surface in Greater Sage-Grouse habitat in SGMAs/core areas would be indirectly impacted in the manner described under Alternative A; however, because the acres managed as ROW avoidance would increase compared with Alternative A, the magnitude of these impacts would increase.</p> <p>All federal mineral estate within Greater Sage-Grouse habitat in SGMAs/core areas (3,262,500 acres or 81 percent of the decision area) would be subject to CSU stipulations and TLs. Application of these stipulations would limit the siting, design, and operations of oil and gas development projects in the manner described under Alternative A; however, because these stipulations would be applied throughout the decision area under Alternative E, the magnitude of the impacts would increase.</p>	<p>For lands managed according to the BLM and Forest Service-Utah Proposed Plans, all acres in PHMA would be either closed to leasing or open subject to NSO stipulations, therefore no oil and gas activities on future leases within these areas would require new ROWs. Therefore, managing PHMA as ROW avoidance would not impact new leases. Existing leases in PHMA would be impacted as described under Alternative A. However, because more acres would be managed as ROW avoidance under these Proposed Plans, and because additional restrictions would be applied to any ROW development that was allowed in PHMA or GHMA, impacts would increase.</p> <p>For lands managed according to the Forest Service-Wyoming Proposed Plan, timing and distance limitations would be increased to include prohibiting surface occupancy and disruptive activities within 0.6 miles of occupied leks and density limitations of 1 location per 640 acres and a 5 percent disturbance cap would reduce and limit mineral activity compared to Alternative A.</p> <p>All federal mineral estate within PHMA (3,258,300 acres or 80 percent of the federal mineral estate decision area) would be open to oil and gas leasing subject to NSO stipulations. These stipulations would apply to 347,800 acres with high potential (44 percent of the high potential acres in the decision area). Federal fluid minerals in area subject to NSO stipulations could be leased, but the leaseholder/operator would have to use offsite methods such as directional or horizontal drilling to access mineral resources that have high potential for oil</p>	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>planning area and could result in operators moving to nearby private or state minerals that are open to leasing.</p>	<p>operators may move to nearby state or private minerals, resulting in lost royalties for the BLM and Forest Service.</p>	<p>(see above)</p>	<p>the decision area under Alternative D, the magnitude of the impacts would increase. These impacts would be mitigated in GHMA where off-site mitigation could allow operators to waive the applicable stipulations.</p>	<p>(see above)</p>		<p>and gas development. The area where directional and horizontal drilling can be effectively used is limited, meaning some minerals may be inaccessible in areas where an NSO stipulation covers a large area or where no leasing is allowed on surrounding lands. Because the acreage subject to NSO stipulations would increase by six times compared with Alternative A, the magnitude of these impacts would also increase under the Proposed Plans.</p> <p>Application of the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) in PHMA could impact both new and existing fluid mineral activities by preventing or restricting new surface development. In PHMA, the density of energy and mining facilities would be limited to one energy/mining facility per 640 acres. When calculated at the project level, this requirement would push developers to consolidate facilities and, where technically feasible, directionally or horizontally drill from outside of Greater Sage-Grouse habitat.</p> <p>Application of lek buffers in GHMA could impact new and existing fluid mineral activities by restricting new surface development.</p> <p>Impacts of applying RDFs would be similar in nature and magnitude to Alternative D.</p>
Nonenergy Leasables						
<p>Under Alternative A, 3,870,080 acres (97 percent) of federal mineral estate in the decision area would remain open to leasing consideration, and 138,500 acres (3 percent) would remain closed to prospecting and leasing. Management actions that close areas to nonenergy leasable mineral prospecting and leasing would directly impact nonenergy leasable minerals by reducing the area available for prospecting and leasing. If the most lucrative resources were closed to prospecting and leasing, developers</p>	<p>Under Alternative B, 3,341,300 acres or 83 percent of the federal mineral estate decision area (including all federal mineral estate in PHMA) would be closed to prospecting and leasing. Management under this alternative would close 24 times more federal mineral estate to nonenergy leasable mineral prospecting and leasing than management under Alternative A. Closing areas to nonenergy mineral prospecting and leasing would result in the same type of impacts as those described under Alternative A, but over a larger area.</p>	<p>All federal mineral estate in the federal mineral estate decision area (4,008,600 acres) would be closed to prospecting and leasing. This alternative would close the most acres out of all the alternatives. Closing areas to nonenergy mineral prospecting and leasing would result in the same type of impacts as those described under Alternative A, but over a larger area.</p>	<p>Like Alternative A, under Alternative D, 138,500 acres (3 percent) of federal mineral estate in the decision area would be closed to nonenergy leasable mineral prospecting and leasing. Another 2,905,100 acres (73 percent) of federal mineral estate within PHMA and within 1 mile of leks in GHMA would be closed to leasing for development by surface mining but would be open to leasing for development by underground mining. Closing areas to nonenergy mineral leasing for development by surface mining could increase costs of development by requiring developers to</p>	<p>Nonenergy leasable mineral allocations under Alternative E would be the same as those under Alternative A and would result in the same impacts.</p> <p>New leases in Greater Sage-Grouse habitat in SGMA/core areas, including leases for commercial prospecting, would be subject to limitations on siting, disturbance (including a 5 percent disturbance cap), tall structures, noise, and timing of development activities. Impacts of these limitations would be the same type as those described for RDFs under Alternative B.</p>		<p>Impacts of closing PHMA to nonenergy mineral leasing in the BLM and Forest Service-Utah portions of the planning area would be similar to those under Alternative B. Impacts would be mitigated because new leases adjacent to existing operations would be allowed, but these new leases would be subject to a disturbance cap, lek buffers, and RDFs. Impacts of these restrictions would be similar to those under Alternatives B and D. PHMA is not closed to nonenergy leasable minerals on National Forest System lands in the Wyoming portion of the planning area.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>may have to prospect and extract resources that are not as lucrative, thus decreasing profit.</p> <p>Nonenergy leasable mineral development operations may also move to nearby private or state minerals containing nonenergy leasable mineral resources within Greater Sage-Grouse habitat. This change would result in lost royalties for the BLM and Forest Service.</p>	<p>Existing federal nonenergy leasable mineral leases in the 3,328,800 acres of federal mineral estate in PHMA would be subject to RDFs, which would limit surface disturbance, vehicle use, siting, and design of mineral development operations in addition to imposing reclamation requirements. Application of RDFs would increase costs of nonenergy leasable development if it delayed resource development or resulted in the use of more expensive technology or less efficient development than would otherwise have been used.</p>	(see above)	use more expensive or less efficient underground mining methods.	(see above)		(see above)
Coal						
<p>There would continue to be 3,982,800 acres, or 99 percent of the decision area acceptable for leasing and suitable for surface mining. Management of 1 percent of the decision area as unacceptable for leasing would continue to preclude development of some coal resources.</p> <p>Continuing to apply disturbance buffers and seasonal TLs on surface disturbing and disruptive activities in portions of Greater Sage-Grouse breeding, nesting, and winter habitat would directly impact development of coal resources by limiting the siting, design, timing, and operations of coal development projects. This, in turn, could delay resource development and require operators to use more costly development methods than they otherwise might have used.</p>	<p>Under Alternative B, 3,328,800 acres (83 percent of the decision area), including all federal mineral estate in PHMA, would be managed as unsuitable for surface mining. This closure to surface mining would include 161,400 acres with high coal development potential (87 percent of federal mineral estate with high coal potential in the decision area). Management of areas as unsuitable for surface mining would preclude development of surface coal resources in the Alton area. Where possible depending on coal resources and geology, coal operations may relocate to nearby state, county, and private minerals. However, state, county, and private mineral resources are often fragmented and limited in extent.</p> <p>Underground coal mining would be allowed to occur in all PHMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.</p>	<p>Under Alternative C, 4,008,600 acres of federal mineral estate (100 percent of the decision area) would be managed as unsuitable for surface mining. This closure to surface mining would include 185,500 acres with high development potential (100 percent of high potential federal mineral estate in the decision area). Management of areas as unsuitable for surface mining would have the same type of impacts as those described under Alternative B, but occurring over a larger area.</p> <p>Underground coal mining would be allowed to occur in all PHMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.</p>	<p>Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. Additional areas could be determined to be unsuitable for surface mining after site-specific review in the same manner described under Alternative A. New leases for surface mining in PHMA would be subject to limitations on noise, structure height, and timing of activities, as well as mitigation requirements and a 5-percent disturbance cap. These limitations would increase costs of coal development and could create development delays due to limits on the timing of activities. New and existing leases for underground mining in PHMA would be required to avoid surface disturbance or, if such avoidance is not technically feasible, limit predator perching opportunities, noise, and timing of activities such as construction and vehicle noise. Additional mitigation would also be required. These limitations would increase costs of coal development and could create development delays due to limits on the timing of activities. Exploration activities would also be subject to limitations on surface disturbance and timing of activities, which would increase costs and delays.</p> <p>Underground coal mining would be allowed to occur in all PHMA. Some restrictions would be placed on development of appurtenant facilities to protect Greater Sage-Grouse.</p>	<p>Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. All new surface and underground leases, as well as exploration activities, on the 3,262,500 acres of federal mineral estate in Greater Sage-Grouse habitat in SGMA/core areas (81 percent of the decision area) would be subject to limitations on siting, disturbance, noise, and timing of activities. Mitigation may also be required. These limitations and requirements would have the same type of impacts as those described under Alternative D.</p> <p>Underground coal mining would be allowed to occur in all PHMA. Some restrictions would be placed on development of appurtenant facilities to protect Greater Sage-Grouse.</p>	<p>Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. Additional areas could be determined to be unsuitable for surface mining after site-specific review in the same manner described under Alternative A.</p> <p>Measures to protect Greater Sage-Grouse and its habitat (disturbance cap, lek buffers, net conservation gain requirements, and restrictions on noise and season) could affect the feasibility of new underground coal leases or the expansion of existing underground operations (e.g., increased costs and development delays due to limits on the timing of activities) but would not preclude them. In the Panguitch Population Area where surface mining occurs, the aforementioned measures to protect Greater Sage-Grouse and its habitat would affect surface coal production.</p>	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Locatable Minerals						
<p>Under Alternative A, 28,000 acres (8 percent) of federal mineral estate with high potential would remain withdrawn, and an additional 40 acres (less than 1 percent) with high potential would continue to be recommended for withdrawal. Approximately 334,000 acres (92 percent) of federal mineral estate with high potential in the decision area would remain open to locatable mineral entry. Withdrawal or closure of an area to mining development eliminates the ability to access and extract the mineral resources in that area under new claims. This represents an impact on the potential discovery, development, and use of those resources by decreasing the availability of mineral resources. In addition, validity exams must be completed on all existing claims in withdrawn areas. The need for these exams adds costs and delays for the BLM, Forest Service, and claimant.</p> <p>This alternative would be the least restrictive to locatable minerals because a larger percentage of the decision area would be open to locatable mineral entry and no additional restrictions would be applied to mining operations.</p>	<p>Under Alternative B, 287,600 acres (79 percent) of federal mineral estate with high potential in the decision area (including all PHMA) would be recommended for withdrawal, compared with 40 acres under Alternative A. The large increase in areas recommended for withdrawal under this alternative compared with Alternative A would increase the development delays and costs of validity exams on the BLM, Forest Service, or claimant described under Alternative A. Additional BMPs would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever those operations are modified. These BMPs could increase the cost of locatable mineral development.</p>	<p>Under Alternative C, 334,000 acres (92 percent) of federal mineral estate with high potential in the decision area would be recommended for withdrawal, compared with 40 acres under Alternative A. The remainder of the high potential acres in the decision area would already be withdrawn. Impacts from these actions would be the same type as those described under Alternative A, however, total withdrawals (including lands currently withdrawn) under this alternative would increase as compared to Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area. Like Alternative B, additional BMPs would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever these operations are modified. These BMPs could increase the cost of locatable mineral development.</p>	<p>Like Alternative A, 498,100 acres (12 percent) of federal mineral estate in the decision area would remain withdrawn from location under the Mining Law of 1872, as amended, and an additional 600 acres (less than 1 percent) would be recommended for withdrawal. Impacts from these actions would be the same as those described under Alternative A.</p> <p>Like Alternative B, additional restrictions and BMPs for locatable minerals may apply in PHMA and GHMA. To the extent practicable, surface disturbance could be limited to under the 5 percent disturbance limit, and enhancements of PHMA through on-site and/or off-site mitigation could be requested. These limits and mitigation measures could increase the costs of locatable mineral development compared with Alternative A, but not to the extent that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.</p>	<p>Like Alternative A, 498,100 acres (12 percent) of federal mineral estate would remain withdrawn from location under the Mining Law of 1872, as amended, and an additional 600 acres (less than 1 percent) would continue to be recommended for withdrawal. Impacts from these actions would be the same as those described under Alternative A.</p> <p>Similar to Alternative D, Alternative E would propose additional restrictions for locatable minerals that may apply in Greater Sage-Grouse habitat in SGMAs/core areas. These limits and mitigation measures could increase the costs of locatable mineral development compared with Alternative A, but not to the extent that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.</p>		<p>Under the Proposed Plans, 235,000 acres (65 percent) of federal mineral estate with high potential in the decision area would be recommended for withdrawal, compared with 40 acres under Alternative A. Impacts from these actions would be the same type as those described under Alternative A, however, total withdrawals (including lands currently withdrawn) under this alternative would increase as compared to Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area. Like Alternative B, additional surface disturbance limitations would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever these operations are modified. These RDFs could increase the cost of locatable mineral development.</p>
Saleable Minerals (Mineral Materials)						
<p>Approximately 73,500 acres (2 percent) of federal mineral estate within the decision area would remain closed to mineral material disposal. This would include 21,800 acres (2 percent) of federal mineral estate with mineral material occurrence in the decision area. Closing these areas to mineral material disposal would result in pits relocating nearby to meet demand for road maintenance and other needs. If demand for mineral materials could not be met by pits operated on federal lands, pits would move onto private or state</p>	<p>Approximately 3,340,000 acres of federal mineral estate in PHMA (83 percent of the federal mineral estate decision area) would be closed to mineral material disposal. This includes 1,140,000 acres with mineral material occurrence (87 percent of federal mineral estate with mineral material occurrence in the decision area). The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 24 times more acres of federal mineral estate with mineral material occurrence would be closed</p>	<p>Approximately 4,008,600 acres of federal mineral estate (the entire federal mineral estate decision area) would be closed to mineral material disposal. This includes all acres with mineral material occurrence in the decision area. The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 39 times more acres of federal mineral estate with mineral material occurrence would be closed under Alternative C, the magnitude of these impacts would increase. Any</p>	<p>The BLM and Forest Service would prohibit mineral material disposal within 1 mile of leks and would close all PHMA to commercial mineral material disposal. Under this alternative, 2,967,500 acres (74 percent) of federal mineral estate within the decision area would be closed to commercial mineral material disposal but open to noncommercial mineral material disposal. This includes 1,030,900 acres with mineral material occurrence (79 percent of federal mineral estate with mineral material occurrence in the decision area). Noncommercial mineral material development would be allowed in these areas with restrictions on siting,</p>	<p>All federal mineral estate not closed to mineral material disposal under Alternative A would remain open (3,932,200 acres, or 98 percent of the decision area), including 1,325,600 acres with mineral material occurrence. Additional restrictions would apply to the 3,262,500 acres of federal mineral estate within Greater Sage-Grouse habitat in SGMAs/core areas (81 percent of the decision area), including maximum cumulative new permanent disturbance from mineral materials development of no more than 5 percent of Greater Sage-Grouse habitat in SGMAs/core areas in each population area. Impacts of these restrictions on mineral material development would be the same type as those described under Alternative D.</p>		<p>For lands managed according to the BLM and Forest Service-Utah Proposed Plans, all federal mineral estate in PHMA would be closed to mineral material disposal. This includes 1,196,900 acres with mineral material occurrence (89 percent of federal mineral estate with mineral material occurrence in the decision area). The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 55 times more acres of federal mineral estate with mineral material occurrence would be closed under the Proposed Plans, the magnitude of these impacts would increase. Impacts would be</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
<p>lands. If no mineral materials occurred near closed areas, developers would have to transport them to construction sites from further away, which would alter the location of mineral materials development and increase transportation costs associated with that development.</p>	<p>under Alternative B, the magnitude of these impacts would increase.</p> <p>In PHMA, mineral material pits no longer in use would be restored to meet Greater Sage-Grouse habitat conservation objectives. Requiring reclamation of mineral material pits no longer in use could increase costs on developers if additional reclamation beyond that required under Alternative A were necessary to meet the specific objectives related to Greater Sage-Grouse habitat and if the BLM and Forest Service required the developers to pay for the reclamation.</p>	<p>mineral material development within occupied habitat would occur on private or state minerals.</p> <p>Mineral material pits no longer in use in PHMA would be restored in the same fashion as that described under Alternative B; however, because all of the decision area would be designated as PHMA under Alternative C, this management action would apply to more acres.</p>	<p>disturbance, noise, structure, height, and timing. These types of restrictions would increase costs of mineral material development if they resulted in the use of more expensive technology or less efficient development methods. Closing acres to commercial mineral material development would prevent large-scale commercial operations while allowing county and community operations, which are generally smaller scale.</p> <p>Additionally, 352,800 acres of federal mineral estate within PHMA (9 percent of the decision area) would be closed to both commercial and noncommercial mineral material disposal, 103,200 acres of which have mineral material occurrence (8 percent of federal mineral estate with mineral material occurrence in the decision area). Impacts of these closures would be the same type as those described under Alternative A; however, because 3 times more acres of federal mineral estate would be closed to mineral materials disposal under this alternative, the magnitude of those impacts would increase.</p>	<p>(see above)</p>		<p>somewhat mitigated because new free use permits and expansion of existing pits would be allowed, subject to restrictions.</p> <p>PHMA is not closed to mineral material disposal on National Forest System lands in the Wyoming portion of the planning area.</p> <p>In GHMA, lek buffer distances to protect Greater Sage-Grouse and their habitat would restrict development and could possibly push it to less desirable locations or require compensatory mitigation but would not prohibit such activities.</p>
Oil Shale and Tar Sands						
<p>Under Alternative A, no disturbance cap would be applied to anthropogenic disturbance in Greater Sage-Grouse habitat. Therefore, oil shale and tar sands development could continue to occur subject to stipulations and other restrictions applied in the Vernal RMP (for the White River Oil Shale Preference Right Lease Area) and site-specific NEPA analyses.</p> <p>If exclusion or avoidance areas are near the White River Oil Shale Preference Right Lease Area or the pending lease in the Asphalt Ridge Special Tar Sands Area, there could be indirect impacts resulting from the limits on the available means for accessing and transporting oil shale and tar sands to processing facilities and markets. Impacts would be mitigated where new ROWs could</p>	<p>Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under Alternative B.</p> <p>There could be indirect impacts resulting from the limits on access and the available means for transporting oil shale and tar sands to processing facilities and markets. Impacts would be mitigated where new ROWs could be collocated within existing ROWs to satisfy valid existing rights.</p>	<p>Under Alternative C, approximately 2,320 acres of the White River Oil Shale Preference Right Lease Area and all 2,120 acres of the pending federal lease within the Asphalt Ridge Special Tar Sands Area would be subject to a 3 percent cap, which would include fire. The Uintah Population Area, where the White River Oil Shale Preference Right Lease Area is located, is currently just under the 3 percent disturbance cap. New development could push the area over the cap and reduce opportunities for new surface disturbance in this portion of the Preference Right Lease Area until areas are reclaimed to the point where disturbance is below the threshold.</p> <p>Impacts on existing leases would be the same type as those described under Alternative B;</p>	<p>Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under Alternative D.</p> <p>Areas within one mile of an occupied lek surrounding the White River Oil Shale Preference Right Lease Area and the pending federal lease within the Asphalt Ridge Special Tar Sands Area would be managed as ROW avoidance. Impacts of this management would be similar to those under Alternative B, but fewer acres would be affected. Overall, impacts would increase compared with Alternative A.</p>	<p>Impacts under Alternative E would be the same as those under Alternative A.</p>		<p>Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under the Proposed Plans.</p> <p>However, oil shale and tar sands development in GHMA would be subject to RDFs, lek buffers, and net conservation gain requirements, which could impact oil shale and tar sands development by restricting new surface development. ROW development surrounding the leases would also be subject to these restrictions.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
be collocated within existing ROWs to satisfy valid existing rights.	(see above)	however, the magnitude of impacts could be more severe because new ROWs would not be permitted in areas surrounding the pending tar sands lease and in areas surrounding 2,320 acres of the White River Oil Shale Preference Right Lease Area.	(see above)	(see above)		(see above)
Special Designations						
Areas of Critical Environmental Concern						
Sagebrush habitat is the only relevant and important value identified for the 15 potential ACECs and Zoological Areas proposed for designation under Alternative C. Refer to the summary of impacts for Special Status Species – Greater Sage-Grouse, and Vegetation (Including Noxious Weeds; Riparian and Wetlands), for detailed analyses of sagebrush management in the decision area, including the areas encompassing these 15 proposed ACECs and Zoological Areas.						
The BLM would continue to manage the seven designated ACECs within Greater Sage-Grouse occupied habitat to protect the identified relevant and important values. Current management would continue protecting the values. None of the identified relevant and important values is Greater Sage-Grouse.	Nearly all new surface-disturbing activities in ACECs would be precluded. Adopting more restrictive management of surface-disturbing activities would be complementary to the protection of the relevant and important values of the existing ACECs. Therefore, in general, Alternative B could enhance the relevant and important values of the existing ACECs to a greater extent than Alternative A. In all cases, the relevant and important values would be protected from irreparable damage.	Impacts would be similar to those under Alternative B. However, because all occupied Greater Sage-Grouse habitat would be managed as PHMA, restrictions would be in place for all existing ACECs.	Surface-disturbing activities in ACECs would be allowed with stipulations, RDFs, or BMPs. However, where current management is more restrictive than what is proposed in this alternative, current management would continue to apply. As a result, this alternative would be at least as restrictive as current management. In all cases, the relevant and important values would be protected from irreparable damage.	Impacts would be the same as described under Alternative D.		Where ACECs overlap restrictions on surface-disturbing activities, impacts would be similar to Alternative B. Where surface-disturbing activities are allowed in ACECs, stipulations or RDFs would apply to mitigate the impacts of the activities. As with Alternative D, where current management is more restrictive than the Proposed Plans, current management would continue to apply. As a result, the Proposed Plans would be at least as restrictive as current management. In all cases, the relevant and important values would be protected from irreparable damage.
Wilderness Study Areas						
Due to the requirement that any activity in WSAs meet the nonimpairment standard, implementing management proposed in the various alternatives would not impair wilderness characteristics. Management to protect Greater Sage-Grouse could enhance naturalness, or, at a minimum, be complementary to management in WSAs. However, this would not vary greatly between the alternatives.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.		Impacts would be the same as described under Alternative A.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Other Special Designations (National Historic Trails)						
<p>The BLM and Forest Service would continue to manage the California, Old Spanish, and Pony Express National Historic Trails in accordance with direction in approved LUPs; BLM Manual 6250, National Scenic and Historic Trail Administration; BLM Manual 6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation; and the existing comprehensive plan for the California and Pony Express National Historic Trails (National Park Service 1999). A comprehensive plan for the Old Spanish National Historic Trail is being developed jointly by the BLM and National Park Service.</p> <p>New policy addressing the management of National Historic Trails was issued by the BLM in 2012. The BLM will manage National Historic Trail resources, qualities, values, and associated settings, and the primary use or uses in accordance with the direction provided in BLM Manual 6280. This policy will be adhered to during any site-specific project NEPA analyses that are conducted in the decision area.</p>	<p>There would be restrictions on surface-disturbing activities in PHMA and GHMA to protect Greater Sage-Grouse. Restrictions would preclude nearly all new surface-disturbing activities. Implementing such restrictions would be complimentary to the protection of national historic trails.</p>	<p>Impacts would be the same as described under Alternative B.</p>	<p>Surface-disturbing activities would be allowed with stipulations, design features, or BMPs. Because management proposed under this alternative would not apply in instances where current management is more restrictive, managing for Greater Sage-Grouse would, at a minimum, provide similar management to Alternative A. Where more stringent restrictions on surface-disturbing activities would apply than under Alternative A, implementing such restrictions would be complimentary to the protection of national historic trails.</p>	<p>Impacts would be the same as described under Alternative D.</p>		<p>Where national trails overlap restrictions on surface-disturbing activities, impacts would be similar to Alternative B. Where surface-disturbing activities are allowed in national historic trail corridors, stipulations or RDFs would apply to mitigate the impacts of the activities. As with Alternative D, where current management is more restrictive than the Proposed Plans, current management would continue to apply. Implementing additional restrictions on surface-disturbing activities would be complimentary to the protection of national historic trails.</p>

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	E2: Wyoming	
Social and Economic Impacts (Including Environmental Justice)						
<p>Current employment and earnings trends in the primary study area would not be affected.</p> <p>Lowest nonmarket values associated with Greater Sage-Grouse.</p> <p>Current trends in tax revenues in the primary study area would not be affected.</p> <p>Current trends in population growth and demand for housing and public services would not be affected.</p> <p>Alternative most favorable to business interests.</p> <p>No environmental justice impacts.</p>	<p>Employment in the primary study area would be reduced by an estimated 0.4 percent of the current employment and earnings would be reduced by an estimated 0.6 percent of current earnings when compared to Alternative A.</p> <p>Impacts on nonmarket values associated with Greater Sage-Grouse between Alternatives A and C.</p> <p>Tax revenues in the primary study area would be lower than under Alternative A but higher than under Alternative C.</p> <p>Impacts on population growth would be between those of Alternatives A and C</p> <p>No environmental justice impacts.</p>	<p>Employment in the primary study area would be reduced by an estimated 0.7 (C2) to 0.8 (C1) percent of the current employment and earnings would be reduced by an estimated 1.0 (C2) to 1.1 (C1) percent of current earnings when compared to Alternative A.</p> <p>Adverse effect on nonmarket values associated with livestock grazing when compared to Alternatives A, B, D, and E, and the Proposed Plans; positive effect on nonmarket values associated with Greater Sage-Grouse.</p> <p>Tax revenues in the primary study area would be lower than under alternatives A, B, D, or E or the Proposed Plans.</p> <p>Potential adverse impact on capacity of some communities to attract and retain population.</p> <p>Alternative most favorable to conservation interests.</p> <p>No environmental justice impacts.</p>	<p>Employment and earnings in the primary study area would be reduced by an estimated less than 0.1 percent of the current employment and earnings when compared to Alternative A.</p> <p>Nonmarket values associated with Greater Sage-Grouse greater than A or E but lower than B or C.</p> <p>Tax revenues would be lower than under Alternative A but higher than under alternative B.</p> <p>Impacts on population growth would be between those of Alternatives A and B.</p> <p>No environmental justice impacts.</p>	<p>Impact on employment and earnings in the primary study area would be the same as under Alternative A.</p> <p>Nonmarket values associated with Greater Sage-Grouse greater than A but lower than B, C or D.</p> <p>Impact on tax revenues in the primary study area would be the same as under Alternative A.</p> <p>Impact on population growth in the primary study area would be the same as under Alternative A.</p> <p>No environmental justice impacts.</p>	<p>Impact on employment and earnings would be a reduction of an estimated 0.1 percent of the current employment and earnings when compared to Alternative A.</p> <p>Nonmarket values associated with Greater Sage-Grouse greater than A, D or E but lower than B or C.</p> <p>As Alternative D, tax revenues would be lower than under Alternative A but higher than under alternative B.</p> <p>Impacts on population growth would be between those of Alternatives B and D.</p> <p>No environmental justice impacts.</p>	
Tribal Interests						
<p>Under all alternatives, the BLM would continue to manage BLM-administered lands in a manner that accommodates Native American religious traditions, practices, and beliefs as guided by directives contained in BLM Manual 8120, American Indian Religious Freedom Act (42 USC 1996), Native American Graves Protection and Repatriation Act (25 USC 3001), Executive Order 13007 (Indian Sacred Sites), and Executive Order 13084 (Tribal Consultation), and Secretarial Order 3317, DOI Policy on Consultation with Indian Tribes (December 1, 2011). The Forest Service would also continue to manage National Forest System lands as guided by Forest Service Manual 1500 (External Relations) and Forest Service Handbook 1509 (American Indian and Alaska Native Relations). All alternatives allow for the appropriate tribal governments to consult on a case-by-case basis on undertakings on BLM-administered and National Forest System lands that could affect Native American concerns. The BLM and Forest Service would continue to identify, protect, and preserve tribal assets, treaty rights, sacred/religious sites, or special use areas through site- and project-specific modification or mitigation on a case-by-case or project-by-project consultation basis.</p>						

4.6 IMPACTS FROM THE PROPOSED PLAN AMENDMENT

Table 4-3, below, is organized by issue, like **Table 4-1**, and summarizes if and how an action in the Proposed Plan Amendment was previously analyzed in either the 2015 Final EIS or 2016 Draft EIS. The table also identifies if any issue was not sufficiently analyzed and needs further analysis in this RMPA/EIS. If issues require further analysis, the remainder of **Section 4.6**, below, provides that additional information.

Table 4-3
Proposed Plan Amendment Issues Already Analyzed in the
2015 Final EIS and 2016 Draft EIS

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Sagebrush Focal Area Designations/Withdrawal Recommendations	<p>Neither Alternative D nor Alternative E1 included the presence of SFAs with the corresponding management (recommendation for withdrawal, no exceptions to NSO, prioritization; see page 2-206, and 2-217). In addition, both Alternative D and Alternative E1 considered exceptions beyond what was considered for SFAs or under the Proposed Plan, allowing consideration of development if there were no impacts on Greater Sage-Grouse or if impacts were minimized (see 2015 Final EIS Appendix H).</p> <p>Further, the 2016 Sagebrush Focal Area Draft EIS included analysis for not moving forward with a withdrawal. As noted on page 4-53 of the 2016 Draft EIS, “no future mines are projected to be developed in the proposed Utah withdrawal areas during the 20-year period of the proposed withdrawal if a withdrawal is not implemented. Based on the projection that there would not be any future mines developed in the Utah withdrawal area, even if a withdrawal is not implemented, there would not be any economic or tangible social impacts from future mining operations in the Utah socioeconomic analysis area.”</p> <p>Applicable analyses from the 2015 Final EIS and 2016 Draft EIS explain the impacts from these actions, and are incorporated by reference. No additional analysis of the recommended SFA withdrawal is needed. Analysis is included below to analyze the effects of removing the other management associated with SFAs.</p>
Administering Disturbance and Density Caps	<p>The 2015 Final EIS Alternatives B, C (page 2-95) and Proposed Plan analyze the 3 percent disturbance cap (page 2-17 and 2-18), and Alternative E1 considers a 5 percent disturbance cap (page 2-95). While the potential protective effects of the cap from the 2015 Final EIS will continue in the Management Alignment Alternative, the exception language present in the 2018 RMPA/EIS was not considered in the 2015 Final EIS.</p> <p>None of the 2015 Final EIS alternatives considered including an exception that allows for development to exceed the cap if the project, based on location and design features, improves the condition of Greater Sage-Grouse habitat.</p>

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Modifying Mitigation Strategy	<p>The 2015 Final EIS discloses impacts on a variety of resources from applying a mitigation strategy designed to achieve a net conservation gain; it mentions that phrase over 64 times when describing impacts from the 2015 Proposed Plan. The 2015 Final EIS analysis for Alternative E1 discloses impacts from applying a mitigation ratio of 4:1. The 2015 Final EIS analysis for the No-Action Alternative also discloses impacts from not requiring any mitigation. Finally, the 2015 Final EIS includes substantial modeling and analysis of the BLM’s commitment to implement vegetation treatments and their effect on Greater Sage-Grouse habitat and the habitat of other species.</p> <p>The effects of vegetation/habitat treatments on Greater Sage-Grouse, vegetation, fish and wildlife, or other special status species would not vary based on why a treatment was conducted. There is no difference in effect if those treatments were completed as a proactive effort as committed to by the BLM in the 2015 ARMPA or in response to the requirement for projects to demonstrate a net conservation gain.</p> <p>The changes to the mitigation strategy in the Proposed Plan Amendment do not adjust whether habitat will be improved, but it changes who is responsible for habitat improvement (the BLM, rather than project proponent). The principles associated with the mitigation strategy (habitat improvement) and the corresponding impacts are consistent with the language in the No-Action Alternative (net conservation gain); therefore, the effects are sufficiently described and incorporated from the 2015 Final EIS. The analysis for the Proposed Plan Amendment below focuses on the effects of changing how Greater Sage-Grouse habitat will be improved.</p>
Modifying Habitat Objectives	<p>Alternative D includes an objective to “maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas” and specifies that the “desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met” (page 2-85 and 2-86). It goes on to note that “adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research” (page 2-86).</p> <p>Applicable analyses from the 2015 Final EIS explain the impacts from these actions (see 2015 Final EIS at 4-115 and 4-132 – 4-133), and are incorporated by reference. No additional analysis is needed.</p>
Waivers, Exceptions, and Modifications for NSO Stipulations	<p>In the 2015 Final EIS, Alternatives A, D, E and the Proposed Plan analyzed waivers, exceptions, and modifications on NSO stipulations. In these instances, it is disclosed that oil and gas may be developed if it would reduce impacts on Greater Sage-Grouse. Applicable analyses from the 2015 Final EIS explain the impacts from these actions, and are incorporated by reference. Specific changes in management related to removal of GHMA under the Proposed Plan Amendment may warrant analysis for specific resources/resource uses. As applicable, such impacts are considered in detail in this chapter.</p>

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
General Habitat Management Areas in Utah	<p>In the 2015 Final EIS neither Alternative A nor Alternative E1 included management for areas that are GHMA in the current No-Action Alternative. Under both alternatives the areas would be managed by the land use plan actions that pre-date the 2015 amendments, and included analysis to that effect.</p> <p>Additionally, while Alternative D considered some minimization measures, it also included an exception that no management would apply to GHMA if “off-site mitigation is successfully completed in PHMA, following discussion with the BLM and Forest Service and the State of Utah” (2015 Final EIS page 2-113).</p> <p>Applicable analyses from the 2015 Final EIS explain the impacts from these actions, and are incorporated by reference. Specific changes in management related to removal of GHMA under the Proposed Plan Amendment may warrant analysis for specific resources/resource uses. As applicable, such impacts are considered in detail in this chapter.</p>
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA	<p>The 2015 Final EIS, as part of the Proposed Plan, analyzed this management action, which allowed for exceptions to the application of the Greater Sage-Grouse objectives and actions in areas that lack the “principle habitat components necessary for Greater Sage-Grouse” (page 2-17); however, in the Record of Decision the PHMA component of this action was removed, which is why the No-Action Alternative does not include this exception for PHMA. Nonetheless, the 2015 Final EIS analysis associated with this action is still applicable to consideration of this issue in the Proposed Plan Amendment.</p> <p>Similarly, Alternative D in 2015 considered an action to except decisions associated with PHMA if it were demonstrated that the action was in non-habitat and met specific criteria (page 2-90).</p> <p>Finally, Alternative E1 in 2015 included language that “effort has been made to minimize the amount of non-habitat within the Sage-Grouse Management Areas (SGMAs), but given the topographic, physiographic and land cover features within Utah and the scale and detail of mapping, the inclusion of some non-habitat was unavoidable.” It went on to note that “no specific management provisions are proposed for non-habitat areas within the SGMAs, except to consider noise and permanent structure stipulations around a lek, and to note that, birds may fly over the non-habitat as they connect to other populations or seasonal habitat areas” (p. 2-90).</p> <p>The 2015 Final EIS analysis included the effects of this language, which is similar to that being considered in the Proposed Plan Amendment. The analysis from the 2015 Final EIS explains the impacts from these actions, and is incorporated by reference. No additional analysis is needed.</p>

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Adaptive Management	<p>Management changes as a result of meeting an adaptive management hard trigger were considered and analyzed in the 2015 Final EIS. While management to remove these “hard wired” changes from adaptive management were not considered in 2015, the impacts from such were analyzed in the 2015 Final EIS:</p> <p>If the 10-year population trend for an area that has met a hard trigger reflects the natural fluctuations of a self-sustaining population, hard trigger management would be removed and the RMPA actions would be restored. Existing RMPA actions have already been analyzed in the 2015 Final EIS; therefore, no additional analysis is necessary.</p> <p>If all the leks in an area that have met a hard trigger are not active for 10 years, indicating no occupied leks, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized. In this instance, the removal of PHMA would revert management to Alternative A, as considered and analyzed in the 2015 Final EIS; therefore, no additional analysis is necessary.</p> <p>Because all impacts from the adaptive management actions considered in this process were already considered in one of the alternatives already analyzed, no additional analysis is necessary to describe impacts from the potential “un-triggers.”</p>
Prioritization of Mineral Leasing	<p>In 2015, Alternatives A, B, C, D, and E (including the State’s plan, Alternative E1) did not evaluate an objective that prioritized leasing and development outside of PHMA and GHMA; therefore, the change proposed in the Proposed Plan Amendment was considered in 2015, and the analysis can be found in Chapter 4 of that EIS. No additional analysis is necessary.</p>
Land Disposal and Exchanges	<p>The BLM develops most RMPs to guide management of land over 20 or more years. The Secretary’s policy is, generally, not to dispose of public lands. However, for long term planning purposes, the situation may arise, especially in areas where public land tracts are isolated and difficult to manage, where it is useful for BLM to identify these areas as suitable for leaving public ownership. Any decision regarding whether or not to dispose of a particular parcel under any particular authority, whether by sale under section 203 of FLPMA; exchange under section 206 of FLPMA; or patent under the Recreation and Public Purposes Act of 1926, as amended, for instance, would require site-specific consideration and analysis, including, but not limited to considerations of access, popular recreational uses, the existence of cultural resources or habitat for species, and whether or not such a parcel, isolated from the rest of the public lands, might be better suited for private ownership.</p> <p>Section 203 of FLPMA specifies that BLM may only sell a tract of public land under section 203 if the tract is identified through the land use planning process, pursuant to section 202 of FLPMA, as meeting one or more of the disposal criteria listed in section 203. The RMP determination that a particular tract meets one or more of the criteria for disposal through sale does not necessarily mean the BLM will sell or dispose of the land by another means. Rather, the process for disposing of public lands under FLPMA Section 203 (Sales) or Section 206 (Exchanges) or any other authority is a lengthy multi-decisional process requiring comprehensive site-specific analysis, and cadastral, cultural and</p>

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Land Disposal and Exchanges (<i>continued</i>)	<p>other resource surveys, when necessary, prior to the sale or disposition of a tract of public land. The BLM bases the determination whether a tract meets one or more of the section 203 disposal criteria on its ongoing inventory of all public lands and their resources conducted pursuant to section 201 of FLPMA. The requirement under section 203 that this determination be made through land use planning is consistent with the section 202 requirement to manage public lands under land use plans, where these represent a broader scope, longer-term approach to management of public lands in an entire planning area that takes into account a wide variety of possible uses of the public lands.</p> <p>The 2015 Final EIS Alternative A includes management that “in order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in FLPMA and in each LUP” (page 2-186). It also included analysis that “lands with sensitive species (including Greater Sage-Grouse) would not be disposed of unless there was a net benefit for Greater Sage-Grouse” (4-54). This management is substantially similar to that considered in the Proposed Plan Amendment, and the effects would not differ from those already identified in the 2015 Final EIS for Alternative A.</p> <p>While the impacts from the proposed changes to land disposal and exchanges are addressed, specific impacts on resources/resource uses, as applicable, will be considered in detail in this chapter.</p>
Managing Habitat to Manage Predation	<p>Allowing the removal of corvid nests was not considered in 2015, although Alternative A was silent on the issue. This chapter analyses the impacts of this action.</p>
Burial of Transmission Lines	<p>Alternative E1 (based on the State’s Plan) did not include requirements for burial of transmission lines. The proposal in the Proposed Plan Amendment to not require burial of power lines was considered within the range of the 2015 Final EIS and analysis can be found in the Chapter 4 analysis of that document.</p>

4.6.1 Impacts on Greater Sage-Grouse

The methods and assumptions regarding analysis of impacts on Greater Sage-Grouse are the same as those used in the 2015 Final EIS, Section 4.3.1 (pages 4-6 through 4-10). The resulting analysis describes impacts from the range of alternatives in the 2015 Final EIS, inclusive of Sections 4.3.2 through 4.3.7 (pages 4-10 through 4-135). This establishes a substantial baseline of impacts from the breadth of issues considered in the 2015 Final EIS, including most of the issues addressed in this RMPA/EIS. The assumption, indicators, and analyses are incorporated by reference and will serve as the base of analytical descriptions from which this analysis is drawn.

Administering Disturbance and Density Caps

The Proposed Plan Amendment includes a cap on disturbance and on density of energy/mining facilities in PHMA, similar to the No-Action Alternative (see **Table E.1, Appendix E**). In both alternatives, disturbance at the project and BSU scales must be managed to stay under 3 percent, as well as the density of energy and mining facilities must remain under one facility per 640 acres, on average. These caps would minimize disturbance in PHMA, managing for a habitat with levels of development that research supports is necessary to maintain Greater Sage-Grouse leks.

However, the Proposed Plan Amendment builds flexibility into the analysis by allowing exceedances of caps if certain conditions are met. For example, if site-specific information (e.g., habitat condition, Greater Sage-Grouse use of the area) combined with project design information (i.e., project siting, minimization measures, or voluntary mitigation) indicate the project will improve the condition of Greater Sage-Grouse habitat, the caps can be exceeded. The ability to exceed the disturbance and density caps could result in loss and degradation of site-specific Greater Sage-Grouse habitat and impacts on local grouse populations. Projects that would likely be precluded under the No-Action Alternative could proceed under the Proposed Plan Amendment; however, exceedances to the caps would only be allowed if site-level analysis indicates the project, in combination with all voluntary and required design features, will improve the condition of Greater Sage-Grouse habitat.

There is a risk that allowing this exceedance could result in the loss of a specific type of habitat that mitigation may not address because it does not require compensation for the exact same habitat value. Consequently, under the Proposed Plan Amendment it is possible that while the required habitat improvement will occur, it may not address the loss of a specific habitat type. This may result in a long-term impact on Greater Sage-Grouse in the project area.

In summary, allowing exceedances to the caps may result in local impacts on Greater Sage-Grouse if a specific limiting habitat type is disproportionately affected; however, project design features, which may include voluntary mitigation, would need to fully replace the value of the impacted area. The determination of what design features would be necessary to achieve that exception criteria depends on site-specific issues that would be analyzed in project-specific environmental reviews.

The interspersed nature of habitat, non-habitat, and potential habitat in Utah results in instances where voluntary habitat improvements could benefit a specific population more than staying under the 3 percent cap. Such improvements could be a component of design features applied to allow for more disturbance, meeting the exception criteria contained in the Proposed Plan Amendment. Greater Sage-Grouse in Utah are limited by habitat availability, and increasing habitat could provide a population-level benefit to Greater Sage-Grouse use of an area.

Modifying Mitigation Strategy

The BLM has determined that FLPMA does not require the BLM to mandate public land users to provide compensatory mitigation as a condition of obtaining authorization for the use of the public lands. The BLM further determined that FLPMA does not limit the ability of public land users to voluntarily offer to provide compensatory mitigation, for public land users to provide compensatory mitigation to satisfy state recommendations or standards, or for the BLM to take such voluntary or state-focused efforts into account when assessing the overall environmental impact of a proposed action. Consistent with that determination and with BLM IM 2018-093, *Compensatory Mitigation*, the Proposed Plan Amendment clarifies how voluntary compensatory mitigation or a state recommended mitigation should be considered in the management of Greater Sage-Grouse habitat. This clarification aligns the Proposed Plan Amendment with BLM policy and the scope of compensatory mitigation authority expressly provided by FLPMA.

Compensatory mitigation is meant to be an additional tool that, in the best circumstances, can attempt to offset residual impacts remaining after applying other mitigation actions. It does not supplant other tools under the mitigation hierarchy, including avoiding and minimizing on-site impacts.

Further, it is impossible to predict the amount of compensatory mitigation that might voluntarily occur in the future and the environmental consequences of that compensatory mitigation. Therefore, analysis of the environmental impact of compensatory mitigation is more appropriate for future project-specific NEPA, where it is possible to assess any project-specific compensatory mitigation that is offered voluntarily or to satisfy state recommendations or standards, in addition to the benefits already gained through other forms of mitigation, including avoidance, minimization, and rectification measures applicable to the specific project and site.

Thus, the effects of these changes to the BLM's approach to compensatory mitigation are speculative and nominal at most. The BLM will continue to ensure consistency of its actions and authorizations with the land use planning level goals and objectives of the Proposed Plans. In the 2015 Greater Sage-Grouse ARMPA the BLM committed to "increase the amount and functionality of seasonal habitats" (Objective SSS-4) by implementing vegetation and fuels treatments (see also MA-SSS-VEG-1, 2, 3 and 4, and MA-FIRE-3). The implementation of compensatory mitigation actions, if applied, will be directed by MOAs that describe how the BLM will align with State authorities and incorporated in the appropriate NEPA analysis during implementation. While the conservation benefit of compensatory mitigation may be limited when weighed against the threats to Greater Sage-Grouse, particularly in the Great Basin portion of the planning area where wildland fire remains a key threat, the BLM is committed to implementing state mitigation requirement or recommendation to help minimize the impacts of anthropogenic disturbance and habitat fragmentation throughout the planning area and the range of Greater Sage-Grouse.

Further, as noted in **Section 3.5**, the BLM committed to implementing beneficial habitat management actions to reduce the threats of fire and invasive species to Greater Sage-Grouse as part of the 2015 ARMPA. Because those actions were consistent with the State's management approach, no changes to them are considered in this effort as, as noted in **Chapter 2**, they are not shown in this EIS. However, the effect of those actions is evident in the habitat treatments described in Table 3-6. The BLM has committed resources to habitat restoration and has treated 2.6 million acres of Greater Sage-Grouse habitat range-wide over the past 5 years. In fiscal year 2019, the BLM funded approximately \$38 million in Greater Sage-Grouse management actions resulting in approximately 632,000 acres of treated habitat. In Fiscal Year 2020, the BLM invested approximately \$37 million in the implementation of habitat management projects resulting in approximately 584,000 acres of treated habitat.

In 2015, the USFWS determined Greater Sage-Grouse was "not warranted" for listing under the Endangered Species Act. The USFWS found that BLM's 2015 land use plans were adequate regulatory mechanisms and that the species no longer warranted listing under the Act. At the time of that decision, USFWS acknowledged the RMP requirements that compensatory mitigation achieve a net gain standard. The BLM is not proposing any action that would preclude proponents from offering compensatory mitigation; it is clarifying the BLM's reliance on voluntary compensatory mitigation consistent with federal law.

In PHMA, when undertaking BLM management actions, and consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions identified in this RMPA. This includes the BLM's planning objective to improve habitat conditions and connectivity through implementation of vegetation

treatments. Under this Proposed Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives that are unchanged from the 2015 ARMPA, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations “to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat” across the planning area.

Based on the existing levels of habitat loss from wildfire and development throughout the planning area, the level of habitat improvements identified in **Chapter 3** since 2015 have resulted in an improvement to Greater Sage-Grouse habitat throughout the planning area. This trend is anticipated to continue, due to the combination of monitoring, treatment success and plan evaluations, the continued application of habitat improvements by the BLM, and likely some improvements voluntarily conducted by third parties. While individual project proponents will no longer be personally responsible to improve habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to increase the quantity and quality of habitat and improve population distribution and vital rates.

Modifying Habitat Objectives

Changes in the habitat objectives table found in Objective SSS-3 are based on an evaluation of Greater Sage-Grouse habitat preferences informed by data collected throughout Utah. The proposed changes to the desired conditions in the habitat objectives table are outlined to better reflect vegetation structure and composition found in vegetation communities that support Greater Sage-Grouse habitat in Utah, as well as adjust the indicators and values to reflect a starting point that is based on the best available data based on local habitat conditions. The resulting three zones (Low, Mid, and High; see **Chapter 3, Section 3.3.4** and Map 3-1) provide a starting point for Greater Sage-Grouse habitat management that is more attuned to the varied vegetation communities providing Greater Sage-Grouse habitat throughout Utah. These changes will have beneficial impacts on management and Greater Sage-Grouse habitat because the indicators and values more accurately reflect vegetation characteristics in Utah as informed by site-specific information that has been updated using local science.

Waivers, Exceptions, and Modifications for NSO Stipulations

As noted in **Table 4-2**, multiple alternatives considered exceptions to oil and gas stipulations. The Proposed Plan Amendment alters the exception from the No-Action Alternative in two ways: first it applies it to areas without habitat (site-scale documentation), and second, it does not require that the State of Utah and the USFWS concur to its use. While exception of the NSO stipulation in PHMA would allow surface development, the BLM is required by regulation to either document that the factors leading to the stipulation have changed (e.g., no Greater Sage-Grouse habitat) or that the proposed operations would not cause unacceptable impacts (43 CFR 3101.1-4). In areas with site-scale habitat, such an exception would only be allowed if it was to prevent damage to higher value Greater Sage-Grouse habitat on adjacent non-public lands. In areas with site-scale non-habitat, the exception could only be approved if the primary disturbance (e.g., well pad, compressor station) did not impair adjacent seasonal habitats from direct and indirect impacts from the project.

While allowing the possibility for an exception introduces the potential for an impact not present in the No-Action Alternative, the criteria that must be met prior to approving an exception would either result in the exception not being granted, or in subsequent development having a low potential for

impacts. Further, if the exception to the NSO stipulation is granted, and subsequent development would be subject to other minimization measures contained in MA-SSS-3, more assurances would be provided that resulting developments would not likely impact Greater Sage-Grouse or their habitats.

The Proposed Plan Amendment also adds a modification to the NSO stipulation that could result in some site-specific impacts on Greater Sage-Grouse or their habitat. The modification would allow operators to place infrastructure (e.g., roads, pipelines, and power lines) associated with their primary disturbance (e.g., well pad and compressor station) in PHMA without adhering to the NSO stipulation, but applying the minimization and mitigation measures in MA-SSS-3 (e.g., disturbance cap, tall structures, noise, seasonal, buffers, etc.). The construction of such associated infrastructure would remove vegetation associated with habitat, increase predation opportunities on Greater Sage-Grouse and potentially displace birds. The modification was added to the Proposed Plan Amendment because in its absence, an operator could still obtain rights-of-way for such infrastructure. To avoid inconsistency in management (i.e., avoiding ROWs but precluding supporting oil and gas infrastructure), the modification was included, but only if the primary disturbance (e.g., well pad, compressor station, etc.) was granted an exception.

The Proposed Plan Amendment also included a waiver for the NSO stipulation; however, there would be no impact on Greater Sage-Grouse from the waiver, as it would be applied only if the area was removed from PHMA management, based on evaluation of site-specific data.

Sagebrush Focal Area Designations/Withdrawal Recommendations

As noted in Table 4-3, impacts to Greater Sage-Grouse from not recommending SFAs for mineral withdrawal is addressed in the 2015 Final EIS and the 2016 Draft EIS, and are incorporated by reference. SFAs also included an NSO stipulation for fluid mineral leasing with no waiver, exception or modification, and were prioritized for vegetation management and conservation actions, including but not limited to conducting land health assessments, wild horse and burro actions, reviewing livestock grazing permits, and habitat restoration.

Though no SFAs would be designated in the Proposed Plan Amendment, the PHMA within the SFAs would still be managed as PHMA with all the corresponding management. This includes requiring an NSO stipulation on all oil and gas leasing to avoid impacts from fluid mineral development. However, different from the No Action Alternative, the NSO stipulation in PHMA includes the potential to consider an exception, waiver or modification. It is critical to note that providing for such consideration does not mean development would be allowed to occur anywhere in PHMA. As required by regulation, the BLM can consider a such exceptions, waivers, or modification to lease stipulations only if “proposed operations would not cause unacceptable impacts” (43 CFR 3101.1-4). The Proposed Plan Amendment specifies the conditions that must be documented in order for an authorized officer to consider granting requests for waivers, modifications, or exceptions (see MA-MR-3). The impacts from this language is disclosed in the preceding section. Because of the stringent criteria that must be documented prior to considering granting exceptions, waivers, or modifications to the NSO stipulation, combined with other minimization measures that are required even if such action are granted, allowing consideration of exceptions, waivers or modifications in areas that used to be SFAs would not expose the habitat or associated Greater Sage-Grouse populations to the loss of habitat functionality.

The No Action Alternative also prioritized grazing permit renewals, vegetation management, and other conservation actions in SFA over all other PHMA. Because SFAs included areas where large populations of Greater Sage-Grouse coincided with relatively consolidated public lands, these areas already contained habitat characteristics that supported Greater Sage-Grouse needs. By prioritizing staff time and budget resources to areas with higher habitat quantity and quality, areas with marginal habitat characteristics could continue to degrade over time, becoming less and less suitable until they no longer provide the necessary components. Such a management focus would emphasize protecting the perceived best habitats to the exclusion of improving and creating habitat. By removing the prioritization of conservation efforts from the perceived best habitats, the Proposed Plan Amendment would enable managers to evaluate local ecological conditions and the presence of threats and focus resources in areas to meet land health standards and improve vegetation characteristics to meet, or move towards meeting Greater Sage-Grouse habitat objectives. In the long term, prioritizing efforts in areas that need improvement, such as areas that are not meeting land health standards, will improve the quality and amount of habitat available for Greater Sage-Grouse populations.

General Habitat Management Areas in Utah

As noted on **Figure 2-1a**, there are several areas of GHMA throughout Utah in the No-Action Alternative. The GHMA in the Morgan and Summit County areas is predominantly on private lands; the GHMA between Vernal and Strawberry Reservoir (noted as South Slope Uintah in the 2015 Final EIS Chapter 3) is tribal and private lands. The areas of GHMA in the Uintah Population Area are separated into three small subpopulations, described in Chapter 3 of the 2015 Final EIS as Deadman's Bench, East Bench and Book Cliffs, and Halfway Hollow. None of the other GHMA in Utah includes any leks, and is generally comprised of poor quality habitat on the periphery of larger PHMA. See **Appendix 3** for a summary of each GHMA in Utah, the composition of its ownership (BLM-administered versus non-BLM-administered), the presence of disturbances, and connectivity issues.

Under the Proposed Plan Amendment, the GHMA designation would be removed with all its corresponding management actions from the 2015 plan amendments. These management actions, including lek buffers, required design features, fluid mineral leasing prioritization, and habitat objectives, provide a hierarchy of potential conditions to minimize effects while still allowing for development in GHMA. Notably, however, under the No-Action Alternative, where GHMA remain, development would still be allowed following this hierarchy of conditions. Under the Proposed Plan Amendment, the removal of GHMA and their associated management actions would likely incentivize development in areas formally identified as GHMA. The long-term effect of incentivizing under the Proposed Plan Amendment is not anticipated to be different than the development that would eventually be allowed under the No-Action Alternative, as noted below.

Under the No-Action Alternative development could still occur in GHMA. As analyzed in the 2015 Final EIS, "despite the...[Greater Sage-Grouse] conservation measures, leasing and development in these areas could result in human alteration, direct loss, and fragmentation of seasonal [Greater Sage-Grouse] habitats, which, in most cases, have already been fragmented by mineral development activities. Fragmentation could further limit the amount of usable habitat available for the small and declining population of [Greater Sage-Grouse] that occupy this area [GHMA]" (2015 Final EIS, page 4-119).

Although GHMA remains a part of the No-Action Alternative, the potential decline of Greater Sage-Grouse in GHMA exists; thus, whether or not GHMA and its associated management is present, the

impacts from the two alternatives would be the same in the long term, though the Proposed Plan Amendment could likely accelerate the effect on resources in the former GHMA. This is because it incentivizes development in these areas over PHMA. Because 95 percent of Utah's Greater Sage-Grouse populations are supported by habitat in PHMA, there would be no significant effect of accelerating the impacts on the small populations in former GHMA that contain 5 percent of Utah's Greater Sage-Grouse populations and just 0.25 percent of the populations range-wide.

In addition, the Proposed Plan Amendment provides that the BLM would replace occupied habitat outside PHMA that is lost to development by creating or improving habitat inside PHMA. Conversely, under the No-Action Alternative, mitigation is required to demonstrate a net conservation gain to compensate for development in GHMA, whether inside or outside GHMA.

PHMA contains better habitat, supports larger populations, and provides better opportunity for the Greater Sage-Grouse than GHMA. Although the loss of GHMA management may have impacts on specific Greater Sage-Grouse in those areas, the Proposed Plan Amendment's increased protections for PHMA, and the BLM's commitment to create/improve habitat within PHMA, will overall provide greater protection and enhancement for key populations and important habitat throughout Utah. In sum, the anticipated benefit of focusing on PHMA will outweigh any potential impact from removing GHMA management.

The BLM's commitment to replacing lost occupied Greater Sage-Grouse habitat in former GHMA by creating or improving PHMA could collectively increase or improve the quality of the PHMA over time. As the amount of development increases in former GHMA, the lack of local mitigation could accelerate the declines in Greater Sage-Grouse populations as available habitat that is not affected by disturbance shrinks.

Of the 363 known occupied leks in Utah, 95 percent of these leks are in PHMA. Only 7 of the 18 leks in GHMA are in areas affected by BLM management, with the other 11 in areas predominantly owned by tribal or private entities. With this alignment, the BLM would prioritize habitat management areas that encompass over 96 percent of the actual Greater Sage-Grouse, based on 2019 data.

As described in the analysis for Alternative E in the 2015 Final EIS, not including specific management for GHMA could result in localized Greater Sage-Grouse habitat loss, and continued population decreases. These areas on public lands are naturally fragmented, and various human developments (e.g., roads, transmission lines, and oil and gas development) have further isolated and impacted these habitats and their associated populations. The changes in management in the Proposed Plan Amendment would continue, if not accelerate these effects; however, as described above, the conservation value of these areas to the persistence and growth of Greater Sage-Grouse populations in Utah is marginal when compared with the habitat values and growth trends of populations in PHMA.

The overall Greater Sage-Grouse goal to "maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners" would be met under the Proposed Plan Amendment (Goal SSS-1 – 2015 ROD/ARMPA). While some areas outside of PHMA would likely see continued population decreases, the BLM's commitment to replace habitat in PHMA as compensation for development in former GHMA will meet the goal of "maintaining and/or increasing Greater Sage-

Grouse abundance” because PHMA provides a greater opportunity for population growth than GHMA due to habitat potential.

Finally, with the removal of GHMA, two small areas in the Sheeprocks area would be managed as available for cross-country OHV use. Approximately 6,320 acres in the 5 Mile Pass area in GHMA on the northeastern portion of Sheeprocks, and 7,900 acres in the Little Sahara Sand Dunes area in GHMA on the southern portion of the Sheeprocks population and would be managed as available for cross-country OHV use. As noted in **Chapter 3**, both these areas are destination-based OHV riding areas, and both were open for more than 25 years prior to the 2015 ROD/ARMPA action to limit use in these areas to existing routes. The acres in both areas are directly adjacent to other areas that are also available to cross-country OHV use, and were originally part of the same open areas prior to 2015. The 2015 Final EIS notes that “habitat loss could occur associated with cross-country OHV use” (2015 Final EIS page 4-52). However, a review of GPS tracking data for Greater Sage-Grouse in the Sheeprocks area indicates that none of the collared birds (a sub-sample of the total population) used the areas proposed to be made available to cross-country use again (Chelak and Messmer 2017). Due to the long-term use in both of these areas prior to 2015, these areas have likely already experienced the habitat losses, so this change is not anticipated to result in impacts on Greater Sage-Grouse or its habitat.

Prioritization of Mineral Leasing

The Proposed Plan Amendment proposes to remove the fluid mineral leasing prioritization objective that prioritizes leasing outside of PHMA and GHMA. This was considered in Alternatives A, B, C, D, and E in the 2015 Final EIS where no similar objective was included; however, the 2015 Final EIS, where mineral leasing prioritization was part of the Proposed Plan (what is now the No-Action Alternative), focused its analysis on the no surface occupancy allocation decision that resulted from the objective. It determined that prioritizing leasing outside of Greater Sage-Grouse habitat would not preclude leasing in PHMA.

At most, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable of analyzing all the nominated parcels. Because the mineral leasing prioritization objective provides no certain or durable protection to PHMA, its removal would not increase threats, since the no surface occupancy stipulation is still in effect.

Land Disposal and Exchanges

The No-Action Alternative would retain both PHMA and GHMA unless a net gain to Greater Sage-Grouse could be documented. The Proposed Plan Amendment also manages PHMA for retention, but former GHMA would be available for disposal according to the local land use plans. Additionally, prior to a disposal of public lands in PHMA, the environmental review would need to document that the land tenure adjustment would not compromise the persistence of the Greater Sage-Grouse population in the PHMA. This change could result in areas of Greater Sage-Grouse habitat in both PHMA and former GHMA no longer being administered according to the management actions from this amendment.

The impact of this change could affect smaller pieces of habitat within a PHMA, but would maintain enough of the seasonal habitats to maintain population persistence. Land disposals and exchanges within PHMA that would compromise the persistence of the PHMA’s population would not be authorized. While there could be site-specific impacts, the likelihood for population-level impacts in PHMA would

be low due to requirement to not dispose of lands that would threaten the persistence of the population. Former GHMA could be affected to a greater degree, as no limitation on size or impact would exist regarding their potential disposal.

Managing Habitat to Manage Predation

Removing corvid nests during habitat treatments in PHMA, including removing the trees on which they are built and adjacent trees, could reduce predation pressures by reducing corvid nesting opportunities. While breeding corvids will simply seek new nesting opportunities in the next nesting season, reducing existing nests and adjacent nesting opportunities in PHMA could reduce opportunities for corvids to have easy access to Greater Sage-Grouse nesting habitat. While generally applicable statewide, the magnitude of this impact would depend on predation rates at the local Greater Sage-Grouse population level.

Burial of Transmission Lines

The No-Action Alternative requires that new transmission lines be buried where technically feasible. The 2015 Final EIS notes that “burying power lines in Greater Sage-Grouse habitat would avoid Greater Sage-Grouse predator perching or nesting opportunities, Greater Sage-Grouse avoidance of aboveground power lines, and Greater Sage-Grouse collisions with power lines” (2015 Final EIS page 4-32). It goes on to note that burying transmission lines would also result in ground disturbance during construction and maintenance and may result in large, permanent displacement of excavated soil and subsequent issues with reestablishing native vegetation. The Proposed Plan Amendment proposes to remove the requirement to bury transmission lines where technically feasible and provides increased flexibility to consider site-specific impacts and minimization options. This change in management could result in both positive and negative impacts on Greater Sage-Grouse, depending on threats in local populations.

Constructing transmission lines above-ground could increase predator perches, which may lead to increased take of Greater Sage-Grouse and their nests; however, impacts of predator perches would be minimized by conforming with right-of-way avoidance allocations, application of tall structure restrictions in PHMA, use of perch deterrents on poles, and micro-siting lines to avoid important Greater Sage-Grouse leks and adjacent seasonal habitats. Constructing transmission lines above the ground could also maintain more habitat than the burial of lines because it offers more protection for sensitive habitat areas. Removal of sagebrush and associated vegetation would be avoided with placement of surface lines, which minimizes habitat disturbance and the potential for invasive/noxious weeds. The specific impacts of this change in management would depend on site-specific conditions, but the removal of the requirement would allow interdisciplinary teams and local managers to evaluate site-scale impacts and minimize impacts at the project level, providing the flexibility to make the best decision for the local Greater Sage-Grouse population and their habitat.

4.6.2 Impacts on Air Quality

Impacts on air quality are described in the 2015 Final EIS in Section 4.4 (pages 4-135 to 4-137). Air quality is identified as a resource that would primarily have indirect, beneficial impacts from the implementation of most Greater Sage-Grouse conservation measures, although some adverse impacts from the different plan alternatives were discussed. As protective measures increase for Greater Sage-Grouse, related reductions in development would help maintain air quality. The 2015 Final EIS discussed positive and negative impacts from livestock grazing, travel, mineral extraction, wildland fires, and

construction activities. No changes are expected to the air impacts analysis contained in the 2015 Final EIS; however, some discussion related to the potential new ozone non-attainment areas and reverting OHV areas back to open for cross-country use as they relate to air quality is provided.

In 2018 the EPA officially designated Salt Lake and Davis Counties, as well as portions of Weber, Tooele, Uintah and Duchesne Counties, as non-attainment for ozone. BLM-managed Greater Sage-Grouse areas are included in the Uintah County non-attainment area, while non-attainment areas in other counties do not overlap BLM-managed Greater Sage-Grouse habitat. Monitoring data found in Table 3.5 and in the 2015 Final EIS (page 3-48) show that ozone measurements have frequently exceeded the current ozone NAAQS value, and changes from attainment to non-attainment will likely not change the air impacts analysis described in 2015.

General Habitat Management Areas in Utah

Two areas in the Sheeprocks Population Area associated with the 5 Mile Pass and Little Sahara Sand Dunes OHV areas would revert to open for cross-country OHV use. Pollution from OHVs includes fugitive dust and NAAQS controlled pollutants. Areas now designated as open to cross-country OHV use are adjacent to existing OHV recreation areas, and no additional air pollution emissions are expected from those that already occur. Additionally, these areas were open to cross-country OHV use before the 2015 Final EIS amendments and impacts on air would be similar to those analyzed in the 2015 Final EIS No-Action Alternative.

4.6.3 Impacts to Climate Change

Impacts on climate change from the 2015 ARMPA are described in the 2015 Final EIS in section 4.5 (Pages 4-137 to 4-147). The changes made in the Proposed Plan Amendment would not change the analysis or conclusions from the 2015 Final EIS. Greenhouse gas-generating actions would be limited in PHMA due to stipulations to protect Greater Sage-Grouse habitat. However, some greenhouse generating activities could still be considered. As described below in Section 4.6.11, the Reasonable Foreseeable Development for Oil and Gas would not change compared to that in the No Action Alternative, and effects on carbon storage capacity would still be as analyzed in the 2015 Final EIS with management still placing the same emphasis on habitat restoration and conservation which would result in removal of encroaching invasive pinyon-juniper.

4.6.4 Impacts on Soil Resources

General Habitat Management Areas in Utah

Under the Proposed Plan Amendment, former GHMA would be removed and would revert back to land management objectives as outlined in pre-existing (before 2015) resource management plans. This action would result in two areas (14,220 acres) in former GHMA that were limited to existing routes in the 2015 Final EIS that would return to being available to cross-country OHV use. This action may have some adverse impacts on soils (especially sensitive soils) from increased disturbance and compaction. This action may enable the spread of invasive and nonnative plant species, which may also impact soils negatively. The impacts from soil compaction and disturbance are outlined in the 2015 Final EIS in Chapter 4, Section 4.6.

4.6.5 Impacts on Vegetation (Including Noxious Weeds, Riparian Areas, and Wetlands)

Impacts on vegetation resources from anthropogenic activities have been disclosed in detail in the Vegetation section (Chapter 4, Section 4.8) in the 2015 Final EIS; however, the Proposed Plan Amendment includes some additional impacts on vegetation resources that may occur from the proposed changes.

General Habitat Management Areas in Utah

Removal of approximately 448,600 acres of former GHMA and reverting to pre-2015 management could allow projects in these areas to proceed more quickly without Greater Sage-Grouse specific conservation measures and management objectives for vegetation. Proposed projects in former GHMA would be allowed by the BLM as long as the project has no indirect impacts on vegetation in PHMA. The BLM would mitigate for disturbance in former GHMA by improving habitat inside of PHMA for Greater Sage-Grouse.

Vegetation resources may be affected on various levels by allowing more disturbance and anthropogenic activities in former GHMA. More disturbance could lead to increased amounts of invasive and noxious vegetation as well as degraded shrub and herbaceous vegetation communities. Indirect impacts from increases in invasive and noxious vegetation may lead to loss of energy flow, hydrologic function, and soil stability which could lead to further degradation of vegetation communities. As the amount of development increases in former GHMA, the consecutive effects of mitigating disturbances in PHMA could mount and could possibly affect the functionality of some vegetation communities.

Site-specific planning and other management from local resource management plans, and adhering to the land health standards, would reduce negative impacts on vegetation resources in former GHMA with the use of best management practices and other project mitigation design features.

Waivers, Exceptions, and Modifications for NSO Stipulations

The Proposed Plan Amendment would allow exceptions to surface occupancy restrictions in mapped PHMA. Areas in PHMA where this would be allowed would lack the principle habitat components necessary (e.g., a combination of sagebrush, grasses, and forbs) for Greater Sage-Grouse. These areas could also be areas that have crossed ecological threshold(s) to non-Greater Sage-Grouse habitat vegetation communities (e.g., monoculture cheatgrass and pinyon/juniper woodlands). Impacts from projects in PHMA non-habitat areas would likely have minimal impacts on vegetation resources, as the vegetation would already be in a non-desirable condition and would likely be unoccupied by Greater Sage-Grouse. Minimization measures would still be applied to projects in PHMA to limit the effects of disturbances (e.g., 3 percent disturbance cap and noise).

Disturbance Caps

The 2015 Final EIS analyzed the impacts from the BLM prohibiting discrete anthropogenic activities that cause disturbance beyond the 3 percent cap in PHMA. The Proposed Plan Amendment would allow the 3 percent cap to be exceeded if a technical team determines the project, in concert with all its design features, will improve the condition of Greater Sage-Grouse habitat. This action would allow projects to exceed the disturbance cap; however, in so doing, it could result in voluntary habitat improvement projects that could change vegetation conditions in the project area to shift away from a vegetation community more dominated by trees to one more dominated by grasses and shrubs, which is conducive to Greater Sage-Grouse habitat. If the exception is voluntarily sought, it would likely result in

treatments that would shift vegetation communities to earlier seral classes. This would come about by meeting habitat objectives designed for Greater Sage-Grouse habitat at the project site scale even though the 3 percent cap would be exceeded.

Modifying Mitigation Strategy

Maintaining a mitigation strategy in PHMA that leads to a planning area-wide improvement of Greater Sage-Grouse habitat would manage for vegetation communities that are generally more dominated by grasses and shrubs than by trees. While each individual project proponent would no longer be required to increase habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to be achieved: namely, increasing the quantity and quality of sage-steppe vegetation communities in early- to mid-seral condition.

Prioritization of Mineral Leasing

Removing the prioritization objective for PHMA and GHMA would not directly impact vegetation because prioritization doesn't permit or preclude leasing in PHMA. The no surface occupancy stipulations and conservation measures in place for PHMA would protect the continuity of sagebrush communities; however, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable to analyzing all the nominated parcels. In an area with poor vegetation conditions or high levels of disturbance, such a delay could provide time for vegetation conditions to improve before new developments are implemented.

4.6.6 Impacts on Other Special Status Species

Administering Disturbance and Density Caps

Allowing exceedances to the disturbance and density caps in PHMA could affect special status species by a reduced level of protection of habitat from disturbance. These disturbance impacts may increase by allowing exceptions to the disturbance cap, especially within areas of non-sagebrush, therefore impacting habitat for special status species that use these non-sagebrush habitat types; however, exceptions to the disturbance and density cap may also benefit some species with habitats that overlap Greater Sage-Grouse. This would be due to the increased potential for voluntary habitat projects, which could improve habitat conditions through vegetation treatments.

Modifying Mitigation Strategy

Maintaining a mitigation strategy in PHMA that leads to a planning area-wide improvement of Greater Sage-Grouse habitat would manage for vegetation communities that are generally more dominated by grasses and shrubs than by trees. While each individual project proponent would no longer be required to increase habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to be achieved: namely, increasing the quantity and quality of sage-steppe vegetation communities in early- to mid-seral condition. This would increase habitats for special status species with habitats that overlap that of Greater Sage-Grouse; however, it would also generally decrease habitat availability for special status species that are not sage dependent.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Development in non-habitat portions of PHMA may increase impacts on certain special status species whose habitat requirements do not overlap sagebrush areas. Adjacent non-sagebrush habitats could see an increase in development and disturbance when trying to avoid and minimize disturbance to sagebrush habitats. Species that use sagebrush systems would see no change to impacts compared with the No-Action Alternative because no exception would be granted, as sagebrush within PHMA is habitat.

Prioritization of Mineral Leasing

Removing the prioritization objective for PHMA and GHMA would not directly impact special status species because prioritization doesn't permit or preclude leasing in PHMA. The no surface occupancy stipulations and conservation measures in place for PHMA would protect sagebrush habitats, which could also maintain special status species using these habitat types; however, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable to analyzing all the nominated parcels. In an area with poor habitat conditions or high levels of disturbance, such a delay could provide time for habitat improvement before new developments are implemented.

Managing Habitat to Manage Predation

The Proposed Plan Amendment provides opportunity to remove trees that have corvid nests that could impact PHMA nesting habitat. Special status wildlife that may experience predation and harassment by corvids would benefit from removal of trees with corvid nests that overlap PHMA nesting habitat. Ravens have been observed in association with Utah prairie dog colonies. Young prairie dogs are likely an opportunistic food source for ravens and crows as they emerge from the burrows. Young prairie dogs are likely easier to carry away and also do not run as fast as adults or respond to alarm calls as quickly (Hoogland et al. 2006).

Efforts by other agencies to minimize impacts from predators on Greater Sage-Grouse would also likely benefit other special status animals, such as Utah prairie dog and black-footed ferret, that overlap Greater Sage-Grouse habitat. The 2012 Revised Utah Prairie Dog Recovery Plan states that normal levels of predation are not considered a threat for healthy Utah prairie dogs and that healthy populations can likely sustain normal predator pressures without adverse impacts on population structures. Predation is more likely to have adverse impacts on Utah prairie dogs in unnaturally fragmented colonies or at new translocation sites (US Fish and Wildlife Service 2012).

4.6.7 Impacts on Fish and Wildlife

Wildlife habitat conditions within the decision area are directly linked to vegetation conditions, water quality and quantity, and progression toward land health standards as described in Section 4.10.2 of the 2015 EIS (BLM 2015, page 4-184).

General Habitat Management Areas in Utah

Removal of GHMA acres would result in management returning to that described under Alternative A in the 2015 Final EIS. Removal of the GHMA and associated management may reduce some indirect protection for big game habitat, including crucial winter and fawning/calving habitat that occur within mapped GHMA. Impacts on big game are considered negligible because big game use a variety of habitat types beyond sagebrush. Additionally, the GHMA is not the only management for these areas, but is

merely complimentary to management of habitat under applicable RMPs and according to BLM Rangeland Health Standards. Removing the GHMA minimization measures that, as noted above would not preclude development, would not likely result in additional impacts that are not already addressed by management of crucial habitats in existing land use plans.

The offsite mitigation in PHMA to replace impacted habitat in occupied Greater Sage-Grouse habitat outside of PHMA may not always benefit the same other wildlife species that were impacted at the disturbed site. While it could lead to a local improvement for species in the area of treatment, especially those that rely on sagebrush habitats, it could also result in an unmitigated loss in the quantity and quality of habitat at the location of the impact. As the amount of development increases in the Greater Sage-Grouse habitat outside PHMA, the impact from disturbances mitigated in PHMA would mount and could affect the use patterns of wildlife in those areas.

Administering Disturbance and Density Caps

Allowing exceedances to the disturbance and density caps in PHMA could affect wildlife by a reduced level of protection for habitat from disturbance. These disturbance impacts may increase by allowing exceptions to the disturbance cap, especially within areas of non-sagebrush, therefore impacting wildlife species that use these other habitat types (e.g., pinyon-juniper woodlands and pinyon jays); however, exceptions to the disturbance and density cap may also benefit some wildlife species with habitats that overlap with Greater Sage-Grouse. This would come about by improving habitat conditions through the increased potential for voluntary vegetation treatments.

Modifying Mitigation Strategy

Maintaining a mitigation strategy in PHMA that leads to a planning area-wide improvement of Greater Sage-Grouse habitat would manage for vegetation communities that are generally more dominated by grasses and shrubs than by trees. While each individual project proponent would no longer be required to increase habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to be achieved: namely, increasing the quantity and quality of sage-steppe vegetation communities in early- to mid-seral condition. This would increase habitats for wildlife species with habitats that overlap that of Greater Sage-Grouse; however, it would also generally decrease habitat availability for wildlife species or seasonal habitats of species that are not sage dependent.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing placement of developments in non-habitat portions of PHMA may increase impacts on certain wildlife and migratory birds whose habitat requirements do not overlap sagebrush areas. Adjacent non-sagebrush habitats could see an increase in development and disturbance when trying to avoid and minimize disturbance to sagebrush communities.

Managing Habitat to Manage Predation

The removal of corvid nest structures, including their trees, in PHMA habitat treatments may impact migratory birds by directly removing nesting structures and cover. Although this may negatively impact tree nesting migratory birds, there could be a benefit to ground and shrub nesting migratory birds due to reduced predation potential from corvids and raptors. These impacts, however, are site specific and would be analyzed in detail at the project scale.

Prioritization of Mineral Leasing

Removing the prioritization objective for PHMA and GHMA would not directly impact wildlife because prioritization doesn't permit or preclude leasing in PHMA. The no surface occupancy stipulations and conservation measures in place for PHMA would protect sagebrush habitats, which could also benefit wildlife species using these habitat types; however, the prioritization could possibly delay when a given parcel is offered for lease or subsequently developed. In an area with poor habitat conditions or high levels of disturbance, such a delay could provide time for vegetation conditions to improve before new developments are implemented.

Burial of Transmission Lines

The Proposed Plan Amendment proposes to remove the requirement to consider burying transmission lines (except when not technically feasible) and allow increased flexibility to consider site-specific impacts and minimization options. This action could lead to a minor negative effect on migratory birds by increasing predator perches from unburied lines that may lead to increased take of migratory birds and their nests by raptors and corvids; however, impacts of predator perches could be minimized on a site-scale by use of perch deterrents on poles. There could be beneficial impacts on big game and migratory bird habitat by not burying transmission lines because it offers more protection for sensitive habitat areas. Removal of sagebrush and associated vegetation can be avoided with placement of surface lines, which minimizes habitat disturbance and potential for weeds.

4.6.8 Impacts on Cultural Resources

Modifying General Habitat Management Areas

The Proposed Plan Amendment would remove GHMA and its management. In the 2015 amendments, OHV area designations in GHMA were changed from cross-country use for OHVs to "limited" to existing routes. In the Proposed Plan Amendment, two areas (14,220 acres) outside of PHMA at 5 Mile Pass and Little Sahara Sand Dunes areas would revert back to being available to cross-country use for OHVs. All other GHMA that switched from available to cross-country use to being limited to existing routes would remain as limited. The previous analysis in the 2015 Final EIS is clear that restrictions on surface and vehicle use would protect cultural resources from impacts due to surface disturbance, erosion, effects on setting and access leading to vandalism, inadvertent damage, and unauthorized collection of cultural resources; however, the impacts from returning to an open OHV use area may cause impacts on cultural resources, as described in Chapter 4 in the 2015 Final EIS (see Section 4.12, page 4-199 to 4-202).

4.6.9 Impacts on Lands and Realty

Administering Disturbance and Density Caps

The Proposed Plan Amendment could decrease impacts on lands and realty projects by allowing site-specific Greater Sage-Grouse habitat analysis and population information, as well as proponent-developed project design elements, to be considered on a project-specific basis. If those voluntary measures were to improve Greater Sage-Grouse habitat, both the disturbance and density caps could be exceeded, allowing for more flexibility to allow consideration of infrastructure projects. Rather than lands and realty projects being precluded entirely if the cap is met, there is an option to exceed the cap by proponents developing measures that improve Greater Sage-Grouse habitat. This would provide more opportunities for lands and realty projects to move forward within PHMA.

Modifying Mitigation Strategy

The mitigation strategy in the Proposed Plan Amendment would no longer require proponents to provide for compensatory mitigation on a project-by-project basis to show a net conservation gain. While the strategy is still substantially similar (“improve the condition of Greater Sage-Grouse habitat”), it would be achieved by the totality of Greater Sage-Grouse management actions applied by the BLM. Not requiring proponents to pay for vegetation and habitat treatments could decrease project costs, providing more opportunities for lands and realty projects to move forward in PHMA; however, during project design, the BLM would consider voluntary compensatory mitigation actions as a component of compliance with the State of Utah law, statute, or policy or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative; however, determining which projects would apply such measures would be made on a project-by-project basis.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing exceptions to avoidance and minimization measures in PHMA if the area is non-habitat and indirect impacts wouldn't occur could decrease impacts on lands and realty. Allowing development in areas of non-habitat inside the PHMA could allow for more flexibility to allow consideration of projects if they meet the described criteria. Rather than lands and realty projects being precluded due to minimization measures, projects could seek locations within PHMA that would avoid habitat, thereby enabling development if documentation of no indirect impacts could be completed. This would provide more opportunities for lands and realty projects to move forward within PHMA.

Modifying General Habitat Management Areas

Removing GHMA would also lessen impacts on lands and realty as the area requiring Greater Sage-Grouse plan compliance for infrastructure projects will be reduced accordingly. This may allow some projects to move forward with fewer permitting restrictions as compared with the No-Action Alternative, however the change in impacts would likely be minor since the area that will be relieved of permitting restrictions is minimal.

Land Disposal and Exchanges

The changes in criteria for disposal and exchange of federal land would allow more lands to be considered for disposal without net conservation gain or requirements not to impact any Greater Sage-Grouse or its habitat. This would result in greater management flexibility to consider disposal and exchange of lands that may already have limited manageability due to being isolated tracts with limited access or control. The increased flexibility may also benefit other resources as additional lands with limited benefit to Greater Sage-Grouse could now be exchanged for lands that may have a higher benefit to other resources; however, the overall change in impacts would likely be minimal since the amount of lands affected by the change in criteria is minor.

4.6.10 Impacts on Renewable Energy**Administering Disturbance and Density Caps**

The Proposed Plan Amendment, specifically changes in MA SSS-3B that allow site-specific Greater Sage-Grouse habitat analysis and population information and project design elements to be considered on a project-specific basis, could potentially lessen impacts on renewable energy as it would allow for more flexibility to allow infrastructure projects that exceed the disturbance cap if they meet the described

criteria. This would have little impact on renewable energy development because PHMA would still be closed to commercial wind and solar development unless the project meets the exception criteria identified in MA-SSS-1.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing exceptions to avoidance and minimization measures in PHMA if the area is non-habitat and indirect impacts wouldn't occur could decrease impacts on renewable energy projects. Allowing development in areas of non-habitat inside the PHMA would allow for more flexibility to allow consideration of projects if they meet the described criteria. Rather than renewable energy projects being precluded due to closures, projects could seek locations within PHMA that would avoid habitat and indirect impacts, thereby enabling development if documentation of no indirect impacts could be completed. The likelihood that commercial renewable energy development could find an area large enough in PHMA to avoid all habitat as well as indirect impacts would be low.

Modifying General Habitat Management Areas

Removing GHMA would also likely reduce impacts on renewable energy as the area requiring Greater Sage-Grouse plan compliance for infrastructure projects will be reduced accordingly. This may allow some projects to move forward with fewer permitting restrictions as compared with the No-Action Alternative; however, the change in impacts would likely be minor since the area of high potential renewable energy resources that will be relieved of permitting restrictions is minimal.

4.6.11 Impacts on Fluid Minerals

The BLM Utah reviewed the reasonably foreseeable development scenario, Appendix R of the 2015 Final EIS, and addressed changes in potential oil and gas exploration and development. The assumptions used in this section to adequately project future development take into account both direct and indirect impacts of removing minimization measures that may limit development desirability of former GHMA. The direct factors include increasing exceptions for no surface occupancy stipulations on new leases for oil and gas development, while the indirect included the removal of minimization measures that were applied as lease notices, such as disturbance caps, buffers, required design features, and net conservation gain mitigation requirements in both PHMA and GHMA. This section will briefly cover previous assumptions and methods used for projecting future oil and gas activity in Greater Sage-Grouse occupied habitat in the 13 population areas, and how new modifications will alter these previous projections.

All baseline data from the reasonably foreseeable development scenarios by population areas in the reasonably foreseeable development scenario are assumed to remain the same. Baseline scenarios were based on criteria including past and present oil and gas exploration and development activity within and near Greater Sage-Grouse occupied habitat, existing oil and gas leases, expressions of interest submitted by industry, exploration and development trends, locations of seismic surveys, existing infrastructure, and commodity prices.

Of the 13 population areas, 8 were projected to have minimal or no future oil and gas development, "minimal" meaning equivalent or less than four projected wells by 2030. These population areas were Ibapah, Box Elder, Lucerne, Hamlin Valley, Bald Hills, Panguitch, Parker Mountain, and Sheeprocks. Of the remaining five population areas, three (Rich, Emery, and Strawberry) were projected to have moderate development, and only two (Carbon and Uintah) were anticipated to have significant

development on federal minerals. The baseline for these population areas (2015 Final EIS, Appendix R) has been kept the same in assumptions for the following reasons:

- Less than 2 years have passed since the reasonably foreseeable development scenario, meaning minimal changes would factor into the historical data.
- Only three (Carbon, Uintah, and Rich) of the population areas would have oil and gas development, if any, that would significantly change projections.
- This review is meant to be a supplement to the previous reasonably foreseeable development scenario and not a complete revision; it makes projections only to 2030.

The 2015 Final EIS reasonably foreseeable development scenario reviewed the development of Alternatives B, C, D, and E and a Proposed Plan, each with different stipulations on oil and gas development. These stipulations took into account PHMA and GHMA and the requirements applicable to these areas, such as no surface occupancy (NSO), controlled surface use (CSU), and timing limitations (TL). The current changes being considered in this RMPA/EIS include removing all minimization measures and compensatory mitigation requirements applicable to GHMA as identified in the 2015 Proposed Plan. In the 2015 RMP, PHMA and GHMA management was anticipated to deter future oil and gas development for the following reasons:

- Minimization measures such as required design features (RDFs), application of lek buffers that encouraged development beyond 3.1 miles (both in PHMA and GHMA), mitigation requirements (both in PHMA and GHMA), noise and structure restrictions (in PHMA), surface disturbance caps (in PHMA), and density and seasonal restrictions (in PHMA) that were expected to discourage future development due to implementation cost; however, in the 2015 Final EIS reasonably foreseeable development scenario it is assumed that any cost of the RDFs for wells outside of the PHMA were already included in the estimated drilling and completion; therefore, removing these measures from application in former GHMA would have no change on the projected costs for oil and gas development in the RMP.
- PHMA and GHMA are categorized as either closed or open with stipulations. In the 2015 Proposed Plan there were approximately 30,000 acres in GHMA that are closed to fluid mineral leasing due to reasons other than Greater Sage-Grouse. As such, all closed GHMA were also closed under the 2015 Alternative A; therefore, the closed lands would remain closed to oil and gas leasing.
- Areas that are open with major stipulations (no surface occupancy) in GHMA are required to have buffer zones from leks. Areas within the vicinity of leks either have major (no surface occupancy), moderate (controlled surface use or timing limitation), or standard stipulations. These areas are minimal and are still open to oil and gas leasing under certain circumstances. The factor affecting future development in these areas is the cost associated with design features. These costs have already been addressed in the first bulleted item, above. PHMA will remain closed or open, with major stipulations.

The eight population areas with minimal or no future fluid mineral development potential will not be affected by the changes in GHMA because their historical development and production has been so low that no additional leases will cause significant development or impact. Furthermore, most restricted areas within these population areas are PHMA, rather than GHMA. Emery and Rich population areas,

which have moderate development potential, contain PHMA and minimal GHMA with standard stipulations, and will therefore have the same projected development potential.

The Strawberry, Carbon, and Uintah population areas contain lands closed, open with major stipulations, open with moderate stipulations, and open with standard stipulations; however, Strawberry and Carbon areas contain much lower amounts of these lands than Uintah. The effects of development that could be factored into these areas would be minimal due to factors addressed in the previous paragraph. Although the Uintah population area will no longer have GHMA, most of this area remains open with moderate to standard stipulations. Since this land is mostly open to leasing already (even with GHMA), it would only be the cost of minimization measures and net conservation gain requirements that may deter development operations; however, as previously stated, it is assumed that any cost of the RDFs for wells outside of the PHMA are already included in the estimated drilling and completion costs.

The assumption taken in this section for all population areas in the Proposed Plan Amendment is that minimal or no development impact through the opening of GHMA is expected. This assumption takes into account both direct and indirect impacts of removing minimization measures that may limit development desirability of GHMA. It is concluded that minimal development change would occur for the following reasons:

- Most of the restricted area is PHMA, and is still applicable in the current assumptions.
- Most GHMA is still open for leasing with moderate to standard stipulations.
- All costs that could have been applicable to stipulations were not factored into GHMA in the original reasonably foreseeable development scenario.
- The 30,000 acres that are currently closed to new leasing within GHMA would remain closed to leasing.

Although there would be minimal development change throughout all of the population areas, removing GHMA and its minimization measures, as well as adding waivers, exceptions, and modifications to the NSO stipulation in PHMA, would possibly allow operators access to more acreage within Greater Sage-Grouse population areas and reduce administrative impediments to development. The only change may be that operators could find a location within PHMA but not within Greater Sage-Grouse habitat (that meets the exception, modification or waiver criteria) to drill a well that is closer to target and would not have to horizontally or laterally drill to reach their target. This would save time and resources for the operator and decrease well pad sizes, in most cases, which is better for other resources.

The allowance for proponents to voluntarily seek an exception to the density and disturbance caps would be assessed on a site- and project-specific basis. Obtaining the exception requires showing the project design features, combined with local topographic conditions and Greater Sage-Grouse use patterns, indicate that despite the increased disturbance there would be a benefit to the Greater Sage-Grouse population. Because of the number of site- and project-dependent issues, the effect of this action, aside from added flexibility for project proponents to explore, would be based on site-specific details and project proposals.

The BLM commits to cooperating with the State of Utah to analyze applicant-proposed or state required or recommended compensatory mitigation to offset residual impacts. The BLM may authorize such actions consistent with NEPA analysis and the governing RMP. Additionally, not requiring lessees to

pay for vegetation and habitat treatments to achieve a net conservation gain could decrease project costs, providing more opportunities for fluid mineral projects to move forward; however, during project design, the BLM would consider voluntary compensatory mitigation actions as a component of compliance with the State of Utah law, statute, or policy, or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative; however, determining which projects would have such measures applied would be made on a project-by-project basis.

Given the above, impacts on oil and gas from the Proposed Plan Amendment on the number of oil and gas well pads anticipated would be the same as the 2015 Final EIS Proposed Plan. The Oil and Gas Reasonably Foreseeable Development Scenario for Greater Sage-Grouse Occupied Habitat in Utah Sub-Region (Appendix R of the 2015 Final EIS) is incorporated by reference. Specifically, Table R.1 (Predicted Number of Wells Drilled by Alternative in Each Population Area and County), R.2 (Predicted Number of Producing Wells by Alternative in Each Population Area and County), and R.7 (Estimated Surface Disturbance: Proposed Plan) describe anticipated levels and development and the related estimated amount of disturbance from the Proposed Plan Amendment.

4.6.12 Impacts on Nonenergy Leasable Minerals, Coal, Locatable Minerals, Mineral Materials, and Oil Shale and Tar Sands

For the purpose of clarifying impact analysis in this document, the status of a fringe acreage lease in relation to the 2015 ARMPA allocations is addressed here. While the PHMA land use allocation for nonenergy minerals remains closed, there is a consideration that leases could be considered next to existing operations (see 2015 ROD/ARMPA MA-MR-15). Though PHMA is noted as closed, unmined nonenergy mineral leases, including phosphate leases, have valid existing rights to which this allocation does not apply. Specifically, as noted in the 2015 Final EIS, page 4-385, there would be sufficient reserves on private lands and on existing federal phosphate leases to keep the current operation in production through the analysis horizon.

In addition, the nonenergy mineral allocation itself specifically provides for alignment with the BLM's minerals regulations. These regulations note that those lands adjoining federal phosphate leases or the mineral rights on adjacent private lands may be leased noncompetitively through a fringe acreage lease or be added to the existing federal lease via a lease modification (43 CFR 3510.11). Such additions could be considered under existing management for MA-MR-15 that provides for leasing nonenergy leasable minerals "contiguous with an existing operation" if the new lease "applies the pertinent management for discretionary activities in PHMA identified in MA-SSS-3." As such, fringe leases and modifications to existing leases would be allowed under both the No-Action Alternative and the Proposed Plan Amendment in alignment with federal regulations; however, management necessary to meet the goals of maintaining or increasing Greater Sage-Grouse abundance and distribution (see 2015 ROD/ARMPA, Goal SSS-1) would not allow new leases or developments that are not contiguous with existing operations.

Administering Disturbance and Density Caps

While the No-Action Alternative provides for development next to existing operations for nonenergy leasable minerals and mineral materials, the analysis determined that PHMA minimization measures, such as mitigation, disturbance cap, density cap, buffers, seasonal restrictions, and RDFs, would preclude most development. The primary measure that was anticipated to preclude development of nonenergy

minerals, mineral materials, and coal in PHMA was the disturbance and density caps applied at the project scale. Because there is no exception to the caps under the No-Action Alternative, no new or expanded mineral operations are anticipated. Allowing an exceedance to the disturbance and density caps based on site-specific habitat condition, population information, and proponent-volunteered project design elements could allow mineral development to proceed in areas that might otherwise have been precluded by the No-Action Alternative. Allowing consideration or proposed developments that could exceed the 3 percent disturbance cap or density cap provides the ability to potentially avoid precluding leasing/permitting, development, or consideration of associated infrastructure. However, authorizing the exceedances to the disturbance and density caps would only be allowed if voluntarily developed minimization or mitigation improves Greater Sage-Grouse habitat. As such, while there is more flexibility and projects may no longer be precluded by the caps, proponents with potential developments may still need to evaluate Greater Sage-Grouse conditions or propose habitat improvement projects. While projects may not be precluded by the caps, voluntarily applying the criteria could result in additional costs to implement mitigating measures. This could increase project costs and could make a proposed project uneconomical.

Under the Proposed Plan Amendment, to the extent consistent with the rights of a mining claimant under existing laws and regulations, the BLM would work with locatable minerals claimants to apply the disturbance cap and minerals/energy density cap in PHMA; however, under the Mining Law of 1872, as amended, the BLM does not have authority to require such mitigation measures. As such, impacts on existing locatable mineral operations from these additional mitigation measures would be minimal.

Modifying Mitigation Strategy

The mitigation strategy in the Proposed Plan Amendment would no longer require proponents to provide for compensatory mitigation on a project-by-project basis to show a net conservation gain. To align this planning effort with the BLM's compensatory mitigation policy (IM 2018-093), the Proposed Plan Amendment clarifies that BLM will consider compensatory mitigation only as a component of compliance with a state mitigation plan, program, or authority, or when offered voluntarily by a project proponent. While the strategy is still substantially similar ("improve the condition of Greater Sage-Grouse habitat"), it would be achieved by the totality of Greater Sage-Grouse management actions applied by the BLM.

The BLM commits to cooperating with the State of Utah to analyze applicant-proposed or state required or recommended compensatory mitigation to offset residual impacts. BLM may authorize such actions consistent with NEPA analysis and the governing RMP. Not requiring proponents to pay for vegetation and habitat treatments could decrease project costs, providing more opportunities for mineral development projects to move forward in PHMA and former GHMA; however, during project design, the BLM would consider voluntary, compensatory, mitigation actions as a component of compliance with the State of Utah law, statute, or policy, or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative. Determining which projects will apply such measures would be made on a project-by-project basis.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing exceptions to avoidance and minimization measures in PHMA if the area is non-habitat and indirect impacts would not occur could allow consideration of leasing/permitting and development for

mineral operations. Allowing development in areas of non-habitat inside the PHMA could allow for more flexibility to allow consideration of projects if they meet the described criteria. The potential for this exception to allow larger mineral developments would be low given the small likelihood that a large development would fit entirely within an area of non-habitat in PHMA and still not have any indirect impacts would be low. For large projects in this situation, the potential effect of this added flexibility is likely low.

Modifying General Habitat Management Areas

Removing GHMA would decrease impediments to mineral development, as the area requiring Greater Sage-Grouse plan compliance for infrastructure projects would be reduced accordingly. This would allow some projects to move forward with fewer restrictions as compared with the No-Action Alternative.

Land Disposal and Exchanges

The changes in criteria for disposal and exchange of federal land would allow more lands to be considered for disposal without net conservation gain or requirements not to impact any Greater Sage-Grouse or its habitat. This could improve management flexibility to consider disposal and exchange of lands that may already have limited manageability due to being isolated tracts with limited access or control. The increased flexibility may also benefit other resources as additional lands with limited benefit to Greater Sage-Grouse could now be exchanged for lands that may have a higher benefit to other resources; however, the overall change in impacts would likely be minimal since the amount of lands affected by the change in criteria is minor.

4.6.13 Impacts on Social and Economic Conditions

Implementation of the Proposed Plan Amendment would be expected to result in the following socioeconomic impacts, which are secondary to changes in resource and management conditions.

Administering Disturbance and Density Caps

Allowing an exceedance of the 3 percent disturbance and density caps could increase opportunities for development within PHMA if an area was close to meeting one of the caps. Should this occur, it is anticipated that there could be increased economic activity and, possibly, positive economic impacts at the local, regional, state, or national level. Exclusion of non-occupied PHMA from this classification could potentially result in increased development activities in the future and, in turn could result in positive economic impacts. This provision could also potentially open up additional opportunities for siting of energy or mining facilities, resulting in positive changes in economic indicators.

Modifying Mitigation Strategy

The BLM commits to cooperating with the State of Utah to analyze applicant-proposed or state required or recommended compensatory mitigation to offset residual impacts. BLM may authorize such actions consistent with NEPA analysis and the governing RMP. No longer requiring proponents to provide for compensatory mitigation on a project-by-project basis to show a net conservation gain could decrease project costs, providing more opportunities for lands and mineral development projects to move forward in PHMA and former GHMA; however, during project design, the BLM would consider voluntary compensatory mitigation actions as a component of compliance with the State of Utah law, statute, or policy, or when offered voluntarily by a project proponent. If such mitigation were

volunteered, impacts would be the same as those described under the No-Action Alternative; however, determining which projects would apply such measures would be made on a project-by-project basis.

General Habitat Management Areas in Utah

Changes in Greater Sage-Grouse management outside of PHMA have the potential to reduce costs of exploration and development of multiple types of energy, mineral, and other land use resources. These include solid, fluid, locatable, saleable, and leasable (both energy- and nonenergy-related) minerals. To the extent that such costs are reduced, entities operating within the affected area could see an increase in competitiveness and profitability over time, although this result would be expected to be marginal.

No social or economic impact is anticipated as a secondary impact resulting from changes in opening areas to cross-country OHV use. The areas proposed to be made available for cross-country use are components of larger areas where such use is already available. In addition, the areas proposed to be made available were available for over 20 years prior to the 2015 change to limited. As such, no change in overall OHV-related and other recreation-related spending patterns or social and economic activity are expected to occur by making the areas available to cross-country use again.

Land Disposal and Exchanges

Increased potential for disposal and/or exchange of BLM-managed federal lands in PHMA and Greater Sage-Grouse habitat outside of PHMA could possibly result in expanded economic opportunities in the affected location. The specific economic impact in each case would depend on the type of development that would occur as a result of the change in land ownership. Possible land uses include use for county and municipal physical facilities, commercial or residential development, and/or recreational use.

4.6.14 Impacts on Other Resources

After reviewing the proposed changes in the Proposed Plan Amendment, interdisciplinary team members identified which actions could affect each resource or resource use. After identifying potential impacts, team members reviewed the 2015 Final EIS to determine if the potentially significant impacts from the proposed changes were already addressed in the existing analysis. As described above, impacts associated with most of the changes were already analyzed. For the following resources and uses, there were no new significant impacts from the actions considered in **Chapter 2** beyond those already addressed in the 2015 Final EIS:

- Water Resources
- Wild Horses and Burros
- Visual Resources
- Wildland Fire Management
- Lands with Wilderness Characteristics
- Livestock Grazing/Range Management
- Recreation
- Comprehensive Travel and Transportation Management
- Tribal Interests

Management changes associated with the following issues could result in development being moved around on the landscape (into areas of non-Greater Sage-Grouse habitat) or expedited in its implementation (not increased, but implemented more quickly):

- General Habitat Management Areas in Utah
- Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA
- Waivers, Exceptions, and Modifications for NSO Stipulations
- Sagebrush Focal Areas Designations/Withdrawal Recommendations
- Administering the Disturbance and Density Caps
- Burial of Transmission Lines

Changes in management resulting from consideration of the above list of issues could result in a change in the potential for development to occur in PHMA or former GHMA. This could include a change in where the development could occur (e.g., in non-habitat portions of PHMA, in former GHMA, or anywhere in PHMA due to exceedances in the disturbance or density cap). The change could also include the rate at which it occurs (development in GHMA occurring more quickly under the Proposed Plan Amendment, compared with the No-Action Alternative, due to removal of some minimization measures and compensation requirements). In all of these instances, the impact analysis in the 2015 Final EIS addressed the effects of similar actions on the list of resources above. Those effects are substantially similar to the impacts from the changes considered in the Proposed Plan Amendment.

At the state-wide context, the fact that impacts could occur is what the analyses addresses, not the more site-specific context of when or where development may occur. The conclusion of the interdisciplinary team member's evaluation of the recommended changes was that the existing 2015 Final EIS accurately described the anticipated impacts for the resources listed above. For these resources, there would be no additional impacts from the proposed changes in the Proposed Plan Amendment than what is described in the corresponding section of the 2015 Final EIS. For these resources, analysis is incorporated by reference as there will be no new impacts that haven't already been addressed in the 2015 Final EIS.

4.7 CUMULATIVE IMPACTS

This section presents the anticipated cumulative impacts on the environment that could occur from implementing the alternatives presented in **Chapter 2**. A cumulative impact is the impact on the environment that results from the incremental impact of the action, when added to other past, present, and reasonably foreseeable actions, regardless of what agency (federal or nonfederal) or person undertakes such actions.

Cumulative impacts can result from individually minor, but collectively significant actions taking place over time. The cumulative impacts resulting from the implementation of the alternatives in this RMPA/EIS may be influenced by other actions, as well as activities and conditions on other public and private lands, including those beyond the planning area boundary. These include the concurrent Forest Service planning effort to amend land management plans for National Forests in Idaho, Montana, Nevada, Utah, Colorado, and Wyoming, which were previously amended in September 2015 to incorporate conservation measures to support the continued existence of the Greater Sage-Grouse. As

a result, the sum of the effects of these incremental impacts involves determinations that often are complex, limited by the availability of information, and, to some degree, subjective.

This RMPA/EIS incorporates by reference the analysis in the 2015 Final EISs and the 2016 SFA Withdrawal Draft EIS, which comprehensively analyzed the cumulative impacts associated with these planning decisions under consideration in that process. The 2015 EISs, and to some degree the 2016 SFA EIS evaluated the cumulative impacts associated with the No-Action Alternative in this RMPA/EIS. The Proposed Plan Amendment's effects are effectively within the range of effects analyzed by the 2015 and 2016 EISs. The 2015 Final EISs are quite recent, and the BLM has determined that conditions in the Utah planning area have not changed significantly based, in part, on the USGS science review (see **Chapter 3**), as well as the BLM's review of additional past, present, and reasonably foreseeable actions in 2018.

Conditions on public land also have changed little since the 2015 Final EISs, and to the extent that there have been new actions or developments, the impacts associated with those actions or developments are in line with the projections in the 2015 Final EISs regarding reasonably foreseeable actions and effects. Additionally, changes that have occurred on a smaller level, like wildfires, received prompt responses. Since the nature and context of the cumulative effects scenario has not appreciably changed since 2015, and the 2015 analysis covered the entire range of the Greater Sage-Grouse, the BLM's consideration of cumulative effects in the 2015 Final EISs adequately addresses most, if not all, of the planning decisions to be made through this planning effort.

While the cumulative impacts analysis in the 2015 Final EISs thus offers a comprehensive foundation for this planning effort, the BLM is improving upon that analysis by integrating additional quantitative analysis specific to this planning effort. The purpose of this additional analysis is to facilitate a comparison of allocation decisions between the No-Action Alternative and Proposed Plan Amendment at scales beyond the individual planning areas associated with the 2018 amendment process. Our analysis focuses on the relevant changes in habitat delineations and allocation decisions each BLM state office is proposing and how those changes may impact our understanding of cumulative effects at the Management Zone (MZ) scale.

Conservation and management partners sought to work in advance of the 2015 USFWS listing decision to develop conservation objectives for the Greater Sage-Grouse that could help direct conservation and management actions for the species. Upon further review of the best available science and commercial information, the USFWS concluded in 2010 that the Greater Sage-Grouse warranted protection under the Endangered Species Act. Two factors leading to the decision to list the species as "warranted but precluded" were threats to habitat and the inadequacy of existing regulatory mechanisms. In 2012, at the request of Utah's Greater Sage-Grouse Task Force (SGTF), state and federal representatives produced a report that identified the most significant areas for Greater Sage-Grouse conservation, the principal threats within those areas, and the degree to which such threats need to be reduced or ameliorated to conserve the Greater Sage-Grouse so that it would not be in danger of extinction or likely to become so in the foreseeable future.

A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts on Greater Sage-Grouse and its habitats. In 2015, the USFWS determined Greater Sage-Grouse was "not warranted" for listing under the ESA. The USFWS found that BLM's 2015 land use plans were adequate regulatory mechanisms and that the species no longer

warranted listing under the Act. At the time of that decision, the USFWS acknowledged the RMP requirements that compensatory mitigation achieve a net gain standard. The BLM is not proposing any action that would preclude proponents from offering compensatory mitigation; it is clarifying the BLM's reliance on voluntary compensatory mitigation consistent with federal law.

While the BLM has more than 90 RMPs, 9 strategies, and 45 agreements in active use that contain or address compensatory mitigation, the BLM has identified only limited implementation of compensatory mitigation consistent with the 2015 Greater Sage-Grouse Plans. Using data gathered in 2017, the BLM identified 13 Greater Sage-Grouse projects across 5 BLM states with a mandatory compensatory mitigation component or net gain standard implemented between October 2008 and June 2017. The most common compensatory actions used by the BLM in those cases were habitat restoration, habitat improvements, rangeland improvements, and invasive species control – actions consistent with the BLM's own investment in management action described previously. In many cases, it is still too soon in the implementation of these mitigation actions to measure the effectiveness or degree of benefit each action provides.

Anecdotally, the existing conservation credit systems, banks, and exchanges designed to offset impacts to Greater Sage-Grouse or its habitat have had mixed success. The BLM is aware of three mitigation banks (one commercial bank agreement in Wyoming and two single-user bank agreements with mining companies in Nevada) and one exchange system in Colorado specific to Greater Sage-Grouse currently in operation. However, the BLM does not have access to data or information that would further assess the relative benefit provided by these systems.

In PHMA within the planning area, and in all designated Greater Sage-Grouse habitats outside the planning area, the BLM will ensure both mitigation and management actions that achieve the planning-level management goals and objectives identified in this RMPA. The BLM has a variety of tools available to effectively achieve those management goals such as restoration projects and habitat improvements.

The BLM will continue plan effectiveness monitoring to provide the data needed to evaluate BLM actions toward reaching the goals and objectives set forth in the RMPAs. Effectiveness monitoring methods will encompass multiple larger scales, from areas as large as the Western Association of Fish and Wildlife Agencies (WAFWA) MZ to the scale of this RMPA. Effectiveness data used for these larger-scale evaluations will include all lands in the area of interest, regardless of surface management, and will help inform where finer-scale evaluations are needed.

Currently BLM has six state-specific RMPA efforts that are all aligning mitigation with their relevant State authorities. All of the Proposed Plan Amendments modify the existing standard for compensatory mitigation but maintain that the BLM will pursue conservation efforts as a broader planning goal and objective. Cumulatively, if the BLM is implementing planning decisions across the broader range, such actions would preclude any cumulative impacts from modifying the mitigation standard at the project level.

The BLM has updated certain data that it collected and evaluated in the 2015 Final EIS concerning the 2015 plan allocation decisions to reflect maintenance-related changes, adaptive management responses, and refined source data. The BLM used these data to represent the No-Action Alternative for the current plan analysis. The BLM also identified 2015 data which are not subject to change in any alternatives associated with the 2018 planning process. These data were carried forward as the

alternative allocation decision data. The BLM was also able to provide allocation decision data representing changes included in the 2018 Draft EIS alternatives, which were then used in the comparative analysis.

The BLM analyzed cumulative effects at two levels in the 2019 planning process. Each state analyzed cumulative effects across the Greater Sage-Grouse range by considering, across each state, reasonably foreseeable future actions and their effects in every WAFWA management zone (excluding WAFWA Zone VI). Each state further analyzed cumulative effects at the WAFWA management zone level for their state. See Section 4.7.1 and **Table I in Appendix I** for the range-wide analysis, which addresses the cumulative effects from reasonably foreseeable future actions across all WAFWA management zones, including those that do not connect directly to Utah. See Utah's WAFWA management zone analysis in Sections 4.7.3, 4.7.4, 4.7.5, and 4.7.6 below. Both analyses use WAFWA Management Zones. Utah's WAFWA Zone analysis included Zones II/VII, III, and IV that include all or portions of Wyoming, Colorado, Montana, California, Nevada, Oregon, and Idaho (**Figure 4-1**).

4.7.1 Range-wide Cumulative Effects Analysis – Greater Sage-Grouse

The 2015 ROD/ARMPA is the No-Action Alternative in this FSEIS and was part of the cumulative impact analysis for Greater Sage-Grouse at the WAFWA zone scale in the 2015 Final EIS (see **Table 4-3**). Additionally, the cumulative impacts anticipated from the Management Alignment Alternative and the Proposed Plan presented in this FSEIS are entirely within the range of effects analyzed by the 2015 Final EIS. While the analysis for the 2015 Final EIS is quite recent, the BLM has reviewed conditions in Utah to verify that they have not changed significantly. Conditions on BLM-administered lands have changed little since the 2015 Final EIS, and to the extent that there have been new actions or developments, the impacts associated with those actions or developments are in line with the projections in the 2015 Final EIS regarding reasonably foreseeable future actions and effects.

The BLM's assessment that conditions and cumulative impacts have not changed significantly is based, in part, on the USGS science review (see **Chapter 3**) and the BLM's review of additional past, present, and reasonably foreseeable actions in 2018. Since the nature and context of the cumulative effects scenario have not appreciably changed since 2015, and the 2015 plans included analysis by WAFWA MZ across the entire range of the Greater Sage-Grouse, the cumulative effects analysis in the 2015 Final EIS applies to this planning effort and provides a foundation for the BLM to identify any additional cumulative impacts.

The remainder of this chapter and related appendices includes additional quantitative analysis using the existing cumulative impacts across the range and integrating additional quantitative analysis specific to this planning effort to provide a comprehensive range-wide view of cumulative impacts. The purpose of this additional analysis is to facilitate a comparison of allocation decisions between the No-Action and Management Alignment (Proposed Plan Amendment) Alternatives at scales beyond the individual planning areas associated with the 2018 amendment process. The analysis focuses on the relevant changes in habitat delineations and allocation decisions each BLM state office is proposing and how those changes may affect the understanding of cumulative effects at the WAFWA MZ scale across the range of Greater Sage-Grouse.

Under the Management Alignment Alternative (Proposed Plan Amendment), the recommendation to withdraw sagebrush focal areas (SFA) from location and entry under the Mining Law of 1872 would be

removed, as the EIS process considering the proposed withdrawal was canceled on October 11, 2017. In its 2016 SFA Withdrawal EIS, the BLM quantified the possible adverse effects from locatable mineral exploration and mining on the approximately 10 million acres of SFAs proposed for withdrawal, finding that they would be limited to approximately 9,000 acres range-wide of surface disturbance over 20 years, with approximately 0.58 percent of Greater Sage-Grouse male birds possibly affected per year. The other action alternatives evaluated in the 2016 SFA Withdrawal Draft EIS similarly demonstrated negligible benefit of the proposed withdrawal to Greater Sage-Grouse and its habitat.¹

The cumulative effects of implementing the Management Alignment Alternative (Proposed Plan Amendment) are as described in the 2016 SFA Withdrawal Draft EIS, under the No-Action Alternative, in which SFAs are not carried forward for withdrawal. Greater Sage-Grouse would not be affected as a result of the removal of the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872, as the recommendation itself does not have any on-the-ground effects. Conservation benefits of a future withdrawal would be negligible, as documented in the 2016 SFA Withdrawal Draft EIS and as explained above; therefore, there would be negligible cumulative impacts associated with the decision to remove the SFA designation. The direct and indirect impact analysis specifically enumerates how each BLM allocation decision to apply NSO stipulations and waivers, exceptions, or modifications overlaps with the SFA designation.

4.7.2 Why use WAFWA Management Zones?

The Western Association of Fish and Wildlife Agencies (WAFWA) represents state and provincial fish and wildlife agencies and supports sound resource management and building partnerships to conserve wildlife for the use and benefit of all citizens, now and in the future. The BLM is analyzing habitats and allocation decisions at the scale of the six WAFWA delineated Greater Sage-Grouse MZs within which the plan amendments are occurring to enable the decision maker to understand the impacts on Greater Sage-Grouse at a biologically meaningful scale (see **Figure 1** in **Appendix I**). The MZs were delineated based on floristic provinces (identified by Connelly et al. 2004) within which the vegetative communities comprising Greater Sage-Grouse habitat as well as the Greater Sage-Grouse populations are responding similarly to environmental factors and management decisions (Stiver et al. 2006). The cumulative effects analysis area for Greater Sage-Grouse extends beyond a state, political, or planning area boundary to reflect the WAFWA MZs because they encompass areas with similar issues, threats, and vegetative conditions important to Greater Sage-Grouse habitat management. Each suite of threats to specific Greater Sage-Grouse populations have been identified in the COT report, 2015 Regional RODs, and the Listing Decision. The 2015 Regional RODs identify how planning level allocation decisions address the identified threats to populations, which are aggregated in this analysis by MZs. The threats vary geographically and may have more or less impact on Greater Sage-Grouse and its habitat in some parts of the MZs, depending on such factors as climate, land use patterns, and topography. The map below identifies the WAFWA MZs and Greater Sage-Grouse population areas.

¹Importantly, mining operations that do occur are subject to regulation under the BLM's surface management regulations at 43 CFR 3809. These regulations ensure that operators comply with environmental standards in conducting exploration, mining, and reclamation. For example, the BLM must approve a plan of operations for locatable mining operations on public lands, which includes compliance with the NEPA, National Historic Preservation Act, and ESA. Plans of operation must also include those measures to meet specific performance standards and to prevent unnecessary or undue degradation of the lands (43 CFR 3809.411).

Table 4-4 shows the resource and location of applicable cumulative effects analysis from 2015 Final EIS. Unless otherwise addressed in this chapter, the cumulative effects of the alternatives analyzed in this Proposed RMPA/Final EIS are covered by the 2015 Final EIS and the 2016 SFA Withdrawal Draft EIS. This includes the incremental impacts across the range of BLM- and Forest Service-administered lands being amended in concurrent plan amendment efforts. See the 2015 Final EIS for additional information.

The sum of past, present, and reasonably foreseeable actions listed in **Appendix I** represent cumulative effects across the range of Greater Sage-Grouse habitat and management areas. These effects are important to consider for future management of the species as a whole and are not solely being analyzed at the local or state level.

Table 4-4
Cumulative Effects Analysis Incorporated by Reference

Resource Topic	Location of Cumulative Effects Analysis
Greater Sage-Grouse	Chapter 5, Section 5.4 of the 2015 Final EIS and Chapter 4, Section 4.5.9 of the 2016 SFA Withdrawal Draft EIS. Additional information regarding Greater Sage-Grouse is included in Chapter 4, Section 4.5 of this RMPA/EIS.
Air Quality	Chapter 5, Section 5.5 of the 2015 Final EIS. Additional information regarding air quality is included in Chapter 4, Section 4.6 of this RMPA/EIS.
Soil Resources	Chapter 5, Section 5.7 of the 2015 Final EIS. Additional information regarding soil resources are included in Chapter 4, Section 4.7 of this RMPA/EIS.
Water Resources	Chapter 5, Section 5.8 of the 2015 Final EIS.
Vegetation (including Noxious Weeds; Riparian and Wetlands)	Chapter 5, Section 5.9 of the 2015 Final EIS. Additional information regarding vegetation is included in Chapter 4, Section 4.8 of this RMPA/EIS.
Other Special Status Species	Chapter 5, Section 5.10 of the 2015 Final EIS. Additional information regarding other special status species are included in Chapter 4, Section 4.9 of this RMPA/EIS.
Fish and Wildlife	Chapter 5, Section 5.11 of the 2015 Final EIS. Additional information regarding fish and wildlife is included in Chapter 4, Section 4.10 of this RMPA/EIS.
Wild Horses and Burros	Chapter 5, Section 5.12 of the 2015 Final EIS.
Cultural Resources	Chapter 5, Section 5.13 of the 2015 Final EIS. Additional information regarding cultural resources is included in Chapter 4, Section 4.11 of this RMPA/EIS.
Visual Resources	Chapter 5, Section 5.14 of the 2015 Final EIS.
Wildland Fire Management	Chapter 5, Section 5.15 of the 2015 Final EIS.
Wilderness Characteristics	Chapter 5, Section 5.16 of the 2015 Final EIS.
Livestock Grazing/Range Management	Chapter 5, Section 5.17 of the 2015 Final EIS.
Recreation	Chapter 5, Section 5.18 of the 2015 Final EIS.
Comprehensive Travel and Transportation Management	Chapter 5, Section 5.19 of the 2015 Final EIS.
Lands and Realty	Chapter 5, Section 5.20 of the 2015 Final EIS. Additional information regarding lands and realty is included in Chapter 4, Section 4.12 of this RMPA/EIS.
Renewable Energy	Chapter 5, Section 5.21 of the 2015 Final EIS. Additional information regarding renewable energy is included in Chapter 4, Section 4.13 of this RMPA/EIS.

Resource Topic	Location of Cumulative Effects Analysis
Leasable Minerals (Oil and Gas, Non-energy Leasable Minerals, Coal, and Oil Shale and Tar Sands)	Chapter 5, Sections 5.22.1-3 & 5.22.6 of the 2015 Final EIS. Additional information regarding leasable minerals is included in Chapter 4, Section 4.14.1-2 of this RMPA/EIS.
Locatable Minerals	Chapter 5, Section 5.22.4 of the 2015 Final EIS and Chapter 4, Section 4.2.9 of the 2016 SFA Withdrawal Draft EIS. Additional information regarding locatable mineral is included in Chapter 4, Section 4.14.2 of this RMPA/EIS.
Mineral Materials	Chapter 5, Section 5.22.5 of the 2015 Final EIS. Additional information regarding mineral materials is included in Chapter 4, Section 4.14.2 of this RMPA/EIS.
Social and Economic Conditions	Chapter 5, Section 5.24 of the 2015 Final EIS and Chapter 4, Section 4.3.13 of the 2016 SFA Withdrawal Draft EIS. Additional information regarding social and economic conditions is included in Chapter 4, Section 4.15 of this RMPA/EIS.
Tribal Interests	Chapter 5, Section 5.25 of the 2015 Final EIS.

This section also describes the threats to Greater Sage-Grouse and its habitat. The magnitude of change between the No-Action Alternative and Proposed Plan Amendments, by decision, is represented in pie charts and tables within this section and in **Appendix I**. Those effects, in addition to synthesizing the plan decisions and comparing the current condition to the condition that will be in effect when the proposed plans are finalized, allow for a comparison of the change in management direction within MZs and across planning regions.

The habitat fragmentation and disturbance from energy development and mining, including associated infrastructure (e.g., roads, railroads, power lines, pipelines – see **Table E-1** in **Appendix E**) remain the greatest threat to Greater Sage-Grouse in the Rocky Mountain region; the levels of development are within the range of projected wildland fire analyzed in the 2015 Final EIS. Wildfire threat remains a concern in the area as well and is the greatest threat to Greater Sage-Grouse in the Great Basin region. Between 2008 and 2018, wildfires burned an average of 900,000 acres per year in Greater Sage-Grouse habitat management areas range-wide²; this is within the range of projected wildland fire analyzed in the 2015 Final EIS.

The BLM has committed resources to habitat restoration and rangewide has treated 1.4 million acres of Greater Sage-Grouse habitat range-wide over the past five years. The interagency (including BLM) WAFWA-led Wildfire and Invasive Species Working Group reviewed recent information for their May 2018 Gap Report Update to the Wildfire and Invasive Plant Species in the Sagebrush Biome: Challenges that hinder current and future management and protection report. They found that all of the original challenges related to control and reduction of the invasive annual grass/fire cycle were still relevant (policy, fiscal and science challenges) as well as pointing to three new gaps involving program capacity, resource specialists, and developing guidelines on drought and climate adaption to manage sagebrush ecosystems.

The increased flexibility proposed in these amendments can allow for responsible development of other uses in Greater Sage-Grouse habitat and may reduce costs to proponents but is not expected to result

² Removing 2012 and 2017, which were above-average wildland fire years, the 8-year average is approximately 500,000 acres burned per year.

in a large increase in development proposals on public land. Similarly, the increased protections from the 2015 Final EIS have not resulted in a large decrease in ROW applications or an increase in rejected applications; therefore, the changes proposed under the Proposed Plan Amendment are not expected to result in large changes to the rate of development across the range, or in its economy.

Some 350 species of plants and wildlife rely on sagebrush steppe ecosystems and coexist with Greater Sage-Grouse and may be similarly affected by development or disturbance; however, nothing in the considered alternatives would lessen the BLM's authority or responsibility to provide for the needs of special status species, as described in BLM LUPs, Policies, and Laws, including Manual 6840, the Endangered Species Act (ESA), and the Federal Land Policy and Management Act (FLPMA). Increased flexibility for other uses within Greater Sage-Grouse habitat does not necessarily increase potential impacts on other wildlife or plant species. Site-specific NEPA analysis including an evaluation of impacts on special status species is required for on-the-ground projects within the planning area.

4.7.3 Cumulative Effects on Greater Sage-Grouse: Management Zone I

In addition to the analysis in the 2015 Final EIS in **Table 4-4**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS.

MZ I encompasses portions of Wyoming, Montana, North Dakota, and South Dakota. Montana is currently not undergoing a plan amendment process; therefore, none of the proposed changes described in this section apply to Greater Sage-Grouse in Montana. Under the Proposed Plan Amendment in WAFWA MZ I, PHMA and GHMA designations would not change from those identified in the No-Action Alternative. In addition, no changes in allocations are proposed in either of the planning areas in this MZ. Approximately 16 percent of the planning area across MZ I is designated as PHMA, and 38 percent is GHMA. Future adjustments to PHMA and GHMA in MZ I would be based on best available science and to align with the respective states' delineations for Greater Sage-Grouse habitat.

Wyoming's current planning effort, and Montana's existing plans, incorporate management flexibility to allow for site specific adjustments to land use plan authorizations for adaptive management strategies, livestock grazing management, and other proposed land uses. The use and application of compensatory mitigation in the planning area would follow the respective State plans, resulting in greater consistency across the MZ. For these actions, cumulative impacts on Greater Sage-Grouse habitat and populations across MZ I would be consistent with those impacts described in the 2015 Final EISs for the then Proposed Plan Amendments.

The currently Proposed Plan Amendment changes from the No-Action Alternative are minor, and still maintain prescriptive management for Greater Sage-Grouse habitat across the MZ for surface disturbing activities. Disturbance from energy development, mining, and infrastructure, as well as the resulting habitat fragmentation, remain the greatest threat to Greater Sage-Grouse in the Rocky Mountain Region. Because the land use prescriptions and allocations are not proposed for change in Wyoming's land use plan amendment, there would be no additional cumulative impact on Greater Sage-Grouse populations or habitat within MZ I.

A summary of potential cumulative impacts by proposed management action is presented below.

Impacts on Greater Sage-Grouse as a result of surface disturbance would likely be greater where development and disturbance is more intense and in areas where development overlaps sensitive habitats. The degree of impact would depend on the timing of development activities and whether the amount of development activity and disruption outpaces successful reclamation and revegetation efforts in disturbed areas. Increased flexibility for updating Greater Sage-Grouse habitat management areas across MZ I would not result in any additive impacts on Greater Sage-Grouse and could result in beneficial impacts as a result of consistent management across the zone.

Any future modifications of habitat management areas would be documented using the appropriate level of NEPA that would, as applicable, provide analysis regarding any potential impacts; however, because the underlying habitat management area allocations and the respective restrictions on those allocations put in place to conserve Greater Sage-Grouse would not change, and any proposed updates would reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse habitat or population.

Under the BLM's Wyoming Management Alignment Alternative, the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872 would be removed, as the EIS process considering the proposed withdrawal was canceled on October 11, 2017. In its 2016 SFA Withdrawal EIS, the BLM quantified the possible adverse effects from locatable mineral exploration and mining on the approximately 10 million acres of SFAs proposed for withdrawal, finding that they would be limited to approximately 9,000 acres of surface disturbance over 20 years, with approximately 0.58 percent of Greater Sage-Grouse male birds affected per year.

Approximately 99 percent of GHMA and PHMA habitat in MZ I is open to livestock grazing, and this is not proposed for change in Wyoming's proposed land use plan amendment; Montana is also not proposing any changes to livestock management at this time. Therefore, no additional cumulative impacts beyond those identified in the 2015 Final EISs are anticipated. In general, livestock can influence habitat by modifying plant biomass, plant height and cover, and plant species composition. As a result, livestock grazing could cause changes in habitat; changes in plant composition could occur in varying degrees and could change vegetative structure, affecting cover for nesting birds. However, grazing can be used to reduce fuel loads and reduce the risk of wildfire and can also be managed to reduce the spread of invasive grasses.

Much of the landscape in MZ I is adapted to withstand grazing disturbance, having been grazed by bison before the West was settled. In addition, the BLM has applied Standards for Rangeland Health since 1997 in order to enhance sustainable livestock grazing and wildlife habitat while protecting watersheds and riparian ecosystems. Under proposed management in MZ I, the BLM would be able to adjust forage levels to meet rangeland health standards based on site-specific information that would inform livestock management decisions.

While the Proposed land use plan amendment in Wyoming would remove the Greater Sage-Grouse specific language Management Action 4 (see Table 2-1, Permit Renewals, of the Wyoming Proposed RMPA/Final EIS), the wildlife/special status species standards are emphasized. As Greater Sage-Grouse

would continue to be considered at the implementation level with site-specific analysis, following management prescriptions analyzed in the 2014 and 2015 Final EISs, no additive impact of this change is anticipated.

Adaptive Management, Mitigation, and Prioritization of Leasing

Similarly, no appreciable additive impacts are anticipated from Wyoming establishing a process whereby adaptive management actions are reviewed and reversed once the identified causal factor is resolved. This process would ensure that the BLM is using the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations and/or habitat, as well as ensuring that once causal factors are resolved, management reverts to pre-adaptive management actions. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative at best and not reasonably foreseeable.

As Montana is not proposing to change any part of its adaptive management process, and Wyoming did not identify any additional direct or indirect impacts as a result of this proposed change, there are no additional cumulative impacts associated with the proposed changes to adaptive management implementation.

Under the Proposed Plan Amendment in Wyoming, language would be added to clarify how implementation-level decisions would be guided regarding mitigation and prioritization of fluid mineral leasing to better align with state conservation plans and management strategies. As identified in the direct and indirect effects section of this Final EIS, impacts on Greater Sage-Grouse would be minor as a result of these changes and could include localized detrimental impacts in some areas and beneficial impacts in others, but would not affect Greater Sage-Grouse conservation. As a result, there would be no appreciable additive impact from the implementation of these clarifications on Greater Sage-Grouse habitat or population across MZ I.

BLM's proposed land use plan amendments in MZ I are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at continued risk due to reasonably foreseeable infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the proposed plan amendments retain conservation measures that would be applied consistent with State management plans, and continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ, to adequately conserve and manage Greater Sage-Grouse habitat.

4.7.4 Cumulative Effects on Greater Sage-Grouse: Management Zone II/VII

In addition to the analysis in the 2015 Final EIS in **Table 4-4**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS.

MZ s II/VII encompass portions of Wyoming, Colorado, Utah, Montana, and Idaho. Under the Proposed Plan Amendment in this MZ, PHMA would decrease by 1 percent and GHMA would decrease by 1 percent, compared to the acreage values in the No-Action Alternative. The proposed change in Greater Sage-Grouse habitat management area acres reflects changes in Utah, where PHMA would be reduced

by approximately 35,000 acres and GHMA (826,000 acres) would be removed in an effort to align with the SGMA identified by the State of Utah.

In Idaho, approximately 50,000 acres would change from PHMA to Important Habitat Management Area (IHMA) for population monitoring purposes as a result of a tripped adaptive management trigger; however, the habitat would continue to be managed as PHMA, which results in no net change to overall acreages included in the habitat management areas. Across this MZ, no other modifications to habitat management areas are currently proposed. Montana is currently not undergoing a plan amendment process; therefore, none of the proposed changes described in this section apply to Greater Sage-Grouse in Montana.

In Colorado, in the no action alternative, PHMA within one mile of active leks is closed to leasing. The proposed action would open one mile of active leks to leasing, subject to NSO with restrictive criteria for waivers, exceptions, and modifications. Although that allocation change would make additional acres available to leasing, the impact on Greater Sage-Grouse is likely to be minimal because surface disturbance, fragmentation, and indirect habitat loss would not be expected to increase due to restrictions on surface disturbance. Additionally, better coordination with the State provides more of an all-lands approach that, due to multiple jurisdictions with regulatory authority over land and mineral ownership, may result in better protections for Greater Sage-Grouse and Greater Sage-Grouse habitat.

For the remainder of the planning areas within MZ II/VII, land use plan allocations tied to HMAs did not change between the No-Action Alternative and the Proposed Plan Amendment.

The decrease in PHMA and GHMA as a result of better alignment with the State of Utah's Greater Sage-Grouse management plan between the No-Action Alternative and the Proposed Plan Amendment would have negligible to minimal impacts on Greater Sage-Grouse and its habitat in the context of the entire MZ. The reduction of PHMA was associated with timbered mountains that do not include Greater Sage-Grouse habitat. The removal of GHMA in MZ II/VII affects populations where the BLM has very little decision space (surface or mineral estates) or areas with very small populations that are already heavily impacted by existing oil and gas development resulting in infrastructure at a density above what science has indicated Greater Sage-Grouse will persist. Additionally, the relevant distribution of land use plan allocations associated with these HMA changes would not significantly change (0–3 percent; see **Appendix I**). Additionally, because Utah provides habitat for approximately 5 percent of the Greater Sage-Grouse population range-wide, and GHMA in Utah comprises only approximately 5 percent of the birds in Utah, removal of GHMA in Utah would only affect 0.25 percent of the range-wide Greater Sage-Grouse population. Given the small number of birds affected and the existing habitat conditions in GHMA (not administered by the BLM, already impacted by existing development, or small and isolated patches with little history of occupancy by local biologists), removing GHMA in Utah will not result in cumulative effects to Greater Sage-Grouse populations range-wide.

The planning efforts being undertaken in this MZ would incorporate management flexibility in Colorado, Utah, and Idaho plans that would allow exceptions to allocation decisions similar to flexibility already in the Wyoming and Montana plans. These changes would allow for site-specific adjustments for land use authorizations based on site conditions. In addition, there would be adjustments to existing adaptive management strategies for all plans in this MZ. Within this MZ, all plans would remove the recommendation to withdraw SFAs from location and entry under the 1872 Mining Law would make slight adjustments to habitat objectives, and Colorado and Idaho plans would identify new exceptions to

seasonal timing restrictions to provide for consideration of site-specific conditions already present in the Utah, Wyoming and Montana plans.

Despite these actions, cumulative impacts on Greater Sage-Grouse populations and habitat across MZ II/VII would be consistent with those impacts identified in the 2015 Final EISs for the then proposed plan amendments. The currently Proposed Plan Amendments changes from the No-Action Alternative would be minor. Disturbance from energy development, mining, and infrastructure, as well as the resulting habitat fragmentation, remain the greatest threat to Greater Sage-Grouse in the Rocky Mountain Region. Because the land use prescriptions within designated habitat management areas and the allocations associated with those habitat management areas are not being proposed for change in any plan in MZ II/VII, there would be no additional cumulative impacts on Greater Sage-Grouse across this MZ.

A summary of potential cumulative impacts by proposed management action is presented below.

Impacts on Greater Sage-Grouse as a result of surface disturbance would likely be greater where development and disturbance is more intense and in areas where development overlaps sensitive habitats. The degree of impact would depend on the timing of development activities and whether the amount of development activity and disruption outpaces successful reclamation and revegetation efforts in disturbed areas. Increased flexibility for updating habitat management areas across MZ II/VII would not result in any additive impacts on Greater Sage-Grouse and could result in beneficial impacts as a result of consistent management across the zone.

Future modifications of habitat management areas would be documented using the appropriate level of NEPA that would, as applicable, provide analysis regarding any potential impacts; however, because the underlying habitat management area allocations and the respective restrictions on those allocations put in place to conserve Greater Sage-Grouse would not change, and any proposed updates would reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse habitat or population.

The allocation exception process would be updated in Colorado, Utah, and Idaho to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given habitat management area, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; benefit Greater Sage-Grouse or its habitat; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

In MZ II/VII, approximately 216,000 acres of PHMA in Wyoming and 164,000 acres of PHMA in Utah were recommended for withdrawal from location and entry under the 1872 Mining Law in the current RMPs. This recommendation, if implemented through a future separate withdrawal action supported by its own NEPA, would apply to approximately 3 percent of the MZ. The proposed change to the withdrawal recommendation itself would not have any on-the-ground effects, and the conservation

benefits of a future withdrawal would be minimal, as documented in the 2016 SFA Withdrawal Draft EIS and as explained above.

Approximately 99 percent of GHMA and PHMA in MZ II/VII is open to livestock grazing; this is not proposed for change in any states' land use plan amendments; therefore, no additional cumulative impacts beyond those identified in the 2015 Final EISs are anticipated. In general, livestock can influence habitat by modifying plant biomass, plant height and cover, and plant species composition. Improper livestock grazing could cause changes in habitat; changes in plant composition could occur in varying degrees and could change vegetative structure, affecting cover for nesting birds; however, proper grazing can be used to reduce fuel loads and reduce the risk of wildfire and can also be managed to reduce the spread of invasive grasses. Specific impacts on Greater Sage-Grouse habitat from livestock grazing are incorporated by reference from the 2015 Final EIS. All ongoing planning efforts in MZ II/VII would make slight adjustments to habitat objectives, and, in Wyoming and Utah, would provide for more flexibility for making site-specific adjustments to livestock grazing management if the site-specific monitoring indicated adjustments were necessary.

Under the proposed land use plan amendments, language would be added to clarify how some implementation level decisions, including mitigation, prioritization of fluid mineral leasing, disturbance caps, and clarification of RDFs would be guided to better align with state conservation plans and management strategies. As identified in the direct and indirect effects section of this Final EIS, impacts on Greater Sage-Grouse would be minor as a result of these changes and could include localized detrimental impacts in some areas and beneficial impacts in others, but would not cumulatively compromise Greater Sage-Grouse conservation efforts throughout the individual states. As a result, there would be no appreciable additive impact from the implementation of these clarifications on Greater Sage-Grouse habitat or population across this MZ.

Similarly, no appreciable additive impacts are anticipated from updating the adaptive management process as described in the Proposed Plan Amendments. In Wyoming and Utah, this process would be updated at the implementation level to ensure that adaptive management actions are reviewed and reversed once the identified causal factor is resolved. In all states in this MZ, this update would ensure that the BLM is using the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations and/or habitat. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative and not reasonably foreseeable.

In Idaho, removal of the project disturbance cap would not result in any changes to allocation decisions; rather, it would allow the BLM to cluster development in PHMA and IHMA only after meeting the anthropogenic disturbance screening criteria and the disturbance development criteria. Lek buffer modifications would also not result in any allocation changes. Some lek buffers would be increased as a result of the proposed land use plan amendment, but, in some cases, the lek buffers may be smaller than those identified in the No-Action Alternative; however, the existing disturbance screening criteria and the disturbance development criteria would highly restrict development activities in both PHMA and IHMA; therefore, the changes in lek buffers sizes would have no additive effect.

BLM's proposed land use plan amendments in MZ II/VII are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at

continued risk due to reasonably foreseeable infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the proposed plan amendments retain conservation measures that would be applied consistent with State management plans, and continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ, to adequately conserve and maintain Greater Sage-Grouse habitat.

4.7.5 Cumulative Effects on Greater Sage-Grouse: Management Zone III

In addition to the analysis in the 2015 Final EIS in **Table 4-4**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS.

This area encompasses portions of California, Nevada, and Utah. Under the Proposed Plan Amendments in Nevada and Northeastern California and Utah, PHMA would decrease by 1 percent, GHMA would decrease by 2 percent, and for Nevada and Northeastern California only, Occupied Habitat Management Area (OHMA) would decrease by 2 percent, as compared to the acreages identified in the No-Action Alternative. The proposed change in habitat management area acres between the No-Action Alternative and the Proposed Plan Amendment in Nevada and Northeastern California is based on adjustments made to habitat modeling used to delineate habitat management areas and improve alignment with the State of Nevada's delineations for habitat management areas, which the State of Nevada adopted by in December 2015. In Utah, GHMA (approximately 860,000 acres) was removed in the Proposed Plan Amendment in an effort to align with the SGMAs identified by the State of Utah. None of the GHMA removed in MZ III includes any leks, and is largely comprised of areas not administered by the BLM, areas already impacted by existing development, or areas that contain small and isolated patches of habitat with little to no history of recent occupancy by local biologists. Additionally, because Utah provides habitat for approximately 5 percent of the Greater Sage-Grouse population range-wide, and GHMA in Utah comprises only approximately 5 percent of the birds in Utah, removal of GHMA in Utah would only affect 0.25 percent of the range-wide Greater Sage-Grouse population. Given the small number of birds affected and the existing habitat conditions in the GHMA, removing GHMA in Utah will not result in cumulative effects to Greater Sage-Grouse populations range-wide.

Following this habitat management area modification, planning-level allocation decisions have also been adjusted in the Proposed Plan Amendments to reflect the distribution of habitat in Nevada/Northeastern California.

In both planning areas within this MZ, land use plan allocations tied to habitat management areas did not change between the alternatives. The decrease in PHMA, GHMA, and OHMA within WAFWA MZ III between the No-Action Alternative and the Proposed Plan Amendment would therefore have negligible-to-minimal impacts on Greater Sage-Grouse and its habitat in the context of the entire MZ, as the relevant distribution of land use plan allocations associated with these habitat management areas is not significantly changing (only an overall 0-3 percent decrease, see **Appendix I**).

Both planning efforts' Proposed Plan Amendments in MZ III incorporate management flexibility that would allow exceptions to allocation decisions within PHMA, GHMA, OHMA in Nevada and Northeastern California, and in both planning areas, would allow for site specific adjustments for land use authorizations and adjustments to existing adaptive management strategies. Under both sets of Proposed Plan Amendments, the BLM would remove the recommendation to withdraw SFAs from

location and entry under the Mining Law of 1872, make slight adjustments to habitat objectives, and identify new exceptions to seasonal timing restrictions.

The cumulative impacts of these proposed changes to Greater Sage-Grouse populations across MZ III would be consistent with the cumulative impacts analyzed and disclosed in the 2015 Final EISs. Moreover, these proposed changes, which focus on anthropogenic disturbances, would have only a minor or limited effect on efforts to manage and conserve Greater Sage-Grouse in this MZ, where wildfire, invasive plants, and conifer encroachment are the greater threats to the Greater Sage-Grouse and its habitat.

BLM's Proposed Plan Amendments in the MZ are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at continued risk due to the reasonably foreseeable future infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the Proposed Plan Amendments retain conservation measures in combination with continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ to adequately conserve and maintain Greater Sage-Grouse habitat.

A summary of potential cumulative impacts by proposed management action is presented below.

Under the Management Alignment Alternative, habitat management area boundaries in Nevada would be adopted or revised to incorporate the best available science (Coates et al. 2016). Because the underlying habitat management area allocations put in place to conserve Greater Sage-Grouse would not change, and these updates reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein.

Similarly, no appreciable additive impacts are anticipated from updating the adaptive management process as described in the Proposed Plan Amendments. This update would ensure that the BLM is utilizing the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations or habitat. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative at best and not reasonably foreseeable.

Under the Proposed Plan Amendment, the allocation exception process would be updated to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given habitat management area, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources and uses analyzed herein, as compared with the No-Action Alternative.

Under the Proposed Plan Amendments, language would be added to clarify how implementation-level decisions would be guided regarding mitigation, seasonal timing restrictions, and modifying habitat objectives to better align with state conservation plans and management strategies. As these updates did not result in any new identifiable direct or indirect impacts, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

4.7.6 Cumulative Effects on Greater Sage-Grouse: Management Zone IV

In addition to the analysis in the 2015 Final EIS in **Table 4-4**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS.

MZ IV encompasses portions of Idaho, Nevada, Montana, Oregon, Utah, and a small portion of Wyoming. Under the Proposed Plan Amendment PHMA would decrease by 2 percent, IHMA would decrease by 0 percent, GHMA would decrease by 0 percent, and OHMA would decrease by 1 percent, as compared to the acreage identified in the No-Action Alternative. The proposed change in habitat management area acres between the No-Action Alternative and the Proposed Plan Amendment in Nevada is based on adjustments made to habitat modeling used to delineate the habitat management areas and to improve alignment with the State of Nevada's delineations for habitat management areas. In Idaho, minor proposed changes in habitat management areas are based on cleaning up habitat mapping errors, removing non-Greater Sage-Grouse habitat that is being managed as PHMA as a result of SFA designation in the 2015 ARMPA, and reallocating an area of PHMA to IHMA because there was no historic lek routes in the PHMA polygon. This made it impossible to apply the adaptive management framework in that polygon. Habitat management areas are not proposed to change in Wyoming, Utah, or Oregon in MZ IV.

The direct and indirect effects of proposed management changes in the Wyoming, Idaho, Utah, Nevada, and Oregon are disclosed in each state's Final EIS. Change in allocation decisions is a better indicator to determine how changes across a MZ will affect Greater Sage-Grouse populations; therefore, this cumulative effects analysis relied on changes in planning allocations as the metric to measure cumulative effects in MZ IV.

In all planning areas within MZ IV, land use plan allocations tied to habitat management areas would not change between the No-Action Alternative and Proposed Plan Amendments. The decrease in PHMA, GHMA, and OHMA within WAFWA MZ IV between the No-Action Alternative and the Proposed Plan Amendment would therefore have negligible to minimal impacts on Greater Sage-Grouse and its habitat in the context of the entire MZ, as the relevant distribution of land use plan allocations associated with these habitat management areas is not significantly changing (0–2 percent, see **Appendix I**).

Each planning efforts' Proposed Plan Amendment MZ IV incorporates management flexibility that would allow exceptions to allocation decisions within habitat management areas and would allow for site specific adjustments for land use authorizations and adjustments to existing adaptive management strategies. Under all Proposed Plan Amendments, the BLM would remove the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872, make slight adjustments to habitat objectives, and identify new exceptions to seasonal timing restrictions. The cumulative impacts of these proposed changes to Greater Sage-Grouse populations across MZ IV would be consistent with cumulative impacts described in the 2015 Final EIS. Moreover, these proposed changes, which focus on anthropogenic disturbances, would have only a minor or limited effect on efforts to manage and

conserve Greater Sage-Grouse in these MZ s, where wildfire, invasive plants, and conifer encroachment are greater threats to the grouse and its habitats.

BLM's Proposed Plan Amendments in the MZ are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at continued risk due to reasonably foreseeable future infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the Proposed Plan Amendments retain conservation measures in combination with continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ to adequately conserve and manage Greater Sage-Grouse habitats.

A summary of potential cumulative impacts by proposed management action is presented below.

The proposed plans vary from state to state as does each state contribution to MZ IV. Montana is not engaging in an amendment process therefore they will not be contributing to any cumulative effects. Wyoming only has approximately 4,000 acres of PHMA and ~20,000 Acres of GHMA within MZ IV making their potential contribution to cumulative effects within the ~80 million acre MZ IV negligible.

The portion of Utah that is within MZ IV is an isolated area with little or no development potential for fluid minerals and is predominantly used for livestock grazing. The reasonably foreseeable development scenario for the area predicts zero wells. The changes proposed in Utah's proposed plan would have no additive effect Greater Sage-Grouse habitats within MZ IV.

The Oregon RMPA would change access on 21,959 acres in all or portions of key Research Natural Areas from unavailable to grazing to available for grazing. No other States within MZ IV are proposing changes to grazing allocation decisions. This change would not add measurably to other actions occurring within the approximately 80 million-acre MZ IV.

The area of MZ that includes Utah is extremely isolated. The dominate use is grazing. Grazing management will follow rangeland health standards and changes to **Table 2-2** that incorporate local science that will benefit Greater Sage-Grouse and ensure that grazing management is conducted properly and would not add cumulatively to Greater Sage-Grouse effects. The area continues to be a ROW avoidance area and is closed to wind energy development. The reasonably foreseeable development scenario for the area predicts zero wells so the change to limited exceptions, waivers, and modifications are moot. The changes proposed in Utah's proposed plan would not add measurably to other actions occurring within the approximately 80 million-acre MZ IV.

Nevada's proposed plan would revise the habitat management area boundaries to incorporate the best available science (Coates et al. 2016), but would not change the allocations associated with each habitat management area. Nevada would also update their adaptive management process to ensure that the BLM is utilizing the best available science and decision support tools to guide management at the appropriate spatial scale. These changes would not measurably to other actions occurring in MZ IV.

In Idaho, removal of the project disturbance cap would not result in any changes to allocation decisions; rather, it would allow the BLM to cluster development in PHMA and IHMA only after meeting the

anthropogenic disturbance screening criteria and the disturbance development criteria. Lek buffer modifications would also not result in any allocation changes. Some lek buffers would be increased as a result of the proposed land use plan amendment, but, in some cases, the lek buffers may be smaller than those identified in the No-Action Alternative; however, the existing disturbance screening criteria and the disturbance development criteria would ensure that impacts from development activities in both PHMA and IHMA would not result in a net loss to Greater Sage-Grouse habitat.

Within MZ IV Oregon would retain their SFA designations while Idaho and Nevada would remove SFA designations. Under the proposed plan in Idaho and Nevada the NSO without waivers, modifications, and exceptions (WEMs) would change to NSO with limited exceptions. The exception criteria could ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

Under the proposed plan, language would be added to clarify how implementation-level decisions would be guided regarding mitigation, seasonal timing restrictions, and modifying habitat objectives to better align with state conservation plans and management strategies. As these updates did not result in any new identifiable direct or indirect impacts, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

4.7.7 Cumulative Effects on Greater Sage-Grouse: Management Zone V

In addition to the analysis in the 2015 Final EIS in **Table 4-4**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS. All changes in the extent of habitat management areas and areas recommended for withdrawal within the MZ occur under the Nevada/Northeastern California amendment. The Oregon amendment did not propose any changes in the extent of habitat management areas (PHMA and GHMA). Oregon removed the recommendation for a withdrawal in the SFA under a plan maintenance action in May 2018, prior to the start of this amendment process. That action resulted in no difference between the No-Action Alternative and the Management Alignment alternatives in terms of withdrawals.

Under the Proposed Plan Amendments in Nevada and Northeastern California and Oregon PHMA would decrease by 1 percent, GHMA would decrease by 2 percent, and for Nevada and Northeastern California only, OHMA would decrease by 2 percent, as compared to the acreages identified in the No-Action Alternative. The proposed change in habitat management area acres between the No-Action Alternative and the Proposed Plan Amendment in Nevada and Northeastern California is based on adjustments made to habitat modeling used to delineate habitat management areas and improve alignment with the State of Nevada's delineations for habitat management areas, which the State of Nevada adopted by in December 2015.

Following this habitat management area modification, planning level allocation decisions have also been adjusted to reflect the distribution of habitat in Nevada/Northeastern California. Future adjustments to habitat management areas in Nevada/Northeastern California would be based on best available science and to align with the respective states' delineations for Greater Sage-Grouse habitat.

In Oregon, the only proposed decision under the Management Alignment Alternative (Proposed Plan Amendment) would retain livestock grazing within key Research Natural Areas. The Management Alignment Alternative would result in allowing livestock grazing on 21,959 acres within the State of Oregon/project area. In the context of the entire MZ, this change would have negligible to no effects on Greater Sage-Grouse populations. Well-managed grazing practices are compatible with sagebrush ecosystems and Greater Sage-Grouse persistence.

A summary of potential cumulative impacts by proposed management action is presented below.

Under the Nevada/Northeastern California amendment, the Management Alignment alternative (Proposed Plan Amendment) would increase PHMA by less than 1 percent, decrease GHMA by 1 percent and decrease OHMA by 2 percent. This change in habitat management area acres between the No-Action Alternative and Proposed Plan Amendments would be the result of improved habitat modeling used to delineate habitat management areas (best available science) and to align with the State of Nevada's delineations for habitat management areas (adopted by the State of Nevada in December 2015). Following this habitat area modification, planning level allocation decisions have also been adjusted to reflect the distribution of habitat in Nevada/Northeastern California.

The Management Alignment alternative (Proposed Plan Amendment) for Nevada/Northeastern California would also remove the recommendation for a withdrawal in the SFAs; allow exceptions to allocation decisions within PHMA, GHMA, OHMA; modify the existing adaptive management strategy; make slight adjustments to habitat objectives; and identify new exceptions to seasonal timing restrictions. Removing the recommendation to withdraw SFAs from mineral development would result in a 3 percent decrease of acres recommended for withdrawal (see **Appendix I**), the largest percent allocation change between the alternatives within the MZ. From these actions, cumulative impacts on Greater Sage-Grouse populations across MZ V would be consistent with those impacts described in the 2015 Final EIS for the then Proposed Plan Amendments because the Management Alignment Alternatives (Proposed Plan Amendments) changes from the No-Action Alternative are minor and deal largely with anthropogenic disturbances. The greatest threats to populations in this MZ would remain wildfire, invasive plants, and conifer encroachment.

The decreases in GHMA and OHMA within WAFWA MZ V between the No-Action Alternative and Management Alignment Alternative (Proposed Plan Amendment) would therefore have negligible to no effect on Greater Sage-Grouse populations and their habitat in the context of the entire MZ, as the relevant distribution of land use plan allocations associated with these habitat management areas would result in an estimated 2.5 to 3 percent decrease, all from Nevada and Northeastern California (see **Appendix I**).

BLM's Proposed Plan Amendments in MZ V are unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Overall, the Proposed Plan Amendments retain conservation measures in combination with continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ; however, smaller populations, particularly those at the edge of the species range, would remain at highest risk of extirpation (Aldridge et al. 2008; Garton et al. 2011), which the reasonably foreseeable actions may exacerbate as unplanned events such as wildfires, drought, and other natural disturbances lead to declines in Greater Sage-Grouse habitat quality.

Under the Management Alignment Alternative, habitat management area boundaries in NV/CA would be adopted or revised to incorporate the best available science (Coates et al. 2016). Because the underlying habitat management area allocations put in place to conserve Greater Sage-Grouse would not change, and these updates reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein.

Similarly, no appreciable additive impacts are anticipated from updating the adaptive management process as described in the Management Alignment Alternative. This update would ensure that the BLM is utilizing the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations and/or habitat. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative at best and not reasonably foreseeable.

Under the Management Alignment Alternative, the allocation exception process would be updated to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given habitat management area, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

Under the Management Alignment Alternative, language would be added to clarify how implementation-level decisions would be guided regarding mitigation, seasonal timing restrictions, and modifying habitat objectives to better align with state conservation plans and management strategies. As these updates did not result in any new identifiable direct or indirect impacts, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

4.8 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Section 102(2)(C) of NEPA requires a discussion of any irreversible or irretrievable commitments of resources from an alternative, should it be implemented. An irreversible commitment of a resource is one that cannot be reversed, such as the extinction of a species or loss of a cultural resource site without proper documentation. An irretrievable commitment of a resource is one in which the resource or its use is lost for a period of time, such as extraction of oil and gas.

Should oil and gas deposits underlying Greater Sage-Grouse habitat be extracted, that oil and gas resource would be lost.

4.9 UNAVOIDABLE ADVERSE IMPACTS

Section 102(C) of the NEPA requires disclosure of any adverse environmental impacts that could not be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures, or impacts for which there are no mitigation

measures. Some unavoidable adverse impacts happen from implementing the RMPA/EIS; others are a result of public use of BLM-administered lands in the planning area.

This section summarizes major unavoidable impacts discussions of the impacts of each management action (in the discussion of alternatives) and provides greater information on specific unavoidable impacts.

Surface-disturbing activities would result in unavoidable adverse impacts. Although these impacts would be mitigated to the extent possible, unavoidable damage would be inevitable under both the No-Action Alternative and the Proposed Plan Amendment.

Impacts from permanent conversion of areas to other uses, such as transportation and mineral and energy development or Off Highway Vehicle (OHV) use, would be greater under the Proposed Plan Amendment, but overall minimal for both alternatives. Both the No-Action Alternative and the Proposed Plan Amendment would place restrictions on many types of development, which would most likely result in fewer visual intrusions and fewer instances of unavoidable wildlife habitat loss.

Wildlife, livestock, wild horses and burros, and other herbivores consume vegetation and affect soils through hoof action and possible compaction. When these impacts are kept at appropriate levels, natural processes such as plant growth and recovery, freeze-thaw periods, and microbial activity in the soil surface result in recovery from these impacts and maintain site stability and health. Vegetation treatments promoting recovery of Greater Sage-Grouse habitats would result in the destruction of the target species, be it annual grass, noxious weed, or encroachment of juniper. Some level of competition for forage between wildlife, livestock, and wild horses would occur. Instances of displacement, harassment, and injury to these species could also occur. Both the No-Action Alternative and the Proposed Plan Amendment would place restrictions on development and surface-disturbing activities, which would minimize the likelihood of displacement, harassment, and/or injury.

Development of mineral resources and general use of the decision area would introduce additional ignition sources into the planning area, which would increase the probability of wildland fire and the need for its suppression. These activities, combined with continued fire suppression, would also affect the overall composition and structure of vegetation communities; this could increase the potential for high-intensity wildland fires. Restrictions on development under both alternatives would be expected to decrease the potential for ignitions in the decision area; however, impacts would be greater under the No-Action Alternative.

Numerous land use restrictions imposed throughout the decision area to protect Greater Sage-Grouse habitat and other important values, by their nature, affect the ability of operators, individuals, and groups who use the public lands to do so without limitations. Although attempts would be made to minimize these impacts, unavoidable adverse impacts could occur under the No-Action Alternative or the Proposed Plan Amendment.

4.10 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Section 102(C) of NEPA requires a discussion of the relationship between local, short-term uses of human environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, short term is defined as anticipated to occur within the

first 5 years of implementation of the activity and long term as lasting beyond 5 years to the end of or beyond the life of this RMPA/EIS.

Surface-disturbing activities, including transportation and utility corridor construction, and mineral resource development would result in the greatest potential for impacts on long-term productivity. Management prescriptions and RDFs are intended to minimize the effect of short-term commitments and to reverse change over the long term. These prescriptions and the associated reduction of impacts would be greater under the No-Action Alternative for resources such as vegetation and wildlife habitat; however, some impacts on long-term productivity might occur, despite the prescriptions intended to reduce impacts on Greater Sage-Grouse and its habitat.

ROWs and short-term use of an area to foster energy and mineral development would result in long-term loss of soil productivity and vegetation diversity. Impacts would persist as long as surface disturbance and vegetation loss continue. In general, the loss of soil productivity would be directly at the point of disturbance; even so, long-term vegetation diversity and habitat value could be reduced due to fragmentation and the increased potential for invasive species to spread from the developments or disturbances. Both the No-Action Alternative and the Proposed Plan Amendment would provide for long-term productivity through restrictive allocations that limit development in many areas and through the application of other restrictions on development, such as disturbance caps, RDFs, and other management prescriptions.

ROWs and the short-term use of Greater Sage-Grouse habitat for energy and mineral development could impair the long-term productivity of Greater Sage-Grouse and its habitat and that of other species. This would occur by displacing species from primary habitats and removing components of these habitats that might not be restored for 20 years or longer. These short-term uses could also affect the long-term sustainability of some special status species. The potential for these impacts, however, would be minimal under both the No-Action Alternative and the Proposed Plan Amendment.

The short-term resource uses associated with mineral development (oil and gas seismic exploration, natural gas test well drilling, and the noise associated with these activities) would have adverse impacts on the long-term productivity of Greater Sage-Grouse and its habitat. This would be the case if these resource uses were to infringe on Greater Sage-Grouse seasonal habitats such as nesting, brood-rearing, and winter habitats. These activities, though short-term individually, could have collective long-term impacts on Greater Sage-Grouse and its habitat if they were to increase in the long term.

This page intentionally left blank.

Chapter 5. Consultation and Coordination

5.1 PUBLIC INVOLVEMENT DURING THE 2020 NEPA PROCESS

5.1.1 Public Comments on the DSEIS

The BLM accepted comments on the DSEIS for 90 days after the NOA publishes in the *Federal Register*.

5.2 AMERICAN INDIAN TRIBAL CONSULTATION

Various federal laws require the BLM to consult with American Indian tribes when it prepared the 2018 Final EIS and proposed plan amendments and the 2019 ROD. While the BLM welcomes comments from any interested tribe on this SEIS, the BLM has not initiated additional government-to-government consultation at this time because this FSEIS clarifies and updates the BLM's NEPA analysis in the 2018 Final EIS, while providing for additional opportunities for public review and comment.

Further, during the 2019 planning process, the BLM reached out to the potentially affected Native American tribes and organizations with interests in the planning area (listed below) by mail requesting government-to-government consultation.

- White Mesa Ute Tribe
- Skull Valley Band of Goshute Indians
- Paiute Indian Tribe of Utah
- Southern Ute
- Ute Indian Tribe
- Northwest Band of Shoshone
- Ute Mountain Ute Tribe
- Confederated Tribe of the Goshute Indian Reservation
- Navajo Utah Commission
- Kaibab Band of Paiute Indians
- Navajo Nation
- Hopi Tribe
- Shoshone - Bannock Tribes
- Te-Moak Western Shoshone
- Eastern Shoshone

The Utah BLM also reached out directly to those tribes that expressed interest in the 2015 Greater Sage-Grouse planning process, since this effort is associated with the 2015 effort. The Utah BLM met with representatives from the Paiute Indian Tribe of Utah in December 2017 and April and June 2018 to invite them to consult with the Utah BLM and to keep them updated on the status of the plan amendment. Similarly, the Utah BLM met with the Ute Indian Tribe in January, April, and October 2018 for the same purposes. In March 2018, the Idaho BLM met with the Shoshone Bannock Tribe's resource staff to invite them to consult and to update them on the status of the plan amendment, including the Utah effort. In March and May 2018, the Utah BLM met with representatives from the Confederated Tribe of the Goshute Indian Reservation.

5.3 LIST OF PREPARERS

An interdisciplinary team of staff from the BLM, in collaboration with Environmental Management and Planning Solutions, Inc. prepared the SEIS.

Name	Role/Responsibility
Jonathan Beck	Team Lead
Quincy Bahr	Branch Chief of Planning and Environmental Coordination
Tyler Nelson	Geospatial Ecologist
Jared Reese	Wildlife Biologist
Ryan Hathaway	Team Lead (<i>former</i>)
Mellissa R. Wood	Greater Sage-Grouse State Implementation Lead (<i>former</i>)

Chapter 6. References

- Baruch-Mordo, S., J. S. Evans, J. P. Severson, D. E. Naugle, J. D. Maestas, J. M. Kiesecker, M. J. Falkowski, et al. 2013. "Saving sage-grouse from the trees: A proactive solution to reducing a key threat to a candidate species." *Biological Conservation* 167: 233–241.
- Bergquist, E., P. Evangelista, T. J. Stohlgren, and N. Alley. 2007. "Invasive species and coal bed methane development in the Powder River Basin, Wyoming." *Environmental Monitoring and Assessment* 128: 381–394.
- Bestelmeyer, Brandon T.; Moseley, Kendra.; Shaver, Pat L.; Sanchez, Homer; Briske, David D.; Fernandez-Gimenez, Maria E. 2010. Practical Guidance for Developing State-and-Transition Models. *Rangelands*, 32(6):23-30. Society for Range Management.
- Bestelmeyer, Brandon T.; Goolsby, Darroc P.; and Archer, Steven R. 2011. Spatial Perspectives in State-and-Transition Models: A Missing Link to Land Management? *Journal of Applied Ecology*. 48:746-757. 2011.
- Bui, T. D., J. M. Marzluff, and B. Bedrosian. 2010. "Common raven activity in relation to land use in western Wyoming: Implications for greater sage-grouse reproductive success." *Condor* 112: 65-78.
- Carter, S. K., D. J. Manier, R. S. Arkle, A. N. Johnston, S. L. Phillips, S. E. Hanser, and Z. H. Bowen. 2018. Annotated bibliography of scientific research on greater sage-grouse published since January 2015: US Geological Survey Open-File Report 2018–1008. Internet website: <https://doi.org/10.3133/ofr20181008>.
- Chambers, Jeanne C.; Miller, Richard F.; Board, David I.; Pyke, David A.; Roundy, Bruce A.; Grace, James B.; Schupp, Eugene W.; and Tausch, Robin J. 2014. Resilience and Resistance of Sagebrush Ecosystems: Implications for State and Transition Models and Management Treatments. *Rangeland Ecology and Management*; 67:440-454 - September 2014.
- Chelak, M., and T. A. Messmer, 2017. Population Dynamics and Seasonal Movements of Translocated and Resident Greater Sage-Grouse (*Centrocercus urophasianus*), Sheeprock Sage-Grouse Management Area. Annual Report. Jack H. Berryman Institute, Utah State University, Logan.
- Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun. 2000. "Guidelines to manage sage-grouse populations and their habitats." *Wildlife Society Bulletin* 28(4): 967–985.
- Connelly, J. W., K. P. Reese, and M. A. Schroeder. 2003. Monitoring of Greater Sage-Grouse Habitats and Populations. University of Idaho Station College of Natural Resources Experiment Station Bulletin 80. University of Idaho, Moscow.

- Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies (WAFWA). Unpublished Report. Cheyenne, Wyoming.
- Connelly, J. W., E. T. Rinkes, and C. E. Braun. 2011. "Characteristics of greater sage-grouse habitats: A landscape species at micro- and macroscales." In: "Greater sage-grouse: Ecology of a landscape species and its habitats" (S. T. Knick and J. W. Connelly, editors). Cooper Ornithological Union, University of California Press, Berkeley. Pp. 69–83.
- Dahlgren, D., T. A. Messmer, B. A. Crabb, M. T. Kohl, S. N. Frey, E. Thacker, R. T. Larsen, and R. J. Baxter. In review 2018. An Empirical Approach to Refining Greater Sage-Grouse (*Centrocercus urophasianus*) Habitat Guidelines. Unpublished - In Review.
- Davies, K. W., C. S. Boyd, J. L. Beck, J. D. Bates, T. J. Svejcar, and M. A. Gregg. 2011. "Saving the sagebrush sea: An ecosystem conservation plan for big sagebrush plant communities.: *Biological Conservation* 144: 2573–2584.
- De Szalay, F. A., and V. H. Resh. 2000. "Factors influencing macroinvertebrate colonization of seasonal wetlands: Responses to emergent plant cover." *Freshwater Biology* 45: 295–308.
- Doherty, M. K. 2007. "Mosquito populations in the Powder River Basin, Wyoming: A comparison of natural, agricultural and effluent coal bed natural gas aquatic habitats." Master's thesis. Montana State University, Bozeman, USA.
- Doherty, K. 2008. "Sage-grouse and energy development: Integrating science with conservation planning to reduce impacts." Doctoral dissertation. University of Montana, Missoula.
- Emmons, S. R., and C. E. Braun. 1984. "Lek attendance of male sage grouse." *Journal of Wildlife Management* 48: 1023-1028.
- EPA. 2018. Monitor Value Reports. Internet website: <https://www.epa.gov/outdoor-air-quality-data>.
- Evangelista, P. H., A. W. Crall, and E. Bergquist. 2011. "Invasive plants and their response to energy development." In: *Energy Development and Wildlife Conservation in Western North America* (D. E. Naugle, editor). Island Press, Washington, D., USA. Pp. 115–129
- Federal Register*. 2010. Endangered and threatened wildlife and plants; 12-month findings for petitions to list the greater sage-grouse (*Centrocercus urophasianus*) as threatened or endangered. Proposed Rule. 75 Fed. Reg. 13910. March 23, 2010.
- Garton, E. O., J. W. Connelly, J. S. Horne, C. A. Hagen, A. Moser, and M. Schroeder. 2011. "Greater sage-grouse population dynamics and probability of persistence." In: "Greater sage-grouse: Ecology and conservation of a landscape species and its habitats." *Studies in Avian Biology* 38: 293–382.
- Gelbard, J. L., and J. Belnap. 2003. "Roads as conduits for exotic plant invasions in a semiarid landscape." *Conservation Biology* 17:4 20–432.

- Grove, A. J., C. L. Wambolt, and M. R. Frisina. 2005. "Douglas-fir's effect on mountain big sagebrush wildlife habitats." *Wildlife Society Bulletin* 33: 74–80.
- Gruell, G. E., J. K. Brown, and C. L. Bushey. 1986. Prescribed Fire Opportunities in Grasslands Invaded by Douglas-Fir: State-of-the-Art Guidelines. General Technical Report INT-198. US Department of Agriculture, Forest Service, Intermountain Research Station, Ogden, Utah.
- Hanser, S. E., P. A. Deibert, J. C. Tull, N. B. Carr, C. L. Aldridge, T. C. Bargsten, T. J. Christiansen, et al. 2018. Greater Sage-Grouse Science (2015–2017)—Synthesis and Potential Management Implications. US Geological Survey Open-File Report 2018–1017. Internet website: <https://doi.org/10.3133/ofr20181017>.
- Harju, S. M., M. R. Dzialak, R. C. Taylor, L. D. Hayden-Wing, and J. B. Winstead. 2010. "Thresholds and time lags in effects of energy development on Greater Sage-Grouse populations." *Journal of Wildlife Management* 74: 437–448.
- Hemstrom, M. A., M. J. Wisdom, M. M. Rowland, B. Wales, W. J. Hann, and R. A. Gravenmier. 2002. "Sagebrush-steppe vegetation dynamics and potential for restoration in the Interior Columbia Basin, USA." *Conservation Biology* 16: 1243–1255.
- Homer, C. G., C. L. Aldridge, D. K. Meyer, M. J. Coan, and Z. H. Bowen. 2009. Multiscale Sagebrush Rangeland Habitat Modeling in Southwest Wyoming. US Geological Survey Open-File Report 2008-1027.
- Hoogland, J., K. Cannon, L. DeBarbieri, and T. Manno. "Selective predation on Utah prairie dogs." *The American Naturalist* 168(4): 546–552.
- Jenni, D. A., and J. E. Hartzler. 1978. "Attendance at a sage grouse lek: Implications for spring census." *Journal of Wildlife Management* 42: 46–52.
- Johnson, D. H. 1980. "The comparison of usage and availability measurements for evaluating resource preference." *Ecology* 61: 65–71.
- Knick, S. T., and J. W. Connelly (editors). 2011. "Greater sage-grouse: Ecology of a landscape species and its habitats." Cooper Ornithological Union, University of California Press, Berkeley.
- Knick, S. T., and S. E. Hanser. 2011. "Connecting pattern and process in greater sage-grouse populations and sagebrush landscapes." In: "Greater sage-grouse: Ecology and conservation of a landscape species and its habitats" (S. T. Knick and J. W. Connelly, editors). *Studies in Avian Biology* 38: 383–405.
- Knick, S. T., S. E. Hanser, R. F. Miller, D. A. Pyke, M. J. Wisdom, S. P. Finn, E. T. Rinkes, and C. J. Henny. 2011. "Ecological influence and pathways of land use in sagebrush" In: "Greater sage-grouse: Ecology and conservation of a landscape species and its habitats" (S. T. Knick and J. W. Connelly, editors). *Studies in Avian Biology* 38: 203–251.
- Knight, R. L., W. E. Walton, G. F. Meara, W. K. Riesen and R. Wass. 2003. "Strategies for effective mosquito control in constructed treatment wetlands." *Ecological Engineering* 21: 211–232.

- _____. 2010. LANDFIRE (also known as Landscape Fire and Resource Management Planning Tools). Internet website: http://www.landfire.gov/data_overviews.php.
- Lammers, W. M., and M. W. Collopy. 2007. "Effectiveness of avian predator perch deterrents on electric transmission lines." *Journal of Wildlife Management* 71: 2752–2758.
- Leu, M., and S. E. Hanser. 2011. "Influences of the human footprint on sagebrush landscape patterns: Implications for sage-grouse conservation." In: "Greater sage-grouse: Ecology and conservation of a landscape species and its habitats" (S. T. Knick and J. W. Connelly, editors). *Studies in Avian Biology* 38: 253–271.
- Lyon, A. G., and S. H. Anderson. 2003. "Potential gas development impacts on sage grouse nest initiation and movement." *Wildlife Society Bulletin* 31: 486–491.
- MacKinnon, W. C., J. W. Karl, G. R. Toevs, J. J. Taylor, M. Karl, C. S. Spurrier, and J. E. Herrick. 2011. BLM Core Terrestrial Indicators and Methods. Tech Note 440. US Department of the Interior, Bureau of Land Management, National Operations Center, Denver, Colorado.
- Manier, D. J., D. J. A Wood, Z. H. Bowen, R. M. Donovan, M. J. Holloran, L. M. Juliusson, K. S. Mayne, et al. 2013. Summary of Science, Activities, Programs, and Policies That Influence the Rangeland Conservation of Greater Sage-Grouse (*Centrocercus urophasianus*). US Geological Survey Open-File Report 2013–1098.
- Messmer, T. A., L. Belton, D. Dahlgren, S. N. Frey, M. Kohl, and R. A. Hart. 2018. Utah's Adaptive Resources Management Greater Sage-Grouse Local Working Groups 2017 Accomplishment Report. Utah Community-Based Conservation Program, Jack H. Berryman Institute, Department of Wildlife Resources, and Utah State University Extension, Logan, Utah Internet website: <https://utahcbcp.org/publications/2017LWGANualRepor.pdf>.
- NatureServe. 2011. International Ecological Classification Standard: Terrestrial Ecological Classifications. NatureServe Central Databases. Arlington, Virginia, USA. Data current as of July 31, 2011.
- Pellant, M., P. Shaver, D. A. Pyke, and J. E. Herrick. 2005. Interpreting Indicators of Rangeland Health, Version 4. Technical Reference 1734-6. US Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, Colorado. BLM/WO/ST-00/001+1734/REV05.
- Pyke, D. A. 2011. "Restoring and rehabilitating sagebrush habitats." In: "Greater sage-grouse: Ecology and conservation of a landscape species and its habitats" (S. T. Knick and J. W. Connelly, editors). *Studies in Avian Biology* 38: 531–548.
- Sandford, C., P. Messmer, and D. K. Dahlgren. 2015. "Sage-grouse nests in an active conifer mastication site." *The Prairie Naturalist* 47: 115–116.
- Sandford, C. P., M. T. Kohl, T. A. Messmer, D. K. Dahlgren, A. Cook, and B. R. Wing. 2017. "Greater sage-grouse resource selection drives reproductive fitness under a conifer removal strategy." *Rangeland Ecology and Management* 70: 59–67.

- Schmidtman, E. T., R. J. Bobian, and R. P. Beldin. 2000. "Soil chemistries define aquatic habitats with immature populations of the *Culicoides variipennis* complex (Diptera: Ceratopogonidae)." *Journal of Medical Entomology* 37: 38–64.
- Schroeder, M. A., C. L. Aldridge, A. D. Apa, J. R. Bohne, C. E. Braun, S. D. Bunnell, J. W. Connelly, et al. 2004. "Distribution of sage-grouse in North America." *Condor* 106: 363–376.
- Stiver, S. J., A. D. Apa, J. R. Bohne, S. D. Bunnell, P. A. Deibert, S. C. Gardner, M. A. Hilliard, C. W. McCarthy, and M. A. Schroeder. 2006. Greater Sage-Grouse Comprehensive Conservation Strategy. Western Association of Fish and Wildlife Agencies. Unpublished report. Cheyenne, Wyoming, USA. Internet website: <http://www.wafwa.org/documents/pdf/GreaterSage-grouseConservationStrategy2006.pdf>.
- Stiver, S. J., E. T. Rinkes, and D. E. Naugle. 2010. Sage-Grouse Habitat Assessment Framework. Unpublished Report. US Bureau of Land Management, Idaho State Office, Boise.
- Stiver, S. J., E. T. Rinkes, D. E. Naugle, P. D. Makela, D. A. Nance, and J. W. Karl. 2015. In Press. Sage-Grouse Habitat Assessment Framework: A Multi-Scale Habitat Assessment Tool. Bureau of Land Management and Western Association of Fish and Wildlife Agencies Technical Reference 6710-1. US Bureau of Land Management, Denver, Colorado.
- Taylor, R. L., B. L. Walker, D. E. Naugle, and L. S. Mills. 2012. "Managing multiple vital rates to maximize greater sage-grouse population growth." *Journal of Wildlife Management* 76: 336–347.
- UDWR (Utah Department of Natural Resources, Division of Wildlife Resources). 2009. Utah Greater Sage-grouse Management Plan. Utah Department of Natural Resources, Division of Wildlife Resources, Publication 09-17, Salt Lake City, Utah, USA.
- USFWS (United States Department of the Interior, Fish and Wildlife Service). 2010a. Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered. Washington, DC. FWS-R6-ES-2010-0018, *Federal Register* 75(55). March 25, 2010.
- _____. 2012. Utah Prairie Dog (*Cynomys parvidens*) Revised Recovery Plan. US Fish and Wildlife Service, Denver, Colorado.
- _____. 2013a. Greater Sage-Grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report. USFWS, Denver, Colorado. February 2013.
- Utah Greater Sage-Grouse Working Group. 2013. Conservation Plan for Greater Sage-grouse in Utah – Final. February 14, 2013. Internet website: http://wildlife.utah.gov/uplandgame/sage-grouse/pdf/greater_sage_grouse_plan.pdf.
- Walton, W. E., and P. D. Workman. 1998. "Effect of marsh design on the abundance of mosquitoes in experimental constructed wetlands in Southern California.: *Journal of the American Mosquito control Association* 14: 95–107.

This page intentionally left blank.

Glossary

Adaptive management. A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies, and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

Amendment. The process for considering or making changes in the terms, conditions, and decisions of approved Resource Management Plans or management framework plans. Usually only one or two issues are considered that involve only a portion of the planning area.

Avoidance/avoidance area. These terms usually address mitigation of some activity (i.e., resource use). Paraphrasing the CEQ Regulations (40 CFR 1508.20), avoidance means to circumvent, or bypass, an impact altogether by not taking a certain action, or parts of an action. Therefore, the term “avoidance” does not necessarily prohibit a proposed activity, but it may require the relocation of an action, or the total redesign of an action to eliminate any potential impacts resulting from it. Also see “*right-of-way avoidance area*” definition.

Best management practices (BMPs). A suite of techniques that guide or may be applied to management actions to aide in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a planning decision unless the plans specify that they are mandatory.

Biologically significant unit (BSU). A geographical/spatial area that includes Greater Sage-Grouse priority habitat management areas that is used as the basis for comparative calculations to support evaluation of changes to habitat. In Utah, each BSU correlates to the priority habitat management area within a population area.

Compensatory mitigation. Compensating for the residual impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

Controlled surface used (CSU). CSU areas are open to fluid mineral leasing, but the stipulation allows the BLM to require special operational constraints, or the activity can be shifted more than 200 meters (656 feet) to protect the specified resource or value.

Cooperating agency. Assists the lead federal agency in developing an environmental assessment or environmental impact statement. These can be any agency with jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any tribe or federal, state, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

Council on Environmental Quality (CEQ). An advisory council to the President of the US established by the National Environmental Policy Act of 1969. It reviews federal programs to analyze and interpret environmental trends and information.

Cumulative effects. The direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action.

Decision area. Public lands and mineral estate managed by the US Department of the Interior, Bureau of Land Management that are within the planning area and are encompassed by all designated habitat.

Direct impacts. Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place.

Environmental impact statement (EIS). A detailed statement prepared by the responsible official in which a major federal action that significantly affects the quality of the human environment is described, alternatives to the proposed action are provided, and effects are analyzed.

Fluid minerals. Oil, gas, coal bed natural gas, and geothermal resources.

Geographic Information System (GIS). A system of computer hardware, software, data, people, and applications that capture, store, edit, analyze, and display a potentially wide array of geospatial information.

Habitat. An environment that meets a specific set of physical, biological, temporal, or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle.

Impact. The effect, influence, alteration, or imprint caused by an action.

Indirect impacts. Indirect impacts result from implementing an action or alternative but usually occur later in time or are removed in distance and are reasonably certain to occur.

Leasable minerals. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. These include energy-related mineral resources such as oil, natural gas, coal, and geothermal, and some nonenergy minerals, such as phosphate, sodium, potassium, and sulfur. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

Lease stipulation. A modification of the terms and conditions on a standard lease form at the time of the lease sale.

Lek. An arena where male Greater Sage-Grouse display for the purpose of gaining breeding territories and attracting females. These arenas are usually open areas with short vegetation within sagebrush habitats, usually on broad ridges, benches, or valley floors where visibility and hearing acuity are excellent.

Long-term effect. The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more.

Management decision. A decision made by the BLM to manage public lands. Management decisions include both land use plan decisions and implementation decisions.

Minimization mitigation. Minimizing impacts by limiting the degree or magnitude of the action and its implementation (40 CFR 1508.20 [b]).

Mitigation. Includes specific means, measures, or practices that could reduce, avoid, or eliminate adverse impacts. Mitigation can include avoiding the impact altogether by not taking a certain action or parts of an action; minimizing the impact by limiting the degree of magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitation, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

Modification. A change to the provisions of a lease stipulation, either temporarily or for the term of the lease. Depending on the specific modification, the stipulation may or may not apply to all sites within the leasehold to which the restrictive criteria are applied.

No surface occupancy (NSO). A major constraint where use or occupancy of the land surface for fluid mineral exploration or development and all activities associated with fluid mineral leasing (e.g., truck-mounted drilling, construction of wells and/or pads) are prohibited to protect identified resource values. Areas identified as NSO are open to fluid mineral leasing, but surface occupancy or surface-disturbing activities associated with fluid mineral leasing cannot be conducted on the surface of the land. Access to fluid mineral deposits would require horizontal drilling from outside the boundaries of the NSO area.

Planning area. The geographical area for which resource management plans are developed and maintained regardless of jurisdiction.

Planning criteria. The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision-making, analysis, and data collection during planning. Planning criteria streamlines and simplifies the resource management planning actions.

Planning issues. Concerns, conflicts, and problems with the existing management of public lands. Frequently, issues are based on how land uses affect resources. Some issues are concerned with how land uses can affect other land uses, or how the protection of resources affects land uses.

Policy. This is a statement of guiding principles, or procedures, designed and intended to influence planning decisions, operating actions, or other affairs of the BLM. Policies are established interpretations of legislation, executive orders, regulations, or other presidential, secretarial, or management directives.

Priority habitat management areas (PHMA). Areas prioritized for managing Greater Sage-Grouse populations (management is only applicable to actions on BLM-administered lands). These management areas include high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat. PHMA largely coincides with the State of Utah's Sage-Grouse management areas (SGMA). Within the SGMA, the State identified areas of seasonal habitat, nonhabitat, and opportunity areas, though management is focused on the habitat. PHMA include areas that include all the seasonal habitats for the corresponding Greater Sage-Grouse populations, including breeding, late brood-rearing, winter areas, and migration or connectivity corridors.

Required design features (RDFs). Means, measures, or practices intended to reduce or avoid adverse environmental impacts. A suite of features that would establish the minimum specifications for certain activities (i.e., water developments, mineral development, and fire and fuels management) and mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementation of best management practices. In general, the design features are accepted practices that are known to be effective when implemented properly at the project level.

Resource management plan (RMP). A land use plan as prescribed by the Federal Land Policy and Management Act that establishes, for a given area of land, land-use allocations, coordination guidelines for multiple-use, objectives, and actions to be achieved.

Short-term effect. The effect occurs only during or immediately after implementation of the alternative.

Stipulation (general). A term or condition in an agreement or contract.

Stipulation (oil and gas). A provision that modifies standard oil and gas lease terms and conditions in order to protect other resource values or land uses and is attached to and made a part of the lease. Typical lease stipulations include no surface occupancy, timing limitations, and controlled surface use. Lease stipulations are developed through the land use planning process.

Timing limitation (TL). Areas identified for timing limitations, a moderate constraint, are closed to fluid mineral exploration and development, surface-disturbing activities, and intensive human activity during identified time frames. This stipulation does not apply to operation and basic maintenance activities, including associated vehicle travel, unless otherwise specified. Construction, drilling, and other operations considered to be intensive are not allowed. Intensive maintenance, such as workover operations, is not permitted. TLs can overlap spatially with no surface occupancy and controlled surface use, as well as with areas that have no other restrictions.

Index

- Controlled Surface Use (CSU), 2-3, 2-6, 2-23, 2-26, 2-27, 2-91, 2-102, 2-103, 2-104, 2-107, 3-23, 3-24, 3-25, 4-14, 4-26, 4-32, 4-33, 4-62
- Council on Environmental Quality (CEQ), 4-3
- Federal Land Policy and Management Act (FLPMA), ES-3, ES-4, 1-3, 1-4, 1-13, 2-26, 2-33, 2-34, 2-44, 2-86, 2-89, 4-4, 4-44, 4-45, 4-46, 4-75
- General Habitat Management Area (GHMA), 1-5, 1-6, 1-9, 1-10, 1-12, 1-13, 2-5, 2-7, 2-23, 2-24, 2-25, 2-26, 2-27, 2-28, 2-29, 2-30, 2-32, 2-33, 2-35, 2-42, 2-43, 2-52, 2-53, 2-54, 2-55, 2-67, 2-72, 2-74, 2-81, 2-88, 2-89, 2-90, 2-92, 2-93, 2-97, 2-98, 2-101, 2-102, 2-104, 2-105, 2-106, 2-108, 3-7, 3-8, 3-9, 3-10, 3-12, 3-15, 3-17, 3-18, 3-20, 3-21, 3-22, 3-23, 3-24, 3-25, 3-26, 4-3, 4-8, 4-13, 4-14, 4-15, 4-18, 4-21, 4-26, 4-27, 4-28, 4-29, 4-29, 4-31, 4-32, 4-33, 4-34, 4-36, 4-37, 4-39, 4-42, 4-43, 4-44, 4-50, 4-51, 4-52, 4-53, 4-54, 4-55, 4-56, 4-57, 4-59, 4-60, 4-61, 4-62, 4-63, 4-65, 4-66, 4-67, 4-68, 4-75, 4-76, 4-77, 4-78, 4-79, 4-80, 4-81, 4-82, 4-83, 4-84, 4-85, 4-86, 4-87
- Lease, 1-8, 1-9, 1-10, 2-3, 2-5, 2-6, 2-7, 2-8, 2-10, 2-13, 2-14, 2-17, 2-19, 2-22, 2-23, 2-26, 2-27, 2-28, 2-32, 2-35, 2-36, 2-37, 2-38, 2-69, 2-87, 2-89, 2-91, 2-92, 2-91, 2-92, 2-91, 2-92, 2-92, 2-93, 2-94, 2-95, 2-96, 2-97, 2-98, 2-100, 2-101, 2-102, 2-103, 2-104, 2-105, 2-106, 2-107, 2-108, 2-109, 3-22, 3-23, 3-24, 3-25, 3-26, 3-27, 4-10, 4-14, 4-15, 4-19, 4-20, 4-21, 4-22, 4-26, 4-27, 4-27, 4-28, 4-29, 4-30, 4-31, 4-32, 4-33, 4-34, 4-35, 4-37, 4-38, 4-44, 4-49, 4-50, 4-52, 4-56, 4-57, 4-59, 4-61, 4-62, 4-63, 4-64, 4-65, 4-77, 4-78, 4-79, 4-80, 4-82, 4-87
- Lek, ES-3, 1-3, 1-4, 1-10, 2-4, 2-7, 2-14, 2-20, 2-23, 2-25, 2-26, 2-30, 2-31, 2-42, 2-43, 2-44, 2-49, 2-50, 2-51, 2-52, 2-53, 2-55, 2-71, 2-76, 2-77, 2-79, 2-80, 2-82, 2-84, 2-85, 2-86, 2-88, 2-90, 2-91, 2-92, 2-94, 2-95, 2-96, 2-98, 2-101, 2-102, 2-103, 2-104, 2-106, 2-107, 3-3, 3-7, 3-8, 3-9, 3-10, 3-26, 4-13, 4-14, 4-15, 4-17, 4-18, 4-24, 4-27, 4-29, 4-29, 4-30, 4-31, 4-32, 4-33, 4-34, 4-35, 4-36, 4-37, 4-43, 4-44, 4-45, 4-50, 4-51, 4-53, 4-62, 4-78, 4-80, 4-81, 4-83, 4-85
- Minerals, locatable, 2-99
- National Environmental Policy Act (NEPA), ES-4, ES-5, ES-7, 1-3, 1-5, 1-12, 2-1, 2-2, 2-7, 2-8, 2-9, 2-11, 2-17, 2-18, 2-19, 2-22, 2-25, 2-26, 2-29, 2-34, 2-36, 2-44, 2-45, 2-46, 2-48, 2-49, 2-50, 2-53, 2-63, 2-65, 2-71, 2-75, 2-94, 2-95, 2-96, 2-97, 2-100, 2-103, 2-105, 2-106, 2-108, 2-109, 3-5, 4-1, 4-3, 4-28, 4-37, 4-39, 4-47, 4-63, 4-65, 4-66, 4-72, 4-75, 4-76, 4-79, 4-87, 4-88, 5-1
- No Surface Occupancy (NSO), 1-9, 1-12, 2-3, 2-6, 2-7, 2-17, 2-22, 2-23, 2-27, 2-91, 2-101, 2-102, 2-103, 2-104, 2-105, 2-106, 2-107, 3-23, 3-24, 3-25, 4-7, 4-14, 4-15, 4-21, 4-22, 4-26, 4-28, 4-29, 4-32, 4-33, 4-34, 4-41, 4-42, 4-48, 4-49, 4-52, 4-55, 4-56, 4-57, 4-59, 4-61, 4-62, 4-63, 4-68, 4-72, 4-78, 4-85

Priority Habitat Management Area (PHMA), 1-5, 1-6, 1-9, 1-10, 1-12, 1-13, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-11, 2-14, 2-17, 2-18, 2-19, 2-22, 2-23, 2-24, 2-26, 2-27, 2-28, 2-29, 2-30, 2-31, 2-32, 2-33, 2-34, 2-35, 2-36, 2-37, 2-38, 2-39, 2-40, 2-41, 2-42, 2-43, 2-44, 2-45, 2-46, 2-47, 2-48, 2-49, 2-52, 2-53, 2-54, 2-55, 2-57, 2-58, 2-59, 2-61, 2-62, 2-63, 2-64, 2-65, 2-67, 2-69, 2-70, 2-71, 2-72, 2-73, 2-74, 2-75, 2-76, 2-77, 2-78, 2-79, 2-81, 2-82, 2-83, 2-84, 2-85, 2-86, 2-87, 2-88, 2-89, 2-90, 2-91, 2-92, 2-93, 2-94, 2-95, 2-96, 2-97, 2-98, 2-100, 2-101, 2-102, 2-103, 2-104, 2-105, 2-106, 2-107, 2-108, 2-109, 3-1, 3-2, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-15, 3-17, 3-18, 3-19, 3-21, 3-22, 3-23, 3-24, 3-25, 3-26, 4-3, 4-8, 4-9, 4-13, 4-14, 4-15, 4-16, 4-17, 4-18, 4-21, 4-22, 4-23, 4-24, 4-26, 4-27, 4-26, 4-27, 4-28, 4-29, 4-28, 4-29, 4-29, 4-30, 4-31, 4-33, 4-34, 4-35, 4-36, 4-37, 4-38, 4-39, 4-43, 4-44, 4-45, 4-47, 4-48, 4-49, 4-50, 4-51, 4-52, 4-53, 4-54, 4-55, 4-56, 4-57, 4-58, 4-59, 4-60, 4-61, 4-62, 4-63, 4-64, 4-65, 4-66, 4-67, 4-68, 4-70, 4-75, 4-76, 4-77, 4-78, 4-79, 4-80, 4-81, 4-82, 4-83, 4-84, 4-85, 4-86, 4-87

Timing Limitation (TL), 2-27, 2-91, 2-93, 2-102, 2-107, 3-23, 3-24, 3-25, 4-14, 4-26, 4-27, 4-32, 4-33, 4-35, 4-62

Utah Division of Wildlife Resources, 2-31, 2-41, 2-42, 2-45, 2-49, 2-50, 2-51, 2-52, 2-55, 2-57, 2-58, 2-65, 2-71, 2-80, 2-84, 2-90, 2-92, 2-95, 2-96, 2-99, 2-101, 2-103, 3-7, 3-8, 3-9, 3-10

Appendix A

Maps

Figure 1-1

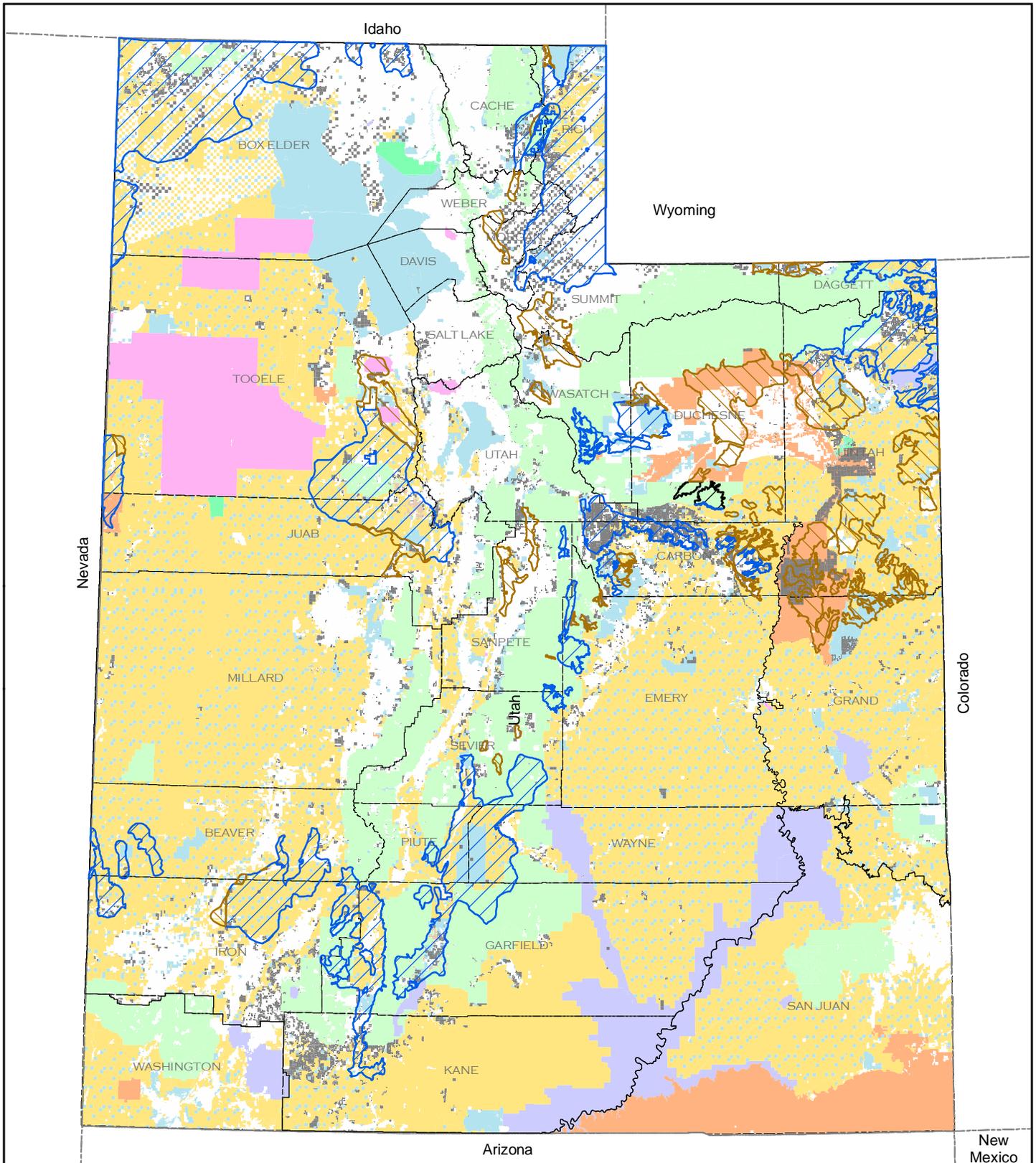
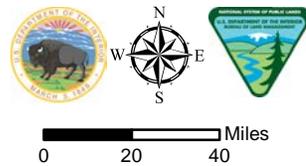


Figure 1-1: Utah Planning/Habitat Areas, Surface Management and Sub-Surface Estate

- | | | |
|---------------------------|--|-----------------------------|
| Bureau of Land Management | Department of Defense | Anthro Mountain (AM) |
| National Park Service | Other Federal | General Habitat Management |
| US Forest Service | State/Local | Priority Habitat Management |
| Indian Reservation | Private/Other | Planning Area |
| US Fish & Wildlife | Non Federal Surface, Federal Sub-surface | State Boundary |
| | | County Boundary |



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

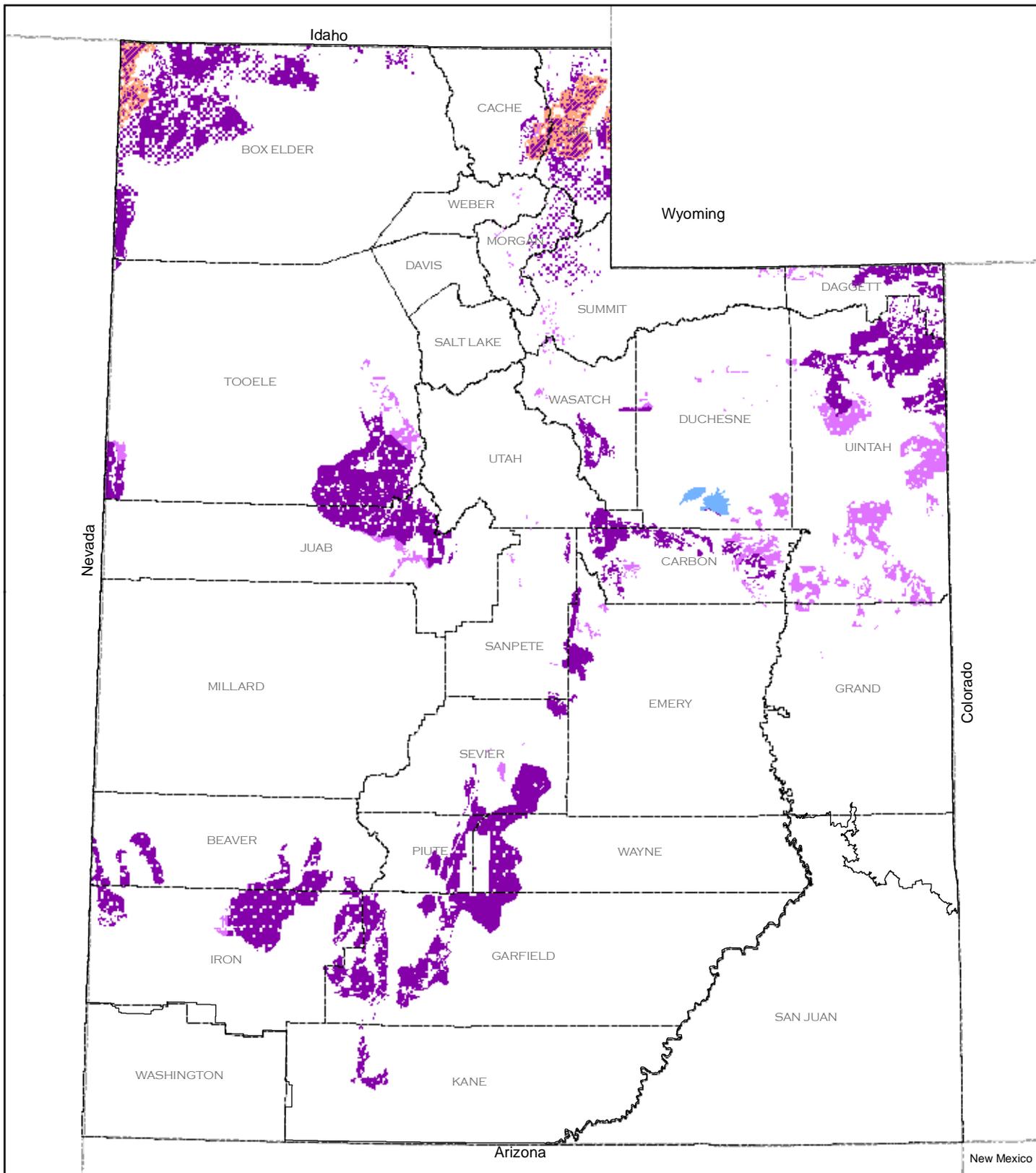
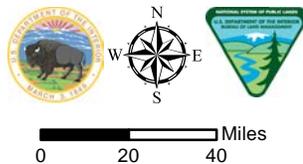


Figure 2-1a: Utah Habitat Management Areas - No-Action Alternative

-  Sagebrush Focal Areas
-  Priority Habitat Management Areas
-  General Habitat Management Areas
-  Anthro Mountain (AM)
-  Planning Area
-  State Boundary
-  County Boundary



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

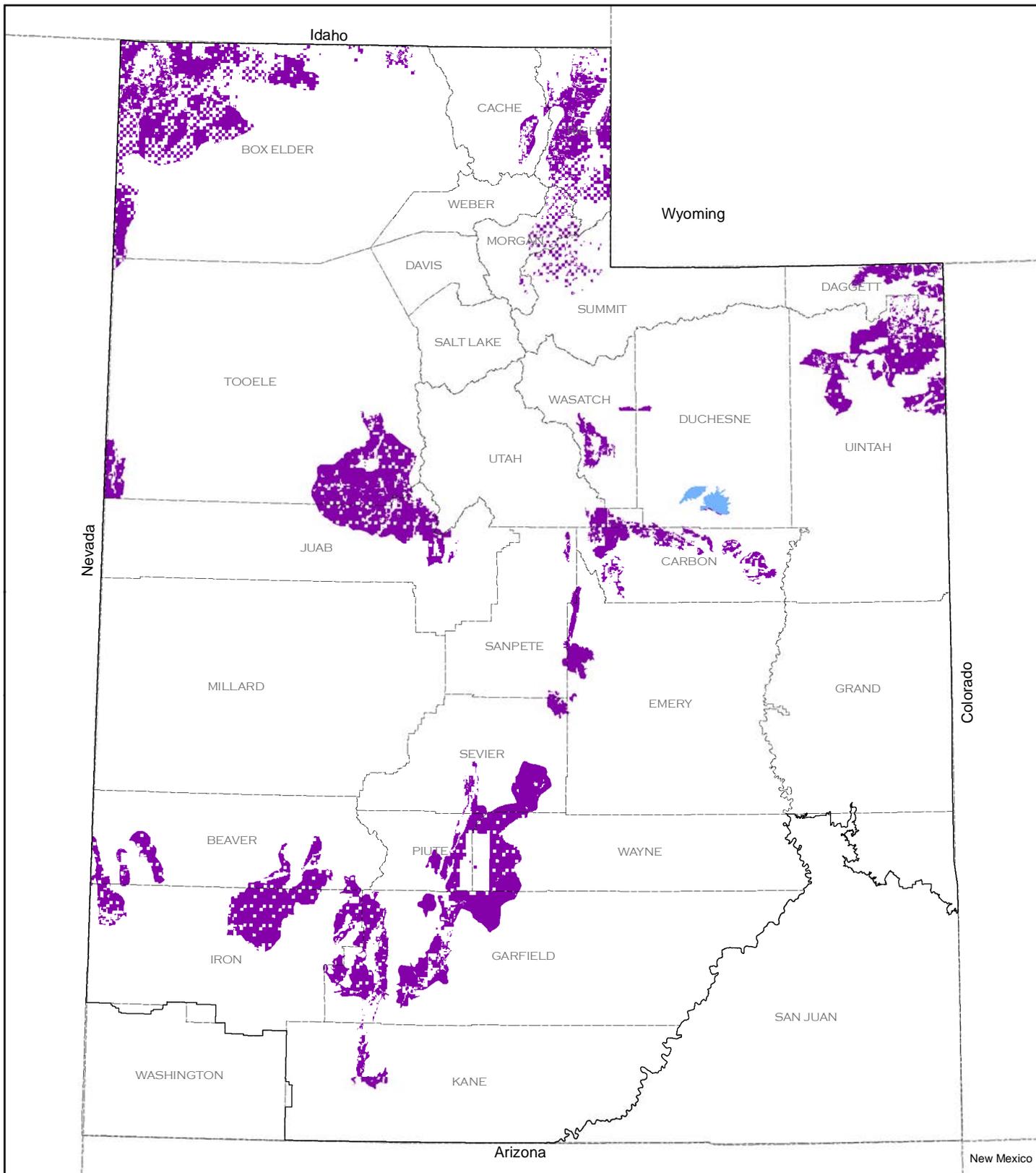
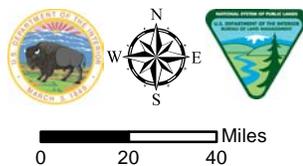


Figure 2-1b: Utah Habitat Management Areas - Management Alignment Alternative

- Priority Habitat Management Areas
- Anthro Mountain (AM)
- Planning Area Boundary
- State Boundary
- County Boundary



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

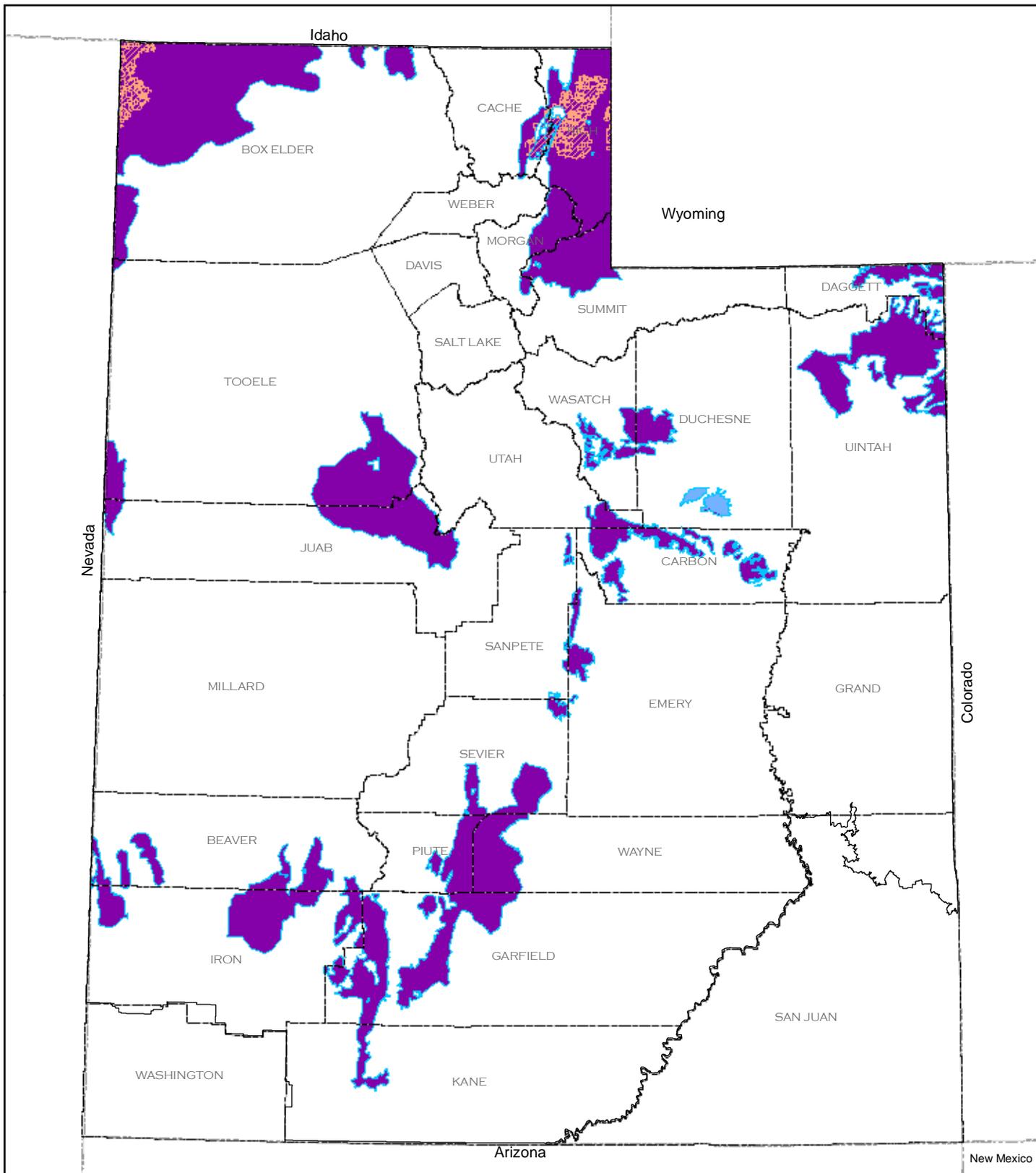


Figure 2-2a: Utah GRSG Biologically Significant Units and Priority Habitat Management Areas - No-Action Alternative

- Sagebrush Focal Areas
- Priority Habitat Management Areas
- Anthro Mountain (AM)
- Planning Area
- State Boundary
- County Boundary



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

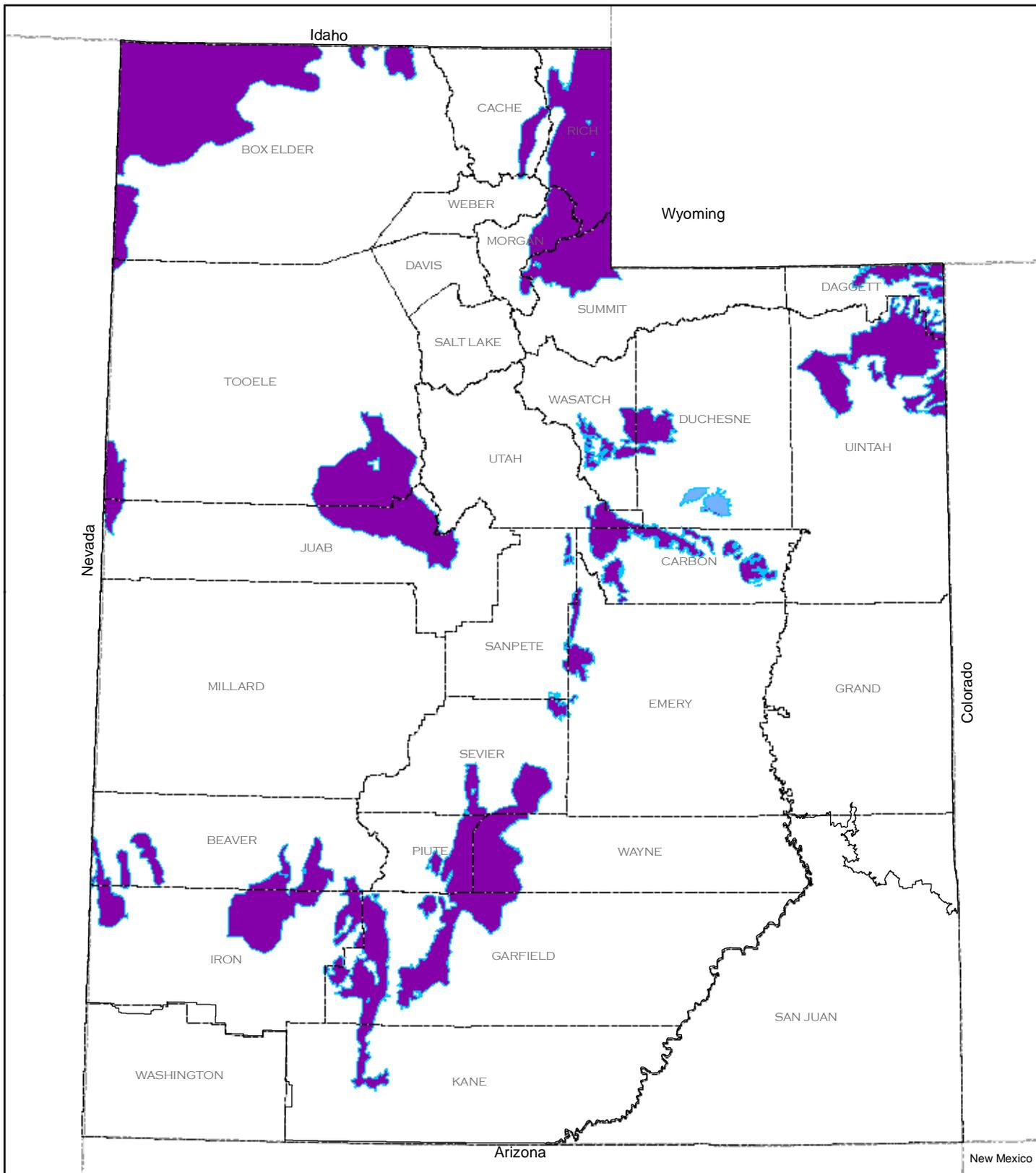
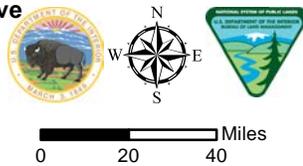


Figure 2-2b: Utah GRSG Biologically Significant Units and Priority Habitat Management Areas - Management Alignment Alternative

- Priority Habitat Management Areas
- Anthro Mountain (AM)
- Planning Area
- State Boundary
- County Boundary



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

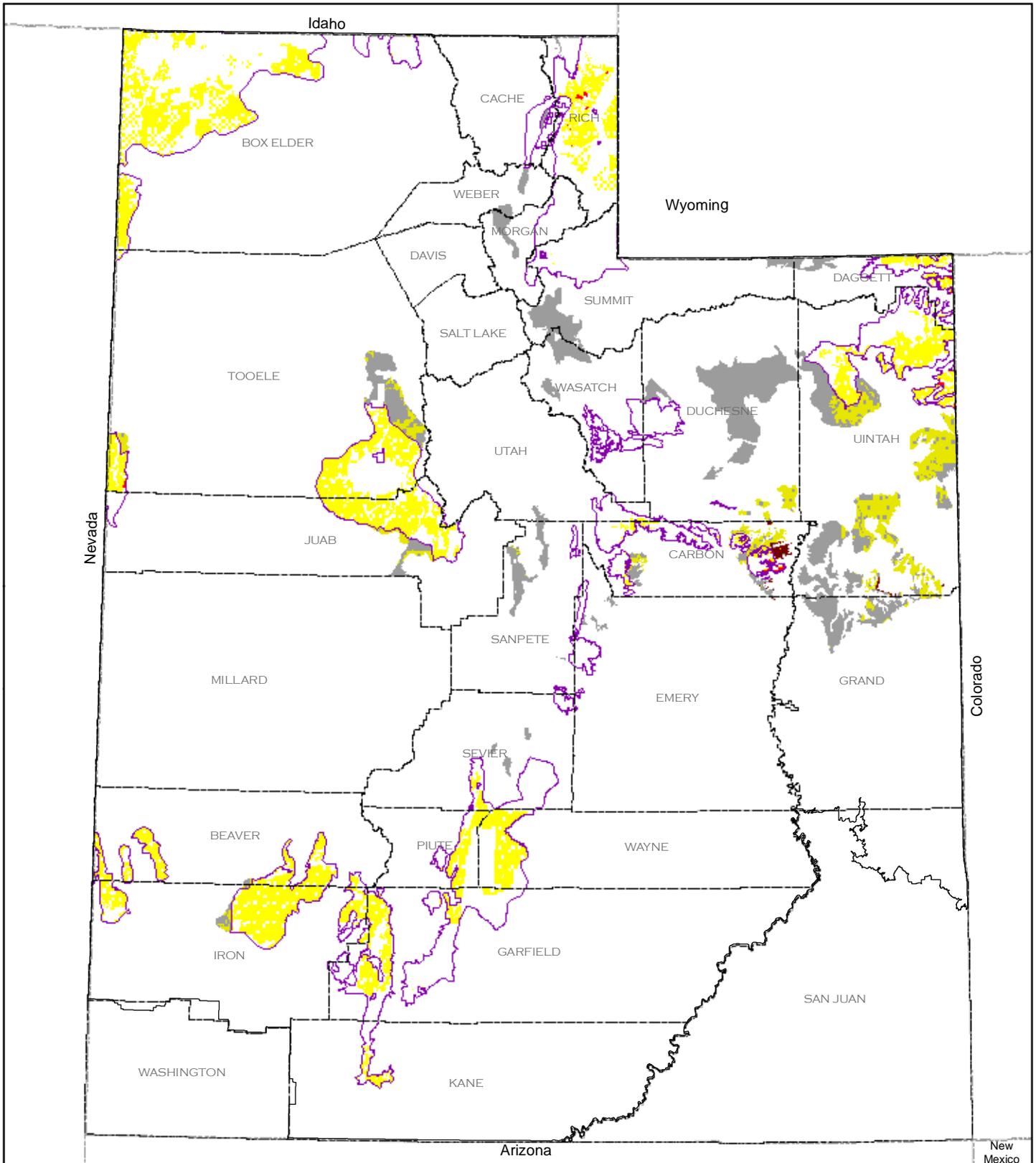


Figure 2-13a: Utah Trails and Travel Management - No Action Alternative

PHMA	GHMA	Outside of BLM Decision Area	Planning Area Boundary
Closed	Limited	State Boundary	County Boundary
Open			



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

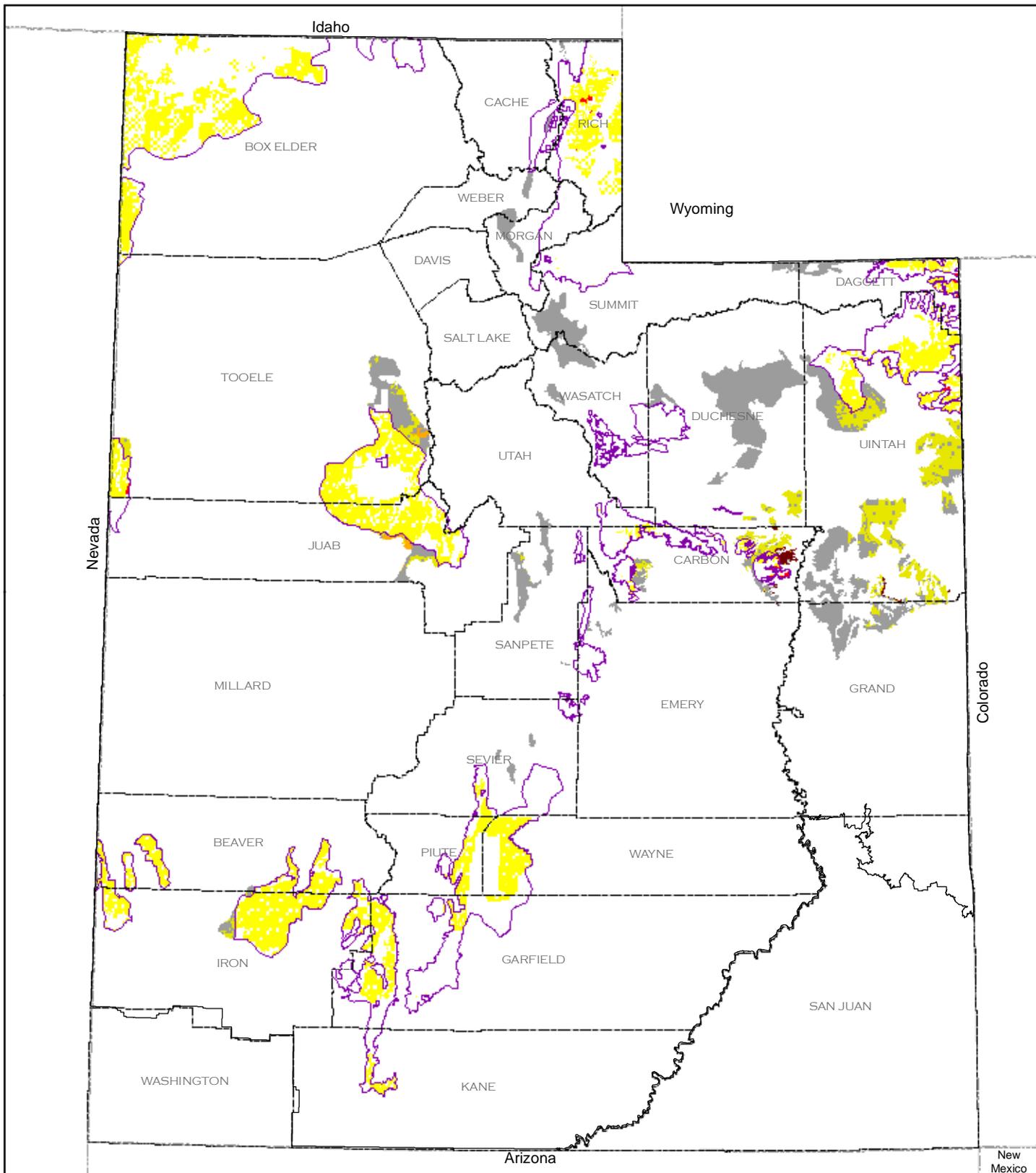


Figure 2-13b: Utah Trails and Travel Management - Management Alignment Alternative

PHMA	GHMA	Outside of BLM Decision Area	Planning Area Boundary
		Closed	State Boundary
		Limited	County Boundary
		Open	



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

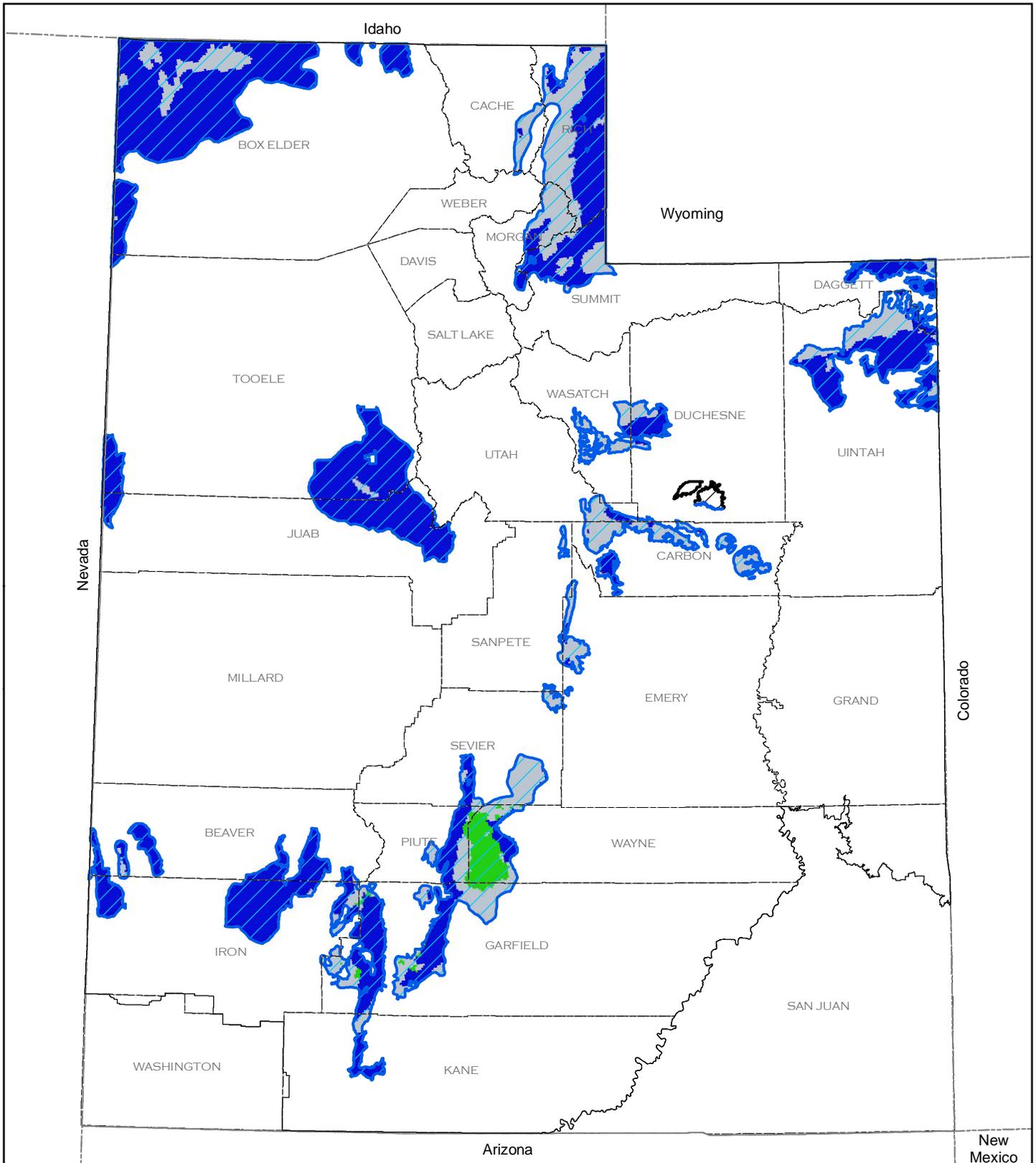
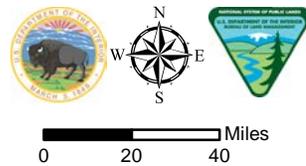


Figure 3-1: Utah Greater Sage-Grouse Habitat Objective Zones

- | | | |
|---|--|--|
|  Anthro Mountain (AM) |  Planning Area Boundary |  High |
|  Priority Habitat Management Areas |  State Boundary |  Mid |
| |  County Boundary |  Low |



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

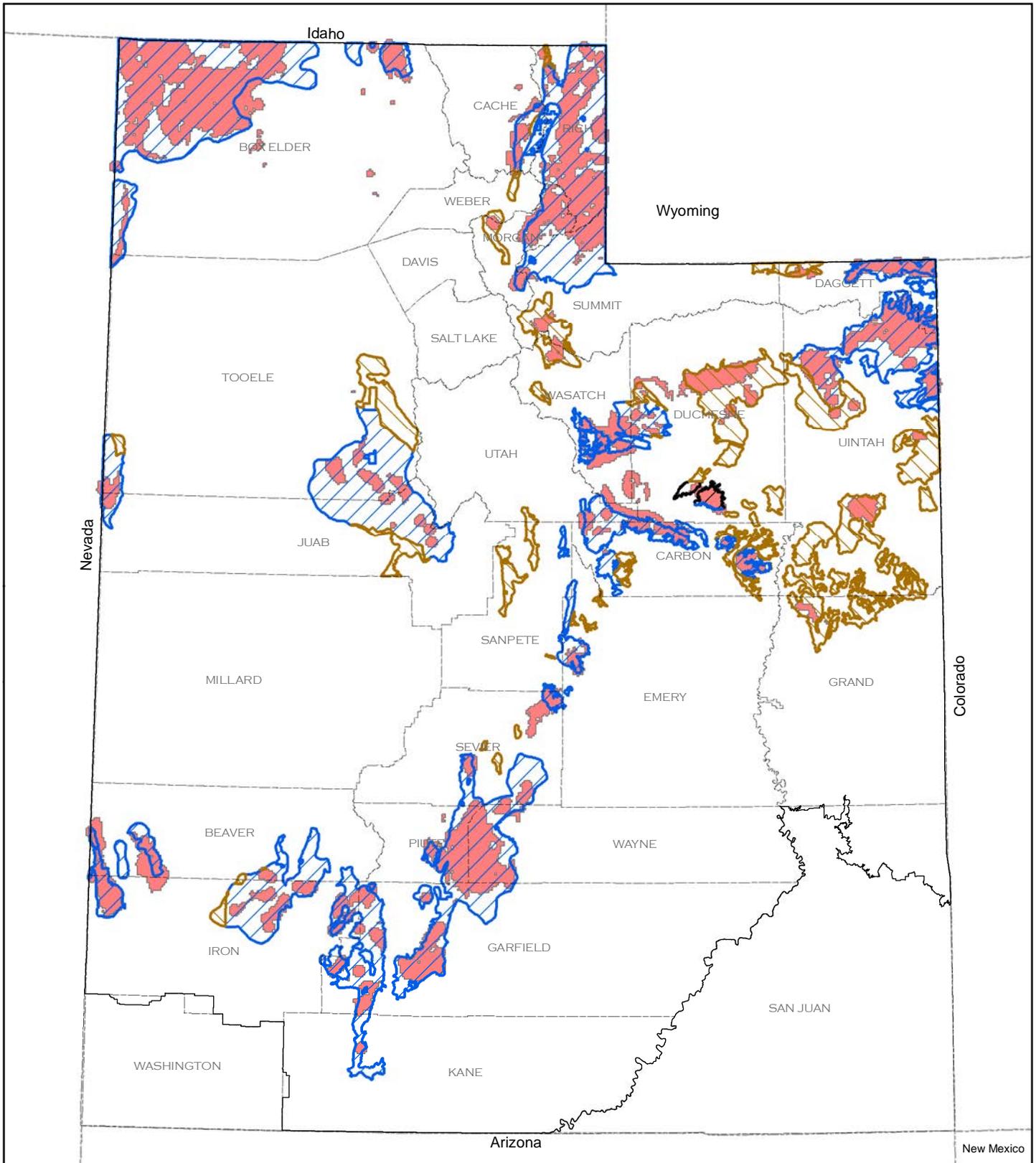
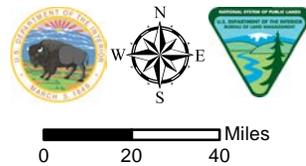


Figure 3-2: Utah Greater Sage-Grouse Breeding Habitat

- Breeding
- Anthro Mountain (AM)
- Planning Area Boundary
- General Habitat Management Areas
- State Boundary
- Priority Habitat Management Areas
- County Boundary



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

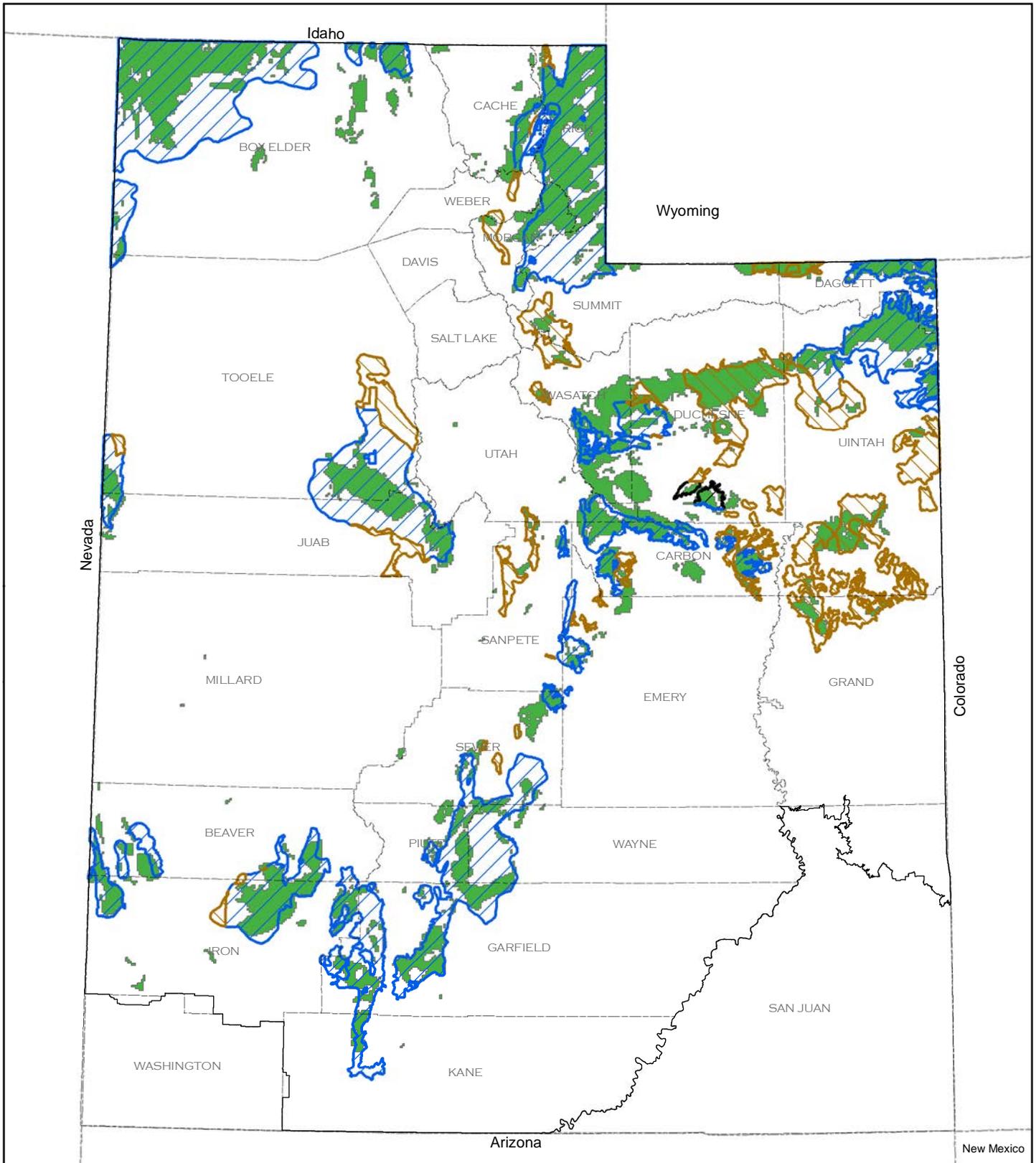
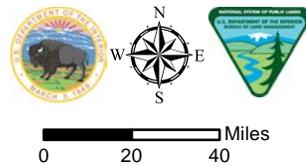


Figure 3-3: Utah Greater Sage-Grouse Summer Habitat

- | | | |
|-----------------------------------|----------------------|------------------------|
| Summer | Anthro Mountain (AM) | Planning Area Boundary |
| General Habitat Management Areas | State Boundary | County Boundary |
| Priority Habitat Management Areas | | |



No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

This page intentionally left blank.

Appendix B

Applying Lek Buffer Distances

Appendix B. Applying Lek Buffer Distances

BUFFER-DISTANCES AND EVALUATION OF IMPACTS ON LEKS

Evaluate impacts on leks during the National Environmental Policy Act (NEPA) analysis process. In addition to any other relevant information determined to be appropriate (e.g., State wildlife agency plans), and consistent with valid existing rights, the BLM, through project-specific analysis for NEPA documentation, will assess and address impacts from the following activities using the lek buffer-distances as identified in the US Geological Survey (USGS) Report *Conservation Buffer-distance Estimates for Greater Sage-Grouse – A Review* ([Open File Report 2014-1239](#)) and local-based science. The BLM will assess and address impacts within the lek buffer-distances specified unless *justifiable departures* are determined to be appropriate (see below). The starting point for lek buffer-distances is as follows:

- linear features (roads) within 3.1 miles of leks
- infrastructure related to energy development within 3.1 miles of leks
- tall structures (e.g., communication or transmission towers and transmission lines) within 1.7 miles of leks
- low structures (e.g., fences and rangeland structures) within 1.2 miles of leks
- surface disturbance (continuing human activities that alter or remove the natural vegetation – see **Table C.2 in Appendix C**) within 3.1 miles of leks
- noise and related disruptive activities, including those that do not result in habitat loss (e.g., motorized recreational events), at least 0.25 miles from leks

Justifiable departures will be considered to decrease or increase these distances from the lek where variability is anticipated, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations and state regulations). The USGS report recognized “that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range.” The distances noted above are starting points, from which local information should be applied to determine if local variations in distances are necessary to address lek persistence. The USGS report also states that “various protection measures have been developed and implemented... [which have] the ability (alone or in concert with others) to protect important habitats, sustain populations, and support multiple-use demands for public lands”. All variations in lek buffer-distances will require appropriate analysis and disclosure as part of activity authorization. The BLM will use the most recent occupied lek data available from the state wildlife agency to assess and address project-specific impacts on leks.

ACTIONS IN PHMA

In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM, through NEPA analysis, will assess and address impacts within the lek buffer-distances identified above to document that conservation measures address the impacts on leks (e.g., land use allocations, minimization measures, state regulations, and site-specific conditions of approval) to the degree that the activity will not directly or indirectly threaten the

continued use of the occupied lek by Greater Sage-Grouse (i.e., lek persistence). The BLM may approve actions in PHMA within the applicable lek buffer-distance identified above if:

- The BLM, with input from the state fish and wildlife agency, determines, based on best available science, landscape features, and other existing protections, that a lek buffer-distance other than the applicable distance identified above offers equivalent protection to the Greater Sage-Grouse lek and its adjacent nesting habitat; or
- The BLM determines that impacts on leks and associated nesting habitats are minimized such that the project will cause minor or no new loss of habitat; or
- Other mitigation measures have been developed and implemented that will, alone or in concert with other minimization actions, maintain lek persistence and the use of adjacent nesting habitat.

If analysis determines impacts could affect lek persistence (i.e., result in a lek no longer being occupied) after application of the above, additional conservation measures should be assessed and applied to address impacts (e.g., locating the action outside of the applicable lek buffer-distance(s) identified above).

Range improvements that do not affect Greater Sage-Grouse or range improvements that provide a conservation benefit to Greater Sage-Grouse, such as fences for protecting important seasonal habitats, are exempt from the lek buffer requirement.

Appendix E

Greater Sage-Grouse Disturbance Cap Guidance

Appendix E. Greater Sage-Grouse Disturbance Cap Guidance

INTRODUCTION

In the US Fish and Wildlife Service's (USFWS) 2010 listing decision for Greater Sage-Grouse (GRSG), the USFWS identified 18 threats contributing to the destruction, modification, or curtailment of the GRSG's habitat or range (75 *Federal Register* 13910 2010). The 18 threats have been aggregated into three measures. The three measures are:

- Sagebrush availability (percent of sagebrush per unit area)
- Habitat degradation (percent of human activity per unit area)
- Density of energy and mining (facilities and locations per unit area)

Habitat Degradation and Density of Energy and Mining will be evaluated under the Disturbance Cap and Density Cap respectively and are further described in this appendix. The three measures, in conjunction with other information, will be considered during the National Environmental Policy Act of 1969 (NEPA) process for projects authorized or undertaken by the Bureau of Land Management (BLM).

DISTURBANCE CAP

This land use plan has incorporated a 3 percent disturbance cap, applicable only within GRSG priority habitat management areas (PHMA). The disturbance cap applies to PHMA within 1) PHMA associated with a GRSG population area (referred to as biologically significant units {BSU} when coordinating across state lines), and 2) the project authorization scale.

For the Utah Sub-region, a "BSU" is the total PHMA acreage associated with a GRSG population area. At this scale, the total PHMA acreage in a population area is the denominator portion of the percentage calculation.

At the project scale, the denominator is determined by identifying PHMA that is nearby or affected by the proposed project that is also located in PHMA. The project scale denominator should include the portions of PHMA used by the local population of GRSG, including all seasonal habitats and transition zones, associated with where the project is proposed. If sufficient monitoring information is not available to identify the portions of the PHMA used by a local population of GRSG, project level boundaries should be identified as described in steps 2-4 below. Steps 1 and 5-9 are applicable to either approach of identifying the project scale denominator.

The denominator in the disturbance calculation formula consists of all acres of lands classified as PHMA within the analysis area (BSU or project scale). Areas that are not GRSG seasonal habitats, or are not currently supporting sagebrush cover (e.g., due to wildfire), are not excluded from the acres of PHMA in the denominator of the formula. Information regarding GRSG seasonal habitats, sagebrush availability, and areas with the potential to support GRSG populations will be considered along with other local conditions that may affect GRSG during the analysis of the proposed project area.

The numerator portion of the percentage calculation is limited to specific activities associated with specific GRSG threats. At both the BSU and project scale, this includes the 12 items identified in the “Habitat Degradation” column of **Table E-1**, Relationship between the 18 Threats and the Three Habitat Disturbance Measures for Monitoring and Disturbance Calculations. At the project scale, seven additional site scale features are included in the cap, identified and defined in **Table E-2**, Seven Site Scale Features Considered Threats to GRSG Included in the Disturbance Calculation for Project Authorizations. No other activities, actions, or threats are included in the numerator when calculating the cap.

At both the BSU and project scale, the best available information should be used to map existing disturbance. At the BSU scale, the west-wide habitat degradation (disturbance) data layers and associated areas of direct influence identified in **Table E-3**, Anthropogenic Disturbance Types for Disturbance Calculations, will be used, at a minimum, to calculate the amount of disturbance and to determine if the disturbance cap has been exceeded as the land use plans are being implemented. Locally collected disturbance data will be used to determine if the disturbance cap has been exceeded for project authorizations, and, as available, may also be used to calculate the amount of disturbance in the BSUs. Locally collected disturbance data should identify the actual areas of disturbance to the extent possible, and are not required to rely on the “Direct Area of Influence” estimates in **Table E-3**.

Although locatable mine sites are included in the degradation calculation, mining activities under the Mining Law of 1872, as amended, may not be subject to the 3 percent disturbance cap. Details about locatable mining activities will be fully disclosed and analyzed in the NEPA process to assess impacts to GRSG and their habitat as well as to goals and objectives, and other agency programs and activities.

DISTURBANCE FORMULAS

Formulas for calculations of the amount of disturbance in PHMA in a Population Area (BSU) and in a proposed project area are as follows:

- For PHMA within a Population Area (BSUs):

$$\% \text{ Degradation Disturbance} = (\text{combined acres of the 12 degradation threats}^1) \div (\text{acres of all lands within PHMA in a Population Area \{BSU\}}) \times 100.$$
- For the Project Analysis Area:

$$\% \text{ Degradation Disturbance} = (\text{combined acres of the 12 degradation threats}^2 \text{ plus the 7 site scale threats and acres of habitat loss}^3) \div (\text{acres of all lands within PHMA in the project analysis area}) \times 100.$$

PROJECT ANALYSIS AREA METHOD FOR PERMITTING SURFACE DISTURBANCE ACTIVITIES

- I. Identify the portions of the proposed area of physical disturbance within PHMA. In other words, in GIS, “clip” the proposed project to PHMA.

¹ See **Table E-1**.

² See **Table E-1**.

³ See **Table E-2**.

2. Determine potentially affected occupied leks by placing a 4 mile boundary around the proposed area of physical disturbance related to the project. All occupied leks located within the 4 mile project boundary and within PHMA will be considered affected by the project.
3. Next, place a 4 mile boundary around each of the affected occupied leks.
4. PHMA within the 4 mile project boundary as well as the 4 mile lek boundary creates the project analysis area for each individual project. If there are no occupied leks within the 4 mile project boundary, the project analysis area will be that portion of the 4 mile project boundary within PHMA.
5. Map disturbances or use locally available data. Use of NAIP imagery is recommended.
6. Calculate percent existing disturbance using the formula above. If existing disturbance is less than 3 percent, proceed to next step. If existing disturbance is greater than 3 percent, defer the project unless a technical team, in coordination with the appropriate State of Utah agency, determines the project will improve the condition of GRSG habitat through analysis of site-specific GRSG habitat and population information and project design elements (see MA-SSS-3B).
7. Add proposed project disturbance footprint area and recalculate the percent disturbance. If disturbance is less than 3 percent, proceed to next step. If disturbance is greater than 3 percent, defer project unless a technical team, in coordination with the appropriate State of Utah agency, determines the project will improve the condition of GRSG habitat through analysis of site-specific GRSG habitat and population information and project design elements (see MA-SSS-3B).
8. For disturbance from proposed energy or mining facilities, calculate the disturbance density (listed below under *Density Cap*). If the disturbance density is less than 1 facility per 640 acres, averaged across the project analysis area, proceed to the NEPA analysis incorporating mitigation measures into an alternative. If the disturbance density is greater than 1 facility per 640 acres, averaged across the project analysis area, either defer the proposed energy or mining project or co-locate it into existing disturbed area. Discrete disturbances should be consolidated and localized as much as possible; this could result in small areas where density exceeds 1 facility per 640 acres, but average density in the project analysis area remains beneath the cap.
9. If a project that would exceed the degradation cap or density cap (for energy or mining facilities) cannot be deferred due to valid existing rights or other existing laws and regulations, fully disclose the local and regional impacts of the proposed action in the associated NEPA.

TRAVEL AND TRANSPORTATION FEATURES IN THE DISTURBANCE CAP

When locally collecting disturbance inventories, travel and transportation features would be included or not included as disturbance based on the characteristics of the feature.

The following would count as disturbance (see **Attachment I** for definitions):

- Linear transportation features identified as roads that have a maintenance intensity of 3 or 5
- Linear transportation features identified as primitive roads, temporary routes, or administrative routes that have a functional classification and a maintenance intensity of level 3 or 5

The following items would not count as disturbance:

- Linear transportation features identified as trails.
- Linear transportation features identified as primitive roads, temporary routes, or administrative routes that have a maintenance intensity of either level 0 or 1.
- Linear transportation features identified as primitive routes.
- Linear disturbances.

DENSITY CAP

This land use plan has also incorporated a cap on the density of energy and mining facilities at an average of 1 facility per 640 acres in PHMA in a project authorization area. If the disturbance density from energy or mining facilities in PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density from energy or mining facilities is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred (1) until the density of energy and mining facilities is less than the cap, or (2) the energy or mining facility is co-located into existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872, as amended, valid existing rights, etc.). However, the density cap may be exceeded if a project is located in non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA), or, if the process identified in MA-SSS-3B determines the project will improve the condition of GRSG habitat through analysis of site-specific GRSG habitat and population information and project design elements. Facilities affected by the density calculation (**Table E-3**) are:

- Energy (oil and gas wells and development facilities)
- Energy (coal mines)
- Energy (wind towers)
- Energy (solar fields)
- Energy (geothermal)
- Mining (active locatable, leasable, and saleable developments)

Table E-1
Relationship Between the 18 Threats and the Three Habitat Disturbance Measures for Monitoring and Disturbance Calculations

USFWS Listing Decision Threat	Sagebrush Availability	Habitat Degradation (disturbance cap)	Energy and Mining Density (density cap)
Agriculture	X		
Urbanization	X		
Wildfire	X		
Conifer encroachment	X		
Treatments	X		
Invasive Species	X		
Energy (oil and gas wells and development facilities)		X	X
Energy (coal mines)		X	X
Energy (wind towers)		X	X
Energy (solar fields)		X	X
Energy (geothermal)		X	X
Mining (active locatable, leasable, and saleable developments)		X	X
Infrastructure (roads)		X	
Infrastructure (railroads)		X	
Infrastructure (power lines)		X	
Infrastructure (communication towers)		X	
Infrastructure (other vertical structures)		X	
Other developed rights-of-way		X	

Table E-2
The Seven Site Scale Features Considered Threats to Sage-Grouse Included in the Disturbance Calculation for Project Authorizations

1. Coalbed Methane Ponds
2. Meteorological Towers
3. Nuclear Energy Facilities
4. Airport Facilities and Infrastructure
5. Military Range Facilities & Infrastructure
6. Hydroelectric Plants
7. Recreation Areas Facilities and Infrastructure
Definitions:
1. Coalbed Methane and other Energy-related Retention Ponds – The footprint boundary will follow the fenceline and includes the area within the fenceline surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (roads, well pads, etc.) will be captured in other disturbance categories.
2. Meteorological Towers – This feature includes long-term weather monitoring and temporary meteorological towers associated with short-term wind testing. The footprint boundary includes the area underneath the guy wires.
3. Nuclear Energy Facilities – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility’s perimeter.
4. Airport Facilities and Infrastructure (public and private) – The footprint boundary will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangars, taxiways, driveways, terminals, maintenance facilities, beacons and related features. Indicators of the boundary, such as distinct land cover changes, fences and perimeter roads, will be used to encompass the entire airport or heliport.
5. Military Range Facilities & Infrastructure – The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility’s perimeter.
6. Hydroelectric Plants – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility’s perimeter.
7. Recreation Areas & Facilities – This feature includes all sites/facilities larger than 0.25 acres in size. The footprint boundary will include any undisturbed areas within the site/facility.

Table E-3
Anthropogenic Disturbance Types for Disturbance Calculations
Data Sources are Described for the West-Wide Habitat Degradation Estimates

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (oil & gas)	Wells	IHS; BLM (AFMSS)	5.0ac (2.0ha)	BLM WO-300
	Power Plants	Platts (power plants)	5.0ac (2.0ha)	BLM WO-300
Energy (coal)	Mines	BLM; USFS; Office of Surface Mining Reclamation and Enforcement; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Energy (wind)	Wind Turbines	Federal Aviation Administration	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	3.0ac (1.2ha)	BLM WO-300
Energy (solar)	Fields/Power Plants	Platts (power plants)	7.3ac (3.0ha)/ MW	NREL
Energy (geothermal)	Wells	IHS	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Mining	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
Infrastructure (roads)	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7ft (12.4m)	USGS
	Major Roads	Esri StreetMap Premium	84.0ft (25.6m)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2ft (73.2m)	USGS
Infrastructure (railroads)	Active Lines	Federal Railroad Administration	30.8ft (9.4m)	USGS
Infrastructure (power lines)	1-199kV Lines	Platts (transmission lines)	100ft (30.5m)	BLM WO-300
	200-399 kV Lines	Platts (transmission lines)	150ft (45.7m)	BLM WO-300
	400-699kV Lines	Platts (transmission lines)	200ft (61.0m)	BLM WO-300
	700+kV Lines	Platts (transmission lines)	250ft (76.2m)	BLM WO-300
Infrastructure (communication)	Towers	Federal Communications Commission	2.5ac (1.0ha)	BLM WO-300

Note: Data sources are described for the west-wide habitat degradation estimates.

ATTACHMENT I: TRAVEL AND TRANSPORTATION MANAGEMENT DEFINITIONS FOR USE IN ANTHROPOGENIC DISTURBANCE CALCULATION

Roads are linear routes managed for use by low clearance vehicles having four or more wheels, and are maintained for regular and continuous use.

Primitive Roads are linear routes managed for use by four-wheel drive or high-clearance vehicles. They do not normally meet any design standards.

Trails are linear routes managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Linear Disturbances are human-made linear features that are not part of the designated transportation network are identified as “Transportation Linear Disturbances.” These may include engineered (planned) as well as unplanned single and two-track linear features that are not part of the BLM’s transportation system.

Primitive Routes are any transportation linear feature located within a wilderness study area or lands with wilderness characteristics identified for protection by a land use plan and not meeting the wilderness inventory road definition.

Temporary Routes are short-term overland roads, primitive roads or trails which are authorized or acquired for the development, construction or staging of a project or event that has a finite lifespan. Temporary routes are not intended to be part of the permanent or designated transportation network and must be reclaimed when their intended purpose(s) has been fulfilled. Temporary routes should be constructed to minimum standards necessary to accommodate the intended use; the intent is that the project proponent (or their representative) will reclaim the route once the original project purpose or need has been completed. Temporary routes are considered emergency, single use or permitted activity access. Unless they are specifically intended to accommodate public use, they should not be made available for that use. A temporary route will be authorized or acquired for the specific time period and duration specified in the written authorization (e.g., permit, ROW, lease, or contract) and will be scheduled and budgeted for reclamation to prevent further vehicle use and soil erosion from occurring by providing adequate drainage and re-vegetation.

Administrative Routes are those that are limited to authorized users (typically motorized access). These are existing routes that lead to developments that have an administrative purpose, where the agency or permitted user must have access for regular maintenance or operation. These authorized developments could include such items as power lines, cabins, weather stations, communication sites, spring.

Maintenance Intensities

Level 0

Maintenance Description

Existing routes that will no longer be maintained and no longer be declared a route. Routes identified as Level 0 are identified for removal from the Transportation System entirely.

Maintenance Objectives

- No planned annual maintenance.
- Meet identified environmental needs.
- No preventative maintenance or planned annual maintenance activities.

Level 1

Maintenance Description

Routes where minimum (low intensity) maintenance is required to protect adjacent lands and resource values. These roads may be impassable for extended periods of time.

Maintenance Objectives

- Low (Minimal) maintenance intensity.
- Emphasis is given to maintaining drainage and runoff patterns as needed to protect adjacent lands. Grading, brushing, or slide removal is not performed unless route bed drainage is being adversely affected, causing erosion.
- Meet identified resource management objectives.
- Perform maintenance as necessary to protect adjacent lands and resource values.
- No preventative maintenance.
- Planned maintenance activities limited to environmental and resource protection.
- Route surface and other physical features are not maintained for regular traffic.

Level 3

Maintenance Description

Routes requiring moderate maintenance due to low volume use (for example, seasonally or year-round for commercial, recreational, or administrative access). Maintenance Intensities may not provide year-round access but are intended to generally provide resources appropriate to keep the route in use for the majority of the year.

Maintenance Objectives

- Medium (Moderate) maintenance intensity.
- Drainage structures will be maintained as needed. Surface maintenance will be conducted to provide a reasonable level of riding comfort at prudent speeds for the route conditions and intended use. Brushing is conducted as needed to improve sight distance when appropriate for management uses. Landslides adversely affecting drainage receive high priority for removal; otherwise, they will be removed on a scheduled basis.
- Meet identified environmental needs.
- Generally maintained for year-round traffic.
- Perform annual maintenance necessary to protect adjacent lands and resource values.
- Perform preventative maintenance as required to generally keep the route in acceptable condition.

- Planned maintenance activities should include environmental and resource protection efforts, annual route surface.
- Route surface and other physical features are maintained for regular traffic.

Level 5

Maintenance Description

Route for high (maximum) maintenance due to year-round needs, high volume of traffic, or significant use. Also may include route identified through management objectives as requiring high intensities of maintenance or to be maintained open on a year-round basis.

Maintenance Objectives

- High (Maximum) maintenance intensity.
- The entire route will be maintained at least annually. Problems will be repaired as discovered. These routes may be closed or have limited access due to weather conditions but are generally intended for year-round use.
- Meet identified environmental needs.
- Generally maintained for year-round traffic.
- Perform annual maintenance necessary to protect adjacent lands and resource values.
- Perform preventative maintenance as required to generally keep the route in acceptable condition.
- Planned maintenance activities should include environmental and resource protection efforts, annual route surface.

Route surface and other physical features are maintained for regular traffic.

Appendix G

Stipulations Associated with Fluid Mineral Leasing

Appendix G. Stipulations Associated with Fluid Mineral Leasing

This appendix lists stipulations for new fluid minerals leases referred to under the Proposed Plan Amendment.

DESCRIPTION OF SURFACE STIPULATIONS

Table G-1 shows the fluid mineral leasing stipulations for the Proposed Plan Amendment, including exceptions, modifications, and waivers. Three types of surface stipulations could be applied to fluid mineral leases: (1) no surface occupancy (NSO), (2) timing limitations (TL), and (3) controlled surface use (CSU). All stipulations for other resources, besides Greater Sage-Grouse, included in the existing land use plans would still be applicable.

Areas identified as NSO would be closed to surface-disturbing activities associated with fluid mineral development.

Areas identified as TL would be closed to surface-disturbing activities associated with fluid mineral development during identified time frames. TL areas would be open to operational and maintenance activities, including associated vehicle travel, during the closed period unless otherwise specified in the stipulation.

Areas identified as CSU would require proposals to be authorized only according to the controls or constraints specified. The controls would be applicable to activities associated with fluid mineral development.

RELIEF FROM STIPULATIONS

With regard to fluid minerals, surface stipulations could be excepted, modified, or waived by the Authorized Officer, but only as specifically identified below. An exception exempts the holder of the land use authorization document from the stipulation on a one-time (or case-by-case) basis. A modification changes the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently removes the stipulation from the lease. The environmental analysis document prepared for site-specific proposals such as fluid minerals development (i.e., master development plans applications for permit to drill or sundry notices) also would need to address proposals to exempt, modify, or waive a surface stipulation.

On BLM-administered lands, to exempt, modify, or waive a stipulation, the environmental analysis document would have to show that (1) the circumstances or relative resource values in the area had changed following issuance of the lease, (2) less restrictive requirements could be developed to protect the resource of concern, and (3) operations could be conducted without causing unacceptable impacts.

In cases where waivers, exceptions, or modification are granted for projects with a residual impact, voluntary compensatory mitigation consistent with the State's management goals can be one mechanism by which a proponent achieves the RMPA goals, objectives, and waiver, exception, or modification criteria. When a proponent volunteers compensatory mitigation as their chosen approach to address

residual impacts, the BLM can incorporate those actions into the rationale used to grant a waiver, exception, or modification. The final decision to grant a waiver, exception, or modification will be based, in part, on criteria consistent with the State’s Greater Sage-Grouse management plans and policies.

Table G-1
BLM Proposed Plan Amendment
Fluid Minerals Stipulations and Exception, Modification, and Waiver Criteria

Stipulation	Stipulation Description
No surface occupancy within PHMA.	<p>Purpose: To protect Greater Sage-Grouse habitat from activity in PHMA.</p> <p>Exception: The Authorized Officer may grant an exception where the proposed action:</p> <ul style="list-style-type: none"> i. Occurs in non-habitat that does not provide important connectivity between habitat areas and the development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project’s NEPA document; OR ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact to Greater Sage-Grouse or its habitat than on nearby parcel. This exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action’s impacts. <p>Modification: The Authorized Officer may grant a modification to a fluid mineral lease NSO stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the NSO stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, powerlines). While the NSO stipulation could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3.</p> <p>Waiver: The Authorized Officer may grant a waiver to a fluid mineral lease NSO stipulation if, through the appropriate planning process (i.e., maintenance, amendment), the area is no longer within PHMA.</p> <p>*The other Greater Sage-Grouse stipulations would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p>

Stipulation	Stipulation Description
<p>Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area (referred to as biologically significant units {BSU} when coordinating across state lines), and 2) within the proposed project analysis area.</p>	<p>Purpose: To protect PHMA and the life-history needs of Greater Sage-Grouse from habitat loss and Greater Sage-Grouse populations from disturbance and limit fragmentation in PHMA. This would be implemented as a lease notice associated with new leases, in addition to the NSO stipulation. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p> <p>Exception: The 3 percent cap may be exceeded at the proposed project analysis scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area. Factors considered by the team are in Appendix E and in MA-SSS-3B. Such exceptions to the 3 percent disturbance cap may be approved by the Authorized Officer only with the concurrence of the State Director. The finding and recommendation shall be made by the technical team, which should consist of a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency.</p> <p>Modification: The stipulation can be modified to allow disturbance to exceed 3 percent on the lease if disturbance in the project analysis area and PHMA associated with a Greater Sage-Grouse population area remains under 3 percent.</p> <p>Waiver: The Authorized Officer may grant a waiver to a fluid mineral lease NSO stipulation if, through the appropriate planning process (i.e., maintenance, amendment), the area is no longer within PHMA.</p> <p>*This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p>

Stipulation	Stipulation Description
<p>In PHMA, limit the density of energy and mining facilities during project authorization to an average of one energy/mineral facility per 640 acres.</p>	<p>Purpose: To protect PHMA and the life-history needs of Greater Sage-Grouse from habitat loss and Greater Sage-Grouse populations from disturbance and limit fragmentation in PHMA. This would be implemented as a lease notice associated with new leases, in addition to the NSO stipulations. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p> <p>Exception: The density cap may be exceeded at the proposed project analysis scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements, indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area. Factors considered by the team are in Appendix E and MA-SSS-3C. Such exceptions to the density cap may be approved by the Authorized Officer only with the concurrence of the State Director. The finding and recommendation shall be made by the technical team which should consist of a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency.</p> <p>Modification: Can exceed the density cap on the lease if the broader project area remains under the limit.</p> <p>Waiver: None</p>
<p>Surface occupancy or use within the PHMA is subject to the following operating constraints:</p> <ul style="list-style-type: none"> • Limit noise from discretionary activities (during construction, operation, or maintenance) will not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting); support the establishment of ambient baseline noise levels for PHMA habitat area leks. • Limit project related noise in other PHMA habitats and seasons where it would be expected to reduce functionality of habitats that support associated Greater Sage-Grouse populations. 	<p>Purpose: Protecting Greater Sage-Grouse from auditory disturbance associated with fluid mineral developments.</p> <p>Exception: None</p> <p>Modification: As additional research and information emerges, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize potential for noise impacts on PHMA Greater Sage-Grouse population behavioral cycles.</p> <p>Waiver: None</p>

Appendix G. Stipulations Associated with Fluid Mineral Leasing (Table G-1: BLM Proposed Plan Amendment Fluid Minerals Stipulations and Exception, Modification, and Waiver Criteria, *cont'd*)

Stipulation	Stipulation Description
<p>Surface occupancy or use within the PHMA is subject to the following operating constraints:</p> <ul style="list-style-type: none"> • Limit the placement of permanent tall structures within PHMA breeding and nesting habitats. • For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors, ravens) that may naturally be absent, or that decreases the use of an area by PHMA. A determination as to whether something is considered a tall structure would be made based on local conditions such as existing vegetation or topography. 	<p>Purpose: To minimize placement of structures that introduce new perching and/or nesting opportunities for avian predators. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p>
<p>No surface disturbance allowed between Feb 15 – June 15, in PHMA Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat.</p>	<p>Purpose: To seasonally protect Greater Sage-Grouse within PHMA from disruptive activity during breeding, nesting and early brood-rearing. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p> <p>Exception: None</p> <p>Modification: Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect Greater Sage-Grouse, in coordination with UDWR biologists.</p> <p>Waiver: None</p>
<p>No surface disturbance allowed between April 15 – August 15, in PHMA Greater Sage-Grouse brood-rearing habitat.</p>	<p>Purpose: To seasonally protect Greater Sage-Grouse within PHMA from disruptive activity during brood-rearing. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p> <p>Exception: None</p> <p>Modification: Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect Greater Sage-Grouse, in coordination with UDWR biologists.</p> <p>Waiver: None</p>

Stipulation	Stipulation Description
<p>No surface disturbance allowed between Nov 15 – March 15, in PHMA Greater Sage-Grouse winter habitat.</p>	<p>Purpose: To seasonally protect Greater Sage-Grouse within PHMA from disruptive activity during the winter season. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.</p> <p>Exception: None</p> <p>Modification: Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect Greater Sage-Grouse, in coordination with UDWR biologists.</p> <p>Waiver: None</p>
<p>Outside of PHMA, areas that are 1) within of State of Utah opportunity areas, and 2) within the lek buffer distances identified in Appendix B for leks located in PHMA, will be subject to the following operating constraints:</p> <ul style="list-style-type: none"> • Limit noise from discretionary activities (during construction, operation, or maintenance) so it will not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting); support the establishment of ambient baseline noise levels for PHMA habitat area leks. • Limit project related noise in other PHMA habitats and seasons where it would be expected to reduce functionality of habitats that support associated Greater Sage-Grouse populations. 	<p>Purpose: Protecting Greater Sage-Grouse from indirect disturbance near leks within PHMA.</p> <p>Exception: None</p> <p>Modification: As additional research and information emerges, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize potential for noise impacts on PHMA Greater Sage-Grouse population behavioral cycles.</p> <p>Waiver: None</p>

Appendix G. Stipulations Associated with Fluid Mineral Leasing (Table G-1: BLM Proposed Plan Amendment Fluid Minerals Stipulations and Exception, Modification, and Waiver Criteria, *cont'd*)

Stipulation	Stipulation Description
<p>Outside of PHMA, areas that are 1) within of State of Utah opportunity areas, and 2) within the lek buffer distances identified in Appendix B for leks located in PHMA, will be subject to the following operating constraints:</p> <ul style="list-style-type: none"> • Limit the placement of permanent tall structures within PHMA breeding and nesting habitats. • For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors, ravens) that may naturally be absent, or that decreases the use of an area by PHMA. A determination as to whether something is considered a tall structure would be made based on local conditions such as existing vegetation or topography. 	<p>Purpose: To minimize placement of structures that introduce new perching and/or nesting opportunities for avian predators.</p> <p>Exception: None</p> <p>Modification: None</p> <p>Waiver: None</p> <p>**For the purposes of this restriction, a tall structure is any manmade structure that provides for perching/nesting opportunities for predators (e.g., raptors and ravens) that are naturally absent, or that decreases the use of an area by Greater Sage-Grouse. A determination as to whether something is considered a tall structure will be made based on local conditions such as existing vegetation or topography.</p>

This page intentionally left blank.

Appendix I

Adaptive Management

Appendix I. Adaptive Management

Adaptive management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative management process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a “trial and error” process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. On February 1, 2008, the Department of the Interior published its Adaptive Management Implementation Policy (522 DM 1). The adaptive management strategy presented within this Resource Management Plan Amendment (RMPA) complies with this policy and direction.

In relation to the Bureau of Land Management (BLM) and US Forest Service (Forest Service) National Greater Sage-Grouse Planning Strategy, adaptive management provides additional certainty for effectiveness of conservation when implemented in concert with the Greater Sage-Grouse conservation measures presented in the plan amendments. This adaptive management strategy is incorporated along with the conservation measures in the plan to ameliorate threats to Greater Sage-Grouse, thereby increasing the likelihood that the combined conservation measures are effective in reducing threats to that species. The following provides the BLM’s adaptive management strategy for the Utah Greater Sage-Grouse RMPA.

UTAH SUBREGIONAL ADAPTIVE MANAGEMENT STRATEGY

The Utah Subregional adaptive management strategy includes the identification of soft and hard triggers and a management approach for responding to those triggers. In the spring of 2014, a multi-agency Utah group coordinated to develop adaptive management triggers for Greater Sage-Grouse populations in Utah. This group includes State of Utah Division of Wildlife Resources (UDWR), Utah Governor’s Public Lands Policy Coordination Office, US Fish and Wildlife Service (USFWS), Forest Service, and BLM. A biologist focus group, a subset of the Utah adaptive management group, was tasked with reviewing Greater Sage-Grouse monitoring data and determining what population and habitat triggers are appropriate given the natural cyclic variability observed in all Greater Sage-Grouse populations.

BACKGROUND INFORMATION

Greater Sage-Grouse Population Change

As is discussed in the 2015 Final EIS, Section 3.3, Greater Sage-Grouse populations across the range fluctuate cyclically. In Utah the cycle seems, generally, to follow a 10-year pattern. The exact reason for the cycle is currently unknown. However, various aspects (i.e., vital rates) of the Greater Sage-Grouse’s life cycle have been linked by past research to changes in environment and habitat.

Utah’s Greater Sage-Grouse populations will likely continue to fluctuate over the short term and on their historic 10-year cycle. The general direction of the cycles, whether populations are trending up or down, is the critical conservation concern for Greater Sage-Grouse. Connelly et al. (2004) showed that rangewide the trend was decreasing from the 1960s to the mid-1980s, hitting a low in the mid-1990s,

but then stabilizing to the present. Certainly, if habitat loss and degradation occur within a population's habitat base the population would likely decline in succeeding years without habitat restoration and/or other management intervention. However, if the habitat base remains intact it is likely that the population will continue to fluctuate, but remain relatively stable in the long term. Greater Sage-Grouse require large landscapes of contiguous sagebrush habitat to carry out their life-cycle. Securing these large landscapes from further degradation and adding more habitat through restoration is the primary conservation action for Greater Sage-Grouse.

Lek Count Data

When considering monitoring data there is always uncertainty, error, and statistical noise. Greater Sage-Grouse lek (breeding ground) counts are not comprehensive in nature, but rather represent a sample of and index to the population. This uncertainty carries over into using lek counts to make decisions for implementing management actions. Any metric of population change (e.g., percent annual change, percent above or below 10-year average, etc.) includes the uncertainty that comes from sampling populations. Therefore, creating precise decision triggers based on lek data is inherently problematic, and should include a relatively large range of specific metrics and management options. However, much more certainty exists concerning the effect of habitat loss or degradation, and precise decision triggers would be much more reliable for habitat conservation purposes.

For Greater Sage-Grouse, while some production data has been collected in various populations, the only data that have been consistently collected across the range of the species and within Utah for this species has been males attending leks. While male lek attendance has been the primary source of data collected and is used as an index of Greater Sage-Grouse populations, it is critical that the strengths and weaknesses of lek counts be understood to appropriately evaluate how confidence in the data may vary. For instance, the number of males counted on leks can vary depending upon how many times the lek was counted in a spring (at least three times is recommended to increase the chances that the peak male lek attendance was observed), time of day (three counts conducted between 30 minutes before sunrise to 1 hour after sunrise), and the weather conditions (calm). Standardized lek counts have become more common practice recently. The lek count protocol is based on lek attendance research (Jenni and Hartzler 1978; Emmons and Braun 1984; Connelly et al. 2003). In general, lek count protocol has become a priority in the last 15 years and adherence to the protocol increases the confidence in and comparability of the resulting data.

Early in the history of collecting lek count data in Utah, the likelihood that leks were known depended on two things: 1) the proximity of the lek to areas frequented by people during dawn (near roads or corrals); and 2) the size of the lek; the larger the lek, the more likely it was noticed. Therefore, the leks counted earliest in the history of Greater Sage-Grouse monitoring in Utah were either large leks and/or easily accessible leks (e.g., near roads). In the last 20 years in Utah and throughout the West, efforts to count and find leks have increased substantially (though there is variation in the number of leks counted, up and down, each year). With these concerted efforts to find new leks, new and generally smaller leks were added to the list of known leks. Consequently, by adding primarily small leks to the overall state "average males per lek", the state average males per lek decreases even though more birds and more leks are being counted. In addition, where graduate students have studied Greater Sage-Grouse populations, new leks have been found as a result of the amount of time on the landscape and radio-telemetry information. From these increased efforts, the number of leks counted has increased from 14 leks in 1959, 99 leks in 1980, up to 362 leks in 2012 (2,485 percent increase) (UDWR 2009). Similarly,

the total number of birds counted in a spring has increased, based on State of Utah data, from 451 males in 1959 to 3,231 males counted in 2012 (616 percent increase).

ADAPTIVE MANAGEMENT TRIGGERS

This overarching adaptive management strategy includes the identification of a two-tiered system of triggers (soft and hard) for both Greater Sage-Grouse populations and habitat. These triggers are not specific to any particular project, but identify population and habitat thresholds which, if exceeded/tripped, would result in a change in how the BLM addresses management of Greater Sage-Grouse in that area. Triggers have been based on the two key metrics that are regularly monitored: population declines and habitat loss.

Soft triggers represent an intermediate threshold indicating that management changes are needed to address habitat or population losses before they become severe. They represent a “caution” signal that changes outside the normal range of variation may be occurring. If a soft-trigger is tripped, monitoring data would be evaluated and management would be implemented to stop further declines.

Hard triggers represent a threshold indicating that more direct and refined actions are quickly needed to stop a severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plan. The intent of a soft-trigger is to identify changes in management at a point where further losses could be avoided; given this, there is no expectation of hitting a hard trigger. If unforeseen circumstances occur that trip either a population or habitat hard trigger, more restrictive management will be required.

The changes in management required after a trigger is tripped are included below in the “Management Response” section. The following sections present the adaptive management triggers, organized first by the metric being addressed (population or habitat) and then by the associated soft and hard triggers.

Population Triggers

When evaluating population-based adaptive management triggers, this adaptive management strategy includes consideration of two aspects of population data to ensure that one set of data, if in error for any reason, would not unnecessarily trigger management changes. Population declines will be evaluated using the following two metrics:

- Population trends based on “trend leks,” and
- Population growth as indicated by Lambda (λ) (as described below) from one year to the next for monitoring associated with all leks within a priority habitat management area (PHMA).

Trend leks are either leks that have been surveyed consistently in the last 20 years or leks that provide spatial representation within PHMA. Twenty years was chosen as the appropriate time period to identify trend leks with consideration of the cyclic nature of Greater Sage-Grouse populations, and to capture monitoring results during the period of time when lek counts were conducted more consistently, and when lek count protocol was more standardized. The Utah Greater Sage-Grouse lek counts appear to have been in a low oscillation in the mid-1990s and again in the last few years (2011). During this same time period, standard lek count protocol use was increasing. Criteria for the trend leks are below:

- Starting with 1996, a lek that had > 1 male counted within one of 5 years between 1994-1998,
- Lek counts have occurred on 80 percent of the years since 1994 (16 years), **AND**

- Lek counts on 50 percent of the years are > 1 (8 of 16), **OR**
- A lek provides spatial representation (in the case of small populations, all leks may be included).

Lambda (λ) is the population change from a given Year 1 to the following Year 2 by dividing the total PHMA males counted in Year 2 by the total males counted in Year 1. If the result equals one (1), there was no change in the population level. A lambda that exceeds one (> 1) means the population is growing. A lambda that is less than one (< 1) indicates a declining population. To generate a consistent and comparable number, lambda can only be calculated on leks that are counted in consecutive years. This is to ensure that the increase in number of leks does not skew population data. This way, lambda can only be calculated for a lek if it is counted in 2 consecutive years. Some examples of calculating lambda are as follows:

- Males in Year 2/males counted in Year 1 = Lambda (λ)
 - Example A – No Change in Population:** Assuming in 2000, the total males counted on leks in PHMA is 350 and in 2001, on the same leks counted in 2000, the total males counted are 350.
- $350/350 = 1$; since lambda is 1, the population is unchanged.
 - Example B: Increasing Population:** Assuming in 2000, the total males counted on leks in PHMA is 350 males and in 2001, on the same leks counted in 2000, the total males counted are 430.
- $430/350 = 1.23$; since lambda is > 1 , the population is increasing.
 - Example C: Decreasing Population:** Assuming in 2000, the total males counted on leks in PHMA is 350 males and in 2001, on the same leks counted in 2000, the total males counted are 280.
- $280/350 = 0.8$; since lambda is < 1 , the population is decreasing.

Multiple population triggers were established to account for different potential population trends for which management and monitoring should respond. This includes triggers to address rapid short-term declines in a population, as well as persistent long-term decreases of both trend leks or all monitored leks (using lambda - λ).

Population Soft Triggers

A population soft trigger would be met in PHMA if any one of 1a, 1b, 1c, or 1d are met, AND number 2 is also met:

- 4 consecutive years of 10 percent or greater annual decline in average males per lek in each year, based on “trend leks”; **OR**
- 6 consecutive years of declining average males per lek in each year, based on “trend leks”; **OR**
- 40 percent or greater decline in average males per lek in any single year, based on “trend leks”; **OR**
- 50 percent or greater decline in average males per lek in a 4 consecutive year period, based on “trend leks”; **AND**

- 2) Lambda of less than 1 in 4 consecutive years, based on all leks in the PHMA. Using criteria 1c, the 40 percent decline in a single year may occur at any point of the four year lambda monitoring window (year one, two, three or four).

For PHMA in the Ibapah and Hamlin Valley population areas, if a Greater Sage-Grouse population adaptive management trigger (hard or soft) from a Nevada land use plan is met on Greater Sage-Grouse habitat in Nevada that is adjacent to the Ibapah or Hamlin Valley PHMA, a soft trigger would be met for the Utah areas, regardless of whether the above criteria have been met or not.

The management to be applied if the soft trigger criteria are met is identified below under the Management Response header. The intent of the population soft trigger is to identify changes to population trends and adjust management before a hard trigger is met.

Population Hard Triggers

A population hard trigger would be met in PHMA if any one of the following criteria (a-d) is identified through monitoring:

Short-term Decline

- a) 4 consecutive years of 20 percent or greater annual decline in average males per lek in each year, based on “trend leks”; **OR**
- b) average males per lek, based on trend leks, drops 75 percent below the 10-year rolling average males per lek in any single year (not a 75 percent decrease, but a decline under 75 percent of the 10-year rolling average); **OR**

Long-term Decline

- c) Lambda of less than 1 in 6 consecutive years, based on all leks within the PHMA; **OR**
- d) Lambda of less than 1 in 8 years of a 10-year window, based on all leks within the PHMA.

The management to be applied if the hard trigger criteria are met is identified below under the Management Response header. Any change in management would only apply to the PHMA where the trigger is tripped.

Habitat Triggers

The adaptive management approach also includes triggers based on Greater Sage-Grouse habitat. Habitat quality is addressed by adherence to the objectives contained in the plan amendment. The adaptive management triggers for habitat is based on the availability of habitat within PHMA, measured using a percent of habitat loss from a baseline of available Greater Sage-Grouse habitat at the signing of the final plan amendments.

Available habitat will be mapped within each PHMA using available information such as vegetation data from satellite imagery (e.g., reGAP, LANDFIRE), local monitoring, soils data, etc. As additional information is made available in the future it can be used to refine the baseline habitat areas that existed at the point the plan amendments are finalized (e.g., removing areas of high juniper density, cliffs, salt-desert scrublands). However, any such changes should reflect habitat as it occurred at the signing of the plan amendments and not reflect changes to habitat from that time. Changes from the baseline acreage

could occur through either the addition of habitat (e.g., juniper reduction projects) or reduction of habitat (e.g., wildfire). In either case, the percentages identified in the triggers are generated by comparing the availability of habitat at a point in time to the acres of habitat available at the signing of the plan amendments.

For both soft and hard triggers, nesting areas will be delineated using lek buffers based on published peer-reviewed data, unless local nesting areas have been specifically mapped by BLM and Forest Service and UDWR biologists using telemetry or other methods with appropriate sampling across the population. Wintering areas will be identified using UDWR mapping, in coordination with BLM and Forest Service biologists.

Habitat Soft Triggers

A habitat soft trigger would be met in PHMA if one of the following criteria is identified through monitoring:

- a) 10 percent loss of total Greater Sage-Grouse habitat in PHMA; **OR**
- b) 10 percent loss of habitat within nesting areas in PHMA; **OR**
- c) 5 percent loss of habitat within UDWR mapped wintering areas in PHMA; **OR**
- d) any one fire that burns 5 percent of total Greater Sage-Grouse habitat in PHMA.

For PHMA in the Ibapah and Hamlin Valley population areas, if a Greater Sage-Grouse habitat adaptive management trigger (hard or soft) from a Nevada land use plan is met on Greater Sage-Grouse habitat in Nevada that is adjacent to the Ibapah or Hamlin Valley PHMA, a soft trigger would be met for the Utah areas, regardless of whether the above criteria have been met or not.

The management to be applied if the soft trigger criteria are met is identified below under the Management Response header. The intent of the population soft trigger is to identify decreases in the availability of Greater Sage-Grouse habitat and adjust management before a hard trigger is met.

Habitat Hard Triggers

- a) 20 percent loss of total Greater Sage-Grouse habitat in PHMA; **OR**
- b) 20 percent loss of habitat within nesting areas in PHMA; **OR**
- c) 20 percent loss of habitat within UDWR mapped wintering areas in PHMA.

The management to be applied if the hard trigger criteria are met is identified below under the Management Response header. Any change in management would only apply to the PHMA where the trigger is tripped.

MANAGEMENT RESPONSE

To be successful, an adaptive management strategy couples a change in management direction to an identified change in resource condition (e.g., meeting an identified trigger). The type of management response would vary whether a soft trigger is met versus a hard trigger. The larger deviation from natural variation associated with a hard trigger would necessarily correspond with a greater change in management.

The adaptive change in management will be targeted to respond/resolve the cause of the observed change in resource condition, to the extent it can be determined. A causal factor may be associated with one of the threats the USFWS identified in its 2010 listing determination, though additional monitoring information and research may also identify other causes that could result in reaching population or habitat triggers. It is also important to note that while one or more factors may be associated with a habitat or population decline, directly attributing a change to a specific cause or causes may not be possible. The complexity of some interactions may make it difficult to establish a direct cause-and-effect relationship for a specific cause or causes. Many factors have been suggested as affecting Greater Sage-Grouse populations and habitats throughout the species' range. These factors can interact in numerous potential complex relationships, making the identification of "the" specific cause or causes difficult. It can be difficult to separate proximate factors from ultimate factors leading to population declines. Further, Greater Sage-Grouse populations that use habitat owned or administered by multiple jurisdictions (e.g., private, state, tribal, or other federal) could result in causes of population or habitat declines that are not able to be ameliorated by the BLM.

If direct cause or causes cannot be identified, the change in management may need to address multiple threats that were identified in the area where the trigger was been met in order to alter a negative trend. Absence of a clear cause is not justification to not take some action to reverse a trend.

Management Response to Meeting Soft Triggers

Upon an annual review of monitoring data, if it is apparent that soft trigger criteria have been met for an area (see Spatial Scale discussion below) the BLM will determine if there is a specific cause or causes that are contributing to the decline within six months of identifying that the trigger has been met. In completing this evaluation, the BLM will coordinate with Greater Sage-Grouse biologists from multiple agencies, including UDWR, the Forest Service, USFWS, and/or NRCS. Through this coordination, the BLM will review available national, state-wide, and local data to determine if there is additional information that could identify the cause/causes of the declines. The BLM will also coordinate with field office/district and state agency specialists and local Greater Sage-Grouse working groups to identify additional information that could assist in identifying the cause/causes.

If it is determined that the decline is related to a natural population variation, no specific management actions would be required. However, if BLM management actions are determined to cause or contribute to the decline, the BLM will work with the appropriate State of Utah agency and public land users to identify and apply management to slow down or stop the population decline. Such measures would be applied by the BLM manager within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures would apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. Such measures could also include other management actions which may require the need to amend the RMP to address the situation and modify management. If able to be identified, the management measures should address the specific causal factor(s) that resulted in the decline, with consideration of local knowledge and conditions.

Responses to soft triggers may require the adjustment of future project level/plan implementation activities in the short or long term, as consistent with the individual site-specific NEPA analyses. Soft

trigger responses can come in the form of terms, conditions, design features, BMPs, or site-specific mitigation measures. Examples of soft trigger responses could include, but are not limited to:

- Extending seasonal restrictions for seasonal surface disturbing activities (provided as stipulations to a right-of-way grant or a condition of approval to an oil and gas lease),
- Reprioritizing wild horse and burro gathers;
- Applying sequential development after reclamation;
- Temporary area closures related to travel management; (2-year maximum);
- Modifying seasons of use for livestock grazing through annual permit authorizations; and/or
- Applying additional restrictions on discretionary activities, or reject the authorization if mitigation criteria cannot be met.

It is expected that monitoring and management in response to soft-triggers should preclude tripping a “hard” trigger, which signals more severe habitat loss or population declines.

Management Response to Meeting Hard Triggers

Hard triggers represent a threshold indicating that more direct and refined actions are quickly needed to stop a severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plan. Upon documenting that a hard trigger has been met the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factors and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in **Table I-1** that address the causal factor, and could also include other management actions, which may require the need to amend or revise the RMP to address the situation and modify management.

If determining the causal factor and development of a corrective strategy is not completed within six months of documenting that the trigger has been met, all the plan level responses identified in **Table I-1** will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that don't address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in **Table I-1**, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed.

**Table I-1
Specific Management Responses**

Program	Adaptive Management Response¹	Affected Decision Number
Greater Sage-Grouse Management	If a hard-trigger is tripped in the Sheeprocks Population Area, adopt the PHMA boundary from Alternative B of the 2015 Final EIS and apply management as described in the Proposed Plan, except as modified below.	Modify MA-SSS-1 specific to Sheeprocks
	PHMA within a Population Area (also referred to as a biologically significant unit {BSU}) where a soft trigger has been reached would be the top priority for habitat improvement and restoration projects and for fuels reduction treatments.	Adjust: MA-VEG-1, MA-FIRE-1, and MA-SSS-3A to address specific area
	Areas within and adjacent to PHMA within a Population Area (BSU) where a hard trigger has been reached would be the top priority for regional mitigation habitat restoration and fuels reduction treatments.	
	Collaborate with applicable government entities to implement intensive programs to reduce populations of Greater Sage-Grouse predators (e.g., ravens, red fox, badgers, raccoons, skunks, raptors), focusing on area-specific predators to provide Greater Sage-Grouse populations the best opportunity to recover while improving habitat conditions.	Adjust MA-SSS-3D to focus on area-specific predators
Vegetation Management	PHMA within a Population Area (BSU), would be a priority for regional mitigation, habitat restoration and fuels reduction treatments.	Adjust: MA-VEG-1, MA-FIRE-1, and MA-SSS-3A to address specific area
Wild Horse and Burro Management	Initiate emergency gathers to reduce wild horse and burro populations within affected area to low end of AML, subject to funding and holding space availability. If the population is within AML and the area does not meet Greater Sage-Grouse habitat objectives, reduce AML for the HMA within the affected area up to 25 percent to facilitate meeting habitat objectives.	Adjust: MA-WHB-7, MA-WHB-3, and MA-WHB-4 to address specific area
Wildland Fire Management	Reassess Greater Sage-Grouse habitat needs to determine if priorities for at-risk habitats, fuels management areas, preparedness, suppression and restoration have changed.	Adjust MA-FIRE-1 to address specific area
Livestock Grazing	In areas where a soft trigger was met, prioritize the completion of rangeland health assessments to determine if the area is meeting Utah's Rangeland Health Standards and is achieving the Greater Sage-Grouse habitat objectives (Objective SSS-3). Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards and that have the best opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse. For areas not achieving the Greater Sage-Grouse habitat objectives (Objective SSS-3), apply one or more of the adjustments to livestock grazing from MA-LG-6.	Adjust: MA-LG-4 and MA-LG-5 to address specific area

Program	Adaptive Management Response¹	Affected Decision Number
Rights of Way – Existing Corridors	Retain the corridors as mapped, but limit the size of new lines within the corridors to same as existing structures.	Augment MA-LR-2 and MA-LR-4 with additional criteria
Rights of Way – Outside of Corridors	Management of the affected PHMA Population Area (BSU) would change to exclude high voltage transmission lines or major pipelines that the corrective strategy identifies. No change in management would be made to distribution lines or minor pipelines.	Augment MA-LR-2 with additional criteria
Wind Energy Development	No change from Proposed Plan.	Not applicable
Industrial Solar	No change from Proposed Plan.	Not applicable
Comprehensive Travel and Transportation Management	If travel management planning has not been completed within Greater Sage-Grouse habitat, PHMA areas where the hard trigger was met would be the highest priority for future travel management planning efforts. If travel management has been completed within Greater Sage-Grouse habitat in the PHMA where the hard trigger was met, re-evaluate designated routes to determine their effects on Greater Sage-Grouse. If routes are found to be causing population-level impacts, revise their designation status to reduce the effect.	Adjust: MA-TTM-4, MA-TTM-2, MA-TTM-5, and MA-TTM-3 to address specific area.
Fluid Minerals	No change from Proposed Plan.	Not applicable
Locatable Minerals	No change from Proposed Plan.	Not applicable
Salable Minerals	No change from Proposed Plan.	Not applicable
Nonenergy Leasable Minerals	No change from Proposed Plan.	Not applicable

¹Any change in management would only apply to the PHMA where the trigger is tripped. Unless otherwise noted as a soft trigger response, all Adaptive Management Responses would be implemented where a hard trigger is reached.

While implementing the corrective strategy, new scientific information may become available demonstrating that the plan-level response(s) could be insufficient to stop the severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plan. If this occurs, the BLM and its partners will review the new scientific information to determine how it may change the causal factor analysis and corrective strategy. If the BLM, in coordination with its partners, concludes that the responses in place would be insufficient, the BLM will implement necessary management to protect Greater Sage-Grouse and its habitat and to ensure that conservation options are not foreclosed in the area where the trigger has been met.

For those Population Areas (BSUs) that are directly connected to identified BSUs in adjacent states (Box Elder, Hamlin Valley, Uintah, and Rich), if a hard trigger is reached on one of the connected BSUs outside of the Utah sub-region, the applicable state wildlife agencies and BLM staff will convene to determine the causal factor and propose project level responses, as appropriate, and discuss further appropriate actions that could be applied. The team will also investigate the status of the hard triggers in

other BSUs within the PAC (in adjacent states) and will recommend the appropriate plan response. Adoption of any further actions at the plan level may require initiating a plan amendment process.

The management identified in the corrective strategy would be implemented until ten-year population trends reflect the natural fluctuations of a self-sustaining population. The BLM would determine the area reflects natural fluctuations for a self-sustaining population in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon such a determination, the management would revert to the RMPA.

If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized.

MONITORING

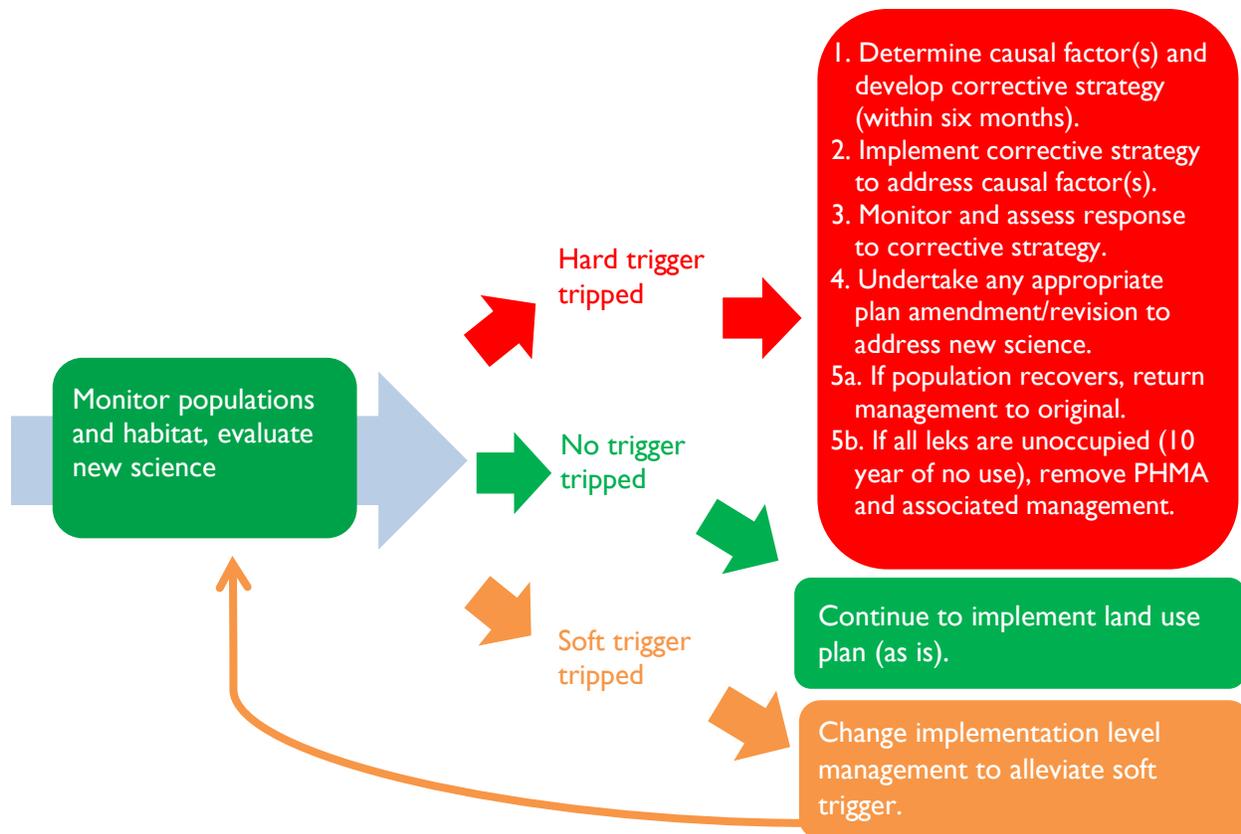
Monitoring is a critical part of implementing adaptive management. Through monitoring, the agencies determine when a trigger has been met, as well as whether management actions taken, including adaptive responses, are effective in increasing Greater Sage-Grouse habitat and populations. The following image shows how monitoring information will be integrated into implementation of the adaptive management plan.

This RMPA contains a Monitoring Framework Plan (**Appendix D**) that outlines monitoring of several aspects of Greater Sage-Grouse biological criteria and aspects of monitoring RMP effectiveness. The information collected through the Monitoring Framework Plan will be used by the BLM, among other available datasets, to determine when adaptive management hard and soft triggers for habitat are met.

The BLM will organize an adaptive management working group, inviting participation from the UDWR, Forest Service, USFWS, and/or local governments. This group will annually review monitoring information related to Greater Sage-Grouse populations and habitat availability to determine if an adaptive management trigger has been met.

The working group will evaluate Greater Sage-Grouse population data collected by the UDWR's lek counts, as well as habitat information available from the BLM's National Operation Center. Habitat information available from the BLM National Operation Center is based on remotely sensed sagebrush vegetation collected as part of the LANDFIRE Existing Vegetation Type layer. Habitat information may be adjusted based on locally available vegetation data, if agreed upon by all adaptive management working group members. However, the baseline for determining the percent loss for the purposes of the adaptive management triggers must remain associated with a consistent vintage, namely the finalization of the RMP-decisions. It is also important that the vegetation data remain at a scale consistent with implementation of the adaptive management plan (BSUs), and remain at such a consistent scale over time.

For any area that has met a soft or hard trigger, the BLM, the appropriate State of Utah agency, and other members of the technical team, will annually review monitoring data regarding population and habitat trends to verify that management actions implemented to mitigate declines are being successful. If monitoring indicates continued declines, the causal factor analysis will be reviewed, updated if needed, and applicable additional management would be identified and implemented.



SPATIAL SCALE

Greater Sage-Grouse biologists, assigned to the multi-agency adaptive management working group, will assess population and habitat adaptive management triggers for PHMA within each Population Area (also referred to as BSUs when coordinating with other states). A BSU is a geographical/spatial area that contains the relevant habitats that are used by Greater Sage-Grouse. In Utah, the BLM is applying adaptive management monitoring and management to the total PHMA area associated with a Greater Sage-Grouse population area. When coordinating with adjacent states in regional monitoring and management, these areas will be referred to as BSUs. These areas generally align with habitat areas within the State of Utah's Greater Sage-Grouse Management Areas (SGMAs) with two adjustments. One adjustment includes some PHMA in the Carbon area that was not identified as an SGMA. Portions of the Anthro Mountain and West Tavaputs areas are combined with Emma Park area for adaptive management purposes. The other adjustment is the Emery population (Wildcat Knoll and Horn Mountain) that is combined with the Parker Mountain SGMA but will be considered separately because the population is small in size and effects to this population would be masked by what is going on in the much larger Parker SGMA. As a result, PHMA in the following areas will be monitored and evaluated for population and habitat adaptive management triggers: Box Elder, Rich, Uinta, Strawberry, Carbon, Emery, Parker, Panguitch, Bald Hills, Hamlin, Sheeprocks, and Ibapah. These areas generally represent population use areas within the sub-region.

As described in the Monitoring Framework Plan, habitat data can be collected at these "BSU" scales and can be both aggregated up to the state-wide population, WAFWA Management Zone, or other

reporting units. Similarly, more specific habitat delineation may be gathered identifying specific seasonal use patterns and even daily movements and preferences. However, in monitoring landscape changes in habitat and effects on Greater Sage-Grouse populations, the interagency team of Greater Sage-Grouse biologists identified the Population Area/SGMA/BSU scale as best capturing the needed metrics at a meaningful and consistent scale. The boundaries of these and other reporting units may be adjusted over time based on the understanding of local population interactions and climate variation.

REFERENCES

- Connelly, J. W., K. P. Reese, and M. A. Schroeder. 2003. Monitoring of greater sage-grouse habitats and populations. Station Bulletin 80. College of Natural Resources Experiment Station, Moscow, Idaho.
- Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats. Western Association of Fish and Wildlife Agencies (WAFWA). Unpublished Report. Cheyenne, Wyoming.
- UDWR (Utah Division of Wildlife Resources). 2009. Utah Greater Sage-grouse Management Plan. Utah Department of Natural Resources, Division of Wildlife Resources, Publication 09-17, Salt Lake City, Utah, USA.
- Emmons, S. R., and C. E. Braun. 1984. Lek attendance of male sage grouse. *Journal of Wildlife Management* 48:1023-1028.
- Jenni, D. A., and J. E. Hartzler. 1978. Attendance at a sage grouse lek: implications for spring census. *Journal of Wildlife Management* 42:46-52.

This page intentionally left blank.

Appendix K

Greater Sage-Grouse Habitat Baseline
and Habitat Update Protocol

Appendix K. Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol

BACKGROUND

Habitat for Greater Sage-Grouse is the most critical element in any efforts to manage and conserve the species in its range across the western United States. Consequently, considerable time and expense has been dedicated to identifying current, historical, and potential expansion of Greater Sage-Grouse habitat and how it functions to provide the life sustaining elements for the species. Conservation of habitat is the foundation for this resource management plan amendment (RMPA). Any Greater Sage-Grouse conservation effort in Utah, as stated in the Conservation Plan for Greater Sage-Grouse in Utah (State Conservation Plan; UDWR 2013), must be “designed to protect high-quality habitat, enhance impaired habitat and restore converted habitat to support, in Utah, a portion of the range-wide population of Greater Sage-Grouse necessary to eliminate threats to the species.”

According to Manier et al. (2013), Greater Sage-Grouse are currently estimated to occupy 165 million acres (668,000 square kilometers) across the western United States and Canada (Knick and Connelly 2011), and this range encompasses tremendous variability in habitat conditions, anthropogenic activities, and Greater Sage-Grouse populations. Development of comprehensive monitoring approaches leads to formal recognition that habitat selection assessments are needed to utilize approaches that address multiple spatial scales to represent selection processes of the animals (Connelly et al. 2003; Stiver et al. 2010). The first-order (1) is the broad geographic range that defines the species distribution Greater Sage-Grouse (2) characterization of the second-order hinges on large, relatively intact regions of habitat identified using populations or subpopulation distributions (for example, geographic connections among leks or regional population connectivity using genetics) to link habitats to Greater Sage-Grouse use. The third-order (3) requires refinement from delineations of populations/subpopulations within the species range in a given area to availability of the seasonal habitats (for example, nesting and winter habitats), and connectivity of seasonal habitats to support migration. Finally, assessment can be made of fourth-order selection (for example, daily site selection and behavioral observations) by (4) quantifying food and cover attributes and foraging behavior at particular sites. In practice, selection of food items is nested within selection of the feeding site because selection of a particular site determines the array of food items available to be selected; importantly, habitat value and use will best be determined using a combination of these characteristics (not one alone). To accurately characterize Greater Sage-Grouse habitat/range selection for a given population at the first- and second-orders, or landscape spatial scales, the migratory nature (seasonal movements) of the population must be well understood (Connelly et al. 2000), and this may include very large areas on an annual basis. It has been suggested that migratory populations may range across hundreds of square miles (Connelly et al. 2003).

HABITAT IDENTIFICATION PROCESS

The UDWR is the primary entity responsible for management of Greater Sage-Grouse populations in Utah and is also the lead entity in identifying and mapping Greater Sage-Grouse distribution. Information on the distribution identification process followed in Utah was summarized and is included in the Utah Greater Sage-Grouse Management Plan (State Management Plan; UDWR 2009). Although this plan has

been superseded by the State Conservation Plan, the now dated Management Plan provides relevant information on the habitat identification process.

Following Doherty's work in Wyoming, Montana, and Colorado (Doherty 2008), core Utah Greater Sage-Grouse breeding habitats were mapped. The mapping was accomplished utilizing occupied lek densities and associated male Greater Sage-Grouse maximum lek attendance data for the period 1999–2008 (10 years), referred to as the breeding bird density mapping. The breeding bird density mapping identified four density levels or parameters. The first parameter identified areas where 25 percent of the state's total 10-year average spring breeding Greater Sage-Grouse males (indicator for populations) are located. These areas symbolize the highest statewide density of breeding males on leks and can also be viewed as high-priority leks or those leks and associated habitats that individually contribute the most to the state's Greater Sage-Grouse total population. The second parameter identified areas where 50 percent of the state's total breeding Greater Sage-Grouse males are found. This was repeated for the 75 percent and 100 percent of spring breeding Greater Sage-Grouse males until all occupied leks were classified. Viewed from the converse, the total known spring Greater Sage-Grouse statewide population was indicated by the combined area of all parameters.

The breeding bird density mapped habitat was further refined over time as additional population and habitat area inventory, studies, and other information were available. This included information provided by other field specialists, other agencies, local and special interest groups, private landowners, and academia. Adjustments to habitat boundaries have been made based on verified information. The mapped seasonal habitat boundaries in each population area are intended to include areas currently used by a population or populations of Greater Sage-Grouse and are based upon the location of occupied leks, the identification of nesting and brood-rearing habitat, and associated winter and other habitat.

For decades prior to the current review, the UDWR has been supporting research and community-based conservation efforts to learn more about the ecology of the species. Appendix 8 of the State's 2013 Conservation Plan contains a listing of research studies and reports on Greater Sage-Grouse conducted in Utah. To facilitate this effort, the UDWR established ten Local Area Working Groups under the general direction of Utah State University, with the first established as far back as 1996. These Local Area Working Groups were composed of private interests and governmental entities, and were tasked to assess the local nature and scope of the threats to the species, and to recommend a course of action to address those threats. Because of this early and ongoing assessment, the State of Utah is fortunate to have a high level of knowledge about many of the populations, including seasonal range, migration routes, and other factors known to be essential to maintenance of the species, all in the context of Utah's unique conditions.

Greater Sage-Grouse distribution in Utah is highly influenced by the geography of Utah, which is characterized by mountainous terrain, separated by broad valleys in the Great Basin, and by deeply incised canyons in the Colorado Plateau. Greater Sage-Grouse habitat may be found in intact blocks in the Great Basin, or in disconnected "islands" of habitat in the Colorado Plateau.

The UDWR's seasonal habitat maps are intended to encompass the range used throughout the year by known Greater Sage-Grouse populations. Broad based maps that identify the Greater Sage-Grouse range are necessary to include a variety of important seasonal habitats and movement corridors that are spread across Utah's geographically diverse and naturally fragmented landscape. Greater Sage-Grouse, frequently described as "landscape-scale species," may use multiple areas to meet seasonal habitat needs

throughout the year and the resulting patchwork of habitats (e.g., winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas, sometimes ranging between 180,000 and 1.2 million acres. Broad range maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included, especially where there are information gaps on Greater Sage-Grouse populations' habitats. Inevitably these Greater Sage-Grouse range maps include a patchwork of Greater Sage-Grouse habitats and non-habitats. Non-habitats, in and of themselves, may not provide direct habitat value for Greater Sage-Grouse (e.g., deep canyons or water bodies), but may be crossed by Greater Sage-Grouse when moving between seasonal habitats.

There are approximately 7.3 million acres mapped as Greater Sage-Grouse range throughout Utah. According to state-wide LANDFIRE vegetation data reflecting existing vegetation, there are 3.1 million acres (approximately 41%) of these areas that are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species of the vegetation community.

While areas mapped as Greater Sage-Grouse range encompass seasonal habitats and transition zones for Greater Sage-Grouse, they are also interspersed with areas that do not provide direct habitat at the site-scale (sagebrush) but may provide dispersal options or seasonal migration opportunities. Ninety-nine percent of the data pixels that comprise the 3.1 million acres of non-sagebrush vegetation types are less than 50 acres, reflecting the nature of habitat comprised of multiple interspersed vegetation types that often intermingle; however, the remaining 1 percent of the data pixels that comprise the 3.1 million acres represent areas that are larger than 50 acres and include nearly 86 percent of the area lacking a sagebrush component within the mapped occupied areas. This accounts for nearly 2.6 million acres of vegetation within Utah's Greater Sage-Grouse range that does not provide the necessary sagebrush components for Greater Sage-Grouse site-scale habitat needs. However, these areas may still provide important contributions to the mid- and fine-scale habitat levels for large, intact areas that are needed to support Greater Sage-Grouse populations. Such a determination would need to be made on a case-by-case basis following a multi-scale habitat assessment.

In short, the range boundaries were drawn on a broad scale, thus they include substantial amounts of interspersed areas of habitat and non-habitat. Most of the areas of non-habitat are predominantly small tracts that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations.

To assist in refining Greater Sage-Grouse seasonal habitat in Utah, telemetry and GPS data have been collected for a portion of the Greater Sage-Grouse populations in the state. Telemetry and GPS data provide the UDWR with site-specific data on how Greater Sage-Grouse use the landscape. Telemetry information provides a snapshot of how Greater Sage-Grouse used the landscape in specific years but does not necessarily represent how those same birds use the landscape every year, or what areas other individual birds may use. In general, maps are refined as additional information on habitat conditions, Greater Sage-Grouse habitat use patterns, population susceptibility to stochastic events, and impacts of vegetation treatment are available. BLM and UDWR biologists would determine habitat availability using information that may include site visits, telemetry data, documented quantitative or qualitative habitat assessments, vegetation and soils mapping, or other inputs that may inform habitat presence/absence.

In summary, broad maps are more likely to include all seasonal habitat areas important for each population and can be refined as management agencies gain more information. While occupied habitat maps were used as a baseline for the 2015 RMPA/EIS, through on-the-ground information it is clear those maps include known use areas, as well as areas of potential habitat and areas of non-habitat.

PLANNING REQUIREMENTS

Though the BLM manages the habitat for wildlife species, the UDWR is the agency primarily responsible for managing Greater Sage-Grouse in Utah. In the past, the UDWR has been the primary repository for information regarding Greater Sage-Grouse habitat in Utah. The range maps represent a broad combination of information sources, including intact sagebrush areas, field observations, radio-telemetry data, historic habitats, professional judgment, and sagebrush areas adjacent to the previously mentioned areas. Since telemetry data have not been collected for every Greater Sage-Grouse population in the state, to refine the broader identified ranges, the aforementioned other sources of information are used in conjunction with telemetry and GPS data to create the Greater Sage-Grouse range maps. For the BLM's purposes of maintaining and enhancing Greater Sage-Grouse persistence on the landscape, all Greater Sage-Grouse range identified and mapped by the UDWR is included as the baseline for planning to ensure that all habitats that are or may be necessary for long-term Greater Sage-Grouse persistence are including for assessment and evaluation in the planning process. However, the identification and mapping of Greater Sage-Grouse habitat is an ongoing effort.

The Greater Sage-Grouse habitat maps used as a baseline for the land use planning process are not intended to represent a survey-grade boundary of Greater Sage-Grouse habitat and are not expected to be exclusively used at the project level. In this sub-regional RMPA, the BLM is making broad-scale land use planning decisions that are connected with similarly broad-scale RMPAs across the range of Greater Sage-Grouse (see Section 1.1 of the 2015 Final EIS). Based on the scale of planning (landscape level), baseline habitat represented in this RMPA primarily represents a portion of the first and the second order habitat within Utah discussed in the background section above.

Not only is the scale of mapping appropriate given the scale of planning, but it is also appropriate given the stated goals and objectives of this RMPA/EIS. Through this planning process the BLM aims to not only stop the decline of Greater Sage-Grouse populations, but to increase habitat availability and population size and distribution.

HABITAT UPDATES

As expressed in the 2013 State Conservation Plan for Utah, the implementation of any plan should be accompanied by efforts to refine mapping of habitats, which includes this RMPA/EIS. These efforts should be coordinated among federal, state, and local agencies; private landowners; Greater Sage-Grouse working groups; and academia that may choose to participate. On-the-ground projects should also contribute to this refined habitat mapping effort, at a level commensurate with the decisions to be made.

Habitat map updates will be made when agencies with special expertise and legal jurisdiction for Greater Sage-Grouse and their habitat gain more information on the presence/absence of Greater Sage-Grouse; obtain new or additional baseline population data, including information on the distribution and connectivity of Greater Sage-Grouse populations with other populations; identify Greater Sage-Grouse seasonal habitats and movements; and identify and quantify sagebrush habitats, the condition of those habitats, and connectivity within populations.

While refinements to habitat maps are necessary and appropriate, the RMPA includes management that gives the agency discretion to authorize actions in non-habitat areas under identified conditions. This eliminates the need to make constant site-specific adjustments to Greater Sage-Grouse habitat management area boundaries through the land use planning processes, which is neither consistent with the landscape nature of management actions in the BLM RMPs, nor consistent with application of conservation measures at a scale and timing needed to protect Greater Sage-Grouse.

Prior to considering proposed actions within Priority Habitat Management Areas (PHMA), an evaluation should be conducted by a qualified biologist in collaboration with federal and state biologists, including a field investigation if needed. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat boundaries. If during implementation of the RMPA or evaluation of a proposed action there are discrepancies between the LUP maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management included within this RMPA/EIS would apply. A similar site-specific review process has been effectively employed while Greater Sage-Grouse habitats were under interim management, allowing proposed projects in areas identified as non-habitat to proceed.

When considering new or local information for application of management actions, the goal is to provide a transparent and consistent scientific-based process for adjusting Greater Sage-Grouse habitat that will promote conservation of Greater Sage-Grouse in Utah. To that end, the following would be considered when updating the Greater Sage-Grouse habitat delineations:

Seasonal Habitat

- Determination of adjustments in the delineation of mapped seasonal Greater Sage-Grouse habitats would be coordinated among federal, state, and local agencies; academia; and technical specialists through a Greater Sage-Grouse Working Group.
- Adjustments in mapped Greater Sage-Grouse seasonal habitats will be based on the best available information, including field observations and inventories, radio-telemetry data, GPS collar data, habitat assessments, site visits, supporting research and science, restoration treatments, disturbance, technical expertise, and accepted modeling (including ground-truthing).
- Review of Greater Sage-Grouse mapped seasonal habitats and proposed adjustments could occur anytime there is a need to adjust the habitat baseline. At a minimum, the BLM would evaluate the mapped seasonal habitat boundaries approximately every 5 years in conjunction with land use plan evaluations.
- In general, mapped seasonal habitat boundaries would not be adjusted to exclude non-habitat areas if those areas of non-habitat are wholly contained in the mapped seasonal habitat boundaries, considering the level of habitat identification needed commensurate with the level of decision-making.
- Habitat altered by fire would not be removed as seasonal habitat. If the BLM, in consultation with other agencies, determines that rehabilitation or restoration of mapped seasonal Greater Sage-Grouse habitat is not feasible and that the area no longer contributes to any part of the Greater Sage-Grouse life cycle, adjustments may be made to exclude the area.
- Determinations on adjustments to mapped Greater Sage-Grouse seasonal habitat would be by consensus of the Greater Sage-Grouse Working Group.

Priority Habitat Management Areas

- Because PHMA boundaries are a land use plan action, adjustments are a BLM responsibility and will comply with the applicable BLM planning regulations and policies.
- Adjustments in delineation of PHMA would be coordinated among federal, state, and local agencies and interested parties.
- Adjustments in delineation of PHMA would be based on the best available information, including field observations and inventories, radio-telemetry and GPS data, habitat assessments, site visits, supporting research and science, restoration treatments, disturbance, technical expertise, and accepted modeling (including ground-truthing).
- Review of PHMA boundaries would generally be done every 5 years (for the BLM, this would be in conjunction with land use plan evaluations), unless more frequent adjustments are needed.
- Consistent with landscape-level decision making, PHMA would be identified at a second-order level (Manier et. al. 2013), and as such, boundaries would generally not be adjusted to exclude non-habitat areas if those areas are wholly contained within the LUP-identified boundaries.
- Areas within PHMA that are not currently used by Greater Sage-Grouse, but are ecologically capable of supporting Greater Sage-Grouse, would not be removed from PHMA boundaries.
- The Greater Sage-Grouse Working Group would make adjustment recommendations to PHMA to the BLM Utah State Director, who will make the final determination on whether the PHMA boundary adjustment is appropriate.
- New areas of mapped Greater Sage-Grouse seasonal habitat could be identified as PHMA following the appropriate BLM planning rules and procedures. The administrative process through which boundary adjustments will be made would be determined on a case-by-case basis.

REFERENCES

- Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. *Wildlife Society Bulletin* 28:967-985.
- Connelly, J. W., K. P. Reese, M. A. Schroeder. 2003. Monitoring of Greater Sage-grouse Habitats and Populations. *Station Bulletin 80*. College of Natural Resources Experiment Station Moscow, Idaho. S.D. Laursen director. University of Idaho.
- Connelly, J. W., E. T. Rinkes, C.E. Braun. 2011. Characteristics of Greater Sage-Grouse Habitats: A landscape species at micro- and macroscales. pp. 69- 83 in S.T. Knick and J. W. Connelly, editors. *Greater Sage-Grouse: ecology of a landscape species and its habitats*. Cooper Ornithological Union, University of California Press, Berkeley.
- Doherty, K. 2008. Sage-grouse and energy development: Integrating science with conservation planning to reduce impacts. PhD. Dissertation. University of Montana. Missoula, Montana.
- Knick, S.T. and J.W. Connelly, editors. 2011. *Greater Sage-Grouse: ecology of a landscape species and its habitats*. Cooper Ornithological Union, University of California Press, Berkeley, California.

Manier, D. J., D. J. A. Wood, Z. H. Bowen, R. M. Donovan, M. J. Holloran, L. M. Juliusson, K. S. Mayne, S. J. Oyler-McCance, F. R. Quamen, D. J. Saher, and A. J. Titolo. 2013. Summary of Science, Activities, Programs and Policies that Influence the Rangeland Conservation of Greater Sage-Grouse (*Centrocercus urophasianus*). US Geological Survey Open-File Report 2013-1098, Fort Collins, Colorado.

Stiver, S. J., E. T. Rinkes, and D. E. Naugle. 2010. Sage-grouse Habitat Assessment Framework. US Bureau of Land Management. Unpublished Report. US Bureau of Land Management, Idaho State Office, Boise, Idaho.

UDWR (Utah Department of Natural Resources, Division of Wildlife Resources). 2009. Utah Greater Sage-grouse Management Plan. Utah Department of Natural Resources, Division of Wildlife Resources, Publication 09-17, Salt Lake City, Utah, USA.

Utah Greater Sage-Grouse Working Group. 2013. Conservation Plan for Greater Sage-grouse in Utah – Final. February 14, 2013. Available online at: http://wildlife.utah.gov/uplandgame/sage-grouse/pdf/greater_sage_grouse_plan.pdf.

This page intentionally left blank.

Appendix I

Cumulative Effects Supporting Information

Appendix I. Cumulative Effects Supporting Information

I.1 RANGEWIDE IMPACTS FROM PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Table I represents the past, present, and reasonably foreseeable actions across the entire range for Greater Sage-Grouse, which are separated by state. When assessing the cumulative impact of the RMPA/EIS on Greater Sage-Grouse and its habitat, there are multiple geographic scales that the BLM has considered, including the appropriate WAFWA MZ. WAFWA MZs have biological significance to Greater Sage-Grouse. Established and delineated in 2004 in the *Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats* (Connelly et al. 2004), the WAFWA MZs are based on floristic provinces that reflect ecological and biological issues and similarities, not political boundaries.

Table I
Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions

Action	Type	Effects
Great Basin		
Habitat Restoration Programmatic EIS	Great Basin-wide programmatic habitat restoration project	Programmatic document effects will be realized when the field implements projects. This action will provide opportunities to improve and enhance habitat through vegetation treatments.
Fuel Breaks Programmatic EIS	Great Basin-wide programmatic habitat fuel break project	Programmatic document effects will be realized when the field implements projects. This action will help to reduce the loss of habitat due to catastrophic fires.
Forest Service Greater Sage-Grouse Plan Amendments	Programmatic LUP amendments for Greater Sage-Grouse on Forest Service Lands in ID, UT, NV, CO, and WY	Programmatic document effects will be realized when the field undertakes projects to implement the LUP amendment. The FS is resolving protests. They have not made a decision.
Northwest Colorado		
Integrated program of work	Habitat restoration and improvement projects	Potential localized, short-term, adverse impacts on Greater Sage-Grouse habitat, with beneficial long-term impacts. Actions are consistent with those foreseen in the 2015 Final EIS and are therefore within the range of cumulative effects analyzed in the 2015 Final EIS.
Travel management	White River Field Office: Area-wide travel designations being considered through an ongoing plan amendment Little Snake Field Office: Travel Management plan, identifying route designations consistent with criteria in the 2015 LUPA	These actions represent implementation of objectives from 2015 ARMPA to prioritize travel management in Greater Sage-Grouse habitat. Impacts are covered in the cumulative impacts of the 2015 Final EIS as reasonably foreseeable.

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Continued oil and gas development (60 parcels sold, but under review, September 2019; Deferral of 6 parcels December 2019 lease sale; Deferral of 39 parcels in March 2020 lease sale; Potential lease of 1 parcel September 2020; Potential lease of 18 parcels December 2020).	Disturbance and fragmentation	Development is consistent with the reasonably foreseeable development scenarios analyzed as part of the 2015 Final EIS and the associated field office RMPs. Additional impacts are expected to be within the range analyzed in 2015 Final EIS cumulative impacts analysis.
<i>Plans</i>		
Northwest Colorado Programmatic Vegetation Treatment Environmental Assessment (DOI-BLM-CO-N000-2017-0001-EA) decision	Programmatic NEPA document for streamlining habitat treatments in sagebrush	-
Idaho		
Wildland fires 2015–2017	BLM: Past acres burned on BLM-administered land	534,744 acres of HMA burned since the ROD was signed in 2015. Post-fire rehabilitation was implemented. Too soon to determine the effectiveness of rehabilitation.
Habitat treatments 2015–2017	BLM: Past habitat improvement projects	431,295 acres treated to restore or improve potential Greater Sage-Grouse habitat. Too soon to determine the effectiveness of treatment.
ROWs issued 2015–2017	BLM: Past ROWs issued on BLM-administered land	97 ROWs were issued in the planning area but fewer than 10 were in Greater Sage-Grouse habitat and resulted in new habitat loss. The effects were mitigated, using the mitigation hierarchy.
Soda Fire restoration	BLM: Present habitat restoration and fuel break construction	Restoration of previously burned Greater Sage-Grouse habitat. Results in a net benefit to Greater Sage-Grouse habitat.
Twin Falls Vegetation Project	BLM: Present habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions. Results in a net benefit to Greater Sage-Grouse habitat.
Idaho Falls Vegetation Project	BLM: Present habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions. Results in a net benefit to Greater Sage-Grouse habitat.
Natural gas-producing well near Weiser, Idaho	Private: Present active gas well on private land	Well is not in Greater Sage-Grouse habitat.
Conifer removal	NRCS: Present (2018) 1,862 acres of conifer removal on private land to improve Greater Sage-Grouse habitat	Conifer removal would improve Greater Sage-Grouse habitat and open areas to Greater Sage-Grouse that were previously unavailable because of juniper encroachment.

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Weed treatments	NRCS: Present (2018) 95 acres of weed treatments on private land to reduce noxious weeds in Greater Sage-Grouse habitat	Weed treatments allow the native vegetation to outcompete weeds on treated acres.
Water development	NRCS: Present (2018) 21,308 feet of pipeline and 40 watering tanks installed on private land	Water development to move livestock out of natural springs and wet meadows.
Pending ROWs 2015–2017	BLM: Future ROW under analysis on BLM-administered land. For example, ROWs include existing distribution lines, gravel pits, roads, canal diversions, etc.	123 ROW applications have been submitted and are pending review and analysis.
Boise District Vegetation Project	BLM: Future habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions result in a net benefit to Greater Sage-Grouse habitat.
Tristate Fuel Breaks Project	BLM: Future Greater Sage-Grouse habitat protection	Fuel breaks would protect habitat from wildfires. Some sagebrush may be lost during fuel break construction. Results in a net benefit to Greater Sage-Grouse habitat.
Bruneau-Owyhee Sage-Grouse Habitat Project	BLM: Ongoing removal of juniper encroaching into Greater Sage-Grouse habitat	Bruneau-Owyhee Sage-Grouse Habitat Project would remove encroaching juniper from Greater Sage-Grouse habitat and render the habitat usable for Greater Sage-Grouse. Results in a net benefit to Greater Sage-Grouse habitat.
Conifer removal	NRCS: Future (2019–2023) 5,541 acres of conifer removal on private land to improve Greater Sage-Grouse habitat	Conifer removal would improve Greater Sage-Grouse habitat and open areas to Greater Sage-Grouse that were previously unavailable because of juniper encroachment.
Weed treatments	NRCS: Future (2019–2023) 357 acres of weed treatments on private land to reduce noxious weeds in Greater Sage-Grouse habitat	Weed treatments allow the native vegetation to outcompete weeds on treated acres.
Water development	NRCS: Present (2019–2023) 82,502 feet of pipeline and 46 watering tanks installed on private land	Water development to move livestock out of natural springs and wet meadows.
Nevada and Northeast California		
Wildland Fires 2015-2017	BLM: Past – Acres burned on BLM administered land	Approximately 1.3 million acres of HMA burned between 2015-2017. Post-fire restoration is being implemented as described below.
Fire Restoration (Emergency Stabilization and Rehabilitation)	BLM: Past and Present – Habitat restoration following wildland fires	1.8 million acres of habitat are either currently being treated or scheduled to be treated according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire.

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Habitat Treatments	BLM: Past – Habitat improvement projects	Over 176,000 acres of Greater Sage-Grouse habitat was treated between 2015-2017 to maintain or improve conditions for Greater Sage-Grouse. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/restoration.
Land Use and Realty (issued and pending) 2015-2018	BLM: Past ROWs issued on BLM land	227 ROWs were issued in the planning area between 2015-2017. This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset using the mitigation hierarchy.
	BLM: Future pending	90 ROW applications are pending review and analysis. New ROWs would be held to the compensatory mitigation process described in this Proposed RMPA/Final EIS. However, no additional impacts from those described in the Draft EIS and 2015 Final EIS are expected. In addition, BLM Nevada is also currently evaluating a proposed withdrawal for expansion of the Fallon Naval Air Station, Fallon Range Training Complex for defense purposes.
Oil and Gas	BLM: Past	BLM has offered for lease 425,711 acres in HMAs; 407,478 of that total was leased. Lease stipulations apply as described in the leases according to HMA category.
	BLM: Past and Future	BLM's scheduled lease sale on June 12, 2018 included offering a total 110,556 acres of HMAs for lease. After the sale, 30,591 acres in HMA were sold. On September 11, 2018, BLM held another lease sale, where 13,163 acres in HMA were sold. The final lease sale of 2018 for BLM Nevada is scheduled for December 11, 2018 and this sale will not include any parcels within HMA for lease.
		165 parcels have been moved from the November 12, 2019 O&G lease sale, New sale date TBD. These parcels are all located in the Ely District. 220 parcels within Greater Sage-Grouse habitat have been moved to April 2020 lease sale.

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Geothermal	BLM: Past and Present	<p>Between 2015 and 2017, the BLM has offered for lease 24,468 acres within HMAs. Lease stipulations apply as described in the leases as analyzed in the 2015 Final EIS.</p> <p>Six geothermal development permits have been approved and drilled on existing pads on existing leases. McGinness Hills Phase 3 Environmental Assessment authorized up to 42 acres of disturbance on existing leases, which will be offset according to the mitigation hierarchy.</p> <p>Juniper Geothermal Project: Proposed activity – still waiting for baseline data to begin the EA. Analysis has not yet started but EA will analyze the 2015 and 2019 habitat types under separate alternatives.</p> <p>North Valley (San Emidio II) Geothermal Development Project. Analysis has not yet started but EA will analyze the 2015 and 2019 habitat types under separate alternatives.</p> <p>Baltazor Geothermal Project Pre NEPA. Analysis has not yet started but EA will analyze the 2015 and 2019 habitat types under separate alternatives.</p> <p>North Valley (San Emidio II) Geothermal Development Project</p>
Geothermal	Forest Service: Future Pending	6,901 acres of HMA pending Forest Service concurrence to lease, no pending geothermal development permits. If in HMAs, stipulations would be as described in 2015.
Locatable Mineral Projects	BLM: Past and Present	Between 2015 and 2017, the BLM has approved 18 new mines and/or expansions in the planning area, which is within the reasonably foreseeable development scenario outlined in the 2015 Final EIS (Section 5.1.16).
	BLM: Future Pending	The BLM is currently reviewing 20 plans of development for new mines or expansions, which is within the reasonably foreseeable development scenario outlined in the 2015 Final EIS (Section 5.1.16).
Fuel Breaks Programmatic EIS	BLM: Future – Great Basin-wide programmatic habitat fuel break project	Programmatic document effects will be realized when the field implements projects.

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Greater Sage-Grouse Conservation	Forest Service- Future	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they propose alignment with state management plans and strategies.
Tri-State-Calico Complex Wild Horse and Burro Gather	BLM: Future	Removing wild horses will protect the rangelands from overgrazing and provide better habitat conditions for sage-grouse.
Thomas Creek Range Improvement Project (CA)	BLM: Future	Vegetation improvement project to improve the range for sage-grouse and other sage obligate species.
Juniper and Fuel Break Maintenance (CA)	BLM: Future	Juniper removal and fuelbreak project to remove encroaching juniper and protect the treatments with from wildfire.
Twin Peaks Horse Gather (CA)	BLM: Future	Removing wild horses will protect the rangelands from overgrazing and provide better habitat conditions for sage-grouse.
Oregon		
Emergency Stabilization and Rehabilitation in South Bull Ridge RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2017).
Emergency Stabilization and Rehabilitation in South Ridge Bully Creek RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2015).
Emergency Stabilization and Rehabilitation in North Ridge Bully Creek RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2015).
Trout Creek Mountain	Grazing permit renewal	Grazing permit renewal allotment includes the East Fork Trout Creek Research Natural Area (2016).
Louse Creek Canyon Grazing Permit EIS	Grazing permit on 550,000 acres	Notice of Intent to prepare an EIS on grazing permit for 550,000 acres in Vale District (NOI September 2019)
Southeastern OR RMP Amendment	Wilderness, Wilderness characteristics	Draft EIS released for public review May 2019.
Lakeview RMP Amendment	Wilderness, Wilderness characteristics	Draft EIS anticipated August 2020.
Tristate Fuel Breaks Project	See Idaho description.	OR ROD to be completed/signed after Southeastern OR RMP amendment is completed.
Lakeview Resource Area Vegetation Management EA	Comprehensive vegetation management plan for the Lakeview Resource Area.	In development.

Action	Type	Effects
Utah		
Fire and Fuels		
Wildland Fires 2015-2017	Acres burned on BLM administered land	<p>Approximately 181,159 acres of PHMA/GHMA burned between 2015-2019. Post-fire restoration is being implemented across all population areas that are affected.</p> <p>Effects: Potential loss of habitat value due to the removal of vegetation by fire.</p>
Fire Restoration (Emergency Stabilization and Rehabilitation)	Acres of habitat restoration following wildland fires	<p>Approximately 380,704 acres of HMA were treated/restored between 2015-2019. All of these acres are being restored in according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire across all population areas that are affected.</p> <p>Effect: Potentially improve or increase habitat due to vegetative restoration activities.</p>
Vegetation		
Habitat Treatments	Acres of habitat improvement projects	<p>Past: Over 270,000 acres of Greater Sage-Grouse habitat was treated between 2015-2019 to maintain or improve conditions for Greater Sage-Grouse across all populations. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/restoration.</p> <p>Effect: Potentially improve or increase habitat due to vegetative restoration activities.</p> <p>Future: Over 524,702 acres of Greater Sage-Grouse habitat is being proposed for treatment over the next 5 years. Treatments will include conifer removal, fuel breaks, invasive species removal and habitat protection/restoration across all populations.</p> <p>Effect: Potentially improve or increase habitat due to vegetative restoration activities.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Lands and Realty		
Land Use and Realty (issued and pending) 2015-2019	ROWs issued or pending on BLM land	<p>Past: Throughout the planning area (all BLM field offices in Utah except Saint George and Monticello) regardless of Greater Sage-Grouse habitat, 1,092 ROWs were issued between 2015 and 2019. However, only 109 of these were within PHMA.</p> <p>Effect: These numbers include amendments and reauthorizations, which would likely not have resulted in any new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset using the mitigation hierarchy.</p> <p>Future: Throughout the entire planning area, 225 ROW applications are pending review and analysis. Of these, only 30 are within PHMA.</p> <p>Effect: New ROWs would be held to the compensatory mitigation process described in this Proposed RMPA/Final EIS. However, no additional impacts from those described in the Draft EIS and 2015 Final EIS are expected.</p>
Zephyr Transmission Line	500 kV transmission line	<p>Application received – could impact the Bald Hills, Uintah, Carbon, Strawberry, Emery, and Sheeprocks populations.</p> <p>Effects: May remove vegetation due to construction activities. Towers may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.</p>
Enefit Utility Project	Five rights-of-way across public lands for infrastructure (a road, 3 pipelines, and 2 powerlines) to support development of a mine on private lands. Estimated 1,037 acres of disturbance for the rights-of-way (7,000-9,000 acre mine and 320-acre processing plant).	<p>ROD issued in September 2018. Issuance and constructions of ROWs still pending – could impact a portion of the Uintah population (Dead Man Bench GHMA).</p> <p>Effects: May remove vegetation due to construction activities. Increased maintenance activities could lead to an increase in collision mortalities. Any associated tall structures may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Congressionally Directed Land Tenure Adjustments	Land Tenure Adjustments from the BLM to the State of Utah	<p>Table I-2 in Chapter I shows the acres of public land with mapped PHMA and GHMA, establishing the summary of all past lands actions.</p> <p>In the National Defense Authorization Act for Fiscal Year 2017 Congress directed a land exchange between the BLM and State Institution and Trust Lands Administration (SITLA). This includes, approximately 2,400 acres of GHMA in the Sheeprocks area being studied for transfer to the State of Utah.</p> <p>In March 2019 Congress provided for land transfers in the John D. Dingell, Jr. Conservation, Management, and Recreation Act. This could include the BLM acquiring 2,065 acres of PHMA and 1,360 acres of GHMA in the Uinta population. It could also include the transfer of SITLA land in Congressional designations outside of Greater Sage-Grouse habitat for BLM lands throughout the state. While the list of involved lands has not been finalized, preliminary potential parcels include approximately 51,400 acres of PHMA and 1,870 acres of GHMA in the Rich, Carbon, Emery, Uinta, and Sheeprocks populations.</p> <p>Effects: Since compliance with the state's 2019 sage-grouse plan and the Governor's Executive Order on sage-grouse is voluntary for SITLA, transfers of PHMA from BLM would decrease the level of certainty for sage-grouse protection. However, since the lands involved in these Congressionally directed transfers has not been finalized at this time, the specific lands involved and, if transferred, their potential future uses are not known. It would be speculative to analyze beyond the above statement.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Leasable Minerals (Oil and Gas, Non-energy Leasable Minerals, Coal, and Oil Shale and Tar Sands)		
Oil and Gas Leases	Acres of BLM land leased for Oil and Gas development	<p>Future: There are approximately 411,000 acres of PHMA and GHMA currently leased for fluid minerals. Approximately 195,000 acres of those leases are held by production. See Section 3.15.1 for details on acres of existing fluid mineral leases.</p> <p>Effects: The act of leasing would have no direct effect, as no specific disturbance is taken as a result of purchasing a lease.</p> <p>Future: The BLM is required to conduct quarterly lease sales which could include parcels in HMA.</p> <p>Effect: The act of leasing would have no direct effect, as no specific disturbance is taken as a result of purchasing a lease.</p> <p>Leasing could occur in any of the populations, but would be most likely to impact the Uintah, Carbon, Emery, and Rich populations due to mineral potential.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Oil and Gas Wells	Oil and Gas exploration and development	<p>Based upon the reasonable and foreseeable development assumptions in Chapter 4, it is anticipated that 2,968 oil and gas wells will be drilled within occupied Greater Sage-Grouse habitat within the population areas, of which 2,289 wells are anticipated to be producing wells. Exploration wells expected in all populations. Development wells anticipated in Uintah, Carbon, Emery, and Rich populations. This estimate would be inclusive of all related mineral development activities, including leasing, full-field development analyses, and APD analyses. Development associated with such actions is the actualization of the reasonably foreseeable development scenario estimate.</p> <p>Effect: The development of wells within these areas could lead to fragmentation and loss of habitat due to construction activities. Increased noise levels associated with traffic and compressors may impact lek attendance. Increased traffic associated with day-to-day operations may also increase the potential for collision mortality. However, most of these impacts should be removed by management standards identified in the selected alternative.</p>
Asphalt Ridge Tar Sands Development	Lease approximately 6,000 acres of Tar Sands Lands described in the Asphalt Ridge Tract, which is directly adjacent to existing approximately 16,000 acres of State leases	<p>Still in planning and NEPA stages – could impact a small portion of the Halfway Hollow portion of the Uintah population near Vernal and Highway 40.</p> <p>Effect: As a largely underground operation on BLM-administered lands, this would disturb a small amount of land associated with ancillary features. On the portions of the mine that would be mined through surface means, habitat would be lost and noise, dust, and light would affect adjacent areas.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Flat Canyon Coal Lease by application	The Flat Canyon Coal Lease Tract is approximately 2, 692 acres of federal coal reserves	<p>Forest Service completed the consent to BLM. Approximately 23 acres out of the 2,692 acres are within the Emery Population Area.</p> <p>Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.</p>
Alton Coal Tract Lease-by-Application	Add 3,576 acres of federal surface or mineral estate to existing 300-acre mine on private land.	<p>ROD issued in August 2018. The lease sale and issuance was completed in February 2019, and as such was developed to be in conformance with the 2015 Utah Greater Sage-Grouse ARMPA. As described in the July 2018 Alton Final EIS, development of the mine could impact a part of the southern habitat in the Panguitch population.</p> <p>Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative, or offset by habitat improvements.</p>
Williams Draw Coal Lease by Application	The proposed action includes 4,200 acres of federal surface and mineral estate; the proposal may have several vents, drilling exploration holes on the surface and underground, and load-out facilities	<p>Still in planning and NEPA stages; could impact the Carbon population.</p> <p>Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Greens Hollow Coal Lease by Application	Proposal includes 6,700 acres; a vent is proposed off site; minimal surface disturbances with the exception for exploration drilling	<p>The area has been leased, but development is on hold due to litigation. Would affect the Emery population.</p> <p>Effect: This is an expansion of an existing underground mine. Activities associated with development of the lease could result in the loss of a small amount of habitat from development of ancillary features (vent fan). Most mining activity (portal, truck traffic, etc.) occurs down the cliff face, far removed from the habitat. Most of these impacts would be removed by management standards identified in the selected alternative.</p>
Flat Canyon Coal Lease by Application	Lease by Application 3,792 acres; and Exploration License, 595 acres	<p>Leased and under production in the Carbon population.</p> <p>Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.</p>
Gilsonite Leasing	16,810 acres that are currently under prospecting permit application; the permits would either be issued or a Known Gilsonite Leasing Area would be established, thus allowing competitive leasing	<p>The prospecting permit applications have been in place since the late 1980s; Known Gilsonite Leasing Area report ongoing, after which NEPA will begin to address backlogs for these areas in the Uintah population.</p> <p>Effect: Activities associated with development or prospecting of the permit / lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.</p>
Phosphate Fringe Acreage Lease	1,627 acres of fringe acreage lease on BLM-administered lands	<p>NEPA has started and awaiting a Development Scenario to complete the NEPA for this expansion of an existing phosphate mine in the Diamond Mountain portion of PHMA in the Uintah population.</p> <p>Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Phosphate Competitive Lease Application	1,186 acres on National Forest System lands	<p>NEPA has started and awaiting a Development Scenario to complete the NEPA for this area in the Uintah population.</p> <p>Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.</p>
Other Items		
Hard Rock Prospecting Permits being considered on Bankhead Jones	Hard rock exploration permits	<p>Pending consideration for this area in the Sheepprocks population.</p> <p>Effect: Activities associated with development of the lease could result in loss of habitat, vehicle mortality due to increased traffic and disruption of seasonal use areas. Most of these impacts should be removed by management standards identified in the selected alternative.</p>
Gooseberry Narrows Reservoir	Bureau of Reclamation project on Forest Service and private land; project is approximately 1,200 acres	<p>EIS is complete, pending EPA review and approval for this portion of the Carbon population.</p> <p>Effect: Activities associated with construction and operation of the reservoir would result in loss of habitat within the project area and a potential increase for vehicle mortality due to increased traffic. However, the habitat lost within the project area may be supplemented by improving the quality and seasonal functionality of the adjacent habitat. Most of the impacts should be removed by management standards identified in the selected alternative.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Uinta Basin Railway	Development of a railway that begins in the Uinta Basin, and terminates at a location that connects to the national rail system.	<p>The project is in the early stages of consideration. Scoping was conducted by the Surface Transportation Board in June-August, 2019. The EIS is currently being developed. There is not a preferred alternative, but based on the early alternatives, one alternative alignment could affect GHMA in the Uinta Population, and others could affect PHMA in the Emma Park portion of the Carbon Population.</p> <p>Effect: Construction of the railway could result in a direct loss of habitat. Use of the railway could result in noise that would displace birds from preferred habitats. The occurrence and magnitude of these impacts would vary based on alternative alignment and mitigation measures applied.</p>
Motorized Travel Plan Implementation	Implementation of motorized route designation plans across the planning region	<p>Implementation actions underway statewide, with travel planning reasonably foreseeable in the Sheeprocks, Uintah, Carbon and Panguitch populations.</p> <p>Effect: The development of a motorized travel plan would potential help to reduce fragmentation of habitat and centralizing disturbance into areas of lesser importance.</p>
Forest Service Greater Sage-Grouse Planning	Forest Service and Utah Division of Wildlife Resources	<p>Forest Service is in the process of amending their land use plans. Their proposed changes are similar with those considered in this EIS, and would increase alignment with state management plans and strategies. Applicable to all Greater Sage-Grouse populations with National Forest System Lands.</p> <p>Effect: This effort will help to align the Forest Service's plan to be more consistent with the State of Utah's plan and provide the adequate management actions necessary to protect and conserve the Greater Sage-Grouse.</p>

Action	Type	Effects
State of Utah Greater Sage-Grouse Management	Update of the State's Conservation Plan for Greater Sage-Grouse in Utah, as well as implementation of the State's compensatory mitigation rule	<p>Past: The State updated their Greater Sage-Grouse plan in January 2019, incorporating the compensatory mitigation rule that provides a process to develop a banking system to apply the state's 4:1 mitigation ratio that is designed to improve habitat for Greater Sage-Grouse.</p> <p>Effect: This new plan refines and identifies areas to improve management actions and allow for the incorporation of new and local science to better balance Greater Sage-Grouse management across the state. It provides management to maintain and improve Greater Sage-Grouse populations, as well as a framework for managing habitat on state and private land. It also provides an opportunity for economic development to occur while offsetting the impacts to habitat quality.</p>
Wyoming		
Wildland Fires 2015-2020	BLM: Past – Acres burned on BLM administered land	Approximately 301,000 acres of HMA burned between 2015 and 2020. Post-fire restoration and habitat treatments are being implemented, as described below, to diminish impacts of habitat lost to wildland fire.
Fire Restoration (Emergency Stabilization and Rehabilitation)	BLM: Past and Present – Habitat restoration following wildland fires	Approximately 5,443 acres of BLM-administered habitat are either currently being treated or scheduled to be treated according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire.
Habitat Treatments	BLM: Past – Habitat improvement projects	More than 96,000 acres of Greater Sage-Grouse habitat were treated between 2015 and 2020 to maintain or improve conditions for Greater Sage-Grouse. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/ restoration.

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Land Use and Realty (issued and pending) 2015-2018	BLM: Past ROWs issued on BLM land	BLM Wyoming issued approximately 3,720 ROWs in the planning area between 2015-2020. This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset by the management prescriptions in the RMPs and ARMPA.
	BLM: Future pending	<p>There are approximately 653 ROW applications pending review and analysis. New ROWs under the 2018 Proposed Plan would align with the management prescriptions of the Core Area Strategy and State of Wyoming Mitigation Framework. No additional cumulative impacts are anticipated, beyond those described.</p> <p>Miller Mountain Land Exchange would resolve public access issues and improve landscape scale management of resources by consolidating BLM lands in the area.</p> <p>Chokecherry and Sierra Madre Wind Energy Development Project, Phase II Turbine Development (EA3)</p>
Oil and Gas	BLM: Past	BLM Wyoming has offered for lease 5,052,795.01 acres; 2,621,838.82 acres of that total was leased. Leases followed management prescriptions in the RMPs and ARMPA and stipulations apply as described in the leases according to HMA category.
	BLM: Future pending	<p>BLM Wyoming has a scheduled lease sale in September 2020 that will offer 351,680.945 acres for lease.</p> <p>The actions in the 2018 Proposed Plan do not propose to change stipulations analyzed in the 2014 and 2015 plans.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Locatable Mineral Projects	BLM: Past and Present	<p>Between 2015-2020^[1], the BLM has approved 24 new mines and/or expansions within the planning area (including non-habitat). The 2018 Proposed Plan does not propose changes to any decisions associated with locatable minerals, which were sufficiently analyzed on the existing plans.</p>
	BLM: Future pending	<p>^[1] This covers all authorized operations through first quarter 2020, it does not include the pending operations that are currently under review.</p> <p>The BLM is currently reviewing 4 plans of operation for new mines, mine expansions and 5 notice-level activities. This number does not include the 10 pending mine patents, which are in the process of being patented into private ownership. The 2018 Proposed Plan does not propose changes to any decisions associated with locatable minerals, and future impacts would be analyzed in future EISs, adhering to existing requirements of the RMPs and ARMPA.</p>
Leasable Mineral Projects (Coal)	BLM: Past and Present	<p>Two coal lease modifications were issued in 2018, totaling 1,306.61 acres. For lease modifications occurring in Greater Sage-Grouse habitat, effects were offset by the management prescriptions in the RMPs and ARMPA.</p>
	BLM: Future pending	<p>BLM Wyoming is currently reviewing 3 coal lease applications/modifications totaling 10,344.21 acres, however these applications are currently on hold. No management decisions for leasable minerals are proposed for change under the 2018 Proposed Plan.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Other items		
Buffalo RMP Coal Supplemental EIS and Amendment	BLM: Past - Planning	<p>Final EIS published November 4, 2019. Record of Decision signed November 22, 2019</p> <p>The Buffalo Field Office addressed deficiencies through the preparation of a Draft Supplemental EIS that considered climate change and downstream combustion, and analyzed alternatives that reduce the amount of coal available for leasing.</p> <p>Effect: Since no alternative proposed different management for Greater Sage-Grouse from the sage-grouse planning process, there are no cumulative effects not already address in the impact analysis above.</p>
Alkali Creek Reservoir Project EIS	<p>BLM: Past - The Wyoming Water Development Commission (WWDC) proposed to construct a 294-acre reservoir on Alkali Creek and ancillary facilities across public and private land near Hyattville, Wyoming. The reservoir will impound approximately 7,994 acre-feet of water under normal conditions, and 9,872 acre-feet when under flood conditions.</p>	<p>Final EIS published May 2019. Record of Decision issued on November 18, 2019.</p> <p>The reservoir will provide late-season irrigation water for portions of the Nowood River Watershed. The irrigation pool (currently modeled at 5,996 acre-feet) will be available either directly or through exchange for irrigation water.</p> <p>Effect: Since no alternative proposed different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>
Leavitt Reservoir Expansion Project EIS	<p>BLM: Past - The WWDC proposed to expand the existing Leavitt Reservoir near Shell, Wyoming, from a pool of 643 acre-feet to 6,404 acre-feet.</p>	<p>The purpose of the project is to provide late season irrigation for agriculture in the Shell Valley.</p> <p>Effect: Since no alternative proposed different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Rock Springs RMP Revision EIS	BLM: Future pending - Development of a resource management plan revision	<p>The planning area includes lands within the Rock Springs Field Office administrative boundary in Sweetwater, Lincoln, Uinta, Sublette, and Fremont counties in southwestern Wyoming. The decision area consists of 3.6 million acres of BLM-administered surface and 3.7 million acres of federal mineral estate. The revised RMP will replace the 1997 Green River RMP. A Comprehensive Travel and Transportation Plan for the entire field office, as well as an additional socioeconomic modeling effort coordinated with cooperating agencies are being incorporated into the RMP Revision.</p> <p>Effect: Since no alternative proposes different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Wild Horse Management for the BLM Rock Springs and Rawlins Field Offices Plan Amendment EIS	BLM: Future pending - Development of a resource management plan amendment	<p>In April 2013, the Department of the Interior, the BLM and the Rock Springs Grazing Association signed a consent decree requiring the BLM to initiate NEPA analysis to consider the environmental effects of modifying management levels of wild horses in specified herd management areas. An NOI was issued, initiating public scoping to amend the 2008 Rawlins RMP in conjunction with the Rock Springs RMP revision. Prior to Spring 2019, the wild horse management decisions were being evaluated through the ongoing Rock Springs Resource Management Plan revision, with included amendment to the Rawlins RMP for the Adobe Town HMA. However, due to delays in the ongoing RMP revision related to expansion of energy development opportunities, the decision was made to expedite a separate EIS document specific to wild horse management actions.</p> <p>Effect: Since no alternative proposes different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>
Converse County Oil and Gas Project EIS	BLM: Future pending – Proposed action includes development of 5,000 new oil and gas wells on 1,500 well pads.	<p>The project area encompasses roughly 1.5 million acres of split estate mixed surface ownership lands. The operators propose to develop the wells over 10 years, with the life of the project anticipated to be 20 to 30 years.</p> <p>Effect: Since no alternative proposes different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>

Appendix I. Cumulative Effects Supporting Information (Table I: Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions, *cont'd*)

Action	Type	Effects
Moneta Divide Natural Gas and Oil Development Project EIS	BLM: Future pending – Proposed action includes development of 4,250 natural gas wells and associated infrastructure.	<p>The project area is located in Fremont and Natrona counties and encompasses approximately 265,000 acres of land. The life of the proposed project is estimated to be 40 years. Additional potential development, which would require additional NEPA analysis, include pipelines to transport treated, produced water from the production areas west to Boysen Reservoir and a pipeline transporting natural gas from the production areas to Wamsutter, Wyoming, in the Rawlins Field Office.</p> <p>Effect: Since no alternative proposes different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>
Wyoming Pipeline Corridor Initiative (WPCI)	BLM: Future pending - The Wyoming Pipeline Corridor Initiative is a proposal from the State of Wyoming to designate almost 2,000 miles of pipeline corridors across private, state and BLM-managed lands in Wyoming. Approximately 1,150 miles of the proposed corridors are located on BLM managed lands.	<p>The project would designate a statewide pipeline corridor network for future development of pipelines associated with carbon capture, utilization and storage, as well as pipelines and facilities associated with enhanced oil recovery. The project will not authorize any new pipelines or construction but will amend several BLM Resource Management Plans across the state to make future analysis of project specific proposals more efficient.</p> <p>One of the primary purposes of the pipeline corridor network is to connect existing oil fields suitable for enhanced oil recovery (EOR) with anthropogenic and natural carbon dioxide (CO₂) sources. The CO₂ will be injected into existing, often “played-out” oil fields, thereby increasing oil production beyond conventional recovery methods with little additional surface disturbance.</p> <p>Effect: Since no alternative proposes different management for Greater Sage-Grouse from the sage-grouse planning process, there will be no cumulative effects not already address in the impact analysis above.</p>

Action	Type	Effects
Greater Sage-Grouse Conservation	Forest Service: Future	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they will propose alignment with state management plans and strategies.

I.2 CUMULATIVE EFFECTS ANALYSIS – HABITAT AND ALLOCATION DECISION SUMMARIES FOR THE NO-ACTION AND PROPOSED PLAN AMENDMENT ALTERNATIVES BY MANAGEMENT ZONE

Data representing the final plan allocation decisions and habitat delineations collected by the BLM upon the completion of the 2015 planning process have been updated or corrected relative to the final allocation decisions from the 2015 plans to reflect maintenance-related changes, adaptive management responses, or refined source data. The BLM used these data to represent the No-Action Alternative for the current plan analysis. The BLM then identified 2015 data which are not subject to change in any alternatives associated with the 2018 planning process. These data were carried forward as the alternative allocation decision data. The BLM was also able to provide allocation decision data representing changes included in the 2018 Proposed RMPAs/Final EISs, which were then used in the comparative analysis. Decision data are summarized by habitat type within each Management Zone (MZ) (see **Figure I**) and are presented in this appendix in both approximate acreage of BLM-administered lands within each habitat designation as well as percent of BLM-administered lands within a habitat designation to which an allocation decision applies. For programs where allocation decisions change, information is presented separately. In cases where no change has occurred, both alternatives are presented together. The BLM Montana is currently not undergoing a plan amendment process; however, data were included in this cumulative effects summary. A summary of data submitted for this analysis can be found in **Table I**, detailing which areas did not provide data for analysis. In these cases, summaries reflect submitted data only. All figures and tables are intended for MZ summary purposes only. They represent data available at the time of consolidation and may be revised as plans are finalized. Consult each individual EIS for final/official acreages.

Table 2
Data Submission Summary for Cumulative Effects Analysis. Y = Data submitted, N = No data submitted, followed by which area within the State that did not provide data.

Program Area	Colorado	Idaho	Montana & The Dakotas	Nevada/NE California	Oregon	Utah	Wyoming
Geothermal Energy	Y	Y	N – Miles City, Lewistown, Billings, UMRBNM	Y	N	Y	N – Bighorn Basin
Land Tenure	Y	Y	Y	Y	N	Y	Y
Livestock Grazing	Y	Y	Y	Y	Y	Y	Y
Locatable Minerals	Y	Y	Y	Y	Y	Y	Y
Non-Energy Leasable Minerals	Y	Y	N – Miles City, Billings	Y	N	Y	N – Bighorn Basin, Buffalo, Wyoming (9-Plan)
Fluid Mineral Leasing (Oil & Gas)	Y	Y	N - Lewistown	Y	N	Y	Y
Rights-of-Ways	Y	Y	Y	Y	N	Y	Y
Salable-Mineral Materials Disposals	Y	Y	Y	Y	N	Y	Y
Solar Energy	Y	Y	Y	Y	N	Y	N – Bighorn Basin, Buffalo, Lander, Wyoming (9-Plan)
Trails and Travel Management	Y	Y	Y	Y	N	Y	Y
Wind Energy	Y	Y	Y	Y	N	Y	Y

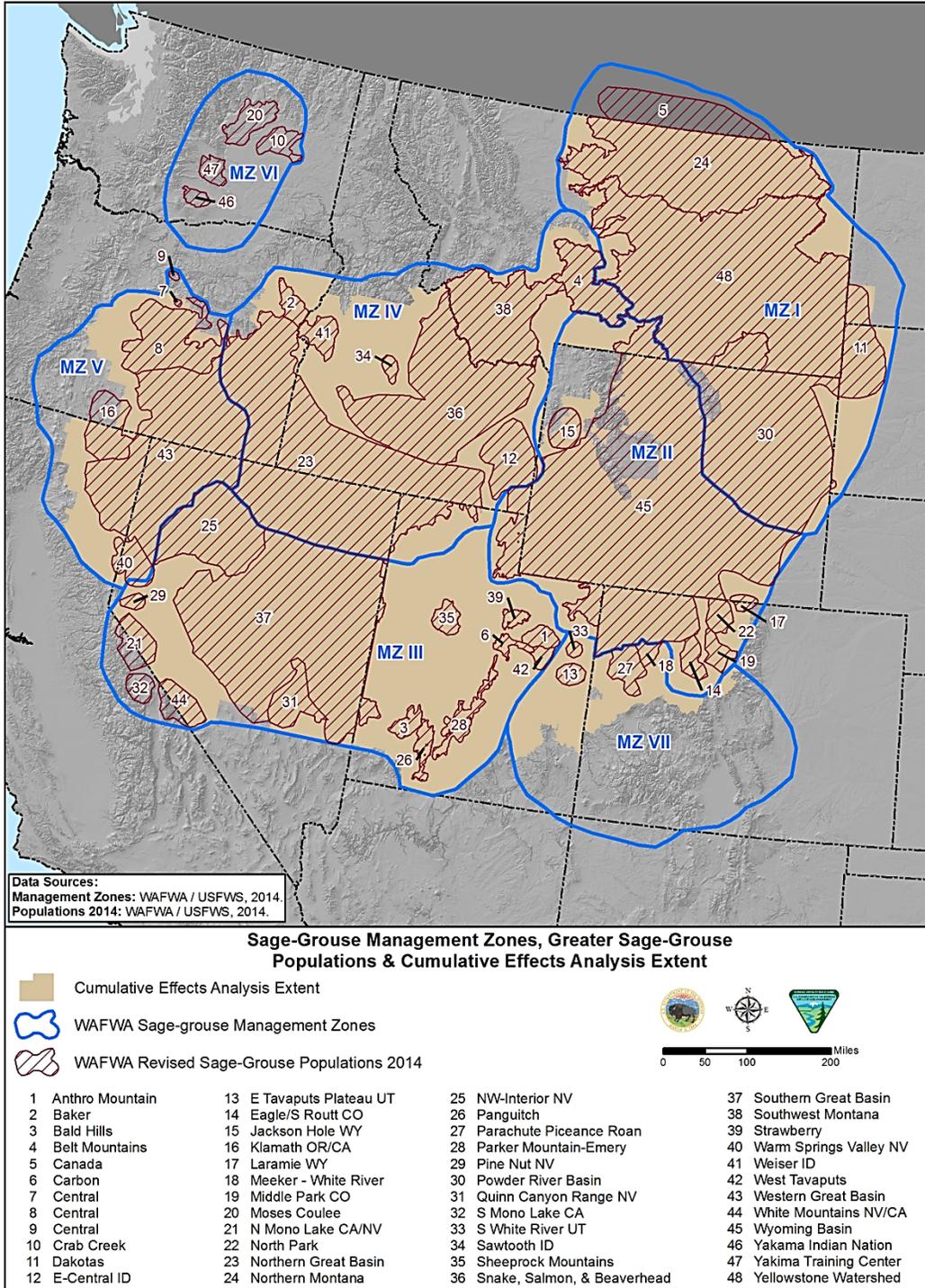


Figure I – Cumulative Effects Analysis Extent, Greater Sage-Grouse Management Zones and Populations

1.2.1 Management Zone I – Wyoming, Montana, North Dakota, South Dakota

I. Habitat Management

Table 3 – Habitat Management Areas within MZ I

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ I							
No Action				Management Alignment			
PHMA	GHMA	RHMA ¹	Non-HMA	PHMA	GHMA	RHMA	Non-HMA
12,122,000	28,339,000	437,000	33,467,000	12,122,000	28,339,000	437,000	33,467,000

Approximate Percent of MZ I that is HMA							
No Action				Management Alignment			
PHMA	GHMA	RHMA	Non-HMA	PHMA	GHMA	RHMA	Non-HMA
16%	38%	1%	45%	16%	38%	1%	45%

**No Action & Management Alignment- MZ I -
Habitat Management Areas within the Planning
Area**

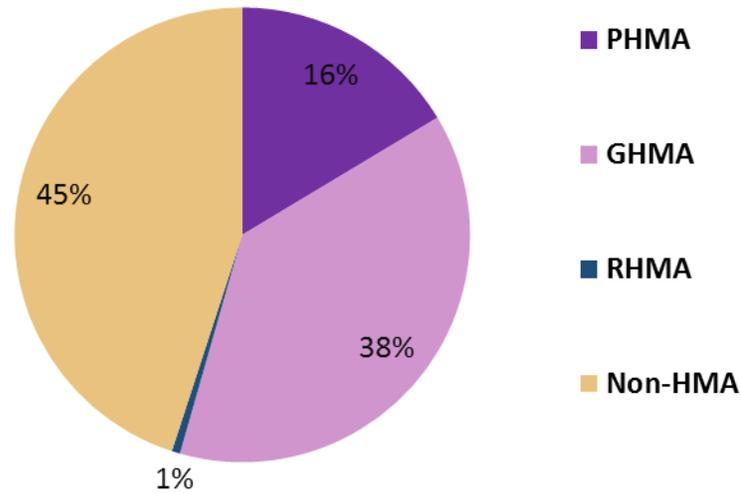


Figure 2 - Habitat Management Areas within MZ I

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

¹ Restoration Habitat Management Area (RHMA)

II. Geothermal Energy

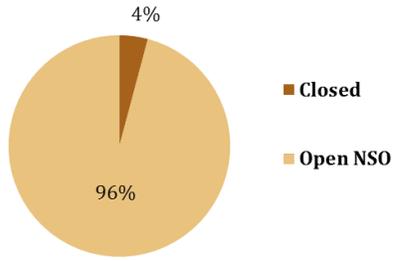
Table 4 – Geothermal Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding.
¹ Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

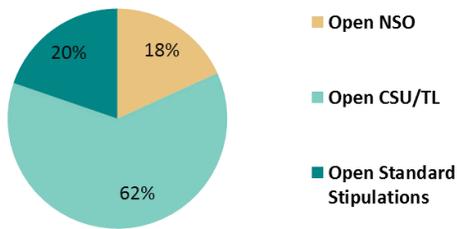
Approximate Acres of Geothermal Decisions¹ in MZ I by Habitat Management Area Type					
Geothermal Energy	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	86,000	0	NA	86,000	172,000
Open NSO	1,988,000	130,000	NA	230,000	2,349,000
Open CSU/TL	0	443,000	NA	1,071,000	1,514,000
Open Standard Stipulations	0	141,000	NA	372,000	514,000
Total	2,074,000	714,000	NA	1,760,000	4,548,000

Approximate % of Habitat Management Area by Geothermal Decision¹ within Habitat in MZ I					
Geothermal Energy	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	4%	0%	NA	5%	4%
Open NSO	96%	18%	NA	13%	52%
Open CSU/TL	0%	62%	NA	61%	33%
Open Standard Stipulations	0%	20%	NA	21%	11%
Total	100%	100%	NA	100%	100%

No Action & Management Alignment - PHMA - Geothermal Energy



No Action & Management Alignment - GHMA - Geothermal Energy



No Action & Management Alignment - Non-HMA - Geothermal Energy

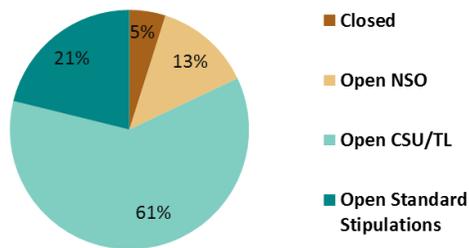


Figure 3 – Geothermal Energy Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ¹ Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

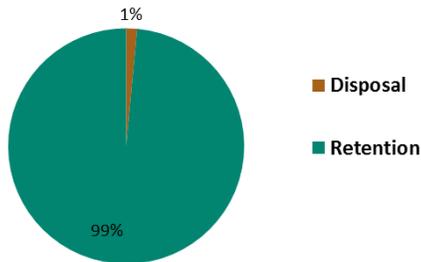
Table 5 – Land Tenure Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

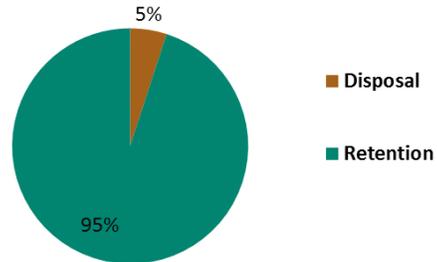
Approximate Acres of Land Tenure Decisions in MZ I by Habitat Management Area Type					
Land Tenure	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Disposal	49,000	167,000	0	143,000	359,000
Retention	3,259,000	2,997,000	159,000	1,538,000	7,953,000
Total	3,308,000	3,164,000	159,000	1,681,000	8,312,000

Approximate % of Habitat Management Area by Land Tenure Decision within Habitat in MZ I					
Land Tenure	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Disposal	1%	5%	0%	9%	4%
Retention	99%	95%	100%	91%	96%
Total	100%	100%	100%	100%	100%

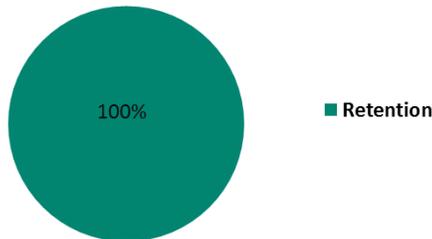
No Action & Management Alignment - PHMA - Land Tenure



No Action & Management Alignment - GHMA - Land Tenure



No Action & Management Alignment - RHMA - Land Tenure



No Action & Management Alignment - Non-HMA - Land Tenure

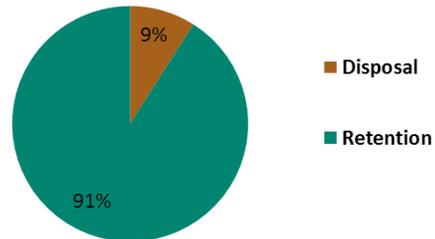


Figure 4 – Land Tenure Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 6 – Livestock Grazing Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ I by Habitat Management Area Type					
Livestock Grazing	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Unavailable	3,000	8,000	0	12,000	23,000
Available	3,303,000	3,186,000	158,000	1,632,000	8,279,000
Total	3,306,000	3,194,000	158,000	1,644,000	8,302,000

Approximate % of Habitat Management Area by Livestock Grazing Decision within Habitat in MZ I					
Livestock Grazing	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Unavailable	<1%	<1%	0%	<1%	<1%
Available	100%	100%	100%	100%	100%
Total	100%	100%	100%	100%	100%

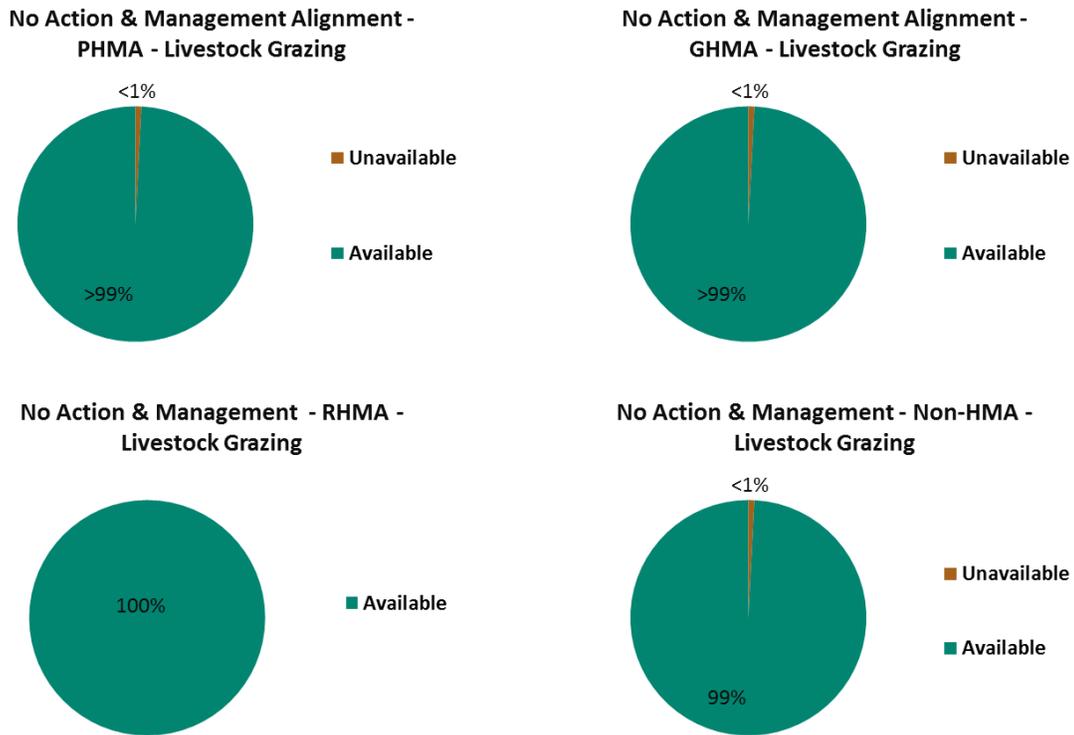


Figure 5 – Livestock Grazing Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 7 – Locatable Minerals Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages. ² MT Recommended Withdrawals Decisions in PHMA will be removed via plan maintenance.

Approximate Acres of Locatable Minerals Decisions² in MZ I by Habitat Management Area Type					
Locatable Minerals	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Existing Withdrawals	22,000	203,000	0	240,000	465,000
Recommended Withdrawals	1,094,000	166,000	0	46,000	1,306,000
Open	4,053,000	7,132,000	164,000	2,688,000	14,037,000
Total	5,169,000	7,501,000	165,000	2,974,000	15,808,000

Approximate % of Habitat Management Area by Locatable Minerals Decisions² within Habitat in MZ I					
Locatable Minerals	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Existing Withdrawals	<1%	3%	<1%	8%	3%
Recommended Withdrawals	21%	2%	0%	2%	8%
Open	79%	95%	100%	90%	89%
Total	100%	100%	100%	100%	100%

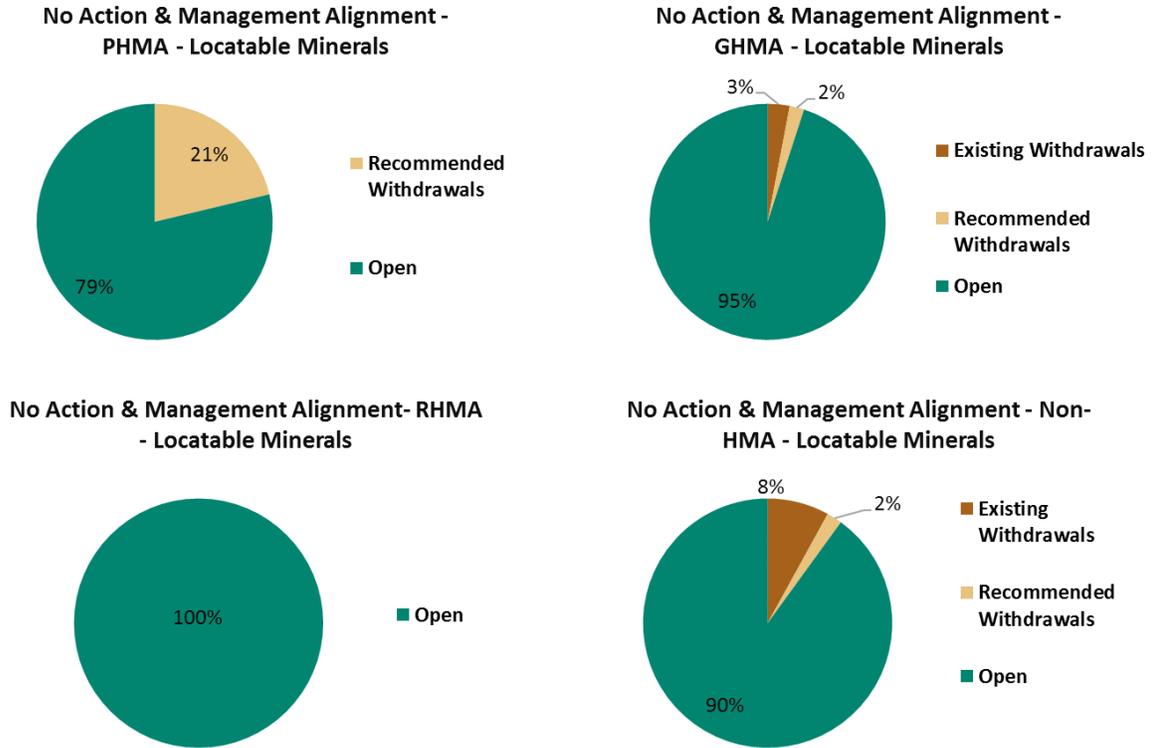


Figure 6 – Locatable Mineral Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages. ² MT Recommended Withdrawals Decisions in PHMA will be removed via plan maintenance.

VI. Non-Energy Leasable Minerals

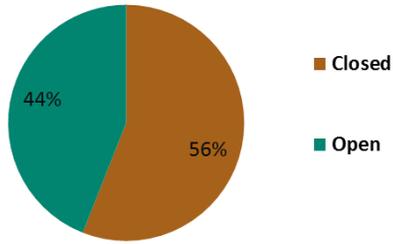
Table 8 – Non-Energy Leasable Minerals Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding.
³ Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

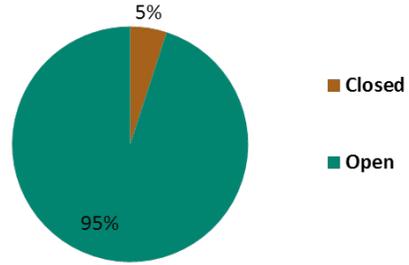
Approximate Acres of Non-Energy Leasable Minerals³ Decisions in MZ I by Habitat Management Area Type					
Non-Energy Leasable Minerals	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	2,432,000	296,000	NA	355,000	3,083,000
Open	1,900,000	6,205,000	NA	2,463,000	10,568,000
Total	4,332,000	6,501,000	NA	2,818,000	13,651,000

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals³ Decision within Habitat in MZ I					
Non-Energy Leasable Minerals	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	56%	5%	NA	13%	23%
Open	44%	95%	NA	87%	77%
Total	100%	100%	NA	100%	100%

No Action & Management Alignment- PHMA
- Non-Energy Leasable Minerals



No Action & Management Alignment -
GHMA - Non-Energy Leasable Minerals



No Action & Management Alignment - Non-
HMA - Non-Energy Leasable Minerals

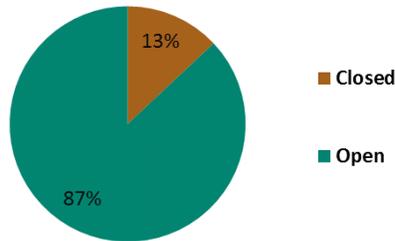


Figure 7 – Non-Energy Leasable Minerals Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ³ Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 9 – Fluid Minerals (Oil & Gas) Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁴Data not available for portions of MT. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Fluid Minerals (Oil a& Gas) Decisions⁴ in MZ I by Habitat Management Area Type					
Fluid Minerals (Oil and Gas)	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	196,000	328,000	0	346,000	870,000
Open NSO	3,730,000	1,485,000	228,000	406,000	5,849,000
Open CSU/TL	1,582,000	5,280,000	64,000	2,155,000	9,082,000
Open Standard Stipulations	0	2,223,000	0	744,000	2,967,000
Total	5,508,000	9,316,000	292,000	3,651,000	18,768,000

Approximate % of Habitat Management Area by Fluid Minerals (Oil a& Gas) Decision⁴ within Habitat in MZ I					
Fluid Minerals (Oil and Gas)	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	3%	4%	0%	9%	5%
Open NSO	68%	16%	78%	11%	31%
Open CSU/TL	29%	57%	22%	59%	48%
Open Standard Stipulations	0%	24%	0%	20%	16%
Total	100%	100%	100%	100%	100%

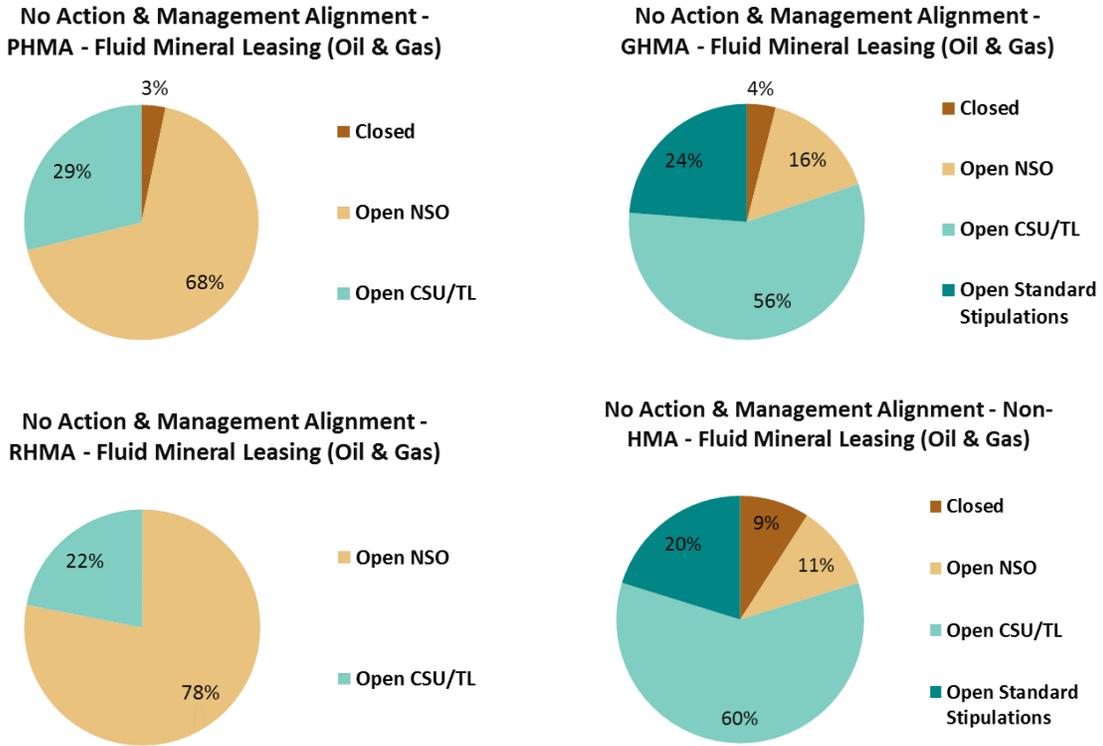


Figure 8 – Fluid Minerals (Oil & Gas) Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁴Data not available for a portion of MT. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

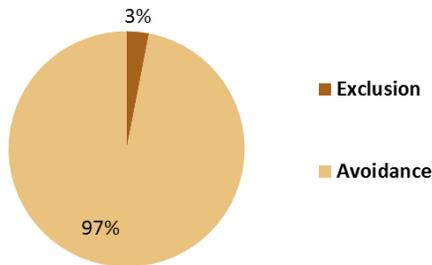
Table 10 – Rights-of-Ways Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

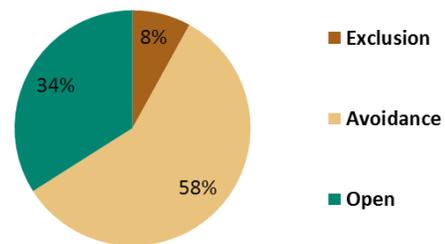
Approximate Acres of Rights-of-Ways Decisions in MZ I by Habitat Management Area Type					
Rights-of-Ways	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Exclusion	110,000	240,000	0	86,000	436,000
Avoidance	3,163,000	1,819,000	72,000	282,478	5,336,478
Open	5,000	1,067,000	87,000	1,206,000	2,364,000
Total	3,278,000	3,126,000	159,000	1,574,478	8,136,478

Approximate % of Habitat Management Area by Rights-of-Ways Decision within Habitat in MZ I					
Rights-of-Ways	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Exclusion	3%	8%	0%	5%	5%
Avoidance	97%	58%	45%	18%	66%
Open	0%	34%	55%	77%	29%
Total	100%	100%	100%	100%	100%

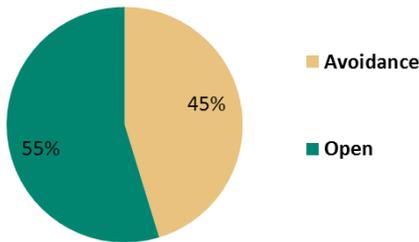
No Action & Management Alignment - PHMA - Rights of Ways



No Action & Management Alignment - GHMA - Rights of Ways



No Action & Management Alignment - RHMA - Rights of Ways



No Action & Management Alignment - Non-HMA - Rights of Ways

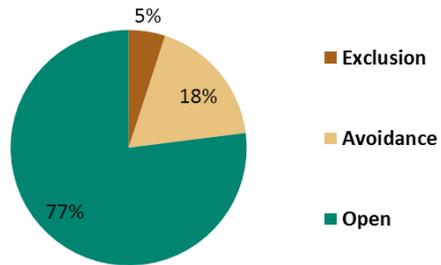


Figure 9 – Rights-of-Ways Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

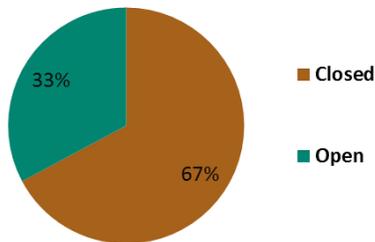
Table II – Salable Minerals Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

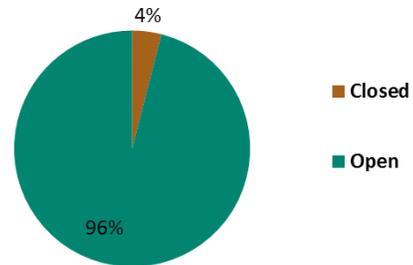
Approximate Acres of Salable Minerals Materials Decisions in MZ I by Habitat Management Area Type					
Salable Minerals Materials	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	3,870,000	402,000	9,000	424,000	4,705,000
Open	1,882,000	8,787,000	267,000	2,990,000	13,926,000
Total	5,752,000	9,189,000	276,000	3,414,000	18,631,000

Approximate % of Habitat Management Area by Salable Minerals Materials Decision within Habitat in MZ I					
Salable Minerals Materials	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	67%	4%	3%	12%	25%
Open	33%	96%	97%	88%	75%
Total	100%	100%	100%	100%	100%

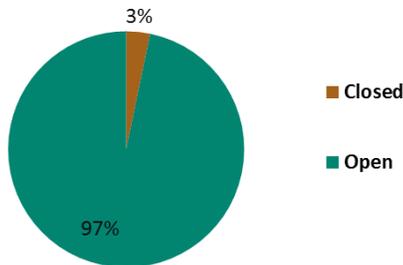
No Action & Management Alignment - PHMA - Salable Minerals Materials



No Action & Management Alignment - GHMA - Salable Minerals Materials



No Action & Management Alignment - RHMA - Salable Minerals Materials



No Action & Management Alignment - Non-HMA - Salable Minerals Materials

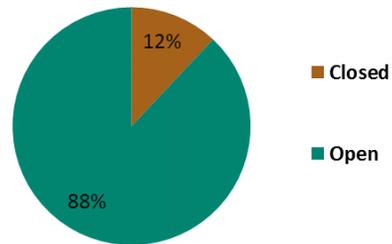


Figure 10 – Salable Minerals Materials Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 12 – Solar Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁵ Data not available for Wyoming. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions⁵ in MZ I by Habitat Management Area Type					
Solar Energy	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Exclusion	2,709,000	249,000	93,000	239,000	3,290,000
Avoidance	0	1,844,000	55,000	172,000	2,071,000
Open	0	0	0	1,144,000	1,145,000
Total	2,709,000	2,093,000	148,000	1,555,000	6,506,000

Approximate % of Habitat Management Area by Solar Energy Decision⁵ within Habitat in MZ I					
Solar Energy	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Exclusion	100%	12%	63%	11%	51%
Avoidance	0%	88%	37%	15%	32%
Open	0%	0%	0%	74%	18%
Total	100%	100%	100%	100%	100%

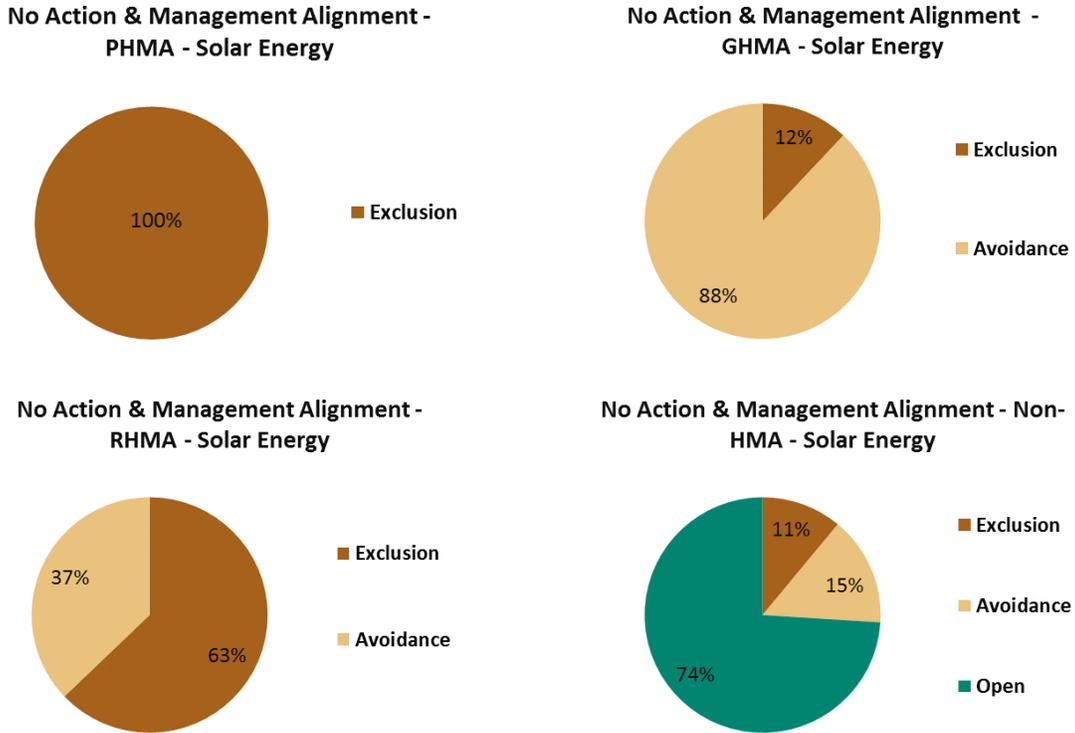


Figure II - Solar Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding.
⁵ Data not available for Wyoming. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 13 – Trails and Travel Management Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ I by Habitat Management Area Type					
Trails and Travel Management	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	2,000	39,000	0	11,000	52,000
Limited	3,306,000	3,125,000	159,000	1,655,000	8,245,000
Open	0	0	0	0	0
Total	3,308,000	3,164,000	159,000	1,666,000	8,297,000

Approximate % of Habitat Management Area by Trails and Travel Management Decision within Habitat in MZ I					
Trails and Travel Management	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Closed	0%	1%	0%	1%	1%
Limited	100%	99%	100%	99%	99%
Open	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%

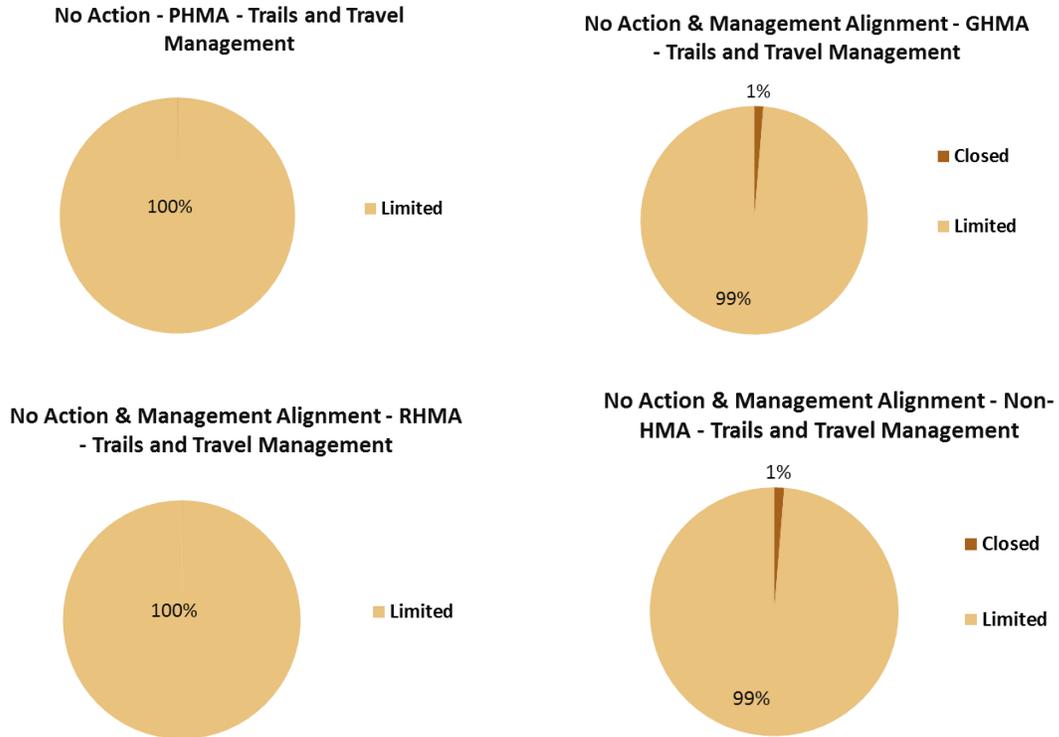


Figure I2 – Trails and Travel Management Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

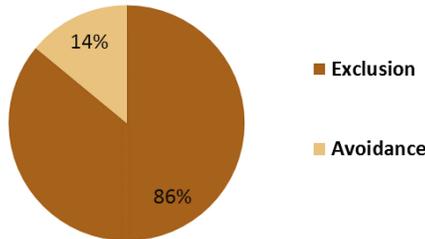
Table 14 – Wind Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

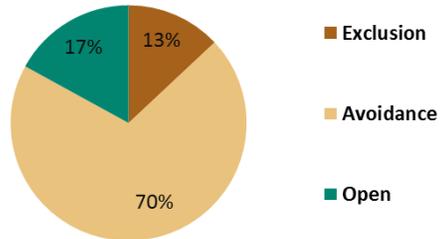
Approximate Acres of Wind Energy Decisions in MZ I by Habitat Management Area Type					
Wind Energy	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Exclusion	2,966,000	384,000	93,000	419,000	3,862,000
Avoidance	493,000	2,090,000	55,000	594,000	3,232,000
Open	0	513,000	0	655,000	1,168,000
Total	3,459,000	2,987,000	148,000	1,668,000	8,262,000

Approximate % of Habitat Management Area by Wind Energy Decision within Habitat in MZ I					
Wind Energy	No Action & Management Alignment				
	PHMA	GHMA	RHMA	Non-HMA	Total
Exclusion	86%	13%	63%	25%	47%
Avoidance	14%	70%	37%	36%	39%
Open	0%	17%	0%	39%	14%
Total	100%	100%	100%	100%	100%

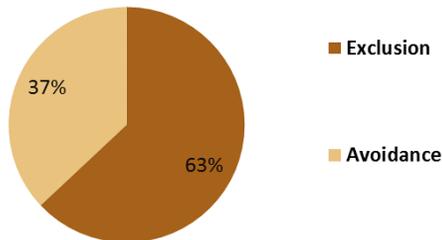
No Action & Management Alignment - PHMA - Wind Energy



No Action & Management Alignment - GHMA - Wind Energy



No Action & Management Alignment - RHMA - Wind Energy



No Action & Management Alignment - Non-HMA - Wind Energy

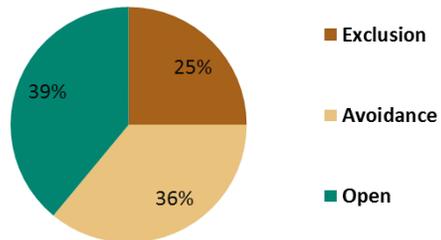


Figure 13 – Wind Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

I.2.2 Management Zones II/VII – Wyoming, Colorado, Utah, Idaho

I. Habitat Management

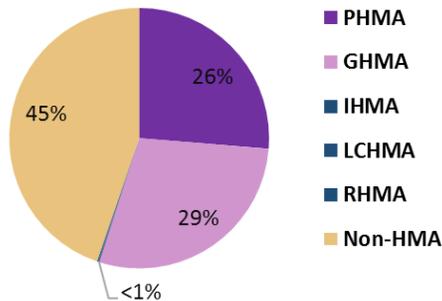
Table 15 – Habitat Management Areas within MZs II/VII

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZs II/VII					
No Action					
PHMA	IHMA	GHMA	LCHMA ²	RHMA	Non-HMA
16,699,000	69,000	18,220,000	295,000	8,000	28,409,000
Management Alignment					
PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA
16,664,000	69,000	17,394,000	295,000	8,000	29,270,000

Approximate Percent of MZs II/VII that is HMA					
No Action					
PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA
26%	<1%	29%	<1%	<1%	45%
Management Alignment					
PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA
26%	<1%	27%	<1%	<1%	46%

No Action - MZ II & VII - Habitat within the Planning Area



Management Alignment - MZ II & VII - Habitat within the Planning Area

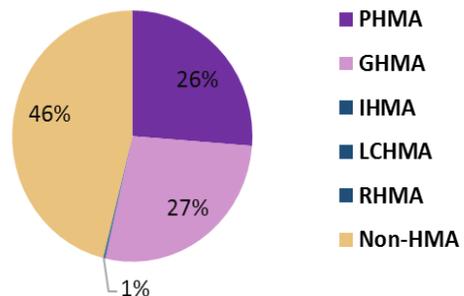


Figure 14 – Habitat Management Areas within MZs II/VII

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

² Linkage Connectivity Habitat Management Area (LCHMA)

II. Geothermal Energy

Table 16 – Geothermal Energy Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding.
 6 Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions⁶ in MZ II/VII by Habitat Management Area Type							
Geothermal Energy	No Action						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Closed	781,000	1,000	285,000	1,000	NA	2,342,000	3,409,000
Open NSO	2,271,000	29,000	342,000	54,000	NA	1,917,000	4,615,000
Open CSU/TL	983,000	0	1,316,000	81,000	NA	3,511,000	5,891,000
Open Standard Stipulations	0	0	245,000	8,000	NA	2,407,000	2,660,000
Total	4,037,000	29,000	2,187,000	144,000	NA	10,179,000	16,575,000

Geothermal Energy	Management Alignment						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Closed	565,000	1,000	260,000	1,000	NA	2,355,000	3,181,000
Open NSO	2,451,000	29,000	348,000	54,000	NA	1,923,000	4,804,000
Open CSU/TL	983,000	0	1,109,000	81,000	NA	3,719,000	5,891,000
Open Standard Stipulations	0	0	140,000	8,000	NA	2,512,000	2,660,000
Total	4,000,000	29,000	1,857,000	144,000	NA	10,509,000	16,538,000

Approximate % of Habitat Management Area by Geothermal Energy Decision⁶ in MZ II/VII							
Geothermal Energy	No Action						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Closed	19%	<1%	13%	1%	NA	23%	21%
Open NSO	56%	100%	16%	38%	NA	19%	28%
Open CSU/TL	24%	0%	60%	56%	NA	34%	36%
Open Standard Stipulations	0%	0%	11%	6%	NA	24%	16%
Total	100%	100%	100%	100%	NA	100%	100%

Geothermal Energy	Management Alignment						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Closed	14%	<1%	14%	1%	NA	22%	19%
Open NSO	61%	100%	19%	38%	NA	18%	29%
Open CSU/TL	25%	0%	60%	56%	NA	35%	36%
Open Standard Stipulations	0%	0%	8%	6%	NA	24%	16%
Total	100%	100%	100%	100%	NA	100%	100%

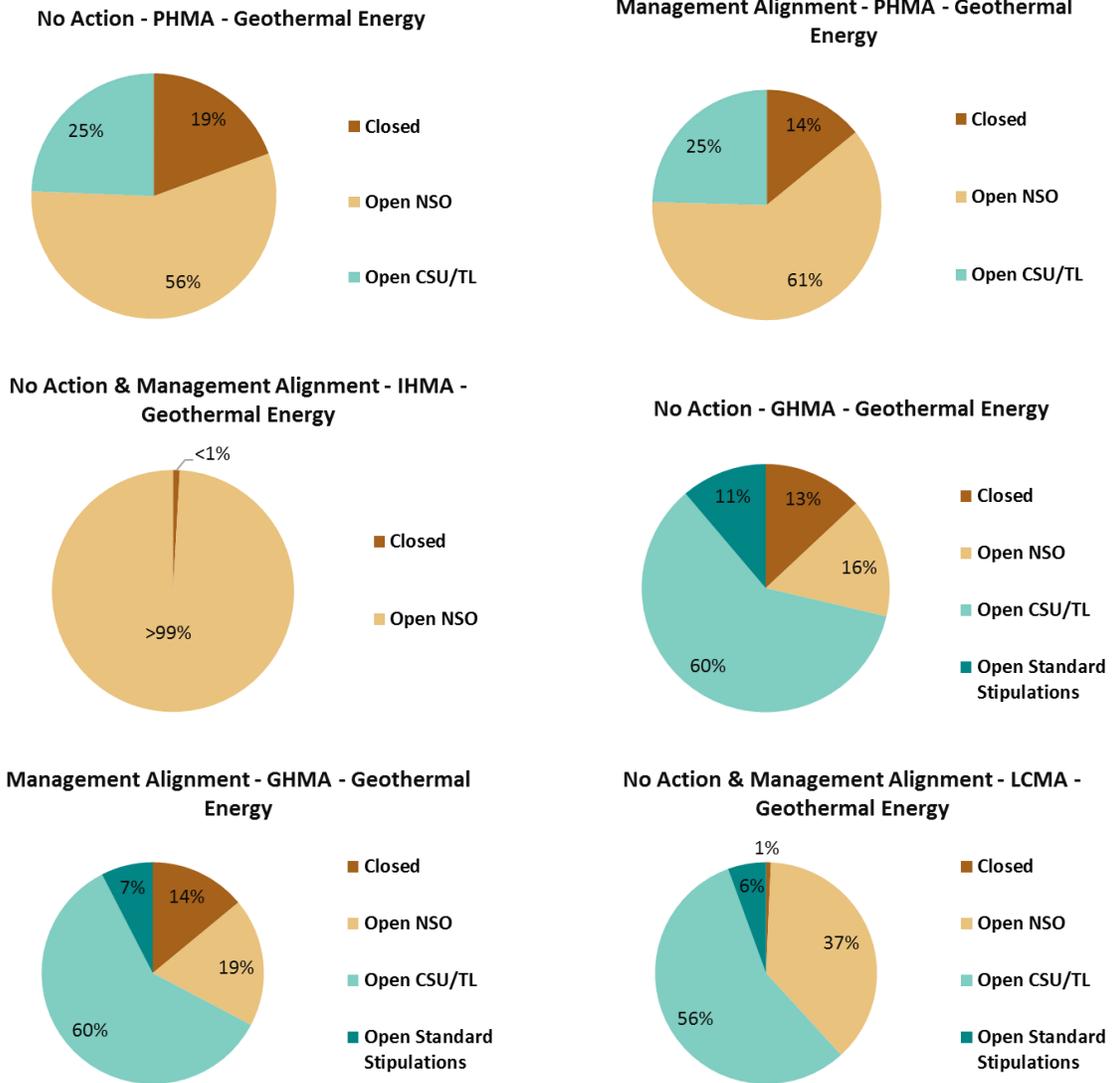
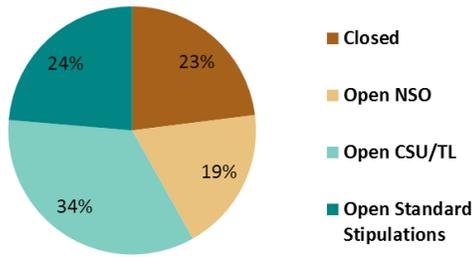


Figure 15 – Geothermal Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁶ Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action - Non-HMA - Geothermal Energy



Management Alignment - Non-HMA - Geothermal Energy

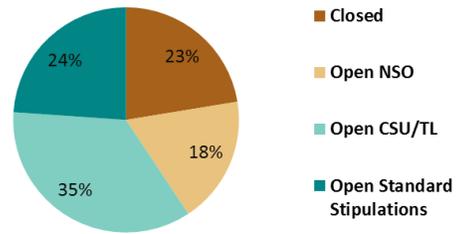


Figure 15 (cont'd) - Geothermal Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁶ Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 17 – Land Tenure Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ II/VII by Habitat Management Area Type							
Land Tenure	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Disposal	57,000	0	154,000	0	0	115,000	325,000
Retention	8,894,000	18,000	8,972,000	82,000	7,000	11,837,000	29,811,000
Total	8,951,000	18,000	9,126,000	82,000	7,000	11,952,000	30,136,000

Land Tenure	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Disposal	57,000	0	154,000	0	0	115,000	325,000
Retention	8,894,000	18,000	8,685,000	82,000	7,000	12,125,000	29,811,000
Total	8,951,000	18,000	8,839,000	82,000	7,000	12,239,000	30,136,000

Approximate % of Habitat Management Area by Land Tenure Decision in MZ II/VII							
Land Tenure	No Action & Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Disposal	1%	0%	2%	0%	0%	1%	1%
Retention	99%	100%	98%	100%	100%	99%	99%
Total	100%	100%	100%	100%	100%	100%	100%

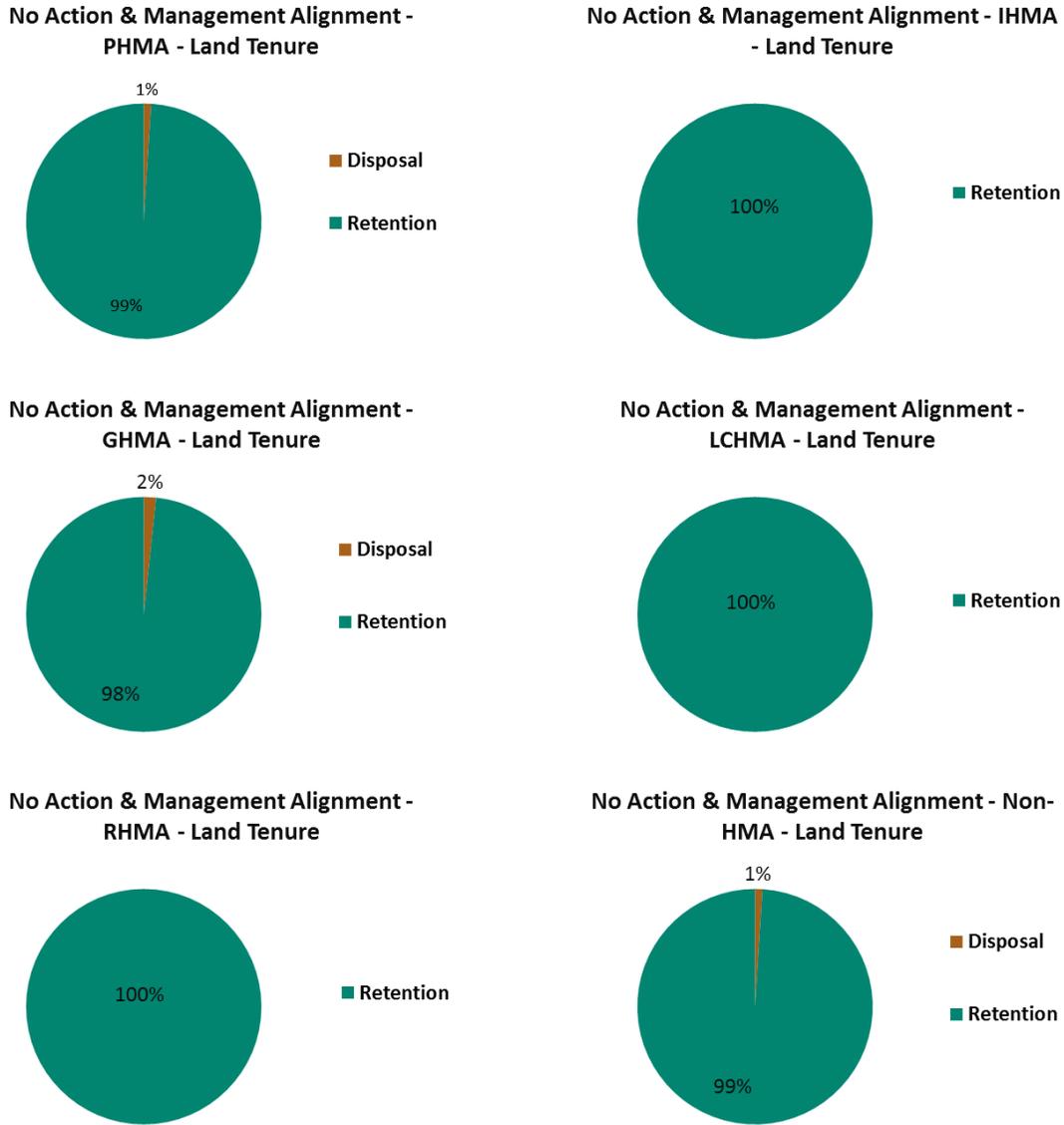


Figure 16 – Land Tenure Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 18 – Livestock Grazing Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ II/VII by Habitat Management Area Type							
Livestock Grazing	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Unavailable	40,000	0	40,000	0	0	316,000	395,000
Available	8,872,000	18,000	9,069,000	81,000	7,000	8,193,000	26,241,000
Total	8,912,000	18,000	9,109,000	81,000	7,000	8,508,000	26,635,000

Livestock Grazing	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Unavailable	40,000	0	40,000	0	0	316,000	395,000
Available	8,872,000	18,000	8,784,000	81,000	7,000	8,479,000	26,241,000
Total	8,912,000	18,000	8,824,000	81,000	7,000	8,794,000	26,635,000

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ II/VII							
Livestock Grazing	No Action & Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Unavailable	<1%	0%	<1%	0%	0%	4%	1%
Available	100%	100%	100%	100%	100%	96%	99%
Total	100%	100%	100%	100%	100%	100%	100%



Figure 17 – Livestock Grazing Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 19 – Locatable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

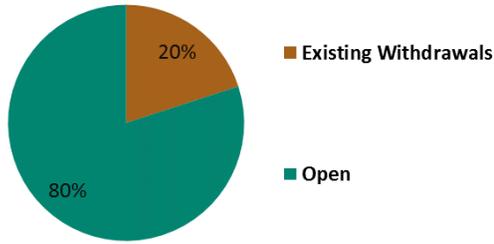
Approximate Acres of Locatable Minerals Decisions in MZ II/VII by Habitat Management Area Type							
Locatable Minerals	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Existing Withdrawals	1,863,000	7,000	2,394,000	1,000	0	4,804,000	9,068,000
Recommended Withdrawals	998,000	0	320,000	0	0	302,000	1,620,000
Open	8,323,000	27,000	8,529,000	137,000	7,000	10,250,000	27,273,000
Total	11,185,000	33,000	11,243,000	137,000	7,000	15,357,000	37,962,000

Locatable Minerals	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Existing Withdrawals	1,863,000	7,000	2,125,000	1,000	0	5,072,000	9,068,000
Recommended Withdrawals	618,000	0	318,000	0	0	302,000	1,238,000
Open	8,703,000	27,000	8,420,000	137,000	7,000	10,361,000	27,656,000
Total	11,185,000	33,000	10,863,000	137,000	7,000	15,736,000	37,962,000

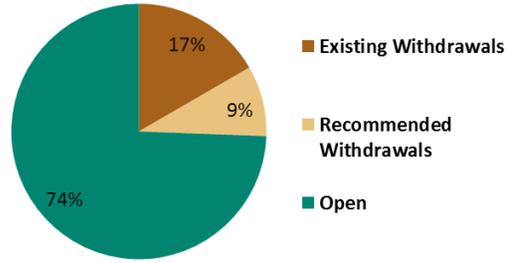
Approximate % of Habitat Management Area by Locatable Minerals Decision in MZ II/VII							
Locatable Minerals	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Existing Withdrawals	17%	20%	21%	<1%	0%	31%	24%
Recommended Withdrawals	9%	0%	3%	0%	0%	2%	4%
Open	74%	80%	76%	100%	100%	67%	72%
Total	100%	100%	100%	100%	100%	100%	100%

Locatable Minerals	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Existing Withdrawals	17%	20%	20%	<1%	0%	32%	24%
Recommended Withdrawals	6%	0%	3%	0%	0%	2%	3%
Open	78%	80%	78%	100%	100%	66%	73%
Total	100%	100%	100%	100%	100%	100%	100%

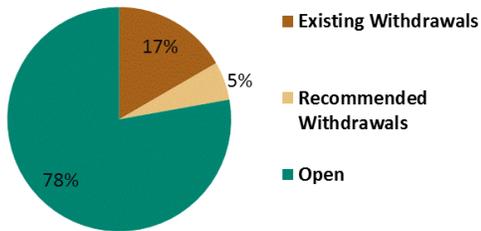
No Action & Management Alignment - IHMA - Locatable Minerals



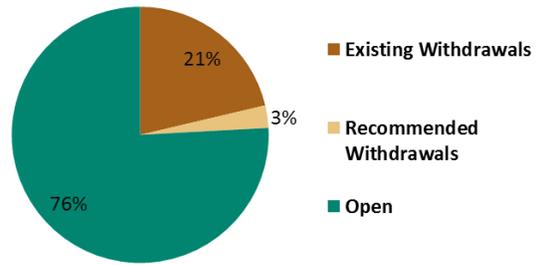
No Action - PHMA - Locatable Minerals



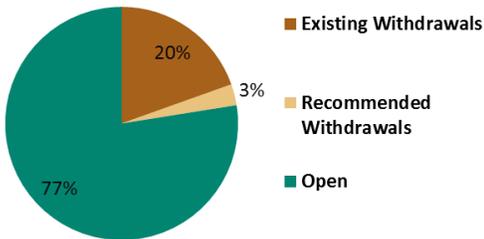
Management Alignment - PHMA - Locatable Minerals



No Action - GHMA - Locatable Minerals



Management Alignment - GHMA - Locatable Minerals



No Action & Management Alignment - LCHMA - Locatable Minerals

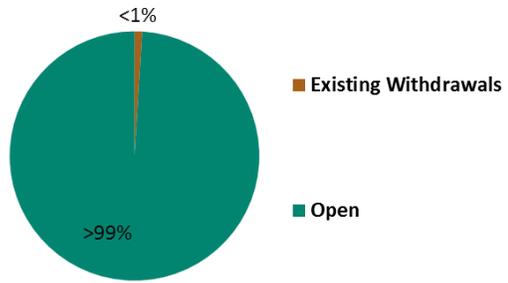
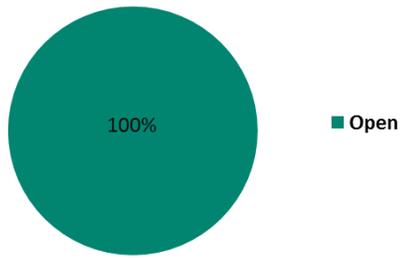


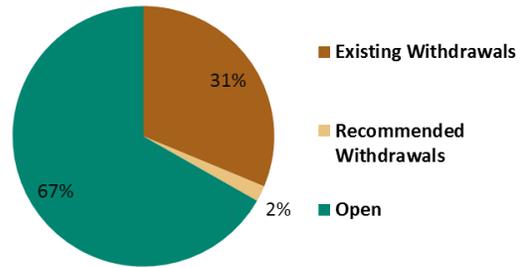
Figure I8 – Locatable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action & Management Alignment -
RHMA - Locatable Minerals



No Action - Non-HMA - Locatable Minerals



Management Alignment - Non-HMA -
Locatable Minerals

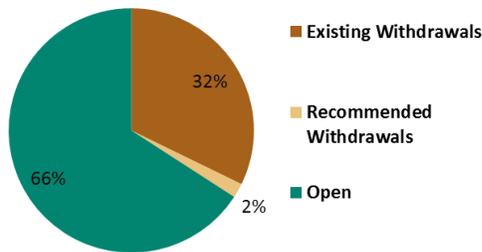


Figure 18 (cont'd) – Locatable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 20 – Non-Energy Leasable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁷Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions⁷ in MZ II/VII by Habitat Management Area Type							
Non-Energy Leasable Minerals	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	3,617,000	7,000	1,256,000	1,000	NA	4,591,000	9,471,000
Open	6,052,000	23,000	7,330,000	137,000	NA	10,221,000	23,763,000
Total	9,669,000	30,000	8,586,000	137,000	NA	14,812,000	33,233,000

Non-Energy Leasable Minerals	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	3,581,000	7,000	1,244,000	1,000	NA	4,603,000	9,436,000
Open	6,052,000	23,000	6,972,000	137,000	NA	10,614,000	23,799,000
Total	9,633,000	30,000	8,216,000	137,000	NA	15,217,000	33,233,000

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision⁷ in MZ II/VII							
Non-Energy Leasable Minerals	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	37%	23%	15%	<1%	NA	31%	28%
Open	63%	77%	85%	100%	NA	69%	72%
Total	100%	100%	100%	100%	NA	100%	100%

Non-Energy Leasable Minerals	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	37%	23%	15%	<1%	NA	30%	28%
Open	63%	77%	85%	100%	NA	70%	72%
Total	100%	100%	100%	100%	NA	100%	100%



Figure 19 - Non-Energy Leasable Minerals Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁷Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)**Table 21 – Fluid Minerals (Oil & Gas) Decisions within MZ II/VII**

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages

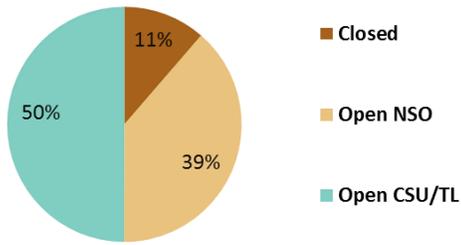
Approximate Acres of Fluid Minerals (Oil & Gas) Decisions in MZ II/VII by Habitat Management Area Type							
Fluid Minerals (Oil & Gas)	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	1,294,000	7,000	1,178,000	1,000	0	4,773,000	7,252,000
Open NSO	4,399,000	23,000	1,425,000	54,000	5,000	2,628,000	8,535,000
Open CSU/TL	5,689,000	0	6,517,000	81,000	2,000	4,748,000	17,036,000
Open Standard Stipulations	0	0	2,297,000	8,000	0	2,895,000	5,200,000
Total	11,382,000	29,000	11,416,000	144,000	8,000	15,046,000	38,024,000

Fluid Minerals (Oil & Gas)	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	1,078,000	7,000	1,153,000	1,000	0	4,787,000	7,024,000
Open NSO	4,578,000	23,000	1,430,000	54,000	5,000	2,634,000	8,725,000
Open CSU/TL	5,689,000	0	6,310,000	81,000	2,000	4,956,000	17,036,000
Open Standard Stipulations	0	0	2,193,000	8,000	0	3,000,000	5,200,000
Total	11,345,000	29,000	11,086,000	144,000	8,000	15,376,000	37,988,000

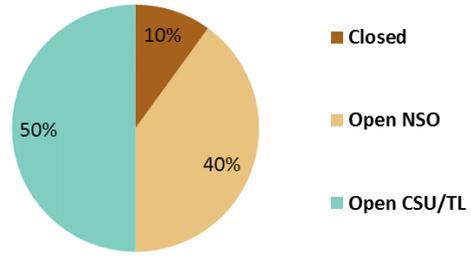
Approximate % of Habitat Management Area by Fluid Minerals (Oil & Gas) Decision in MZ II/VII							
Fluid Minerals (Oil & Gas)	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	11%	21%	10%	<1%	0%	32%	19%
Open NSO	39%	79%	12%	38%	63%	17%	22%
Open CSU/TL	50%	0%	57%	56%	37%	32%	45%
Open Standard Stipulations	0%	0%	20%	6%	0%	19%	14%
Total	100%	100%	100%	100%	100%	100%	100%

Fluid Minerals (Oil & Gas)	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	10%	21%	10%	<1%	0%	31%	18%
Open NSO	40%	79%	13%	38%	63%	17%	23%
Open CSU/TL	50%	0%	57%	56%	37%	32%	45%
Open Standard Stipulations	0%	0%	20%	6%	0%	20%	14%
Total	100%	100%	100%	100%	100%	100%	100%

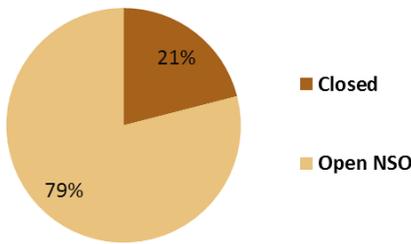
No Action - PHMA - Fluid Mineral Leasing (Oil & Gas)



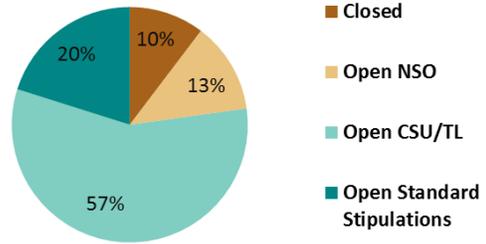
Management Alignment - PHMA - Fluid Mineral Leasing (Oil & Gas)



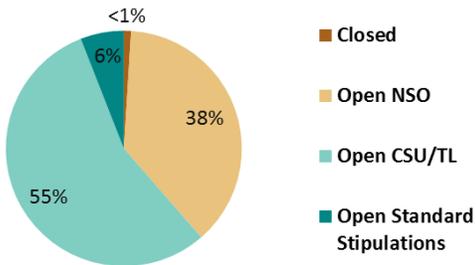
No Action & Management Alignment - IHMA - Fluid Mineral Leasing (Oil & Gas)



No Action & Management Alignment - GHMA - Fluid Mineral Leasing (Oil & Gas)



No Action & Management Alignment - LCHMA - Fluid Mineral Leasing (Oil & Gas)



No Action & Management Alignment - RHMA - Fluid Mineral Leasing (Oil & Gas)

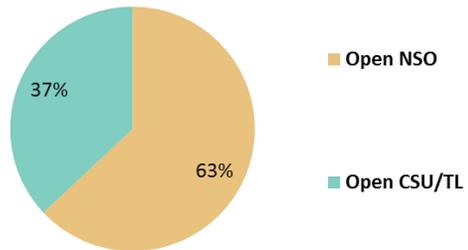
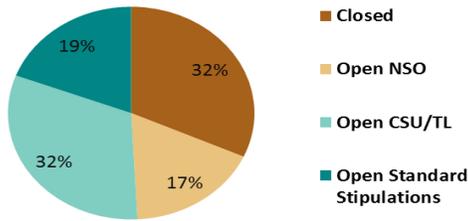


Figure 20 – Fluid Minerals (Oil & Gas) Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action - Non-HMA - Fluid Mineral Leasing (Oil & Gas)



Management Alignment - Non-HMA - Fluid Mineral Leasing (Oil & Gas)

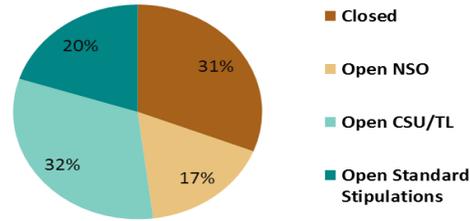


Figure 20 (cont'd) – Fluid Minerals (Oil & Gas) Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 22 – Rights-of-Ways Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ II/VII by Habitat Management Area Type							
Rights-of-Ways	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	561,000	0	654,000	0	0	1,255,000	2,471,000
Avoidance	8,119,000	18,000	3,132,000	16,000	7,000	1,172,000	12,465,000
Open	71,000	16,000	5,256,000	51,000	0	5,067,000	10,460,000
Total	8,752,000	34,000	9,041,000	67,000	7,000	7,494,000	25,395,000

Rights-of-Ways	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	561,000	0	651,000	0	0	1,258,000	2,471,000
Avoidance	8,119,000	18,000	3,132,000	16,000	7,000	1,172,000	12,465,000
Open	71,000	16,000	4,971,000	51,000	0	5,351,000	10,460,000
Total	8,752,000	34,000	8,754,000	67,000	7,000	7,781,000	25,395,000

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ II/VII							
Rights-of-Ways	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	6%	0%	7%	0%	0%	17%	10%
Avoidance	93%	53%	35%	24%	100%	16%	49%
Open	1%	47%	58%	76%	0%	68%	41%
Total	100%						

Rights-of-Ways	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	6%	0%	7%	0%	0%	16%	10%
Avoidance	93%	53%	36%	24%	100%	15%	49%
Open	1%	47%	57%	76%	0%	69%	41%
Total	100%	100%	100%	100%	100%	100%	100%

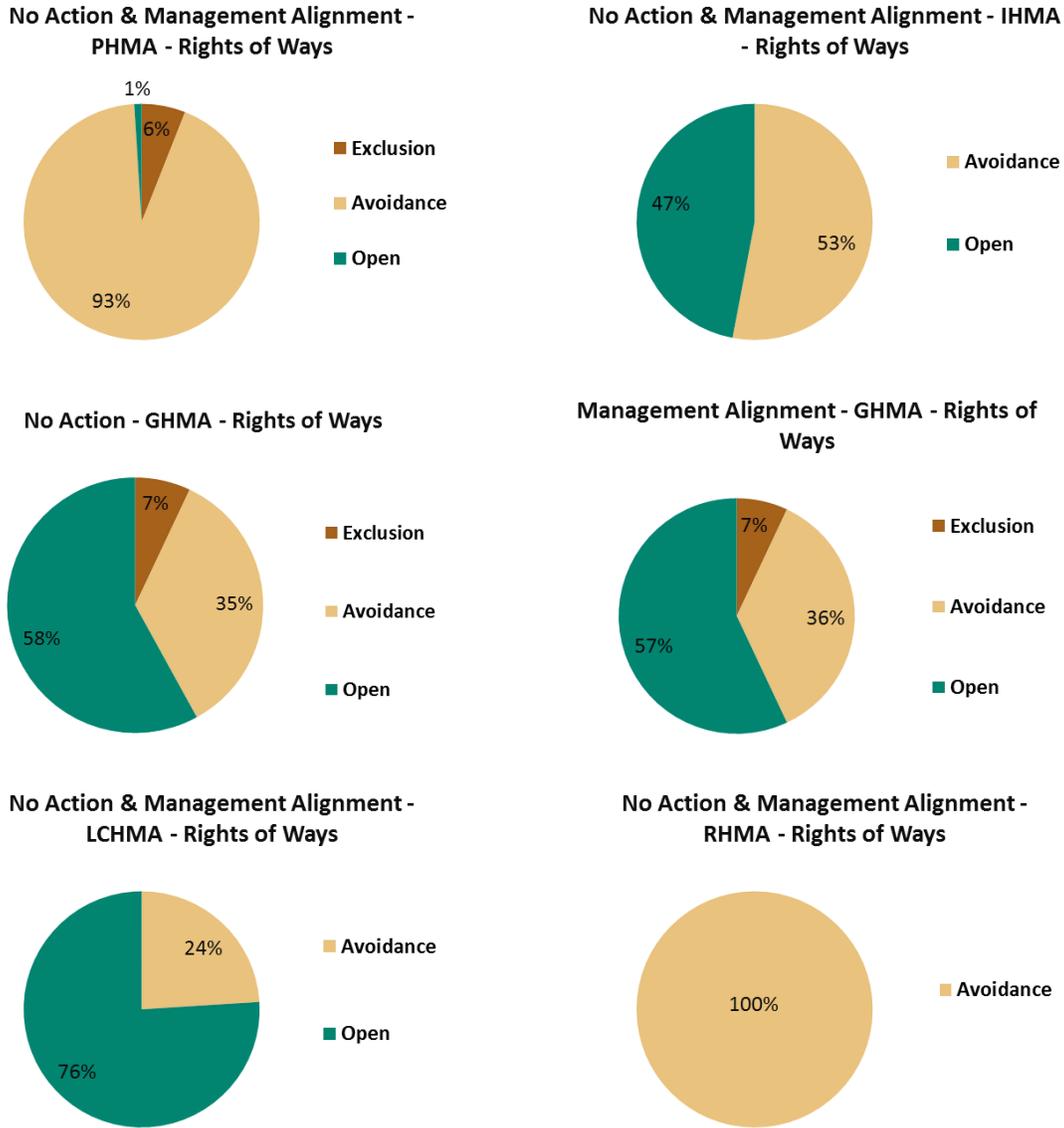


Figure 21 – Rights-of-Ways Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action & Management Alignment - Non-HMA - Rights of Ways

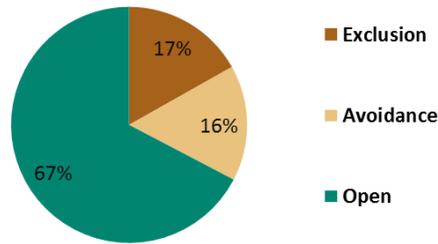


Figure 21 (cont'd) – Rights-of-Ways Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 23 – Salable Minerals Materials Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

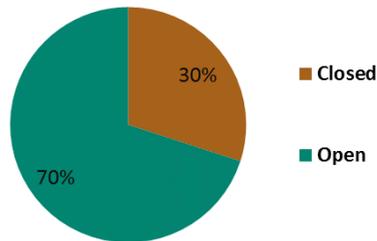
Approximate Acres of Salable Minerals Materials Decisions in MZ II/VII by Habitat Management Area Type							
Salable Minerals Materials	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	3,241,000	0	1,401,000	27,000	0	3,592,000	8,263,000
Open	7,671,000	28,000	9,745,000	115,000	7,000	9,675,000	27,239,000
Total	10,912,000	28,000	11,145,000	142,000	7,000	13,268,000	35,502,000

Salable Minerals Materials	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	3,241,000	0	1,399,000	27,000	0	3,594,000	8,263,000
Open	7,671,000	28,000	9,413,000	115,000	7,000	10,006,000	27,239,000
Total	10,912,000	28,000	10,813,000	142,000	7,000	13,600,000	35,502,000

Approximate % of Habitat Management Area by Salable Minerals Materials Decision in MZ II/VII							
Salable Minerals Materials	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	30%	0%	13%	19%	0%	26%	23%
Open	70%	100%	87%	81%	100%	74%	77%
Total	100%						

Salable Minerals Materials	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	30%	0%	13%	19%	0%	27%	23%
Open	70%	100%	87%	81%	100%	73%	77%
Total	100%	100%	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Salable Minerals Materials



No Action & Management Alignment - IHMA - Salable Minerals Materials

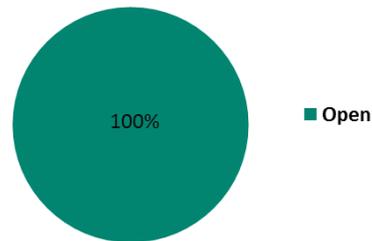
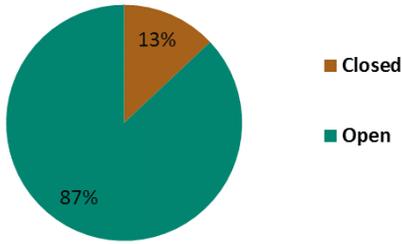


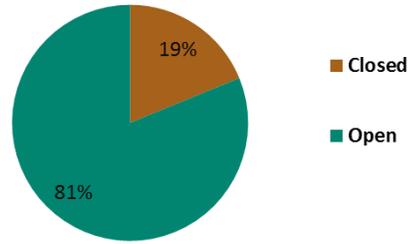
Figure 22 – Salable Minerals Materials Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

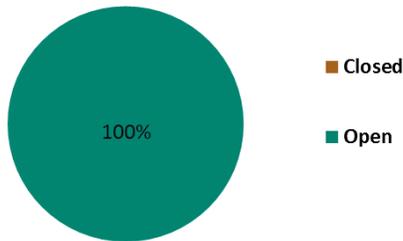
No Action & Management Alignment -
GHMA - Salable Minerals Materials



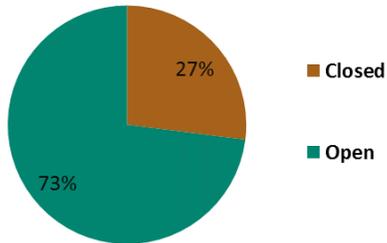
No Action & Management Alignment -
LCHMA - Salable Minerals Materials



No Action & Management Alignment -
RHMA - Salable Minerals Materials



No Action - Non-HMA - Salable Minerals
Materials



Management Alignment - Non-HMA -
Salable Minerals Materials

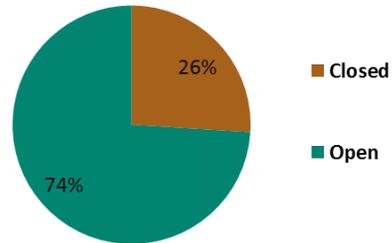


Figure 22 (cont'd) – Salable Minerals Materials Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 24 – Solar Energy Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁸ Data not available for WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

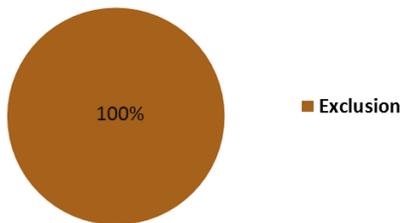
Approximate Acres of Solar Energy Decisions ⁸ in MZ II/VII by Habitat Management Area Type							
Solar Energy	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	1,494,000	0	317,000	0	7,000	4,352,000	6,169,000
Avoidance	2,000	18,000	764,000	83,000	0	742,000	1,610,000
Open	0	0	1,000	0	0	2,170,000	2,171,000
Total	1,496,000	18,000	1,082,000	83,000	7,000	7,265,000	9,950,000

Solar Energy	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	1,494,000	0	30,000	0	7,000	4,639,000	6,169,000
Avoidance	2,000	18,000	764,000	83,000	0	742,000	1,610,000
Open	0	0	1,000	0	0	2,170,000	2,171,000
Total	1,496,000	18,000	795,000	83,000	7,000	7,551,000	9,950,000

Approximate % of Habitat Management Area by Solar Energy Decision ⁸ in MZ II/VII							
Solar Energy	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	100%	0%	29%	0%	100%	60%	62%
Avoidance	0%	100%	71%	100%	0%	10%	16%
Open	0%	0%	<1%	0%	0%	30%	22%
Total	100%						

Solar Energy	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	100%	0%	4%	0%	100%	61%	62%
Avoidance	0%	100%	96%	100%	0%	10%	16%
Open	0%	0%	<1%	0%	0%	29%	22%
Total	100%	100%	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Solar Energy



No Action & Management Alignment - IHMA - Solar Energy

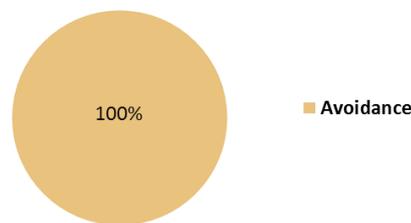


Figure 23 – Solar Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁸ Data not available for WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

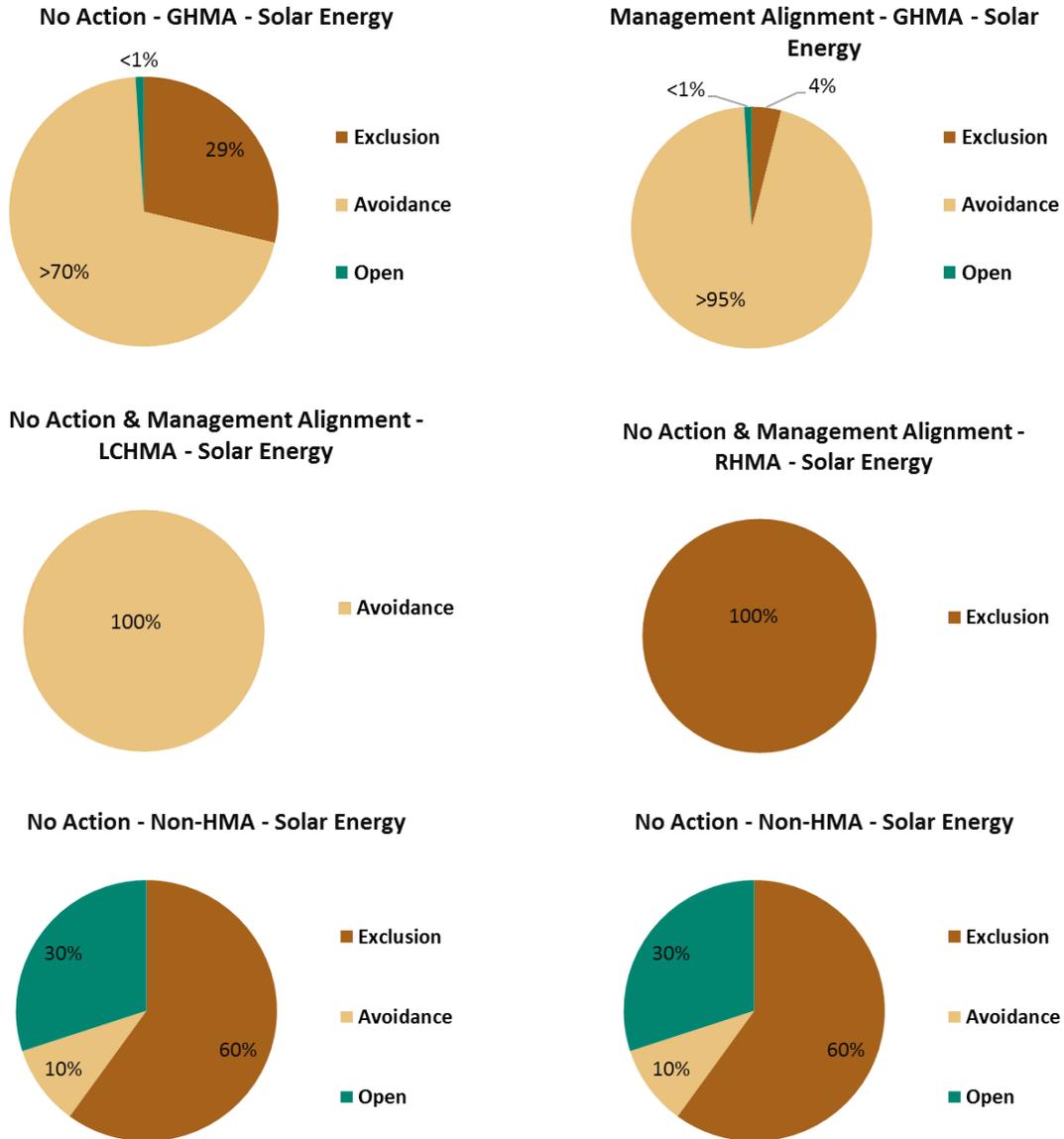


Figure 23 (cont'd) – Solar Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. ⁸Data not available for WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 25 – Trails and Travel Management Decisions within MZ II/VII

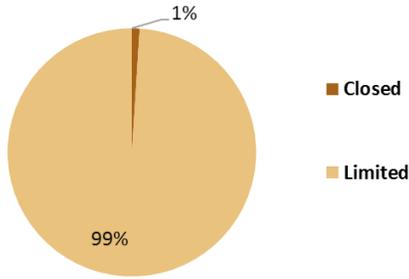
Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ II/VII by Habitat Management Area Type							
Trails and Travel Management	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	103,000	0	369,000	11,000	0	1,304,000	1,787,000
Limited	8,840,000	18,000	8,696,000	69,000	7,000	6,337,000	23,966,000
Open	4,000	0	54,000	3,000	0	891,000	953,000
Total	8,947,000	18,000	9,121,000	82,000	7,000	8,531,000	26,706,000

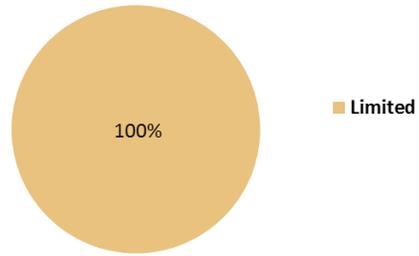
Trails and Travel Management	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	103,000	0	366,000	11,000	0	1,307,000	1,787,000
Limited	8,840,000	18,000	8,413,000	69,000	7,000	6,620,000	23,966,000
Open	4,000	0	54,000	3,000	0	891,000	953,000
Total	8,947,000	18,000	8,834,000	82,000	7,000	8,819,000	26,706,000

Approximate % of Habitat Management Area by Trails and Travel Management Decision in MZ II/VII							
Trails and Travel Management	No Action & Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Closed	1%	0%	4%	13%	0%	15%	7%
Limited	99%	100%	95%	84%	100%	74%	90%
Open	0%	0%	1%	4%	0%	10%	4%
Total	100%	100%	100%	100%	100%	100%	100%

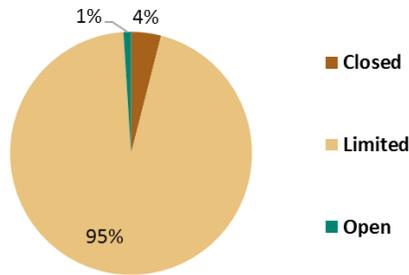
No Action & Management Alignment - PHMA - Trails and Travel Management



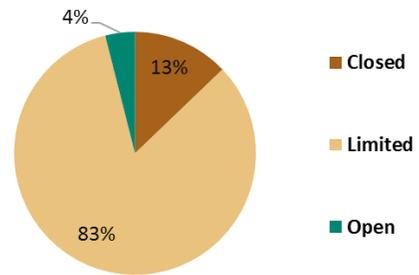
No Action & Management Alignment - IHMA - Trails and Travel Management



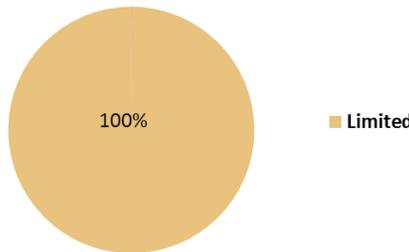
No Action & Management Alignment - GHMA - Trails and Travel Management



No Action & Management Alignment - LCHMA - Trails and Travel Management



No Action & Management Alignment - RHMA - Trails and Travel Management



No Action & Management Alignment - Non-HMA - Trails and Travel Management

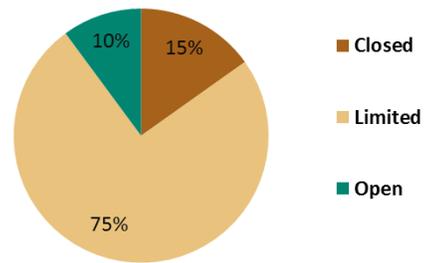


Figure 24 – Trails and Travel Management Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 26 – Wind Energy Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

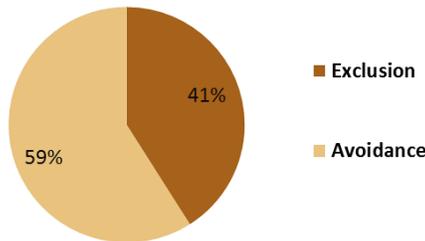
Approximate Acres of Wind Energy Decisions in MZ II/VII by Habitat Management Area Type							
Wind Energy	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	3,660,000	0	1,041,000	0	7,000	1,327,000	6,035,000
Avoidance	5,294,000	18,000	2,805,000	83,000	0	1,103,000	9,304,000
Open	0	0	5,272,000	0	0	5,045,000	10,317,000
Total	8,953,000	18,000	9,119,000	83,000	7,000	7,476,000	25,656,000

Wind Energy	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	3,660,000	0	1,038,000	0	7,000	1,330,000	6,035,000
Avoidance	5,294,000	18,000	2,805,000	83,000	0	1,103,000	9,304,000
Open	0	0	4,988,000	0	0	5,329,000	10,317,000
Total	8,953,000	18,000	8,831,000	83,000	7,000	7,763,000	25,656,000

Approximate % of Habitat Management Area by Wind Energy Decision in MZ II/VII							
Wind Energy	No Action						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	41%	0%	11%	0%	100%	18%	24%
Avoidance	59%	100%	31%	100%	0%	15%	36%
Open	0%	0%	58%	0%	0%	67%	40%
Total	100%						

Wind Energy	Management Alignment						Total
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	
Exclusion	41%	0%	12%	0%	100%	17%	24%
Avoidance	59%	100%	32%	100%	0%	14%	36%
Open	0%	0%	56%	0%	0%	69%	40%
Total	100%	100%	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Wind Energy



No Action & Management Alignment - IHMA - Wind Energy

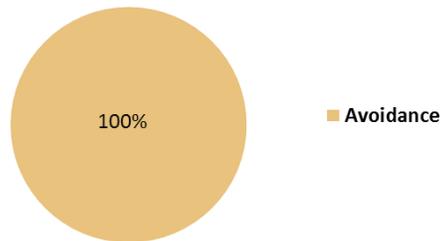


Figure 25 – Wind Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

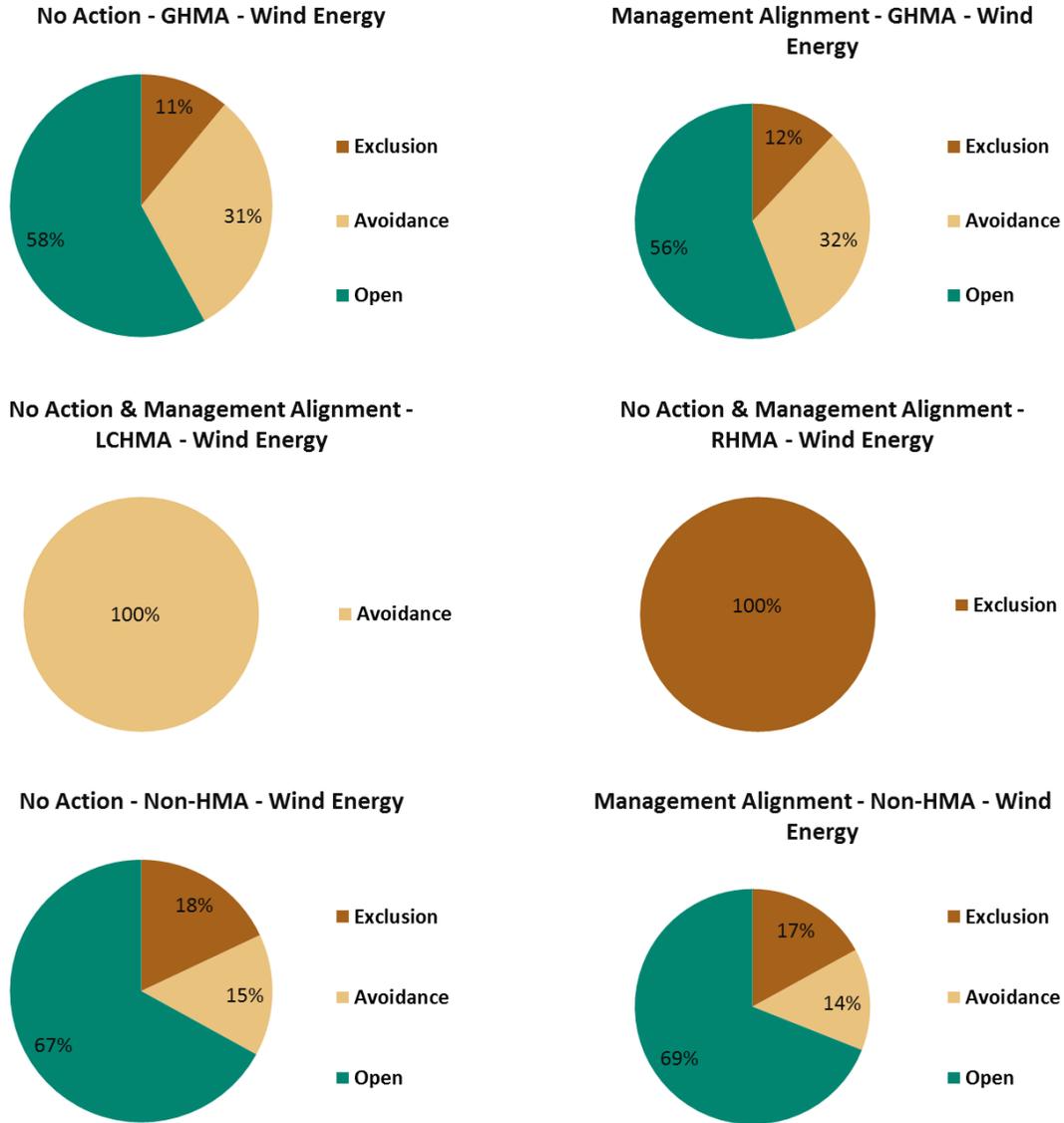


Figure 25 (cont'd) – Wind Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

I.2.3 Management Zone III – Utah, Nevada

I. Habitat Management

Table 27 – Habitat Management Areas within MZ III

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ III									
No Action					Management Alignment				
PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA
7,093,000	5,953,000	5,651,000	42,000	54,928,000	6,974,000	4,474,000	4,253,000	42,000	57,925,000

Approximate Percent of MZ III that is HMA									
No Action					Management Alignment				
PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA
10%	8%	8%	<1%	75%	9%	6%	6%	<1%	79%

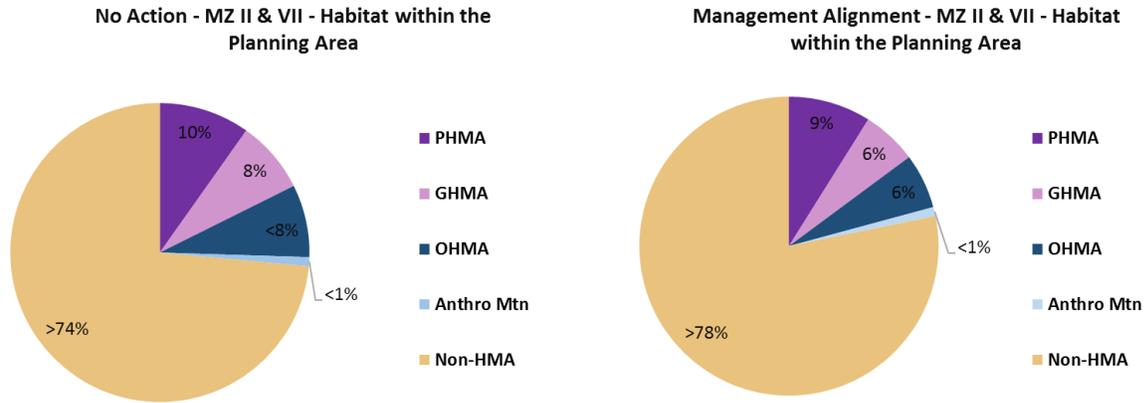


Figure 26 – Habitat Management Areas within MZ III

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

II. Geothermal Energy

Table 28 – Geothermal Energy Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions in MZ III by Habitat Management Area Type						
Geothermal Energy	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	126,000	165,000	230,000	7,000	4,948,000	5,476,000
Open NSO	5,358,000	23,000	0	35,000	3,939,000	9,354,000
Open CSU/TL	0	3,628,000	0	0	2,135,000	5,763,000
Open Standard Stipulations	0	86,000	4,042,000	0	26,065,000	30,193,000
Total	5,484,000	3,902,000	4,272,000	42,000	37,087,000	50,787,000

Geothermal Energy	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	124,000	176,000	159,000	7,000	4,990,000	5,457,000
Open NSO	5,483,000	0	0	35,000	3,961,000	9,479,000
Open CSU/TL	0	3,565,000	0	0	2,191,000	5,756,000
Open Standard Stipulations	0	0	3,534,000	0	26,554,000	30,088,000
Total	5,607,000	3,741,000	3,693,000	42,000	37,696,000	50,780,000

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ III						
Geothermal Energy	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	2%	4%	5%	17%	13%	11%
Open NSO	98%	1%	0%	83%	11%	18%
Open CSU/TL	0%	93%	0%	0%	6%	11%
Open Standard Stipulations	0%	2%	95%	0%	70%	59%
Total	100%	100%	100%	100%	100%	100%

Geothermal Energy	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	2%	5%	4%	17%	13%	11%
Open NSO	98%	0%	0%	83%	11%	19%
Open CSU/TL	0%	95%	0%	0%	6%	11%
Open Standard Stipulations	0%	0%	96%	0%	70%	59%
Total	100%	100%	100%	100%	100%	100%

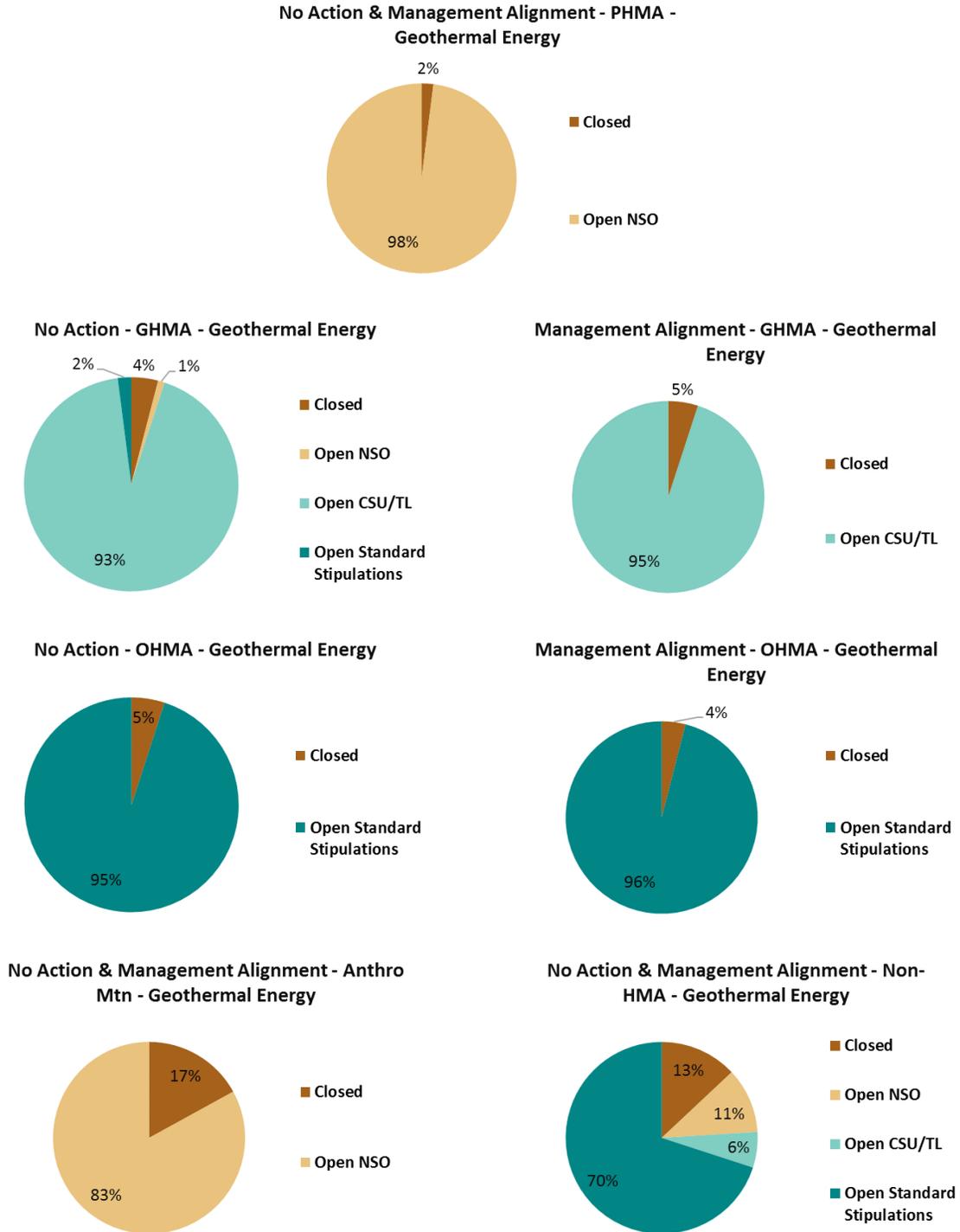


Figure 27 – Geothermal Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 29 – Land Tenure Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ III by Habitat Management Area Type						
Land Tenure	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Disposal	0	0	280,000	NA	2,178,000	2,458,000
Retention	4,722,000	3,875,000	3,992,000	NA	30,234,000	42,824,000
Total	4,722,000	3,875,000	4,272,000	NA	32,413,000	45,283,000

Land Tenure	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Disposal	3,000	62,000	304,000	NA	2,214,000	2,583,000
Retention	4,844,000	3,679,000	3,389,000	NA	30,782,000	42,694,000
Total	4,847,000	3,741,000	3,693,000	NA	32,996,000	45,277,000

Approximate % of Habitat Management Area by Land Tenure Decision in MZ III						
Land Tenure	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Disposal	0%	0%	7%	NA	7%	5%
Retention	100%	100%	93%	NA	93%	95%
Total	100%	100%	100%	NA	100%	100%

Land Tenure	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Disposal	0%	2%	8%	NA	7%	6%
Retention	100%	98%	92%	NA	93%	94%
Total	100%	100%	100%	NA	100%	100%

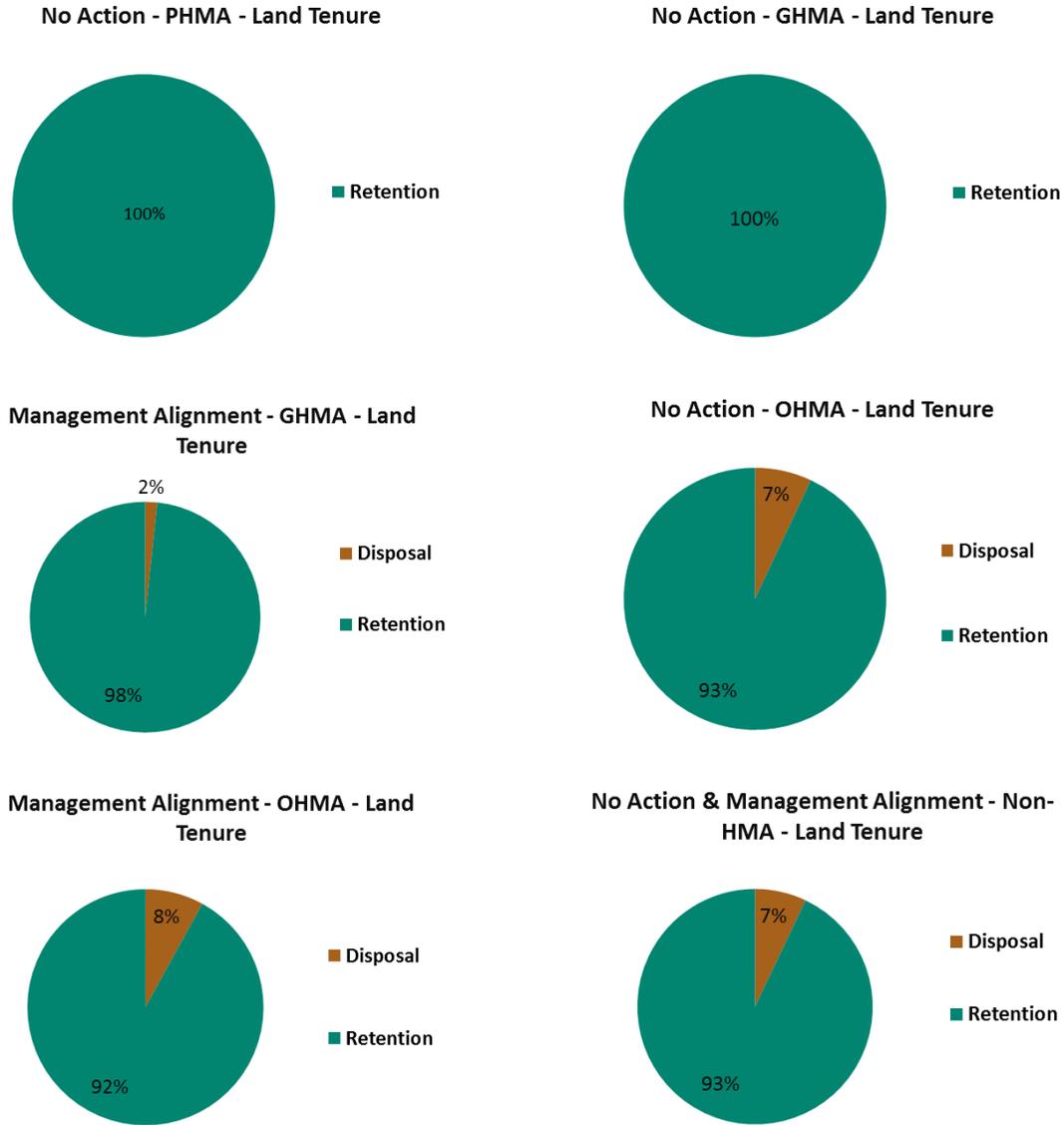


Figure 28 – Land Tenure Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 30 – Livestock Grazing Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ III by Habitat Management Area Type						
Livestock Grazing	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Unavailable	0	0	0	NA	129,000	129,000
Available	4,722,000	3,868,000	4,265,000	NA	31,559,000	44,415,000
Total	4,722,000	3,868,000	4,265,000	NA	31,688,000	44,544,000

Livestock Grazing	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Unavailable	0	0	0	NA	129,000	129,000
Available	4,845,000	3,741,000	3,690,000	NA	32,135,000	44,410,000
Total	4,845,000	3,741,000	3,690,000	NA	32,264,000	44,539,000

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ III						
Livestock Grazing	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Unavailable	0%	0%	0%	NA	<1%	<1%
Available	100%	100%	100%	NA	100%	100%
Total	100%	100%	100%	NA	100%	100%

Livestock Grazing	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Unavailable	0%	0%	0%	NA	<1%	<1%
Available	100%	100%	100%	NA	100%	100%
Total	100%	100%	100%	NA	100%	100%

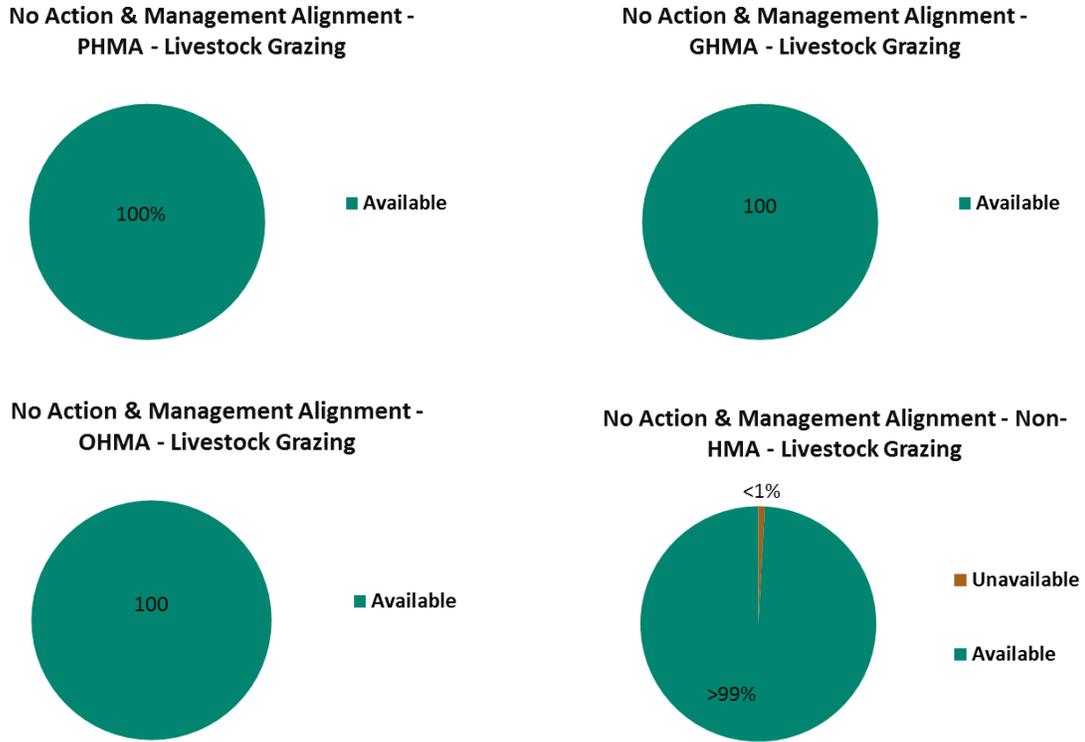


Figure 29 – Livestock Grazing Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 31 – Locatable Minerals Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Locatable Minerals Decisions in MZ III by Habitat Management Area Type						
Locatable Minerals	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Existing Withdrawals	56,000	143,000	52,000	0	3,350,000	3,602,000
Recommended Withdrawals	4,000	0	0	0	49,000	53,000
Open	5,429,000	3,788,000	4,219,000	42,000	34,853,000	48,332,000
Total	5,489,000	3,931,000	4,272,000	42,000	38,253,000	51,987,000

Locatable Minerals	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Existing Withdrawals	61,000	100,000	42,000	0	3,398,000	3,601,000
Recommended Withdrawals	4,000	0	0	0	50,000	53,000
Open	5,552,000	3,641,000	3,650,000	42,000	35,444,000	48,330,000
Total	5,617,000	3,741,000	3,693,000	42,000	38,892,000	51,985,000

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ III						
Locatable Minerals	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Existing Withdrawals	1%	4%	1%	0	9%	7%
Recommended Withdrawals	<1%	0%	0%	0%	<1%	<1%
Open	99%	96%	99%	100%	91%	93%
Total	100%	100%	100%	100%	100%	100%

Locatable Minerals	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Existing Withdrawals	1%	3%	1%	0%	9%	7%
Recommended Withdrawals	<1%	0%	0%	0%	0%	<1%
Open	99%	97%	99%	100%	91%	93%
Total	100%	100%	100%	100%	100%	100%

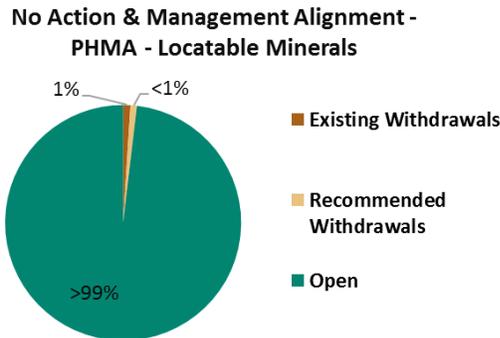


Figure 30 – Locatable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

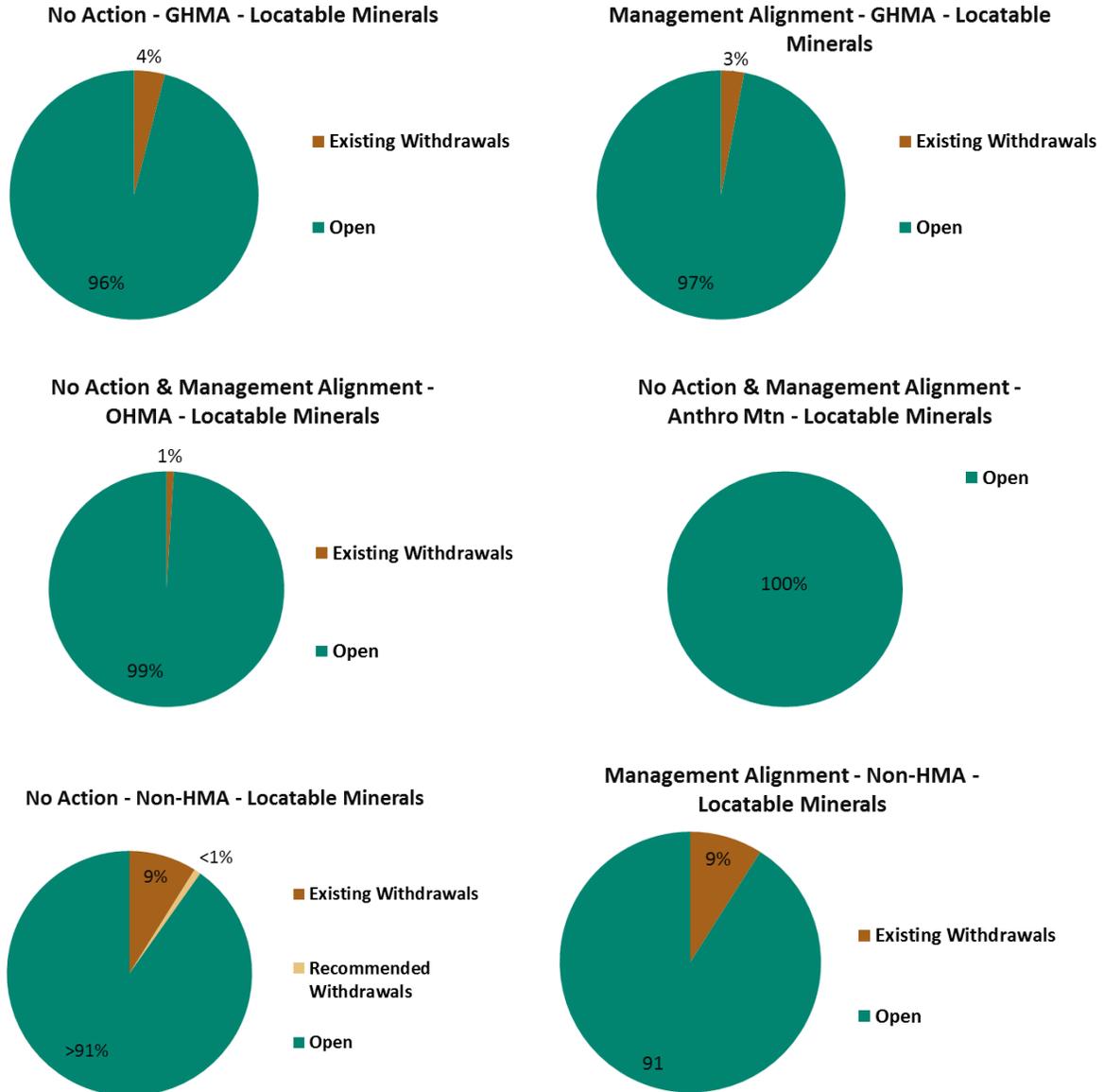


Figure 30 (cont'd) – Locatable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 32 – Non-Energy Leasable Minerals Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions in MZ III by Habitat Management Area Type						
Non-Energy Leasable Minerals	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	5,486,000	165,000	230,000	42,000	4,948,000	10,871,000
Open	0	3,766,000	4,042,000	0	33,308,000	41,116,000
Total	5,486,000	3,931,000	4,272,000	42,000	38,256,000	51,987,000
Non-Energy Leasable Minerals	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	5,611,000	176,000	159,000	42,000	4,990,000	10,978,000
Open	0	3,565,000	3,534,000	0	33,904,000	41,004,000
Total	5,611,000	3,741,000	3,693,000	42,000	38,894,000	51,981,000
Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ III						
Non-Energy Leasable Minerals	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	100%	4%	5%	100%	13%	21%
Open	0%	96%	95%	0%	87%	79%
Total	100%	100%	100%	100%	100%	100%
Non-Energy Leasable Minerals	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	100%	5%	4%	100%	13%	21%
Open	0%	95%	96%	0%	87%	79%
Total	100%	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Non-Energy Leasable Minerals

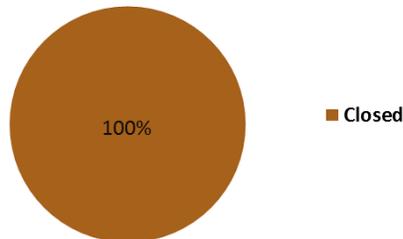


Figure 31 – Non-Energy Leasable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

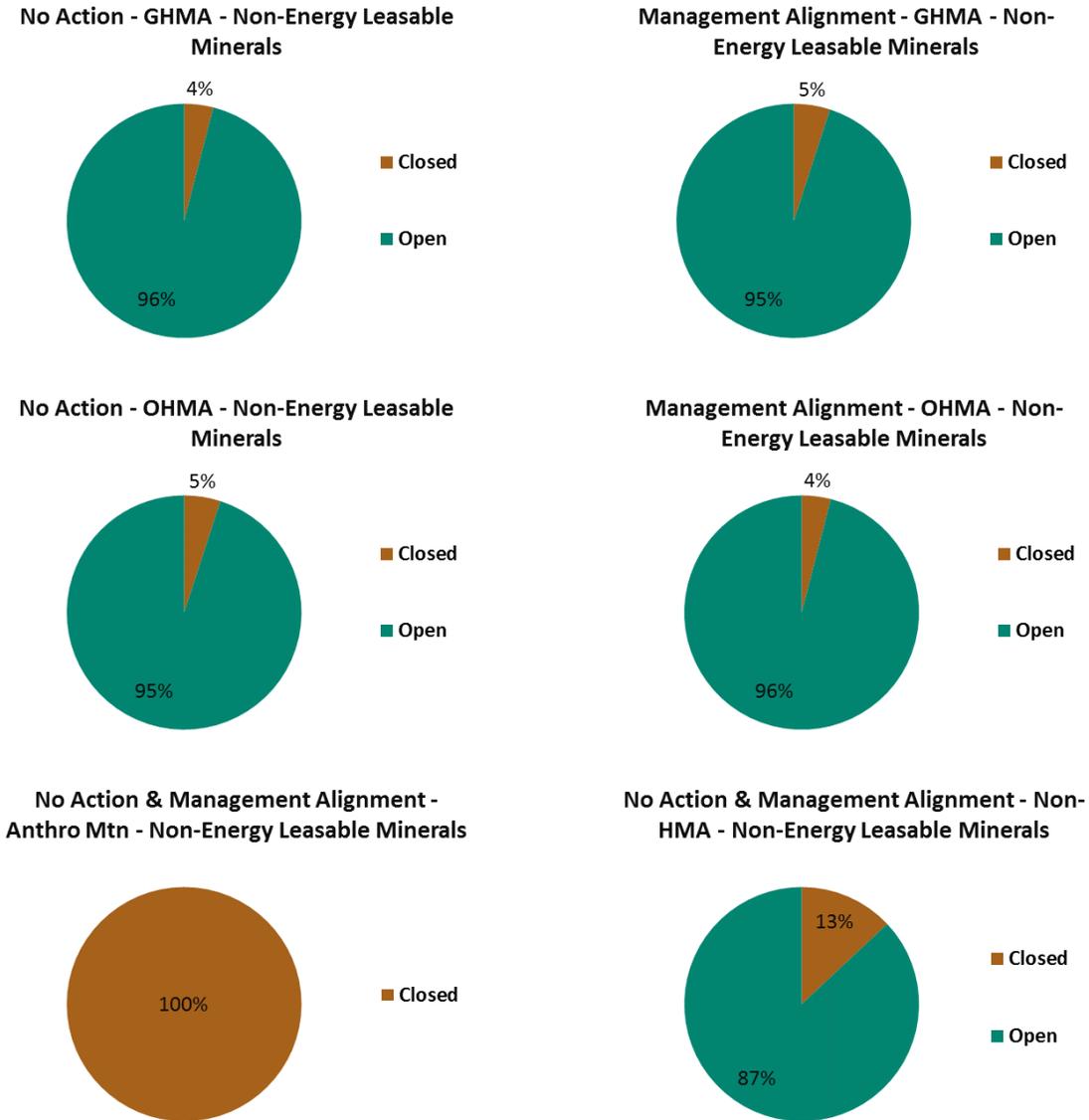


Figure 31 (cont'd) – Non-Energy Leasable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 33 – Fluid Mineral (Oil & Gas) Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

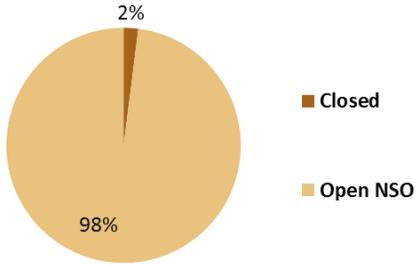
Approximate Acres of Fluid Mineral (Oil & Gas) Decisions in MZ III by Habitat Management Area Type						
Fluid Mineral (Oil & Gas) Decisions	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	126,000	165,000	230,000	7,000	4,948,000	5,476,000
Open NSO	5,358,000	23,000	0	35,000	3,431,000	8,847,000
Open CSU/TL	0	3,628,000	0	0	2,135,000	5,763,000
Open Standard Stipulations	0	86,000	4,042,000	0	26,502,000	30,630,000
Total	5,484,000	3,902,000	4,272,000	42,000	37,016,000	50,716,000

Fluid Mineral (Oil & Gas) Decisions	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	144,000	176,000	159,000	7,000	4,990,000	5,476,000
Open NSO	5,464,000	0	0	35,000	3,454,000	8,952,000
Open CSU/TL	0	3,565,000	0	0	2,191,000	5,756,000
Open Standard Stipulations	0	0	3,534,000	0	26,991,000	30,525,000
Total	5,607,000	3,741,000	3,693,000	42,000	37,626,000	50,710,000

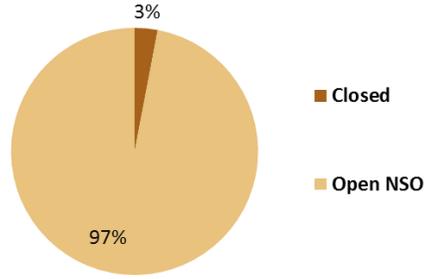
Approximate % of Habitat Management Area by Fluid Mineral (Oil & Gas) Decision in MZ III						
Fluid Mineral (Oil & Gas) Decisions	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	2%	4%	5%	17%	13%	11%
Open NSO	98%	1%	0%	83%	9%	17%
Open CSU/TL	0%	93%	0%	0%	6%	11%
Open Standard Stipulations	0%	2%	95%	0%	72%	60%
Total	100%	100%	100%	100%	100%	100%

Fluid Mineral (Oil & Gas) Decisions	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	3%	5%	4%	17%	13%	11%
Open NSO	97%	0%	0%	83%	9%	18%
Open CSU/TL	0%	95%	0%	0%	6%	11%
Open Standard Stipulations	0%	0%	96%	0%	72%	60%
Total	100%	100%	100%	100%	100%	100%

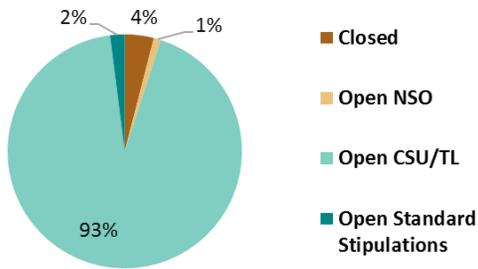
No Action - PHMA - Fluid Mineral Leasing (Oil & Gas)



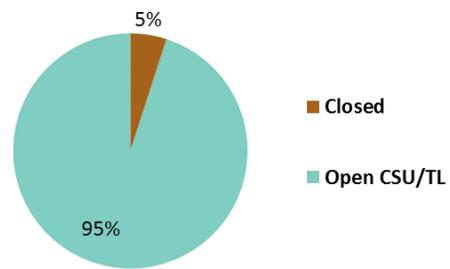
Management Alignment - PHMA - Fluid Mineral Leasing (Oil & Gas)



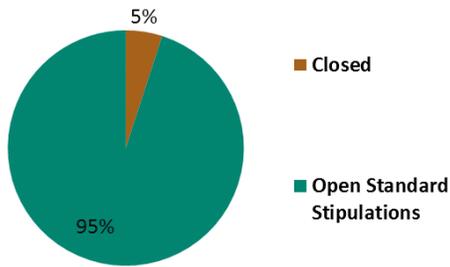
No Action - GHMA - Fluid Mineral Leasing (Oil & Gas)



Management Alignment - GHMA - Fluid Mineral Leasing (Oil & Gas)



No Action - OHMA - Fluid Mineral Leasing (Oil & Gas)



Management Alignment - OHMA - Fluid Mineral Leasing (Oil & Gas)

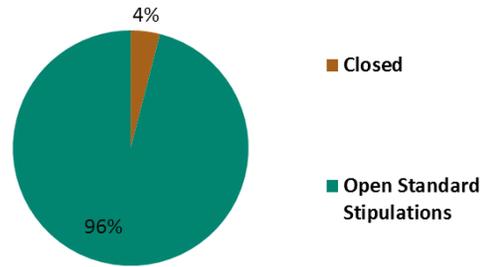
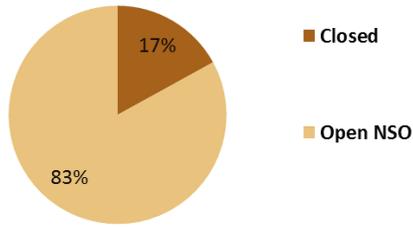


Figure 32 – Fluid Mineral (Oil & Gas) Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action & Management Alignment - Anthro Mtn - Fluid Mineral Leasing (Oil & Gas)



No Action & Management Alignment - Non-HMA - Fluid Mineral Leasing (Oil & Gas)

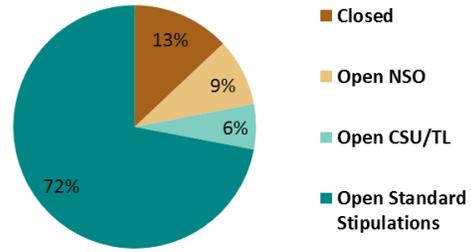


Figure 32 (cont'd) – Fluid Mineral (Oil & Gas) Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 34 – Rights-of-Ways Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ III by Habitat Management Area Type						
Rights-of-Ways	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	86,000	164,000	230,000	NA	3,794,000	4,274,000
Avoidance	4,591,000	3,495,000	0	NA	799,000	8,884,000
Open	46,000	216,000	4,043,000	NA	27,890,000	32,195,000
Total	4,722,000	3,875,000	4,272,000	NA	32,483,000	45,353,000

Rights-of-Ways	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	104,000	176,000	159,000	NA	3,837,000	4,275,000
Avoidance	4,726,000	3,565,000	0	NA	373,000	8,664,000
Open	17,000	0	3,534,000	NA	28,857,000	32,408,000
Total	4,847,000	3,741,000	3,693,000	NA	33,066,000	45,348,000

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ III						
Rights-of-Ways	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	2%	4%	5%	NA	12%	9%
Avoidance	97%	90%	0%	NA	2%	20%
Open	1%	6%	95%	NA	86%	71%
Total	100%	100%	100%	NA	100%	100%

Rights-of-Ways	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	2%	5%	4%	NA	12%	9%
Avoidance	98%	95%	0%	NA	1%	19%
Open	<1%	0%	96%	NA	87%	71%
Total	100%	100%	100%	NA	100%	100%

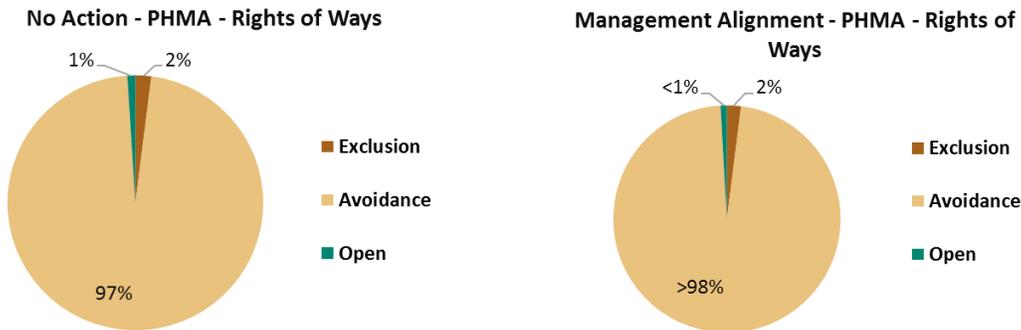


Figure 33 – Rights-of-Ways Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

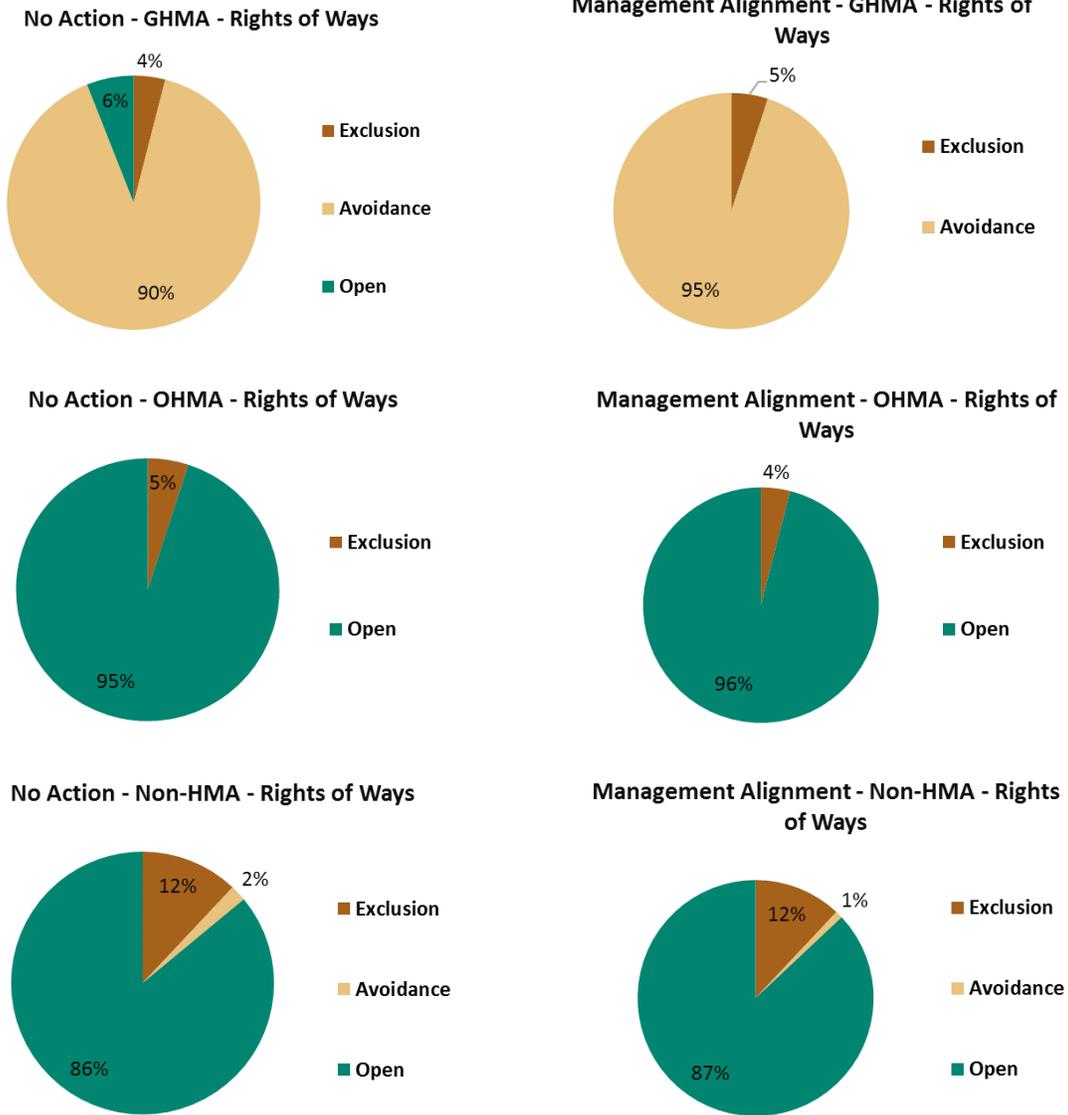


Figure 33 (cont'd) – Rights-of-Ways Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 35 – Salable Minerals Materials Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ III by Habitat Management Area Type						
Salable Minerals Materials	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	4,722,000	172,000	230,000	NA	4,646,000	9,770,000
Open	0	3,707,000	4,042,000	NA	27,834,000	35,583,000
Total	4,723,000	3,878,000	4,272,000	NA	32,479,000	45,353,000

Salable Minerals Materials	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	4,847,000	176,000	159,000	NA	4,694,000	9,876,000
Open	0	3,565,000	3,534,000	NA	28,372,000	35,471,000
Total	4,847,000	3,741,000	3,693,000	NA	33,066,000	45,347,000

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ III						
Salable Minerals Materials	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	100%	4%	5%	NA	14%	22%
Open	0%	96%	95%	NA	86%	78%
Total	100%	100%	100%	NA	100%	100%

Salable Minerals Materials	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	100%	5%	4%	NA	14%	22%
Open	0%	95%	96%	NA	86%	78%
Total	100%	100%	100%	NA	100%	100%

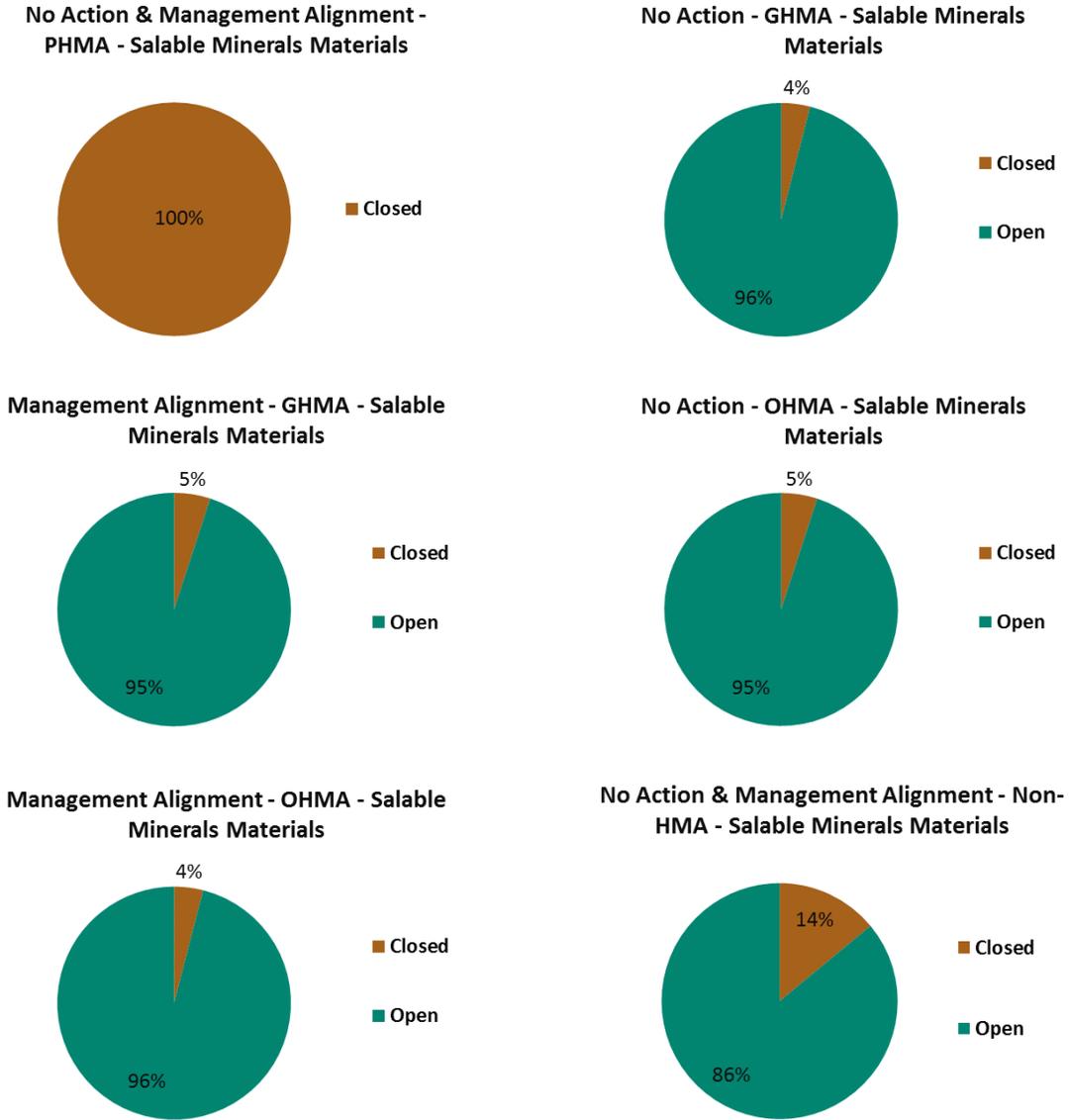


Figure 34 – Salable Minerals Materials Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 36 – Solar Energy Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions in MZ III by Habitat Management Area Type						
Solar Energy	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	4,731,000	3,886,000	3,417,000	NA	24,421,000	36,454,000
Avoidance	2,000	4,000	857,000	NA	7,637,000	8,499,000
Open	0	0	1,000	NA	340,000	341,000
Total	4,732,000	3,889,000	4,274,000	NA	32,398,000	45,294,000

Solar Energy	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	4,858,000	3,748,000	3,699,000	NA	24,867,000	37,172,000
Avoidance	0	0	0	NA	7,770,000	7,770,000
Open	0	0	0	NA	346,000	346,000
Total	4,858,000	3,748,000	3,699,000	NA	32,983,000	45,288,000

Approximate % of Habitat Management Area by Solar Energy Decision in MZ III						
Solar Energy	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	100%	100%	80%	NA	75%	80%
Avoidance	<1%	<1%	20%	NA	24%	19%
Open	0%	0%	<1%	NA	1%	1%
Total	100%	100%	100%	NA	100%	100%

Solar Energy	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	100%	100%	100%	NA	75%	82%
Avoidance	0%	0%	0%	NA	24%	17%
Open	0%	0%	0%	NA	1%	1%
Total	100%	100%	100%	NA	100%	100%

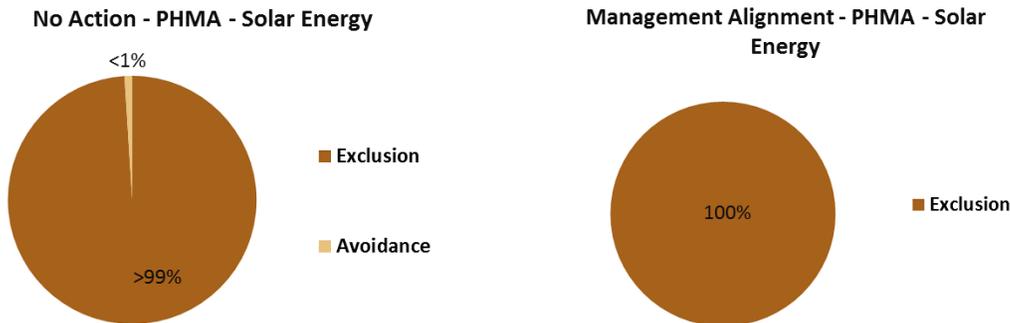


Figure 35 – Solar Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

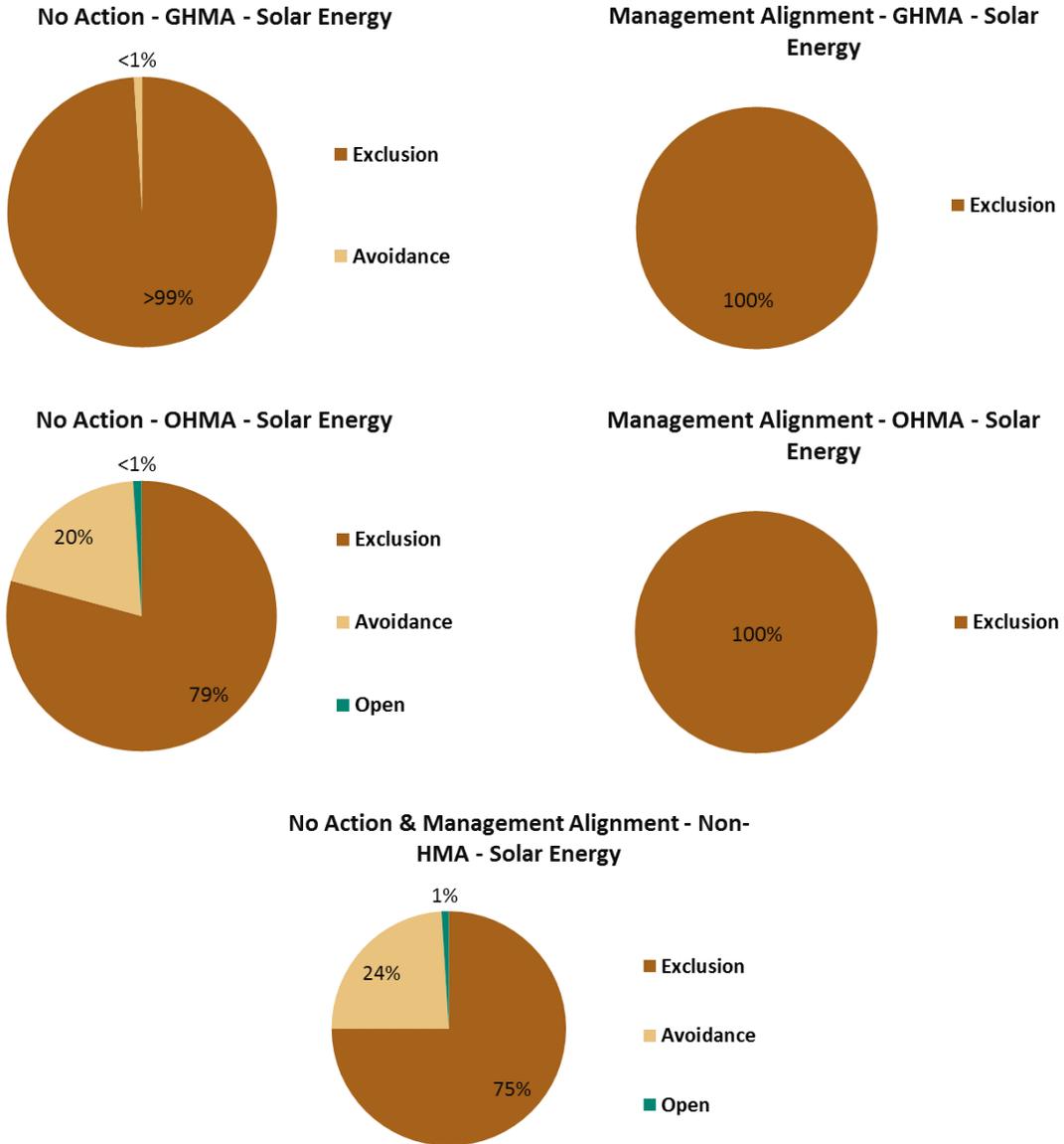


Figure 35 (cont'd) – Solar Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management**Table 37 – Trails and Travel Management Decisions within MZ III**

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ III by Habitat Management Area Type						
Trails and Travel Management Decisions	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	16,000	84,000	52,000	NA	2,517,000	2,669,000
Limited	4,702,000	3,791,000	1,000	NA	5,791,000	14,285,000
Open	0	0	4,219,000	NA	24,153,000	28,372,000
Total	4,718,000	3,875,000	4,273,000	NA	32,461,000	45,326,000

Trails and Travel Management Decisions	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	21,000	100,000	42,000	NA	2,505,000	2,668,000
Limited	4,821,000	3,642,000	14,000	NA	6,095,000	14,572,000
Open	0	0	3,637,000	NA	24,429,000	28,066,000
Total	4,842,000	3,741,000	3,693,000	NA	33,030,000	45,307,000

Approximate % of Habitat Management Area by Trails and Travel Management Decisions Decision in MZ III						
Trails and Travel Management Decisions	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	<1%	2%	1%	NA	8%	6%
Limited	100%	98%	0%	NA	18%	32%
Open	0%	0%	99%	NA	74%	63%
Total	100%	100%	100%	NA	100%	100%

Trails and Travel Management Decisions	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Closed	<1%	3%	1%	NA	8%	6%
Limited	100%	97%	0%	NA	18%	32%
Open	0%	0%	98%	NA	74%	62%
Total	100%	100%	100%	NA	100%	100%

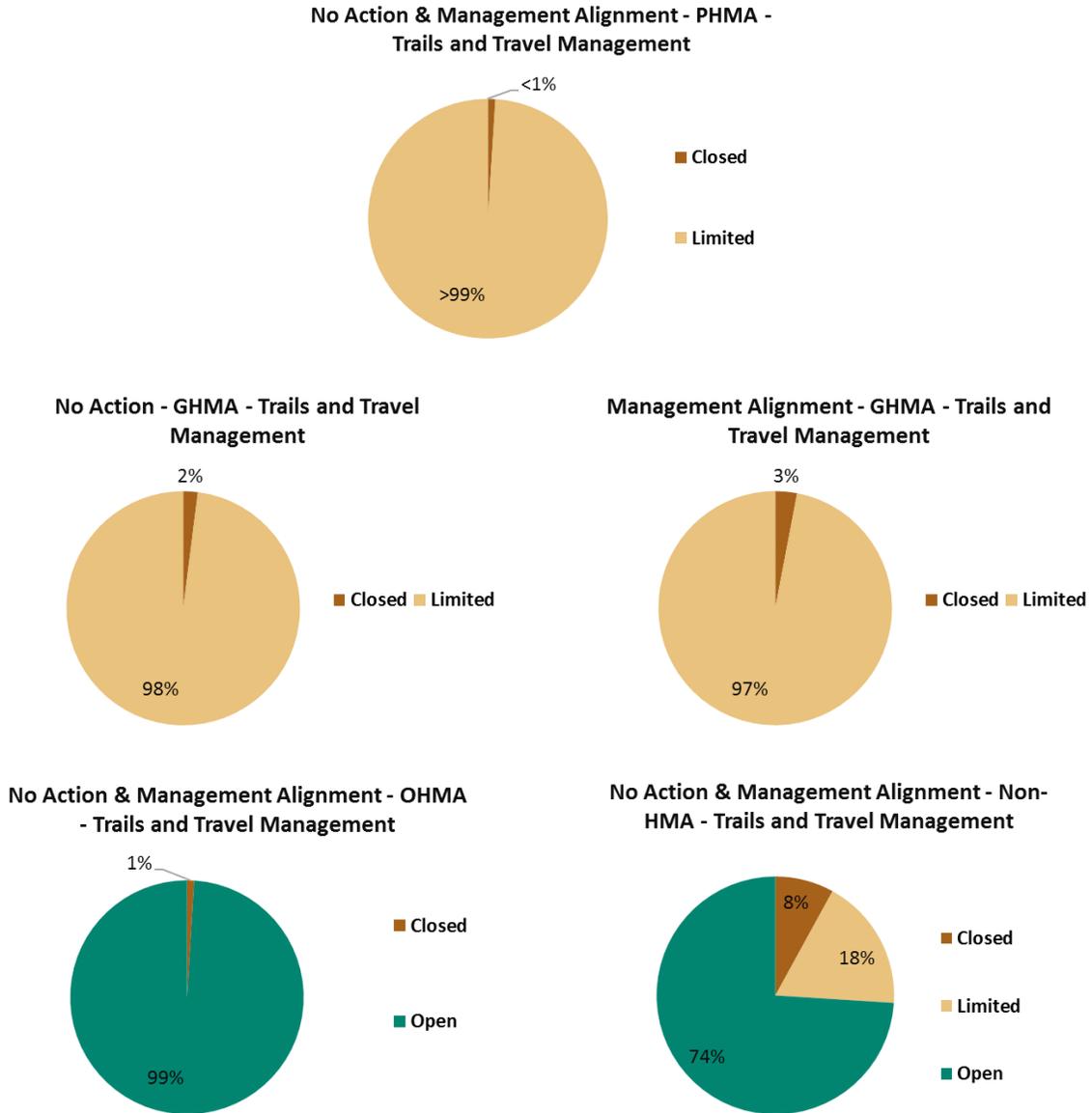


Figure 36 – Trails and Travel Management Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 38 – Wind Energy Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ III by Habitat Management Area Type						
Wind Energy	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	4,669,000	166,000	230,000	NA	3,939,000	9,004,000
Avoidance	0	3,572,000	0	NA	212,000	3,784,000
Open	54,000	137,000	4,042,000	NA	28,265,000	32,498,000
Total	4,723,000	3,876,000	4,272,000	NA	32,415,000	45,286,000

Wind Energy	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	4,793,000	176,000	159,000	NA	3,982,000	9,110,000
Avoidance	0	3,565,000	0	NA	212,000	3,777,000
Open	54,000	0	3,534,000	NA	28,805,000	32,393,000
Total	4,847,000	3,741,000	3,693,000	NA	32,999,000	45,280,000

Approximate % of Habitat Management Area by Wind Energy Decision in MZ III						
Wind Energy	No Action					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	0%	92%	0%	NA	1%	8%
Avoidance	99%	4%	5%	NA	12%	20%
Open	1%	4%	95%	NA	87%	72%
Total	100%	100%	100%	NA	100%	100%

Wind Energy	Management Alignment					
	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	Total
Exclusion	0%	95%	0%	NA	1%	8%
Avoidance	99%	5%	4%	NA	12%	20%
Open	1%	0%	96%	NA	87%	72%
Total	100%	100%	100%	NA	100%	100%

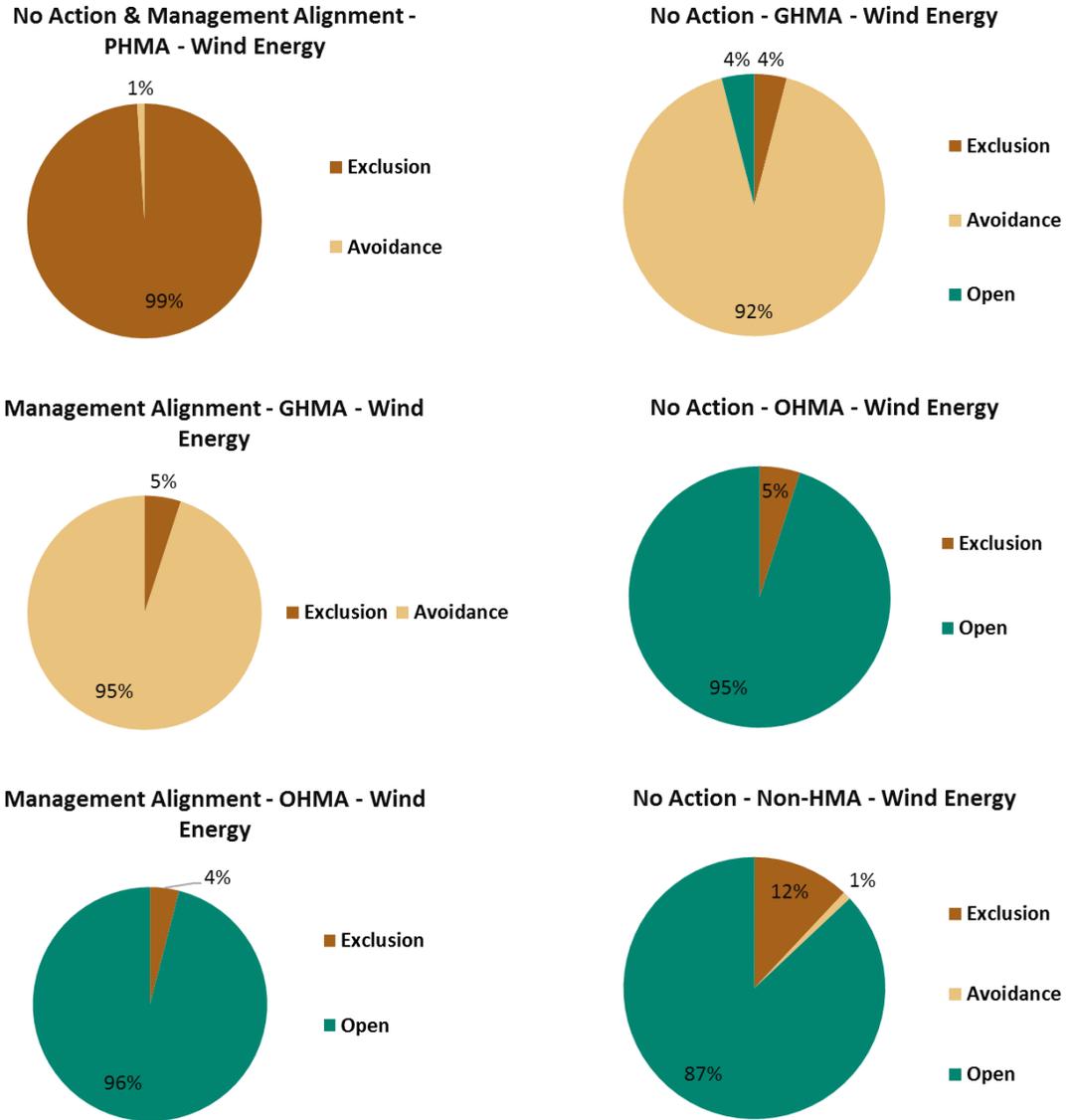


Figure 37 – Wind Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

1.2.4 Management Zone IV – Idaho, Utah, Nevada, Oregon

I. Habitat Management

Table 39 – Habitat Management Areas within MZ IV

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ IV									
No Action					Management Alignment				
PHMA	IHMA	GHMA	OHMA	Non-HMA	PHMA	IHMA	GHMA	OHMA	Non-HMA
17,170,000	4,449,000	11,447,00	1,261,000	41,395,000	16,147,000	4,519,000	11,297,000	990,000	42,769,022

Approximate Percent of MZ IV that is HMA									
No Action					Management Alignment				
PHMA	IHMA	GHMA	OHMA	Non-HMA	PHMA	IHMA	GHMA	OHMA	Non-HMA
23%	6%	15%	2%	55%	21%	6%	15%	1%	56%

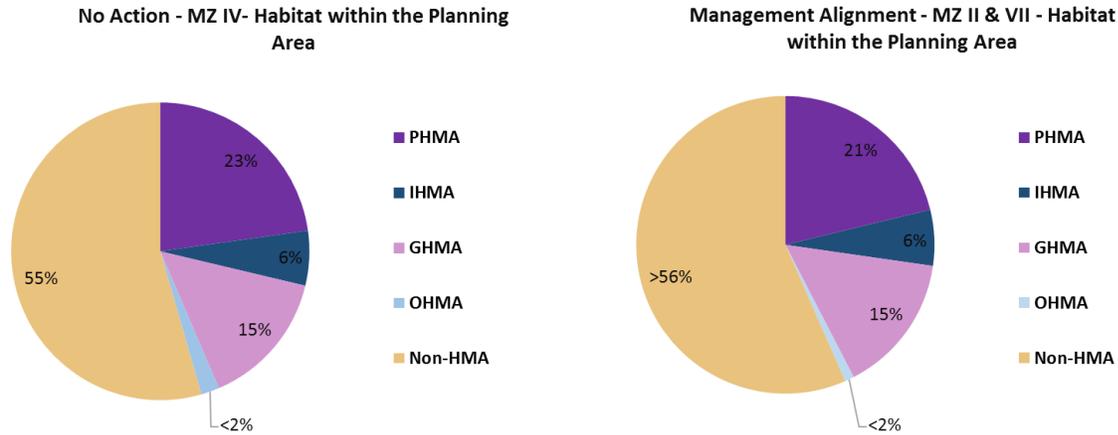


Figure 38 – Habitat Management Areas within MZ IV

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

II. Geothermal Energy

Table 40 – Geothermal Energy Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

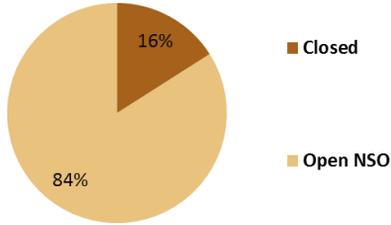
Approximate Acres of Geothermal Energy Decisions in MZ IV by Habitat Management Area Type						
Geothermal Energy	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Closed	1,923,000	918,000	1,130,000	4,000	9,440,000	13,415,000
Open NSO	10,256,000	2,638,000	424,000	0	1,125,000	14,443,000
Open CSU/TL	0	0	4,881,000	0	2,196,000	7,077,000
Open Standard Stipulations	0	3,000	20,000	704,000	4,529,000	5,257,000
Total	12,178,000	3,560,000	6,455,000	708,000	17,290,000	40,191,000

Geothermal Energy	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Closed	1,913,000	918,000	1,133,000	6,000	9,439,000	13,410,000
Open NSO	9,848,000	2,702,000	424,000	0	1,125,000	14,099,000
Open CSU/TL	0	0	4,974,000	0	2,196,000	7,169,000
Open Standard Stipulations	0	3,000	20,000	616,000	4,855,000	5,494,000
Total	11,762,000	3,624,000	6,550,000	622,000	17,615,000	40,173,000

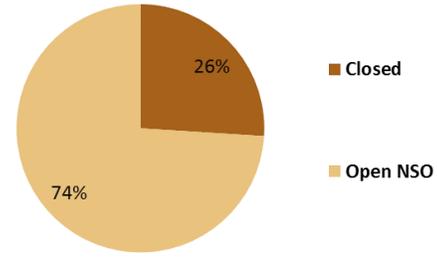
Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ IV						
Geothermal Energy	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Closed	16%	26%	18%	1%	55%	33%
Open NSO	84%	74%	7%	0%	7%	36%
Open CSU/TL	0%	0%	76%	0%	13%	18%
Open Standard Stipulations	0%	0%	0%	99%	26%	13%
Total	100%	100%	100%	100%	100%	100%

Geothermal Energy	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Closed	16%	25%	17%	1%	54%	33%
Open NSO	84%	75%	6%	0%	6%	35%
Open CSU/TL	0%	0%	76%	0%	12%	18%
Open Standard Stipulations	0%	0%	0%	99%	28%	14%
Total	100%	100%	100%	100%	100%	100%

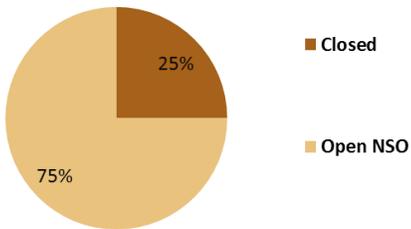
No Action & Management Alignment - PHMA - Geothermal Energy



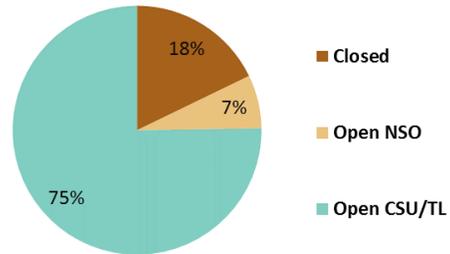
No Action - IHMA - Geothermal Energy



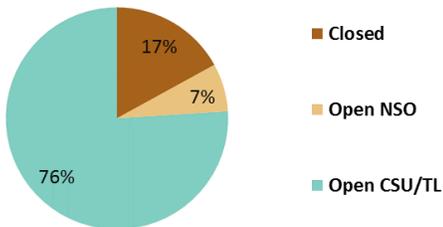
Management Alignment - IHMA - Geothermal Energy



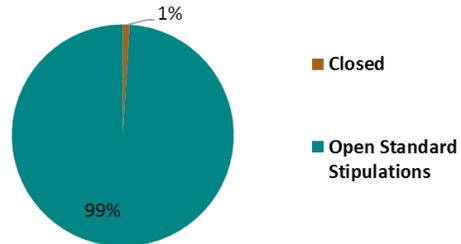
No Action - GHMA - Geothermal Energy



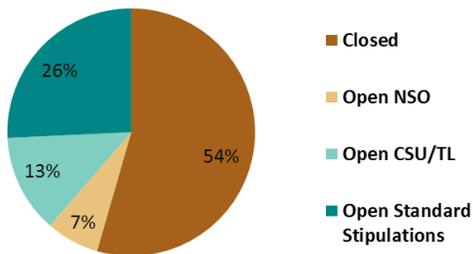
Management Alignment - GHMA - Geothermal Energy



No Action & Management Alignment - OHMA - Geothermal Energy



No Action - Non-HMA - Geothermal Energy



Management Alignment - Non-HMA - Geothermal Energy

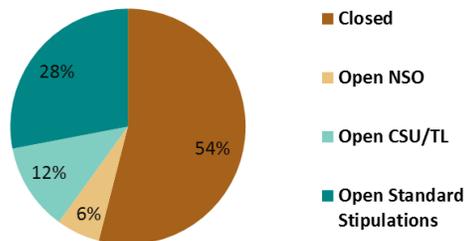


Figure 39 – Geothermal Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 41 – Land Tenure Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ IV by Habitat Management Area Type						
Land Tenure	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Disposal	0	0	1,000	146,000	659,000	805,000
Retention	10,726,000	2,719,000	4,948,000	562,000	4,277,000	23,232,000
Total	10,727,000	2,719,000	4,949,000	708,000	4,935,000	24,038,000

Land Tenure	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Disposal	6,000	0	25,000	85,000	799,000	914,000
Retention	10,319,000	2,780,000	5,019,000	537,000	4,462,000	23,117,000
Total	10,325,000	2,780,000	5,043,000	622,000	5,261,000	24,032,000

Approximate % of Habitat Management Area by Land Tenure Decision in MZ III						
Land Tenure	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Disposal	0%	0%	<1%	21%	13%	3%
Retention	100%	100%	100%	79%	87%	97%
Total	100%	100%	100%	100%	100%	100%

Land Tenure	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Disposal	<1%	0%	<1%	14%	15%	4%
Retention	100%	100%	100%	86%	85%	96%
Total	100%	100%	100%	100%	100%	100%

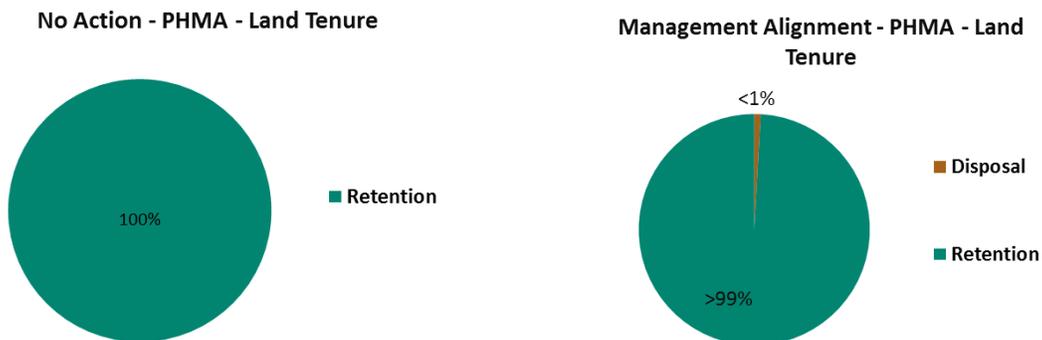
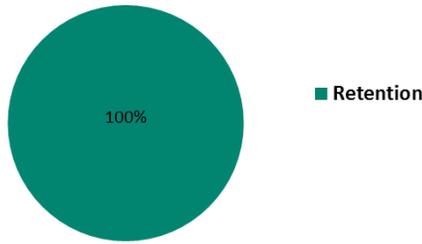


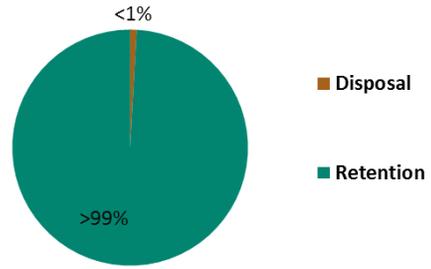
Figure 40 – Land Tenure Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

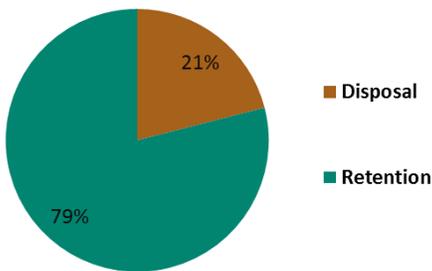
No Action & Management Alignment - IHMA - Land Tenure



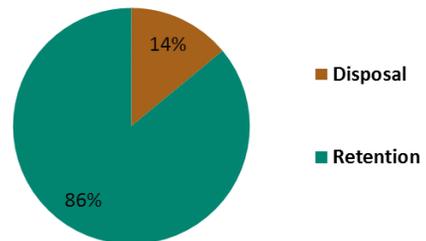
No Action & Management Alignment - GHMA - Land Tenure



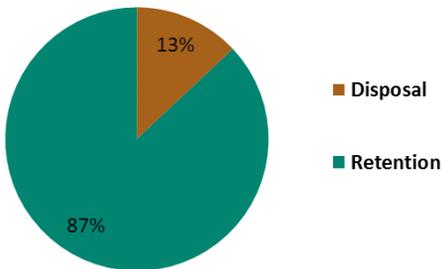
No Action - OHMA - Land Tenure



Management Alignment - OHMA - Land Tenure



No Action - Non-HMA - Land Tenure



Management Alignment - Non-HMA - Land Tenure

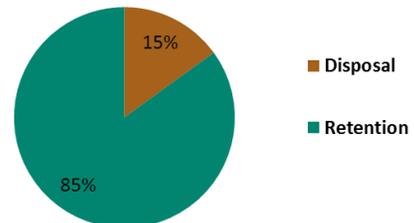


Figure 40 (cont'd) – Land Tenure Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 42 – Livestock Grazing Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ IV by Habitat Management Area Type						
Livestock Grazing	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	182,000	18,000	43,000	0	92,000	335,000
Available	10,515,000	2,701,000	4,923,000	709,000	4,562,000	23,411,000
Total	10,697,000	2,719,000	4,966,000	709,000	4,655,000	23,746,000

Livestock Grazing	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	182,000	18,000	43,000	0	92,000	335,000
Available	10,112,000	2,762,000	5,029,000	620,000	4,883,000	23,406,000
Total	10,294,000	2,780,000	5,072,000	620,000	4,975,000	23,740,000

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ IV						
Livestock Grazing	No Action & Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	2%	1%	1%	0%	2%	1%
Available	98%	99%	99%	100%	98%	99%
Total	100%	100%	100%	100%	100%	100%

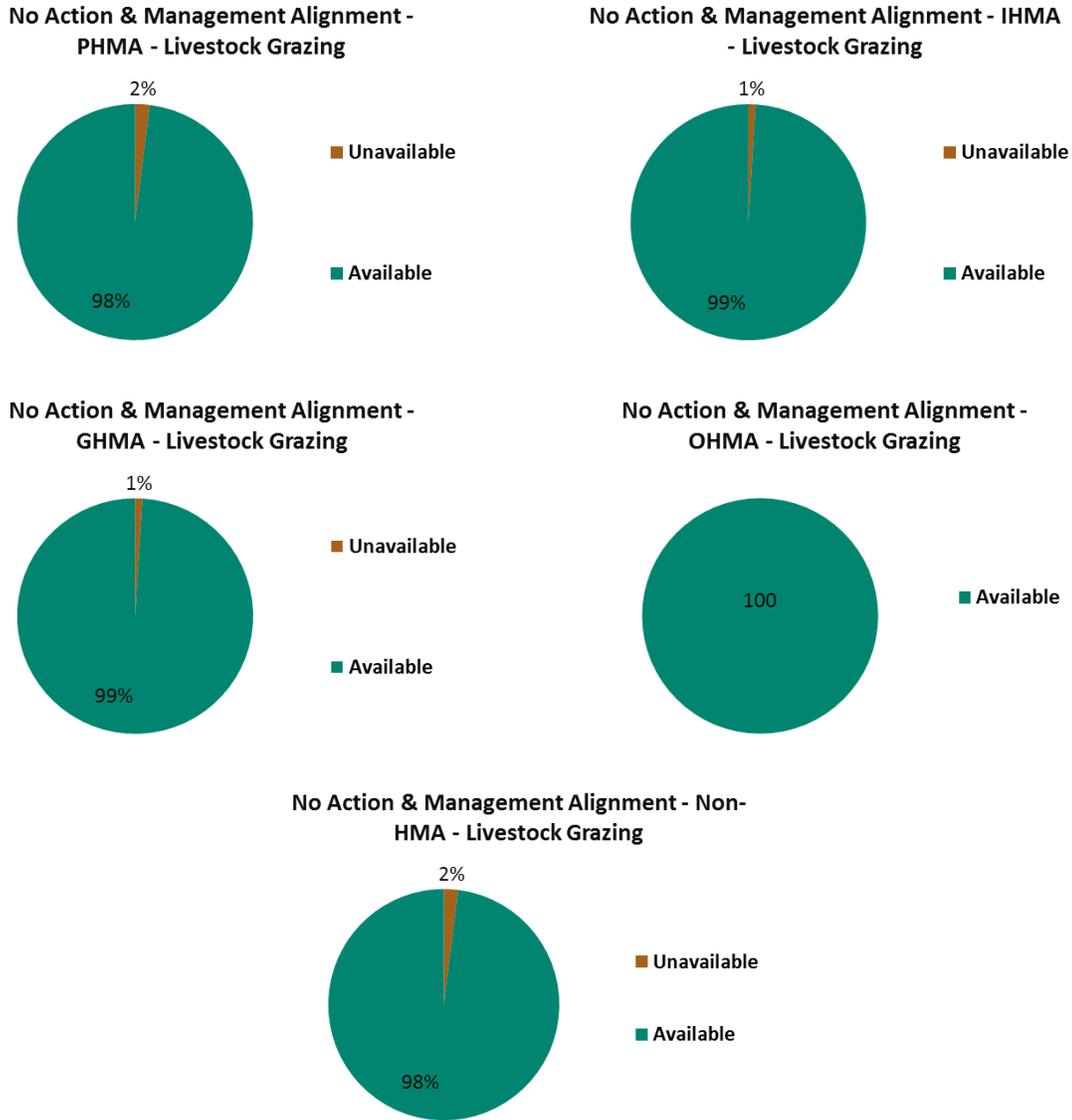


Figure 41 – Livestock Grazing Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 43 – Locatable Minerals Decisions within MZ IV

Acreages and Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Locatable Minerals Decisions in MZ IV by Habitat Management Area Type						
Locatable Minerals	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	1,079,000	442,000	432,000	0	3,606,000	5,560,000
Recommended Withdrawals	4,836,000	0	2,000	0	0	4,838,000
Open	6,074,000	2,858,000	6,055,000	708,000	13,798,000	29,492,000
Total	11,990,000	3,300,000	6,489,000	708,000	17,404,000	39,891,000

Locatable Minerals	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	1,078,000	442,000	431,000	0	3,605,000	5,556,000
Recommended Withdrawals	0	0	2,000	0	0	2,000
Open	10,518,000	2,923,000	6,151,000	622,000	14,113,000	34,327,000
Total	11,597,000	3,364,000	6,584,000	622,000	17,718,000	39,885,000

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ IV						
Locatable Minerals	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	9%	13%	7%	0%	21%	14%
Recommended Withdrawals	40%	0%	0%	0%	0%	12%
Open	51%	87%	93%	100%	79%	74%
Total	100%	100%	100%	100%	100%	100%

Locatable Minerals	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	9%	13%	9%	0%	20%	14%
Recommended Withdrawals	0%	0%	<1%	0%	0%	0%
Open	91%	87%	91%	100%	80%	86%
Total	100%	100%	100%	100%	100%	100%



Figure 42 – Locatable Minerals Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 44 – Non-Energy Leasable Minerals Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

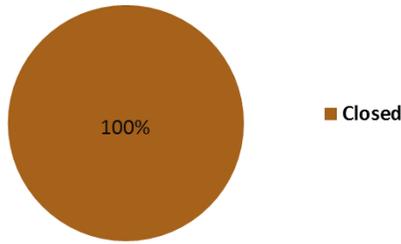
Approximate Acres of Non-Energy Leasable Minerals Decisions in MZ IV by Habitat Management Area Type						
Non-Energy Leasable Minerals	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	12,180,000	682,000	1,059,000	4,000	9,139,000	23,064,000
Open	0	2,877,000	5,413,000	704,000	8,375,000	17,369,000
Total	12,180,000	3,559,000	6,472,000	708,000	17,514,000	40,433,000

Non-Energy Leasable Minerals	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	11,775,000	682,000	1,062,000	6,000	9,138,000	22,663,000
Open	0	2,941,000	5,505,000	616,000	8,701,000	17,763,000
Total	11,775,000	3,624,000	6,567,000	622,000	17,839,000	40,426,000

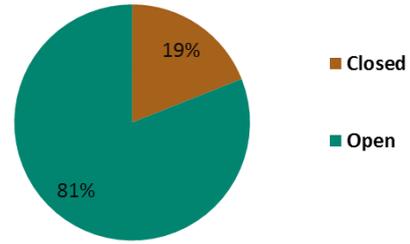
Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ IV						
Non-Energy Leasable Minerals	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	19%	16%	1%	52%	57%
Open	0%	81%	84%	99%	48%	43%
Total	100%	100%	100%	100%	100%	100%

Non-Energy Leasable Minerals	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	19%	16%	1%	51%	56%
Open	0%	81%	84%	99%	49%	44%
Total	100%	100%	100%	100%	100%	100%

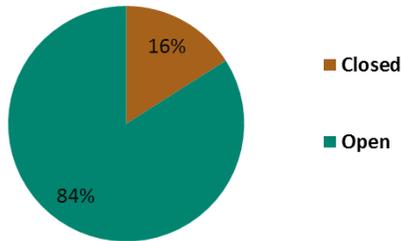
No Action & Management Alignment - PHMA - Non-Energy Leasable Minerals



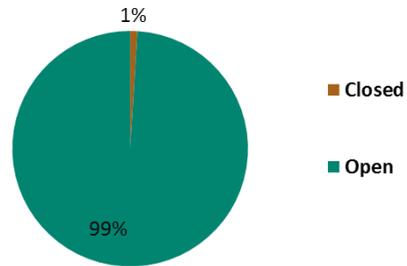
Management Alignment - IHMA - Non-Energy Leasable Minerals



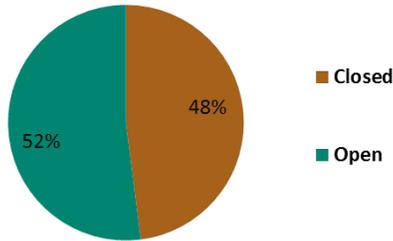
Management Alignment - GHMA - Non-Energy Leasable Minerals



Management Alignment - OHMA - Non-Energy Leasable Minerals



No Action - Non-HMA - Non-Energy Leasable Minerals



Management Alignment - Non-HMA - Non-Energy Leasable Minerals

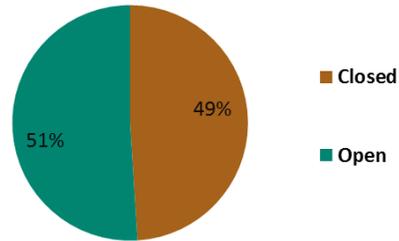


Figure 43 – Non-Energy Leasable Minerals Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 45 – Fluid Mineral (Oil & Gas) Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Fluid Mineral (Oil & Gas) Decisions in MZ IV by Habitat Management Area Type						
Fluid Mineral (Oil & Gas) Decisions	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	1,924,000	1,136,000	1,136,000	4,000	9,542,000	13,523,000
Open NSO	10,245,000	436,000	436,000	0	1,164,000	14,493,000
Open CSU/TL	18,000	4,947,000	4,947,000	0	2,266,000	7,230,000
Open Standard Stipulations	1,000	3,000	3,000	704,000	4,729,000	5,437,000
Total	12,187,000	6,522,000	6,522,000	708,000	17,701,000	40,683,000

Fluid Mineral (Oil & Gas) Decisions	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	1,917,000	917,000	1,138,000	6,000	9,541,000	13,520,000
Open NSO	9,846,000	2,712,000	436,000	0	1,176,000	14,171,000
Open CSU/TL	17,000	0	5,039,000	0	2,266,000	7,322,000
Open Standard Stipulations	1,000	0	3,000	616,000	5,043,000	5,663,000
Total	11,782,000	3,629,000	6,616,000	622,000	18,027,000	40,676,000

Approximate % of Habitat Management Area by Fluid Mineral (Oil & Gas) Decision in MZ IV						
Fluid Mineral (Oil & Gas) Decisions	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	16%	26%	17%	1%	54%	33%
Open NSO	84%	74%	7%	0%	7%	36%
Open CSU/TL	<1%	0%	76%	0%	13%	18%
Open Standard Stipulations	<1%	0%	<1%	99%	27%	13%
Total	100%	100%	100%	100%	100%	100%

Fluid Mineral (Oil & Gas) Decisions	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	16%	25%	17%	1%	53%	33%
Open NSO	84%	75%	7%	0%	7%	35%
Open CSU/TL	<1%	0%	76%	0%	13%	18%
Open Standard Stipulations	<1%	0%	<1%	99%	28%	14%
Total	100%	100%	100%	100%	100%	100%

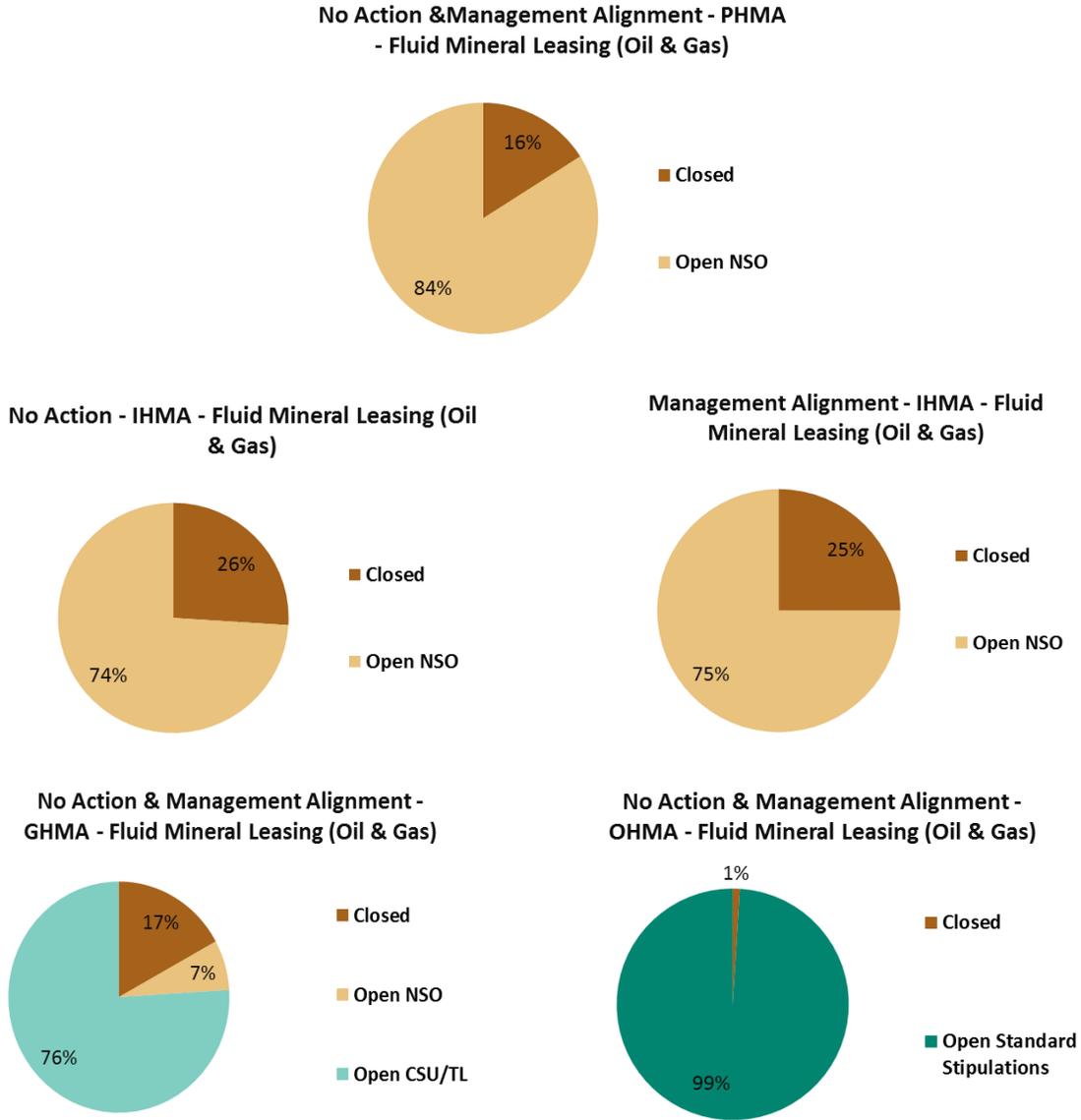
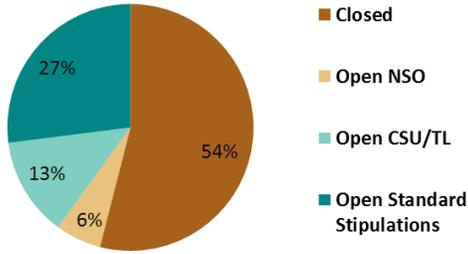


Figure 44 – Fluid Mineral (Oil & Gas) Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action - Non-HMA - Fluid Mineral Leasing (Oil & Gas)



Management Alignment - Non-HMA - Fluid Mineral Leasing (Oil & Gas)

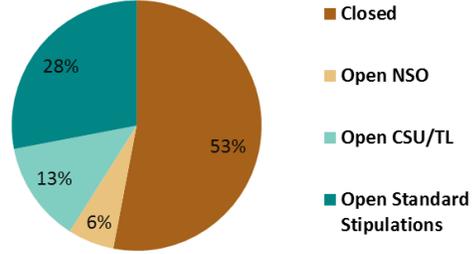


Figure 44 (cont'd) – Fluid Mineral (Oil & Gas) Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 46 – Rights-of-Ways Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

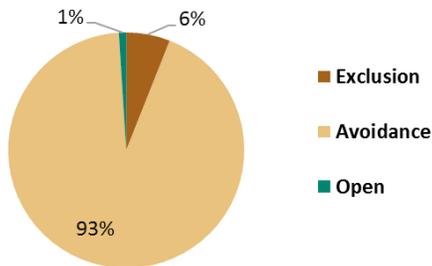
Approximate Acres of Rights-of-Ways Decisions in MZ IV by Habitat Management Area Type						
Rights-of-Ways	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	637,000	131,000	269,000	3,000	244,000	1,283,000
Avoidance	9,993,000	2,565,000	3,095,000	0	463,000	16,117,000
Open	98,000	24,000	1,827,000	705,000	4,381,000	7,035,000
Total	10,728,000	2,719,000	5,192,000	708,000	5,088,000	24,435,000

Rights-of-Ways	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	631,000	131,000	272,000	6,000	245,000	1,285,000
Avoidance	9,623,000	2,626,000	3,204,000	0	475,000	15,928,000
Open	68,000	24,000	1,810,000	615,000	4,700,000	7,217,000
Total	10,322,000	2,780,000	5,286,000	621,000	5,420,000	24,429,000

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ IV						
Rights-of-Ways	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	6%	5%	5%	0%	5%	5%
Avoidance	93%	94%	60%	0%	9%	65%
Open	1%	1%	35%	100%	86%	29%
Total	100%	100%	100%	100%	100%	100%

Rights-of-Ways	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	6%	5%	5%	1%	4%	5%
Avoidance	93%	94%	61%	0%	9%	65%
Open	1%	1%	34%	99%	87%	30%
Total	100%	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Rights of Ways



No Action & Management Alignment - IHMA - Rights of Ways

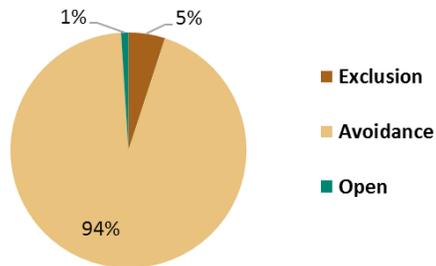


Figure 45 – Rights-of-Ways Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

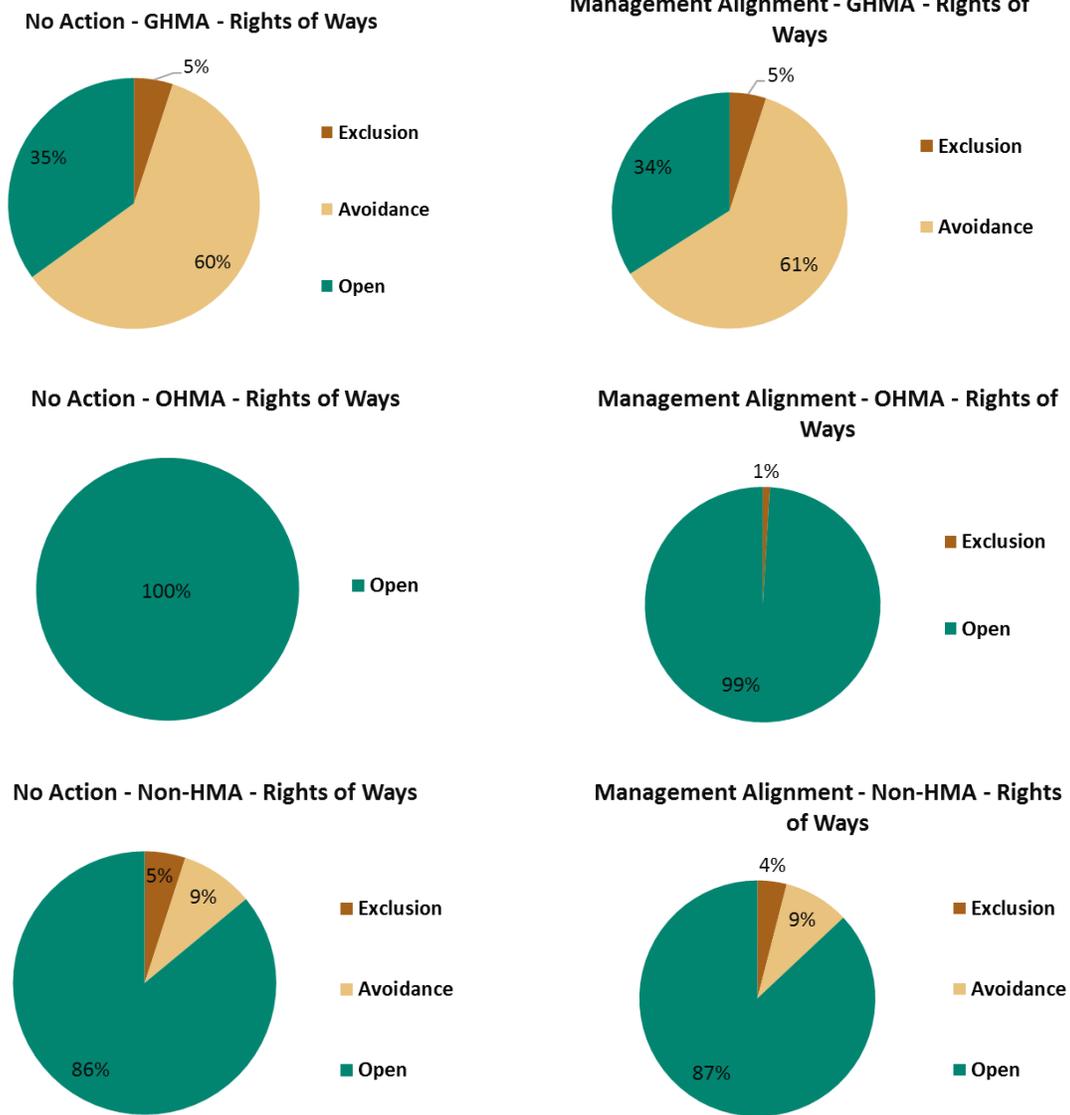


Figure 45 (cont'd) – Rights-of-Ways Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 47 – Salable Minerals Materials Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

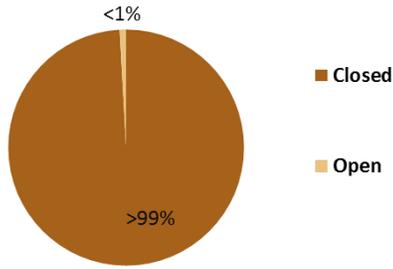
Approximate Acres of Salable Minerals Materials Decisions in MZ IV by Habitat Management Area Type						
Salable Minerals Materials	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	11,494,000	313,000	682,000	4,000	830,000	13,323,000
Open	4,000	2,878,000	5,250,000	704,000	5,504,000	14,339,000
Total	11,497,000	3,191,000	5,932,000	708,000	6,334,000	27,662,000

Salable Minerals Materials	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	11,089,000	313,000	684,000	6,000	829,000	12,922,000
Open	4,000	2,942,000	5,343,000	616,000	5,830,000	14,734,000
Total	11,093,000	3,255,000	6,027,000	622,000	6,659,000	27,656,000

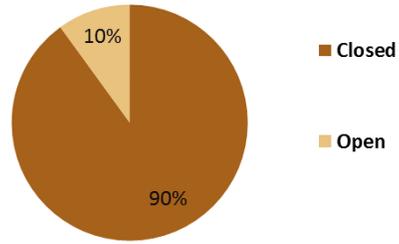
Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ IV						
Salable Minerals Materials	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	10%	11%	1%	13%	48%
Open	<1%	90%	89%	99%	87%	52%
Total	100%	100%	100%	100%	100%	100%

Salable Minerals Materials	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	10%	11%	1%	12%	47%
Open	<1%	90%	89%	99%	88%	53%
Total	100%	100%	100%	100%	100%	100%

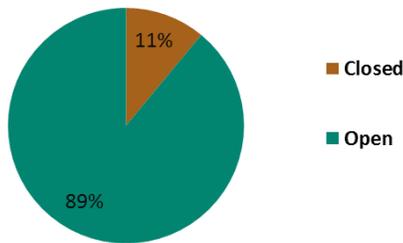
No Action & Management Alignment - PHMA - Salable Minerals Materials



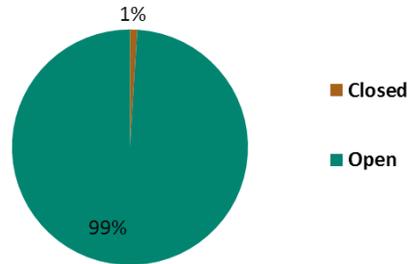
No Action & Management Alignment - IHMA - Salable Minerals Materials



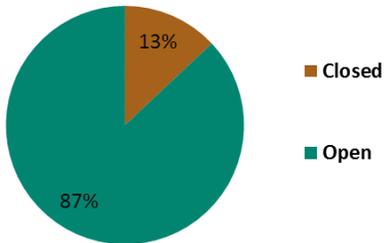
No Action & Management Alignment - GHMA - Salable Minerals Materials



No Action & Management Alignment - OHMA - Salable Minerals Materials



No Action - Non-HMA - Salable Minerals Materials



Management Alignment - Non-HMA - Salable Minerals Materials

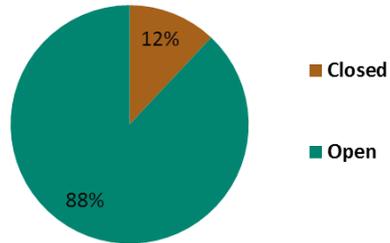


Figure 46 – Salable Minerals Materials Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 48 – Solar Energy Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

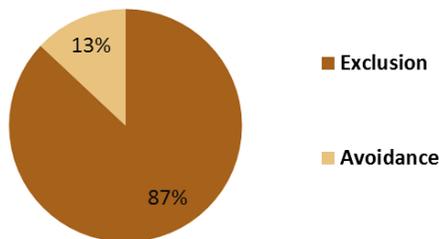
Approximate Acres of Solar Energy Decisions in MZ IV by Habitat Management Area Type						
Solar Energy	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	9,341,000	363,000	1,210,000	706,000	2,275,000	13,895,000
Avoidance	1,390,000	2,357,000	2,235,000	0	123,000	6,105,000
Open	0	0	1,500,000	1,000	2,521,000	4,022,000
Total	10,731,000	2,719,000	4,945,000	707,000	4,919,000	24,021,000

Solar Energy	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	8,937,000	363,000	1,304,000	622,000	2,605,000	13,831,000
Avoidance	1,390,000	2,417,000	2,235,000	0	123,000	6,165,000
Open	0	0	1,500,000	0	2,520,000	4,020,000
Total	10,326,000	2,780,000	5,039,000	622,000	5,248,000	24,015,000

Approximate % of Habitat Management Area by Solar Energy Decision in MZ IV						
Solar Energy	No Action					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	87%	13%	24%	100%	46%	58%
Avoidance	13%	87%	45%	0%	3%	25%
Open	0%	0%	30%	0%	51%	17%
Total	100%	100%	100%	100%	100%	100%

Solar Energy	Management Alignment					Total
	PHMA	IHMA	GHMA	OHMA	Non-HMA	
Exclusion	87%	13%	26%	100%	50%	58%
Avoidance	13%	87%	44%	0%	2%	26%
Open	0%	0%	30%	0%	48%	17%
Total	100%	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Solar Energy



No Action & Management Alignment - IHMA - Solar Energy

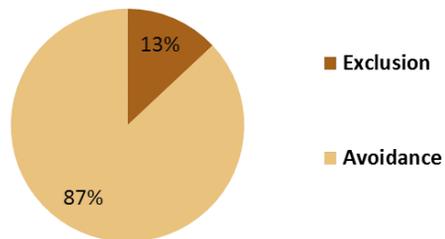


Figure 47 – Solar Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

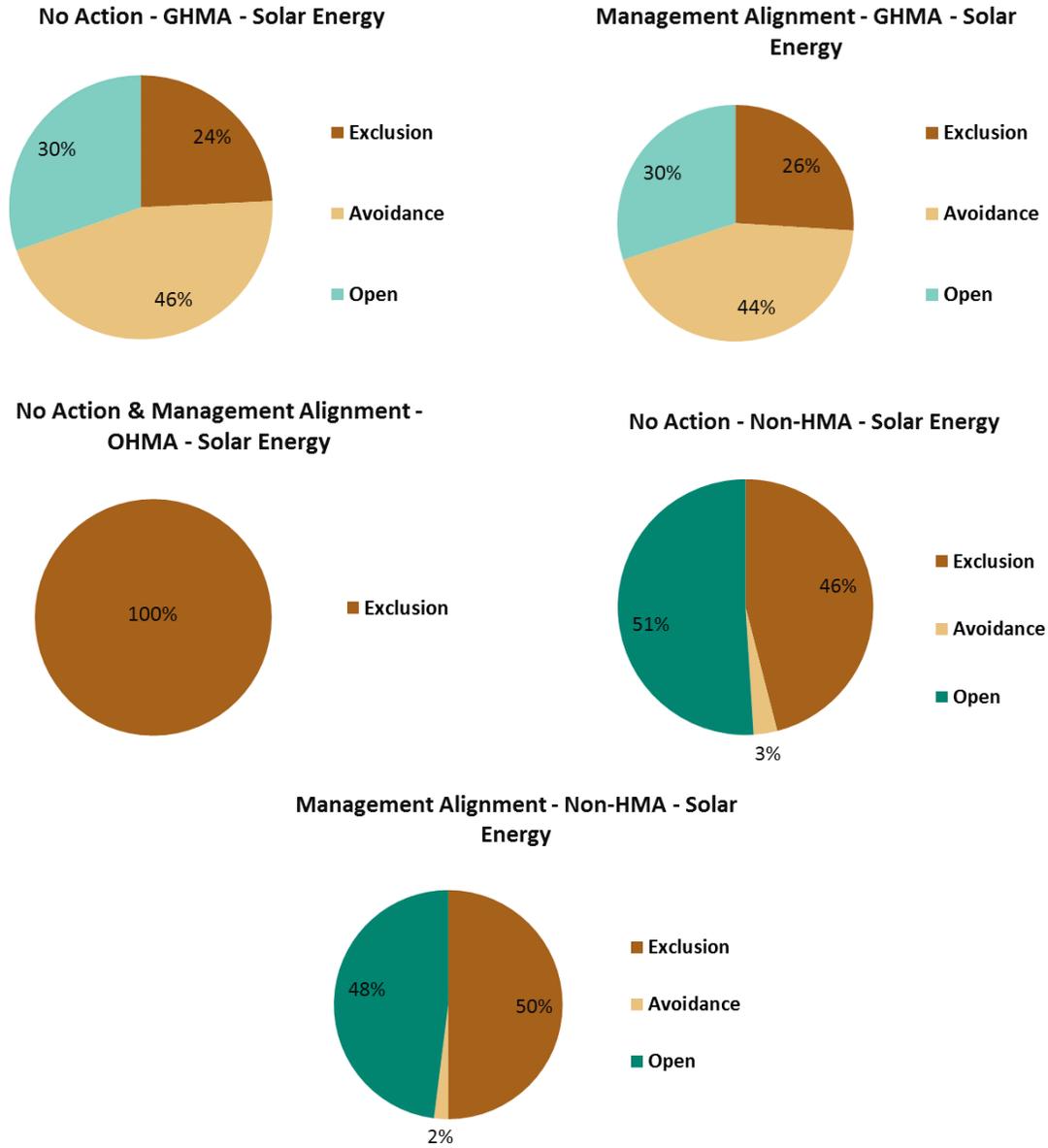


Figure 47 (cont'd) – Solar Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 49 — Trails and Travel Management Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

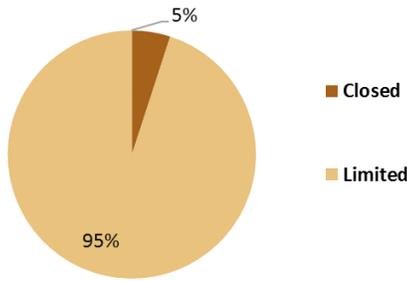
Approximate Acres of Trails and Travel Management Decisions in MZ IV by Habitat Management Area Type						
Trails and Travel Management Decisions	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	560,000	83,000	85,000	1,000	215,000	943,000
Limited	10,169,000	2,633,000	4,866,000	1,000	3,101,000	20,770,000
Open	0	3,000	0	707,000	1,619,000	2,329,000
Total	10,729,000	2,719,000	4,951,000	708,000	4,935,000	24,042,000

Trails and Travel Management Decisions	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	559,000	83,000	84,000	0	214,000	940,000
Limited	9,768,000	2,694,000	4,961,000	5,000	3,188,000	20,617,000
Open	0	3,000	0	617,000	1,859,000	2,479,000
Total	10,327,000	2,780,000	5,046,000	622,000	5,261,000	24,036,000

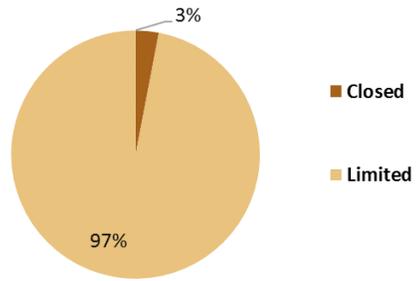
Approximate % of Habitat Management Area by Trails and Travel Management Decisions Decision in MZ IV						
Trails and Travel Management Decisions	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	5%	3%	2%	<1%	4%	4%
Limited	95%	97%	98%	<1%	63%	86%
Open	0%	<1%	0%	100%	33%	10%
Total	100%	100%	100%	100%	100%	100%

Trails and Travel Management Decisions	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Closed	5%	3%	2%	0%	4%	4%
Limited	95%	97%	98%	1%	61%	86%
Open	0%	0%	0%	99%	35%	10%
Total	100%	100%	100%	100%	100%	100%

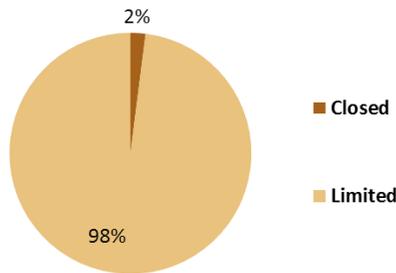
No Action & Management Alignment - PHMA - Trails and Travel Management



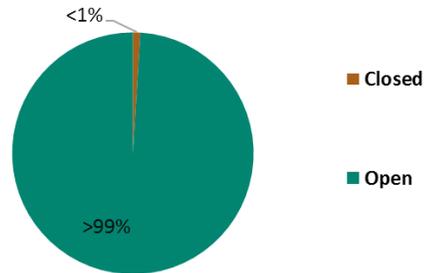
No Action & Management Alignment - IHMA - Trails and Travel Management



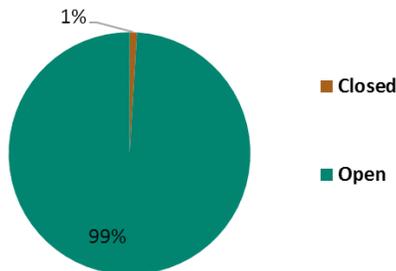
No Action & Management Alignment - GHMA - Trails and Travel Management



No Action - OHMA - Trails and Travel Management



Management Alignment - OHMA - Trails and Travel Management



No Action - Non-HMA - Trails and Travel Management

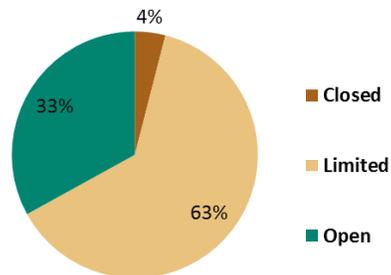


Figure 48 – Trails and Travel Management Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Management Alignment- Non-HMA - Trails
and Travel Management

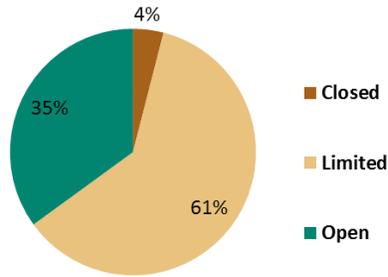


Figure 48 (cont'd) – Trails and Travel Management Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 50 – Wind Energy Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

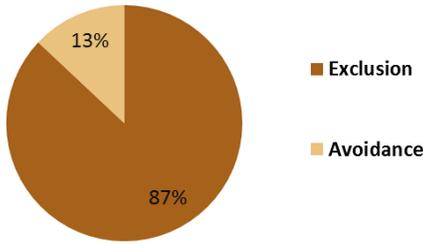
Approximate Acres of Wind Energy Decisions in MZ IV by Habitat Management Area Type						
Wind Energy	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	9,339,000	363,000	392,000	4,000	1,035,000	11,133,000
Avoidance	1,390,000	2,357,000	3,051,000	0	123,000	6,920,000
Open	0	0	1,501,000	704,000	3,769,000	5,973,000
Total	10,728,000	2,719,000	4,944,000	708,000	4,926,000	24,026,000

Wind Energy	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	8,938,000	363,000	395,000	6,000	1,046,000	10,748,000
Avoidance	1,390,000	2,417,000	3,144,000	0	123,000	7,073,000
Open	0	0	1,501,000	616,000	4,083,000	6,199,000
Total	10,327,000	2,780,000	5,039,000	622,000	5,252,000	24,020,000

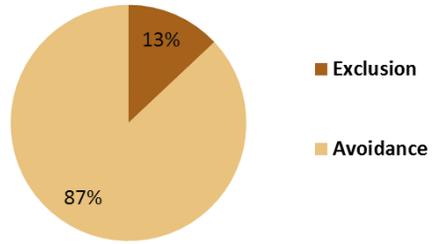
Approximate % of Habitat Management Area by Wind Energy Decision in MZ IV						
Wind Energy	No Action					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	87%	13%	8%	1%	21%	46%
Avoidance	13%	87%	62%	0%	2%	29%
Open	0%	0%	30%	99%	77%	25%
Total	100%	100%	100%	100%	100%	100%

Wind Energy	Management Alignment					
	PHMA	IHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	87%	13%	8%	1%	20%	45%
Avoidance	13%	87%	62%	0%	2%	29%
Open	0%	0%	30%	99%	78%	26%
Total	100%	100%	100%	100%	100%	100%

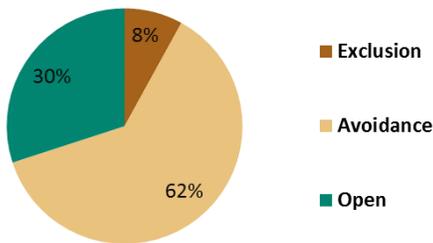
No Action & Management Alignment - PHMA - Wind Energy



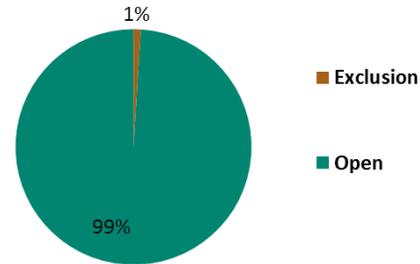
No Action & Management Alignment - PHMA - Wind Energy



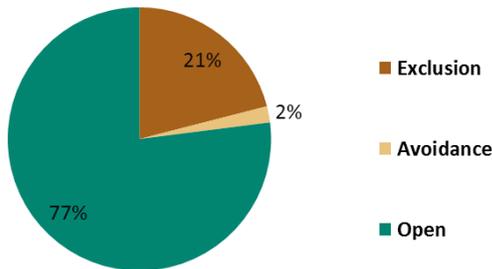
No Action & Management Alignment - GHMA - Wind Energy



No Action & Management Alignment - OHMA - Wind Energy



No Action - Non-HMA - Wind Energy



Management Alignment - Non-HMA - Wind Energy

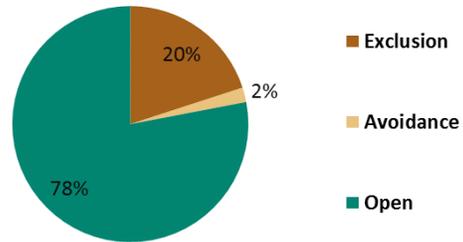


Figure 49 – Wind Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

1.2.5 Management Zone V – Oregon, Nevada, California

I. Habitat Management

Table 51 – Habitat Management Areas within MZ V

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ V							
No Action				Management Alignment			
PHMA	GHMA	OHMA	Non-HMA	PHMA	GHMA	OHMA	Non-HMA
6,510,000	7,323,000	1,932,000	15,519,000	6,567,000	6,846,000	1,142,000	16,727,000

Approximate Percent of MZ I that is HMA							
No Action				Management Alignment			
PHMA	GHMA	OHMA	Non-HMA	PHMA	GHMA	OHMA	Non-HMA
21%	23%	6%	50%	21%	22%	4%	53%

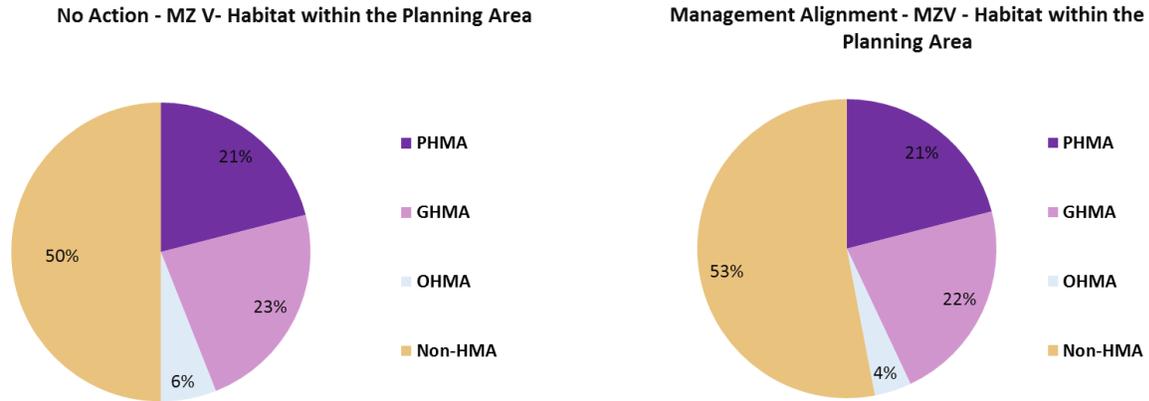


Figure 50 – Habitat Management Areas within MZ V

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

II. Geothermal Energy

Table 52 – Geothermal Energy Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions in MZ V by Habitat Management Area Type					
Geothermal Energy	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	1,626,000	1,359,000	158,000	898,000	4,042,000
Open NSO	3,350,000	379,000	0	164,000	3,893,000
Open CSU/TL	0	3,287,000	0	335,000	3,622,000
Open Standard Stipulations	5,000	0	744,000	2,367,000	3,117,000
Total	4,982,000	5,026,000	903,000	3,764,000	14,674,000

Geothermal Energy	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	1,569,000	1,373,000	141,000	935,000	4,018,000
Open NSO	3,566,000	379,000	0	164,000	4,110,000
Open CSU/TL	0	3,185,000	0	335,000	3,520,000
Open Standard Stipulations	0	0	423,000	2,598,000	3,021,000
Total	5,136,000	4,937,000	564,000	4,032,000	14,668,000

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ V					
Geothermal Energy	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	33%	27%	17%	24%	28%
Open NSO	67%	8%	0%	4%	27%
Open CSU/TL	0%	65%	0%	9%	25%
Open Standard Stipulations	<1%	0%	82%	63%	21%
Total	100%	100%	100%	100%	100%

Geothermal Energy	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	31%	28%	25%	23%	27%
Open NSO	69%	8%	0%	4%	28%
Open CSU/TL	0%	65%	0%	8%	24%
Open Standard Stipulations	0%	0%	75%	64%	21%
Total	100%	100%	100%	100%	100%

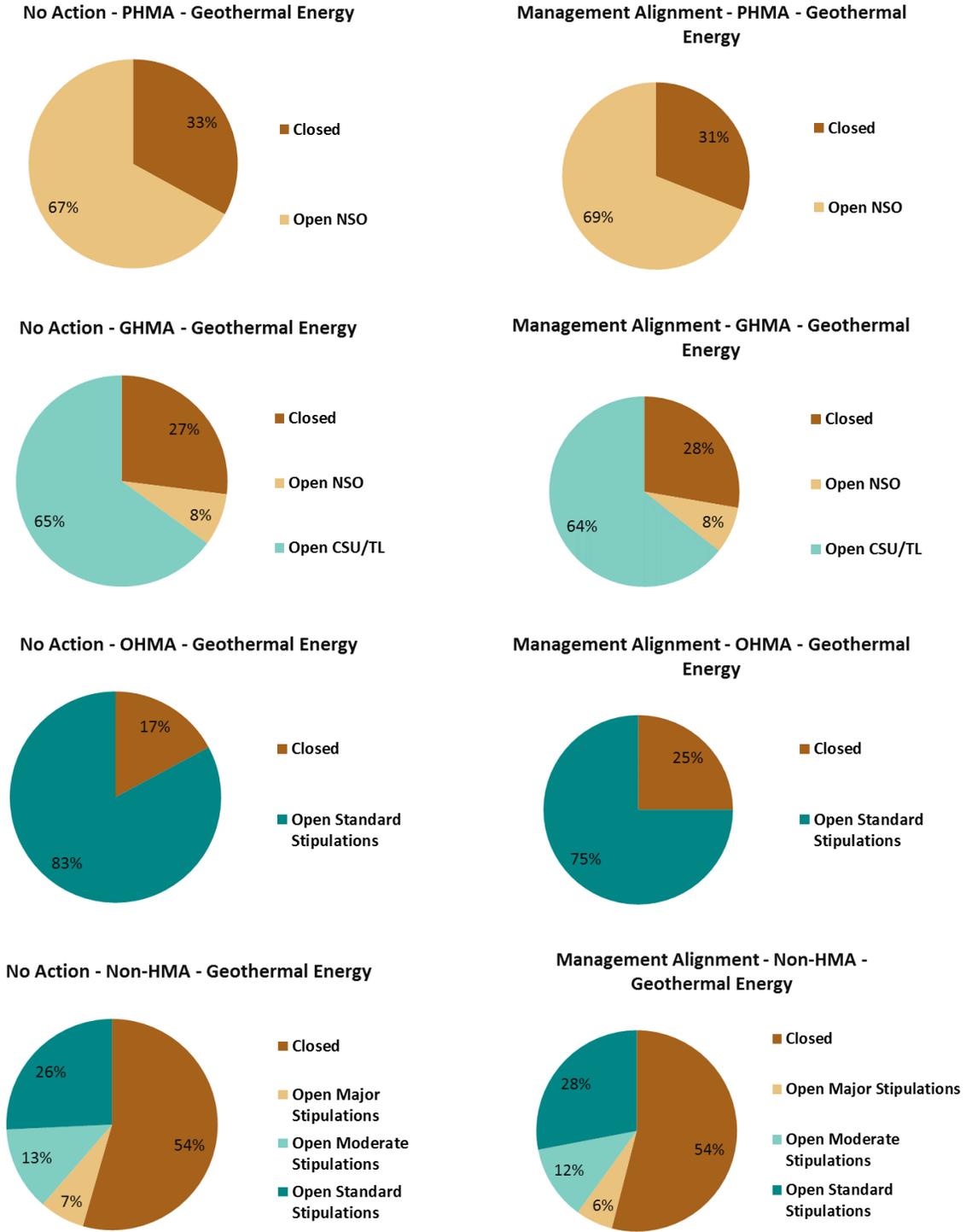


Figure 5I – Geothermal Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 53 – Land Tenure Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ V by Habitat Management Area Type					
Land Tenure	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Disposal	0	0	79,000	521,000	600,000
Retention	4,649,000	4,896,000	822,000	3,044,000	13,410,000
Total	4,649,000	4,896,000	901,000	3,565,000	14,011,000

Land Tenure	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Disposal	2,000	19,000	32,000	592,000	644,000
Retention	4,802,000	4,787,000	530,000	3,241,000	13,360,000
Total	4,804,000	4,806,000	562,000	3,833,000	14,005,000

Approximate % of Habitat Management Area by Land Tenure Decision in MZ III					
Land Tenure	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Disposal	0%	0%	9%	15%	4%
Retention	100%	100%	91%	85%	96%
Total	100%	100%	100%	100%	100%

Land Tenure	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Disposal	<1%	<1%	6%	15%	5%
Retention	100%	100%	94%	85%	95%
Total	100%	100%	100%	100%	100%

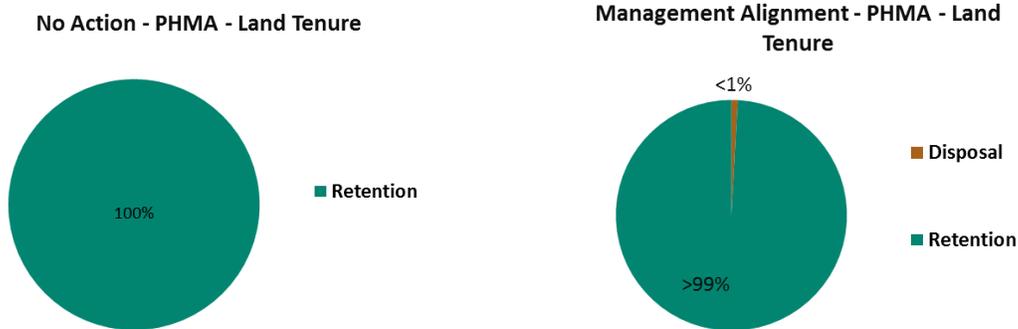


Figure 52 – Land Tenure Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

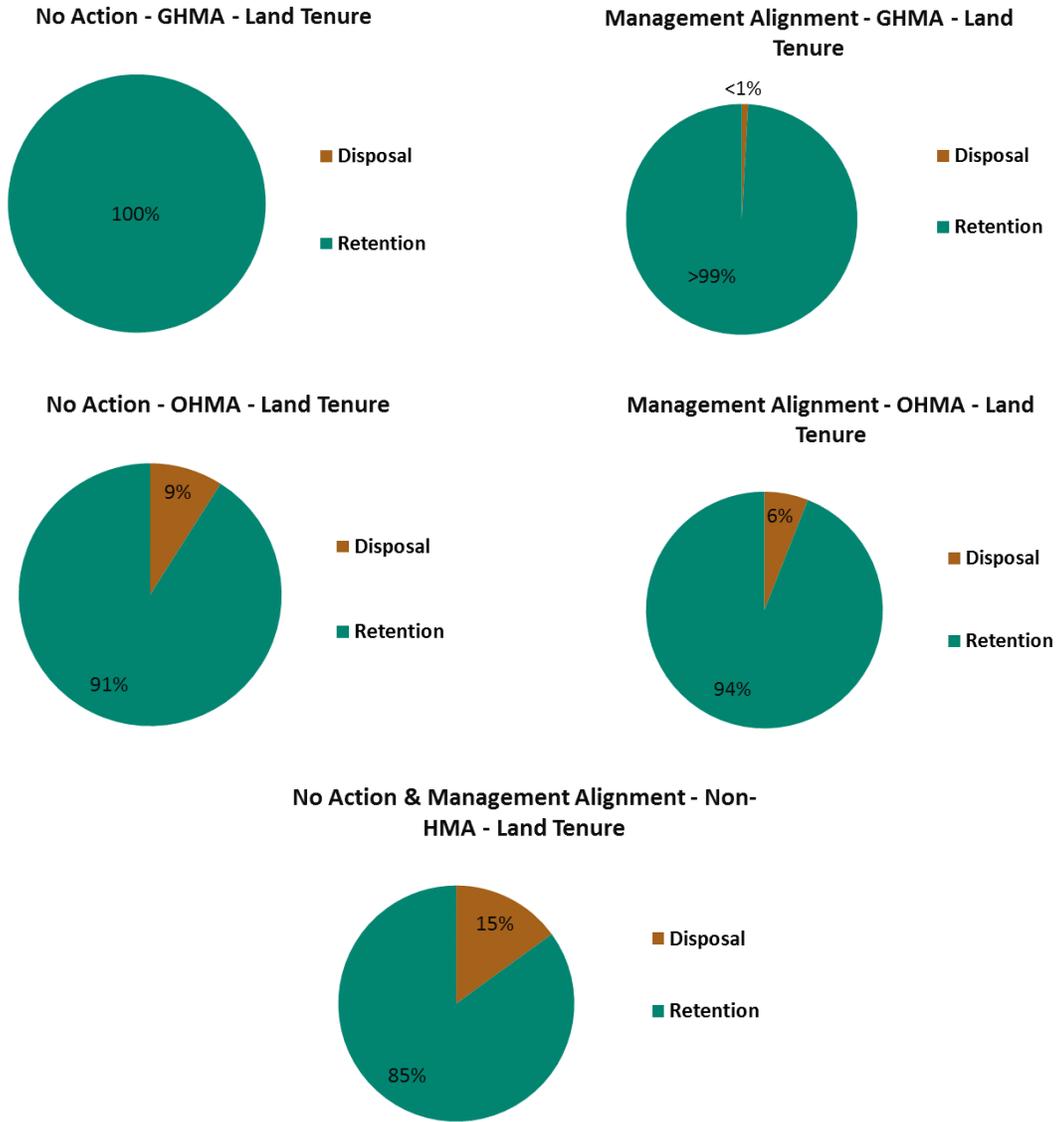


Figure 52 (cont'd) – Land Tenure Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 54 – Livestock Grazing Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ V by Habitat Management Area Type					
Livestock Grazing	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	47,000	102,000	0	84,000	232,000
Available	4,582,000	4,762,000	883,000	3,233,000	13,461,000
Total	4,629,000	4,864,000	883,000	3,317,000	13,694,000

Livestock Grazing	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	47,000	102,000	0	84,000	232,000
Available	4,736,000	4,671,000	550,000	3,493,000	13,450,000
Total	4,783,000	4,772,000	550,000	3,577,000	13,682,000

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ V					
Livestock Grazing	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	1%	2%	0%	3%	2%
Available	99%	98%	100%	97%	98%
Total	100%	100%	100%	100%	100%

Livestock Grazing	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Unavailable	1%	2%	0%	2%	2%
Available	99%	98%	100%	98%	98%
Total	100%	100%	100%	100%	100%



Figure 53 – Livestock Grazing Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 55 – Locatable Minerals Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

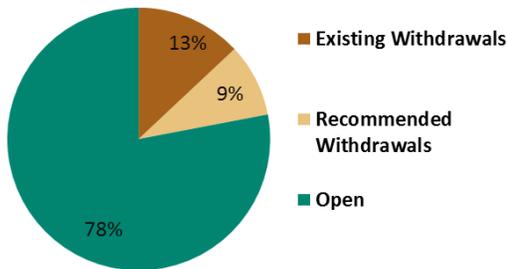
Approximate Acres of Locatable Minerals Decisions in MZ V by Habitat Management Area Type					
Locatable Minerals	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	631,000	687,000	59,000	486,000	1,864,000
Recommended Withdrawals	435,000	5,000	0	0	440,000
Open	3,885,000	4,329,000	842,000	3,048,000	12,104,000
Total	4,951,000	5,022,000	901,000	3,534,000	14,408,000

Locatable Minerals	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	626,000	687,000	64,000	487,000	1,864,000
Recommended Withdrawals	12,000	5,000	0	0	17,000
Open	4,469,000	4,240,000	499,000	3,314,000	12,522,000
Total	5,106,000	4,932,000	562,000	3,801,000	14,403,000

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ V					
Locatable Minerals	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	13%	14%	7%	14%	13%
Recommended Withdrawals	9%	0%	0%	0%	3%
Open	78%	86%	93%	86%	84%
Total	100%	100%	100%	100%	100%

Locatable Minerals	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Existing Withdrawals	12%	14%	11%	13%	13%
Recommended Withdrawals	0%	0%	0%	0%	0%
Open	88%	86%	89%	87%	87%
Total	100%	100%	100%	100%	100%

No Action - PHMA - Locatable Minerals



Management Alignment - PHMA - Locatable Minerals

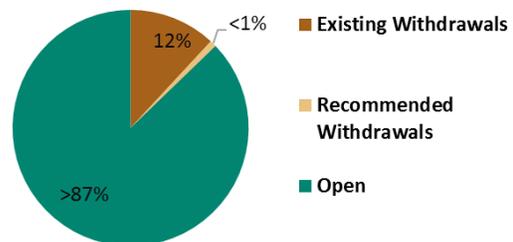


Figure 54 – Locatable Minerals Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.



Figure 54 (cont'd) – Locatable Minerals Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 56 – Non-Energy Leasable Minerals Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions in MZ V by Habitat Management Area Type					
Non-Energy Leasable Minerals	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	4,980,000	1,388,000	158,000	898,000	7,423,000
Open	0	3,635,000	744,000	2,866,000	7,247,000
Total	4,980,000	5,024,000	903,000	3,764,000	14,671,000

Non-Energy Leasable Minerals	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	5,135,000	1,402,000	141,000	935,000	7,613,000
Open	0	3,532,000	423,000	3,097,000	7,052,000
Total	5,135,000	4,934,000	564,000	4,032,000	14,665,000

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ V					
Non-Energy Leasable Minerals	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	28%	17%	24%	51%
Open	0%	72%	82%	76%	49%
Total	100%	100%	100%	100%	100%

Non-Energy Leasable Minerals	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	28%	25%	23%	52%
Open	0%	72%	75%	77%	48%
Total	100%	100%	100%	100%	100%



Figure 55 – Non-Energy Leasable Minerals Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 57 – Fluid Mineral (Oil & Gas) Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

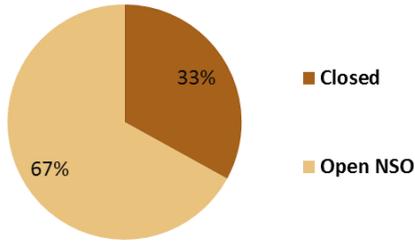
Approximate Acres of Fluid Mineral (Oil & Gas) Decisions in MZ V by Habitat Management Area Type					
Fluid Mineral (Oil & Gas) Decisions	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	1,590,000	1,373,000	141,000	935,000	4,039,000
Open NSO	3,542,000	379,000	0	164,000	4,085,000
Open CSU/TL	0	3,184,000	0	335,000	3,519,000
Open Standard Stipulations	0	0	423,000	2,598,000	3,021,000
Total	5,133,000	4,936,000	564,000	4,032,000	14,664,000

Fluid Mineral (Oil & Gas) Decisions	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	1,626,000	1,359,000	158,000	898,000	4,042,000
Open NSO	3,354,000	379,000	0	164,000	3,898,000
Open CSU/TL	0	3,287,000	0	335,000	3,622,000
Open Standard Stipulations	0	0	743,000	2,365,000	3,108,000
Total	4,981,000	5,026,000	902,000	3,762,000	14,670,000

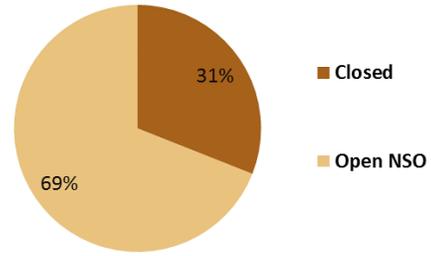
Approximate % of Habitat Management Area by Fluid Mineral (Oil & Gas) Decision in MZ V					
Fluid Mineral (Oil & Gas) Decisions	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	33%	27%	18%	24%	28%
Open NSO	67%	8%	0%	4%	27%
Open CSU/TL	0%	65%	0%	9%	25%
Open Standard Stipulations	0%	0%	82%	63%	21%
Total	100%	100%	100%	100%	100%

Fluid Mineral (Oil & Gas) Decisions	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	31%	28%	25%	23%	28%
Open NSO	69%	8%	0%	4%	28%
Open CSU/TL	0%	65%	0%	8%	24%
Open Standard Stipulations	0%	0%	75%	64%	21%
Total	100%	100%	100%	100%	100%

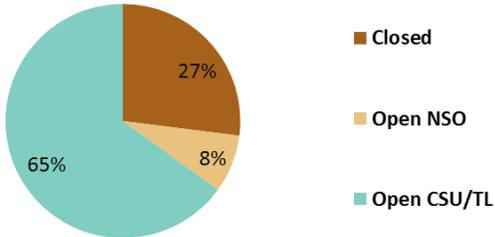
No Action - PHMA - Fluid Mineral Leasing (Oil & Gas)



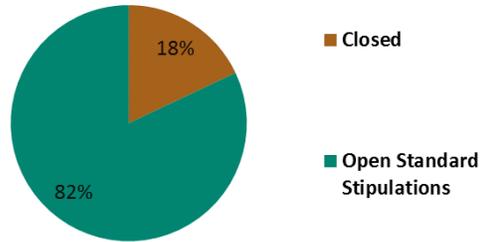
Management Alignment - PHMA - Fluid Mineral Leasing (Oil & Gas)



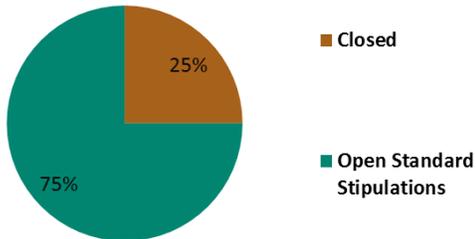
No Action & Management Alignment - GHMA - Fluid Mineral Leasing (Oil & Gas)



No Action - OHMA - Fluid Mineral Leasing (Oil & Gas)



Management Alignment - OHMA - Fluid Mineral Leasing (Oil & Gas)



No Action - Non-HMA - Fluid Mineral Leasing (Oil & Gas)

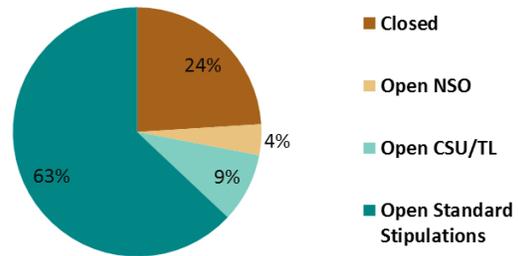


Figure 56 – Fluid Mineral (Oil & Gas) Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Management Alignment - Non-HMA - Fluid Mineral Leasing (Oil & Gas)

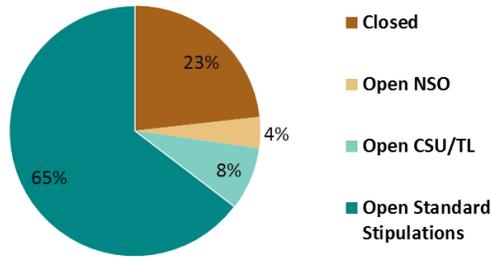


Figure 56 (cont'd) – Fluid Mineral (Oil & Gas) Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 58 – Rights-of-Ways Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ V by Habitat Management Area Type					
Rights-of-Ways	No Action				Total
	PHMA	GHMA	OHMA	Non-HMA	
Exclusion	956,000	445,000	158,000	787,000	2,347,000
Avoidance	3,634,000	4,349,000	0	325,000	8,307,000
Open	87,000	106,000	744,000	2,449,000	3,386,000
Total	4,677,000	4,900,000	902,000	3,561,000	14,040,000

Rights-of-Ways	Management Alignment				Total
	PHMA	GHMA	OHMA	Non-HMA	
Exclusion	922,000	459,000	141,000	824,000	2,346,000
Avoidance	3,854,000	4,281,000	0	325,000	8,460,000
Open	51,000	69,000	423,000	2,685,000	3,228,000
Total	4,827,000	4,809,000	564,000	3,834,000	14,034,000

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ V					
Rights-of-Ways	No Action				Total
	PHMA	GHMA	OHMA	Non-HMA	
Exclusion	78%	89%	0%	9%	59%
Avoidance	20%	9%	18%	22%	17%
Open	2%	2%	82%	69%	24%
Total	100%	100%	100%	100%	100%

Rights-of-Ways	Management Alignment				Total
	PHMA	GHMA	OHMA	Non-HMA	
Exclusion	80%	89%	0%	8%	60%
Avoidance	19%	10%	25%	21%	17%
Open	1%	1%	75%	70%	23%
Total	100%	100%	100%	100%	100%

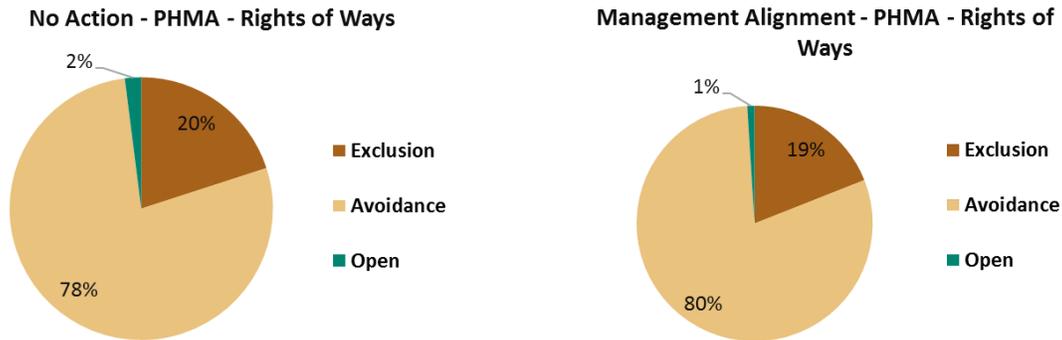


Figure 57 – Rights-of-Ways Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

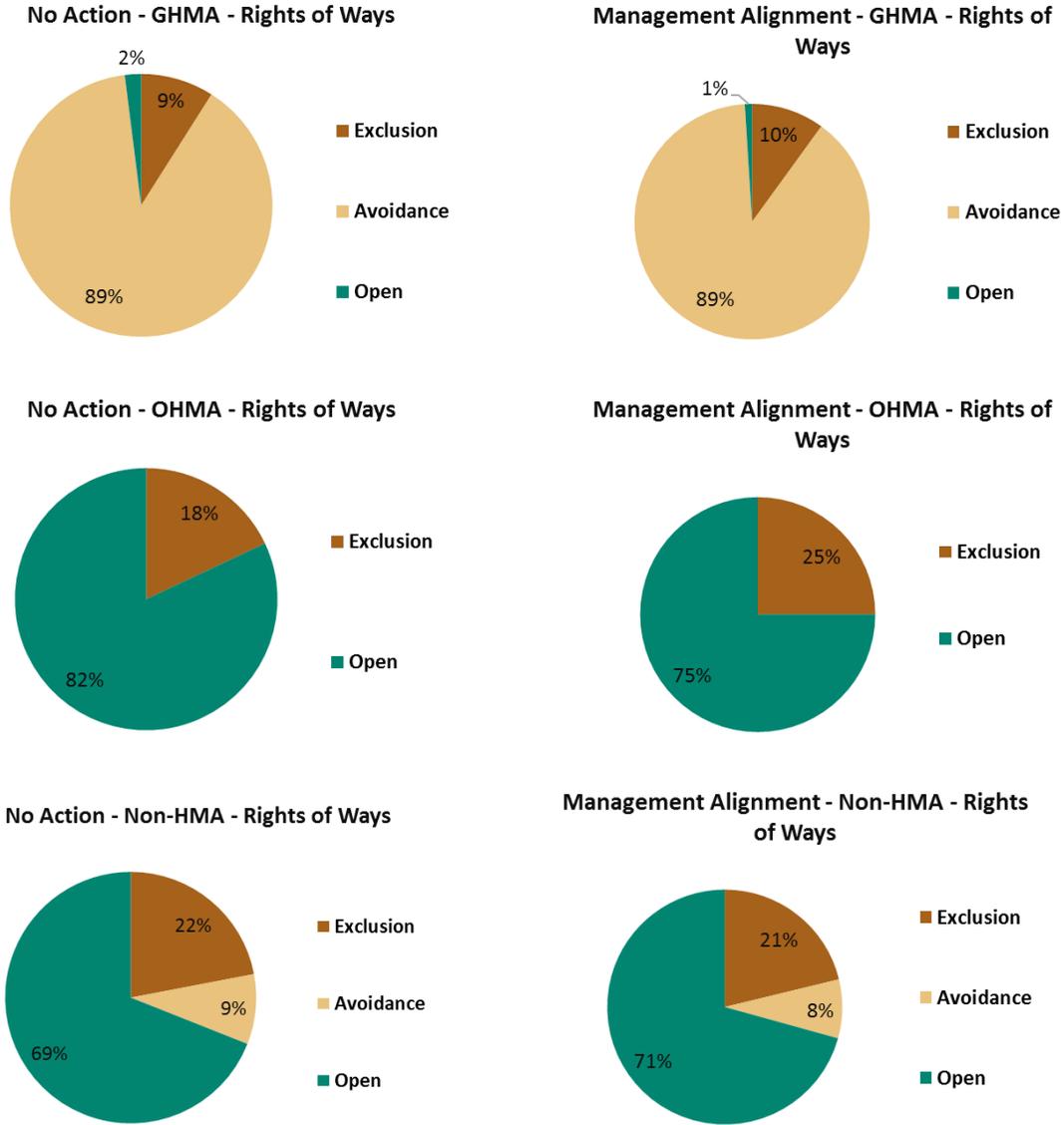


Figure 57 (cont'd) – Rights-of-Ways Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 59 – Salable Minerals Materials Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ V by Habitat Management Area Type					
Salable Minerals Materials	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	4,980,000	1,402,000	158,000	935,000	7,475,000
Open	1,000	3,621,000	744,000	2,827,000	7,194,000
Total	4,980,000	5,024,000	903,000	3,762,000	14,669,000

Salable Minerals Materials	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	5,135,000	1,416,000	141,000	972,000	7,664,000
Open	0	3,518,000	423,000	3,057,000	6,998,000
Total	5,135,000	4,934,000	564,000	4,030,000	14,663,000

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ V					
Salable Minerals Materials	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	28%	17%	25%	51%
Open	<1%	72%	83%	75%	49%
Total	100%	100%	100%	100%	100%

Salable Minerals Materials	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	100%	29%	25%	24%	52%
Open	0%	71%	75%	76%	48%
Total	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Salable Minerals Materials

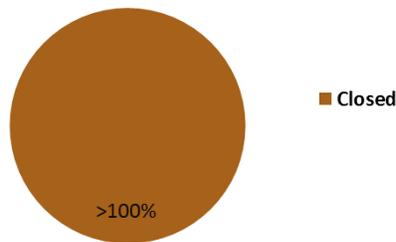
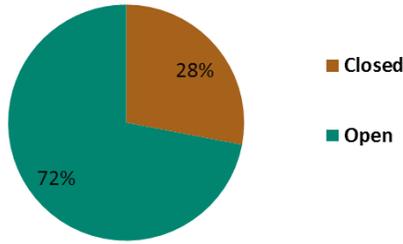


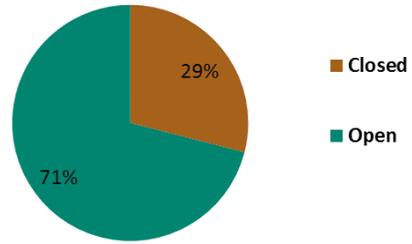
Figure 58 – Salable Minerals Materials Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

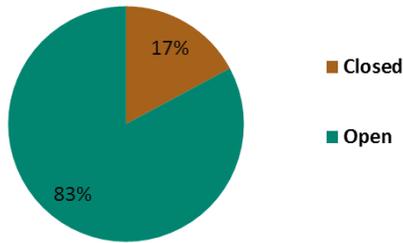
No Action - GHMA - Salable Minerals Materials



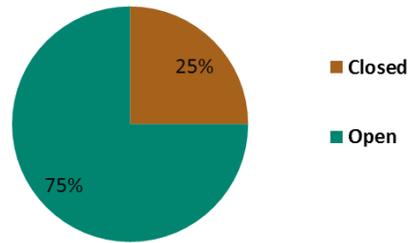
Management Alignment - GHMA - Salable Minerals Materials



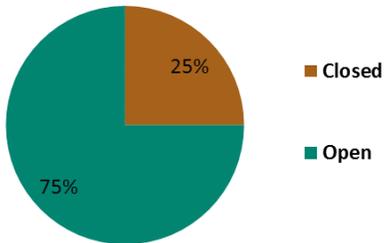
No Action - OHMA - Salable Minerals Materials



Management Alignment - OHMA - Salable Minerals Materials



No Action - Non-HMA - Salable Minerals Materials



Management Alignment - Non-HMA - Salable Minerals Materials

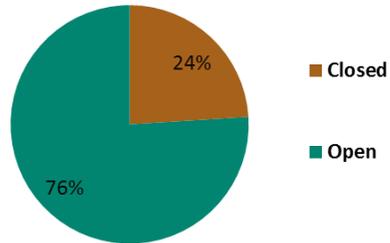


Figure 58 (cont'd) – Salable Minerals Materials Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 60 – Solar Energy Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions in MZ V by Habitat Management Area Type					
Solar Energy	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	3,932,000	1,466,000	897,000	2,191,000	8,487,000
Avoidance	750,000	3,438,000	1,000	348,000	4,537,000
Open	0	0	4,000	1,032,000	1,036,000
Total	4,683,000	4,904,000	903,000	3,571,000	14,060,000

Solar Energy	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	4,088,000	1,373,000	564,000	2,457,000	8,483,000
Avoidance	750,000	3,438,000	0	349,000	4,537,000
Open	0	0	0	1,034,000	1,035,000
Total	4,838,000	4,810,000	564,000	3,841,000	14,054,000

Approximate % of Habitat Management Area by Solar Energy Decision in MZ V					
Solar Energy	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	84%	30%	99%	61%	60%
Avoidance	16%	70%	<1%	10%	32%
Open	0%	0%	<1%	29%	7%
Total	100%	100%	100%	100%	100%

Solar Energy	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	84%	29%	100%	64%	60%
Avoidance	16%	71%	0%	9%	32%
Open	0%	0%	0%	27%	7%
Total	100%	100%	100%	100%	100%

No Action & Management Alignment - PHMA - Solar Energy

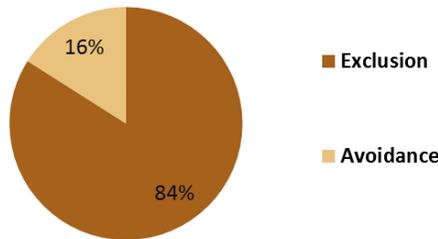


Figure 59 – Solar Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

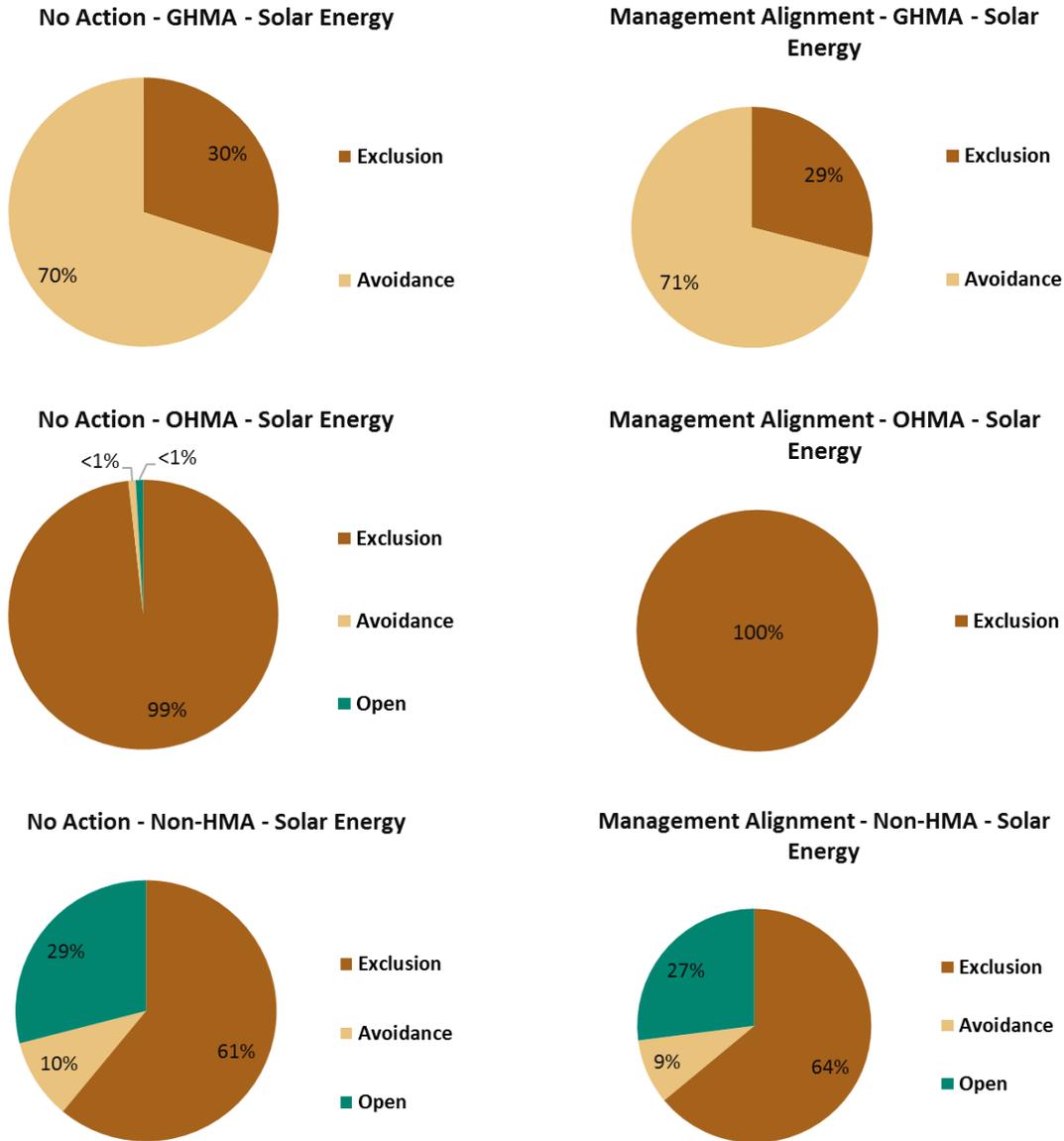


Figure 59 (cont'd) – Solar Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 61 – Trails and Travel Management Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ V by Habitat Management Area Type					
Trails and Travel Management Decisions	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	220,000	215,000	59,000	423,000	917,000
Limited	4,452,000	4,681,000	428,000	1,257,000	10,818,000
Open	0	2,000	414,000	1,888,000	2,304,000
Total	4,672,000	4,897,000	901,000	3,568,000	14,038,000
Trails and Travel Management Decisions	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	215,000	214,000	64,000	424,000	917,000
Limited	4,613,000	4,591,000	290,000	1,280,000	10,774,000
Open	0	2,000	209,000	2,131,000	2,342,000
Total	4,828,000	4,807,000	562,000	3,836,000	14,032,000
Approximate % of Habitat Management Area by Trails and Travel Management Decisions Decision in MZ V					
Trails and Travel Management Decisions	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	5%	4%	7%	12%	7%
Limited	95%	96%	48%	35%	77%
Open	0%	<1%	46%	53%	16%
Total	100%	100%	100%	100%	100%
Trails and Travel Management Decisions	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Closed	4%	4%	11%	11%	7%
Limited	96%	96%	52%	33%	77%
Open	0%	<1%	37%	56%	17%
Total	100%	100%	100%	100%	100%

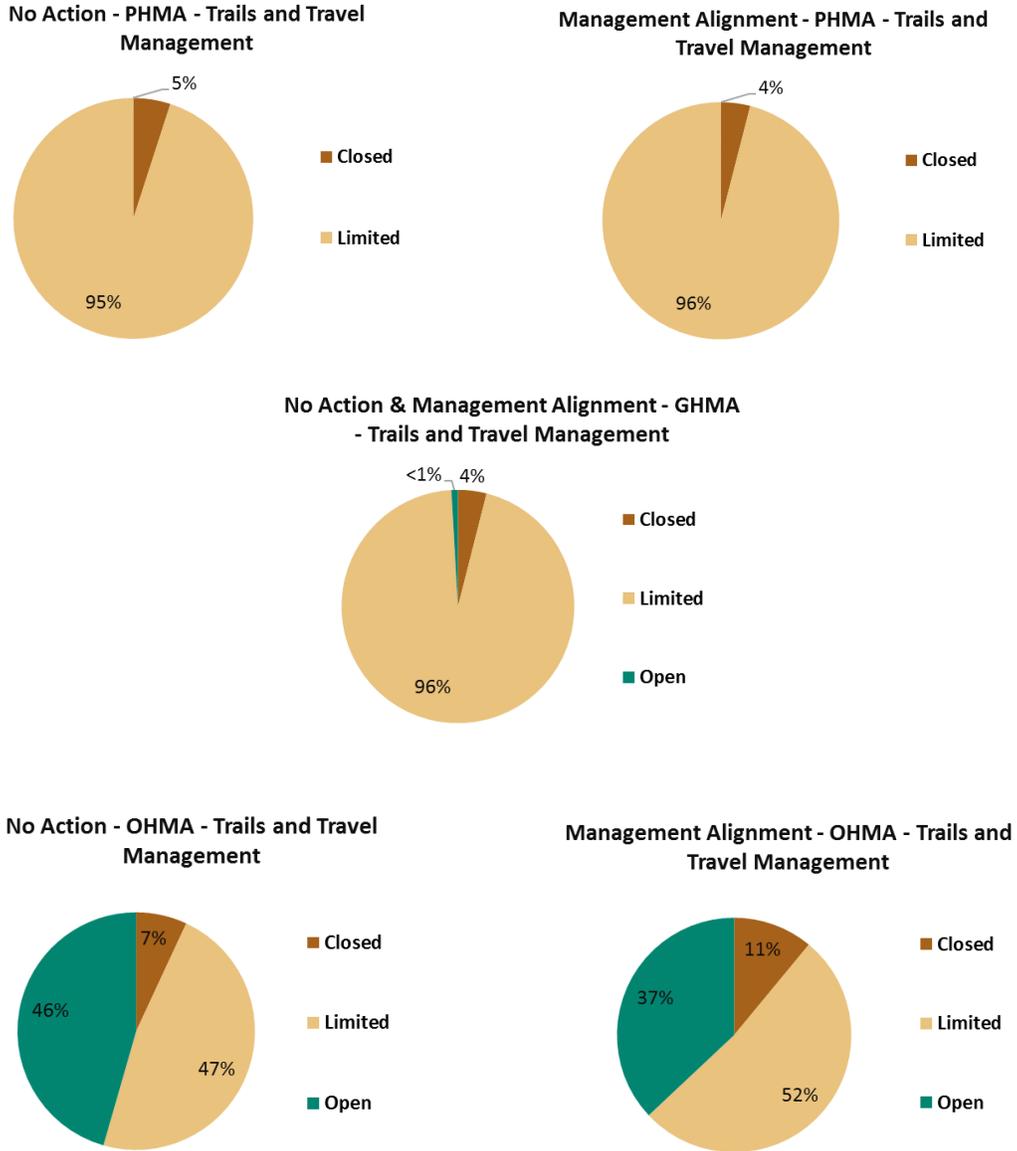
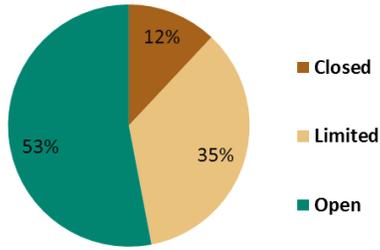


Figure 60 – Trails and Travel Management Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

No Action - Non-HMA - Trails and Travel Management



Management Alignment- Non-HMA - Trails and Travel Management

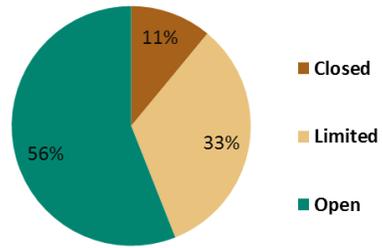


Figure 60 (cont'd) – Trails and Travel Management Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 62 – Wind Energy Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ V by Habitat Management Area Type					
Wind Energy	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	3,927,000	454,000	158,000	792,000	5,330,000
Avoidance	750,000	4,445,000	0	321,000	5,516,000
Open	1,000	0	744,000	2,456,000	3,201,000
Total	4,678,000	4,900,000	903,000	3,568,000	14,048,000

Wind Energy	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	4,083,000	467,000	141,000	829,000	5,520,000
Avoidance	750,000	4,341,000	0	321,000	5,412,000
Open	0	0	423,000	2,686,000	3,110,000
Total	4,833,000	4,809,000	564,000	3,836,000	14,042,000

Approximate % of Habitat Management Area by Wind Energy Decision in MZ V					
Wind Energy	No Action				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	84%	9%	17%	22%	38%
Avoidance	16%	91%	0%	9%	39%
Open	<1%	0%	82%	69%	23%
Total	100%	100%	100%	100%	100%

Wind Energy	Management Alignment				
	PHMA	GHMA	OHMA	Non-HMA	Total
Exclusion	84%	10%	25%	22%	39%
Avoidance	16%	90%	0%	8%	39%
Open	0%	0%	75%	70%	22%
Total	100%	100%	100%	100%	100%

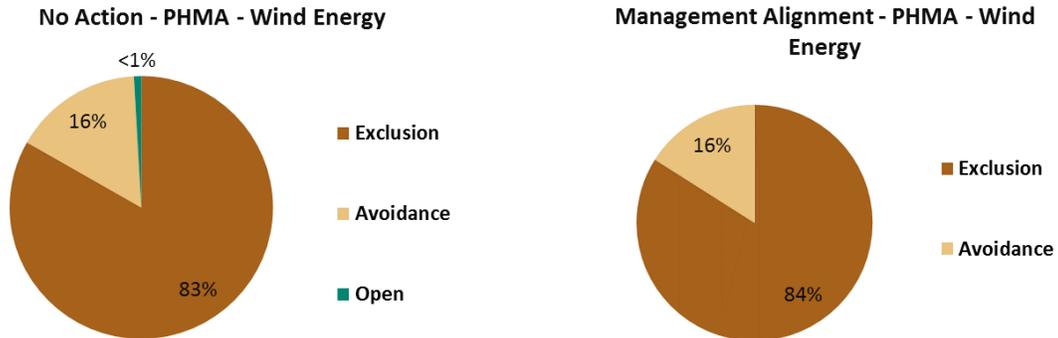


Figure 61 – Wind Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

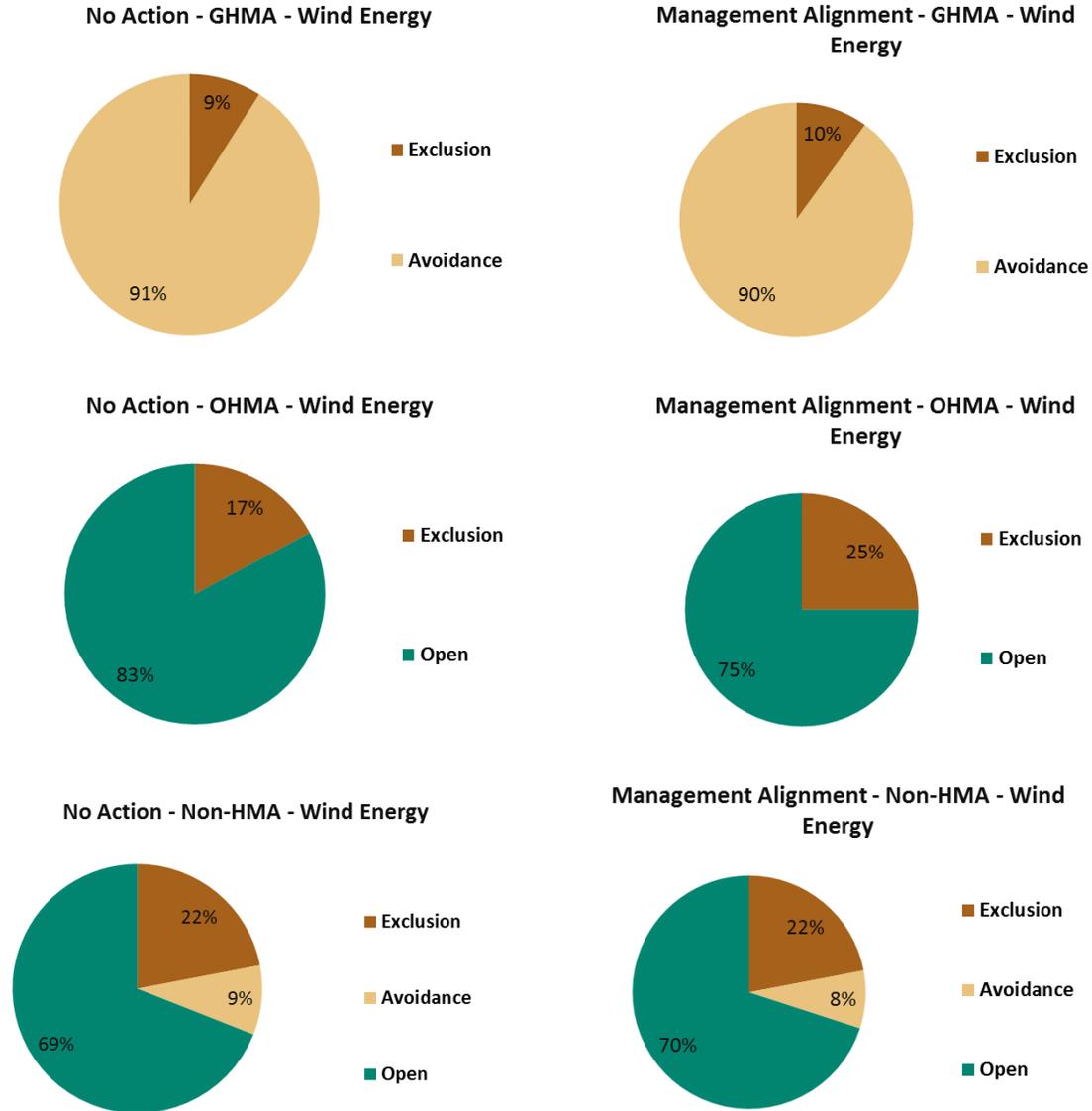


Figure 6I (cont'd) – Wind Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Appendix 2

Current Conditions of GHMA in Utah

Appendix 2. Current Conditions of GHMA in Utah

Based on public comments, coordination with cooperating agencies, and internal review during the 2018 Draft EIS review process, the BLM has compiled the following information regarding the current status and condition of general habitat management areas (GHMA) across Utah.

As part of this appendix, the BLM looked at five specific items of interest associated with GHMA throughout Utah. Those specific items were BLM management and decision acres, existing mineral developments (Utah DOGM) and leases (BLM corporate data), current disturbances (2015 Final EIS), leks and seasonal Greater Sage-Grouse habitat, and connectivity (USU interim data, 2017). The BLM presented information on these items because they relate to decision space, managerial discretion, habitat availability, linkages, and impacts that reflect the resources and issues facing the continued use of GHMA by Greater Sage-Grouse throughout Utah.

To provide specific areas of analysis, the BLM has grouped GHMA in Utah into the following 10 distinct areas, including an overall statewide analysis, and further analysis has been provided in this appendix:

UTAH'S GHMA GROUPS

- South Slope
- Deadman Bench
- Book Cliffs
- West Tavaputs
- Wasatch Plateau
- Lucerne
- Rich
- Sheeprocks
- Ibapah
- Bald Hills

STATEWIDE

Total Habitat Management Area Acres

- 1,684,820 acres in GHMA
- 5,600,900 acres in priority habitat management areas (PHMA)

BLM Decision Area

- 440,100 of the BLM-administered surface acres are in GHMA
- 178,000 of the BLM-administered mineral estate acres are in GHMA
- 2,079,900 of the BLM-administered surface acres are in PHMA
- 1,319,400 of the BLM-administered mineral estate acres are in PHMA

Existing Utah Division of Oil, Gas, and Mining (DOGM) Wells, All Surface Management Agencies

- 1,695 (85%) of the 2,000 DOGM wells are in GHMA

Authorized BLM Leases

- 245,981 acres leased on GHMA
- 127,949 acres leased on PHMA

Disturbance Acres

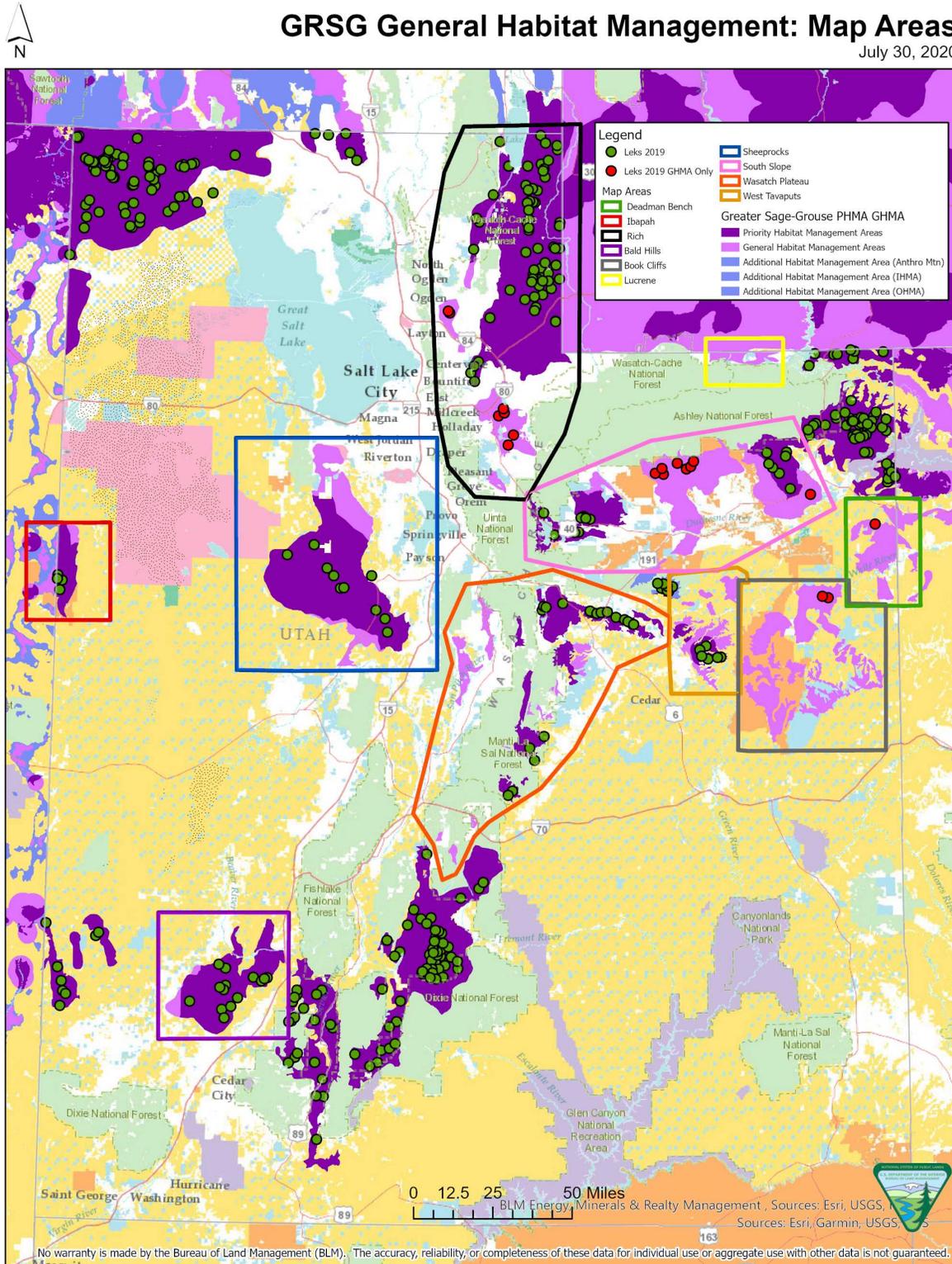
- 20,084 (1.2%) acres in GHMA
- 42,383 (0.8%) acres in PHMA

Leks/Seasonal Habitat

- 18 (5%) of the 363 leks that are in Utah's habitat management areas are in GHMA
- 648,695 of the total 4,868,550 seasonal habitat acres in habitat management areas are in GHMA

GRSG General Habitat Management: Map Areas

July 30, 2020



SOUTH SLOPE AREA

Total Habitat Management Area Acres

- 472,416 acres in GHMA
- 279,615 acres in PHMA

BLM Decision Area

- 49,909 of the BLM-administered surface acres are in GHMA
- 23,374 of the BLM-administered mineral estate acres are in GHMA
- 51,771 of the BLM-administered surface acres are in PHMA
- 66,239 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 785 (99%) of the 793 DOGM wells are in GHMA

Authorized BLM Leases

- 41,927 acres leased on GHMA
- 7,582 acres leased on PHMA

Disturbance Acres

- 4,718 acres in GHMA
- 1,593 acres in PHMA

Leks/Seasonal Habitat

- 8 (33%) of the 24 leks in the habitat management areas are in GHMA, though only one is on BLM-administered lands
- 302,628 of the total 557,429 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

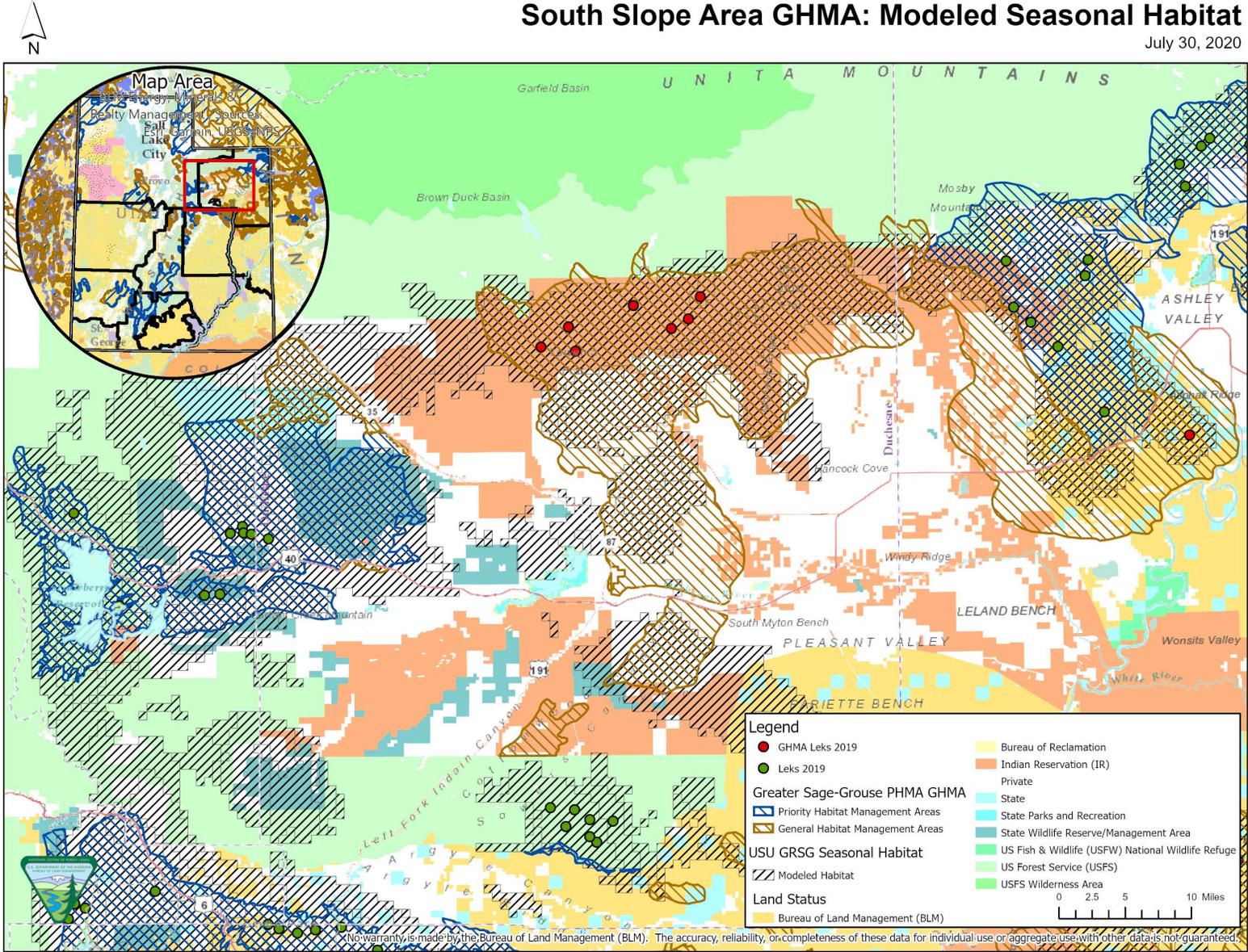
Over the past several years radio-collars and GPS transmitters have been used to document movements of Greater Sage-Grouse on Little Mountain. One female was documented moving just north of the South Slope GHMA area¹ (Utah Division of Wildlife Resources [UDWR] 2018). There are no physical barriers that would pose a substantial hurdle to natural movement into the South Slope GHMA area from the PHMA area just north. The radio-collared birds have also been documented moving west, back and forth from public lands to Ute tribal lands, although none of the birds have moved farther west than Whiterocks Canyon² (UDWR 2018). There is high connectivity potential for the Greater Sage-Grouse populations that use the South Slope GHMA area, the PHMA area, and Ute tribal lands.

¹ Brian Maxfield, UDWR Biologist, personal communication

² Ibid.

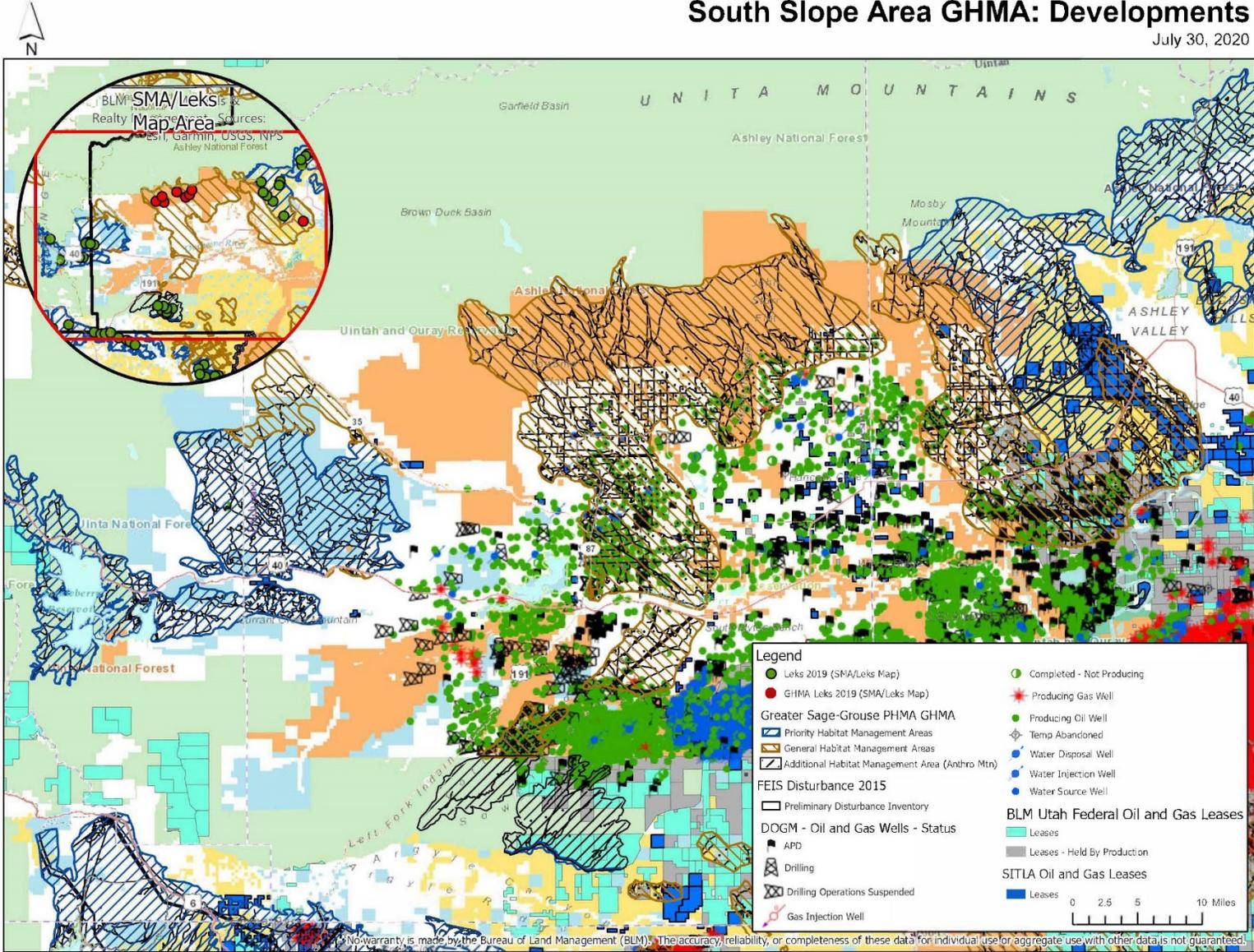
South Slope Area GHMA: Modeled Seasonal Habitat

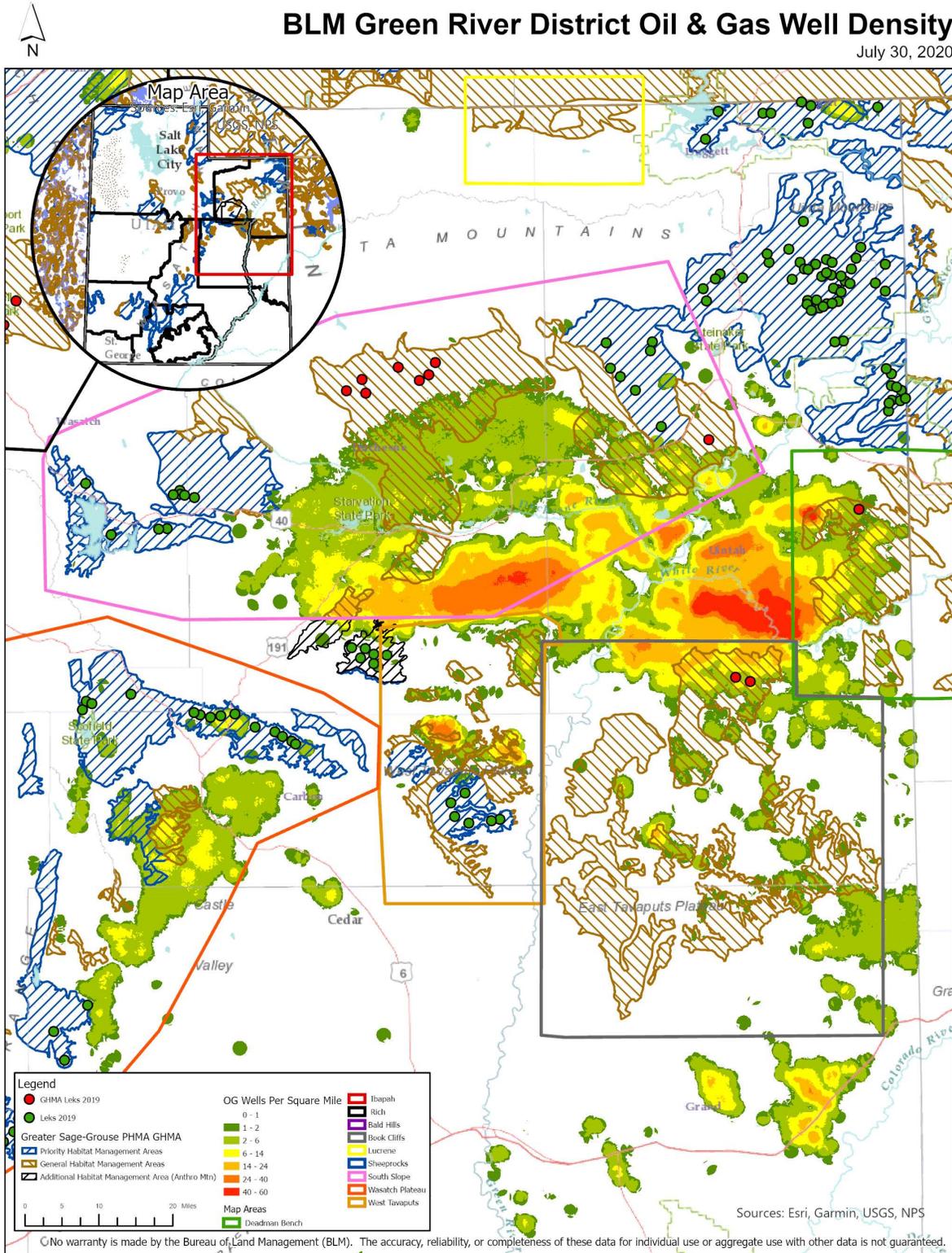
July 30, 2020



South Slope Area GHMA: Developments

July 30, 2020





DEADMAN BENCH AREA

Habitat Management Area Acres

- 134,671 acres in GHMA
- 0 acres in PHMA

BLM Decision Area

- 100,661 of the BLM-administered surface acres are in GHMA
- 448 of the BLM-administered mineral estate acres are in GHMA
- 0 of the BLM-administered surface acres are in PHMA
- 0 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 226 DOGM wells are in GHMA

Authorized BLM Leases

- 63,288 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 3,426 acres in GHMA

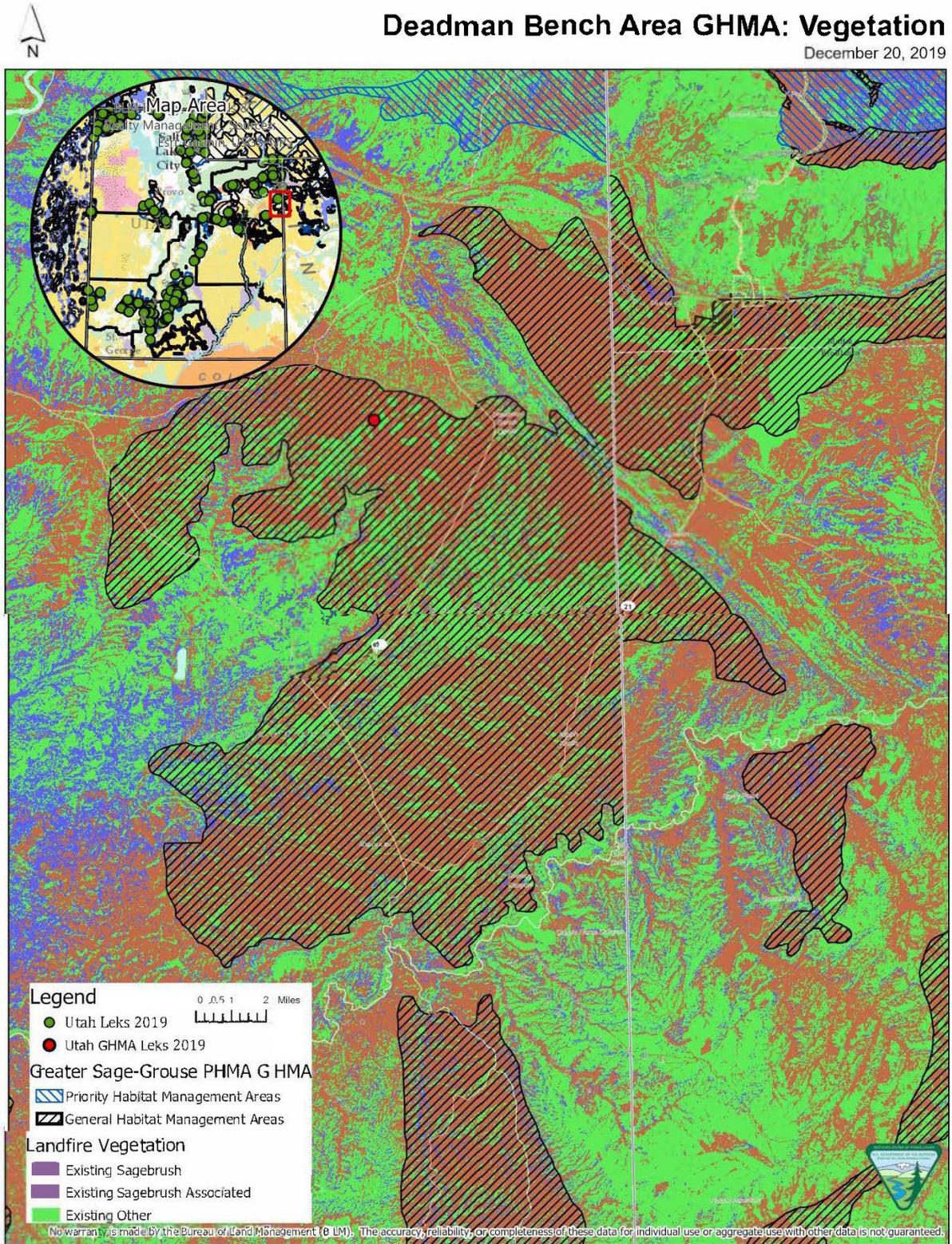
Leks/Seasonal Habitat

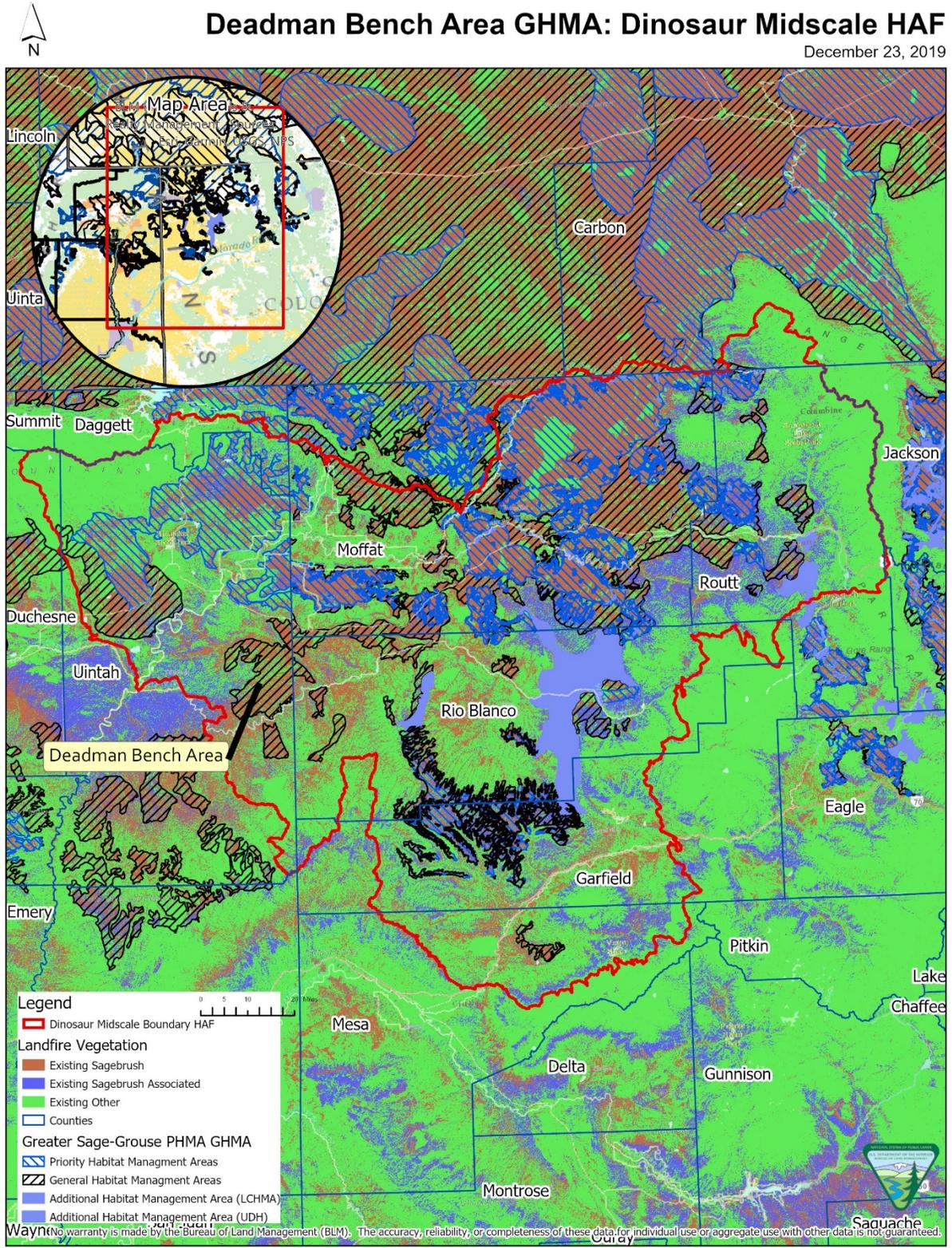
- In the Utah GHMA there is 1 occupied lek
- In the Colorado GHMA there are 5 active leks between 0.8 to 3.0 miles from the State line, as well as 1 inactive lek and 2 historic leks
- In Utah 31,116 of the total 31,116 modeled seasonal habitat acres are in GHMA

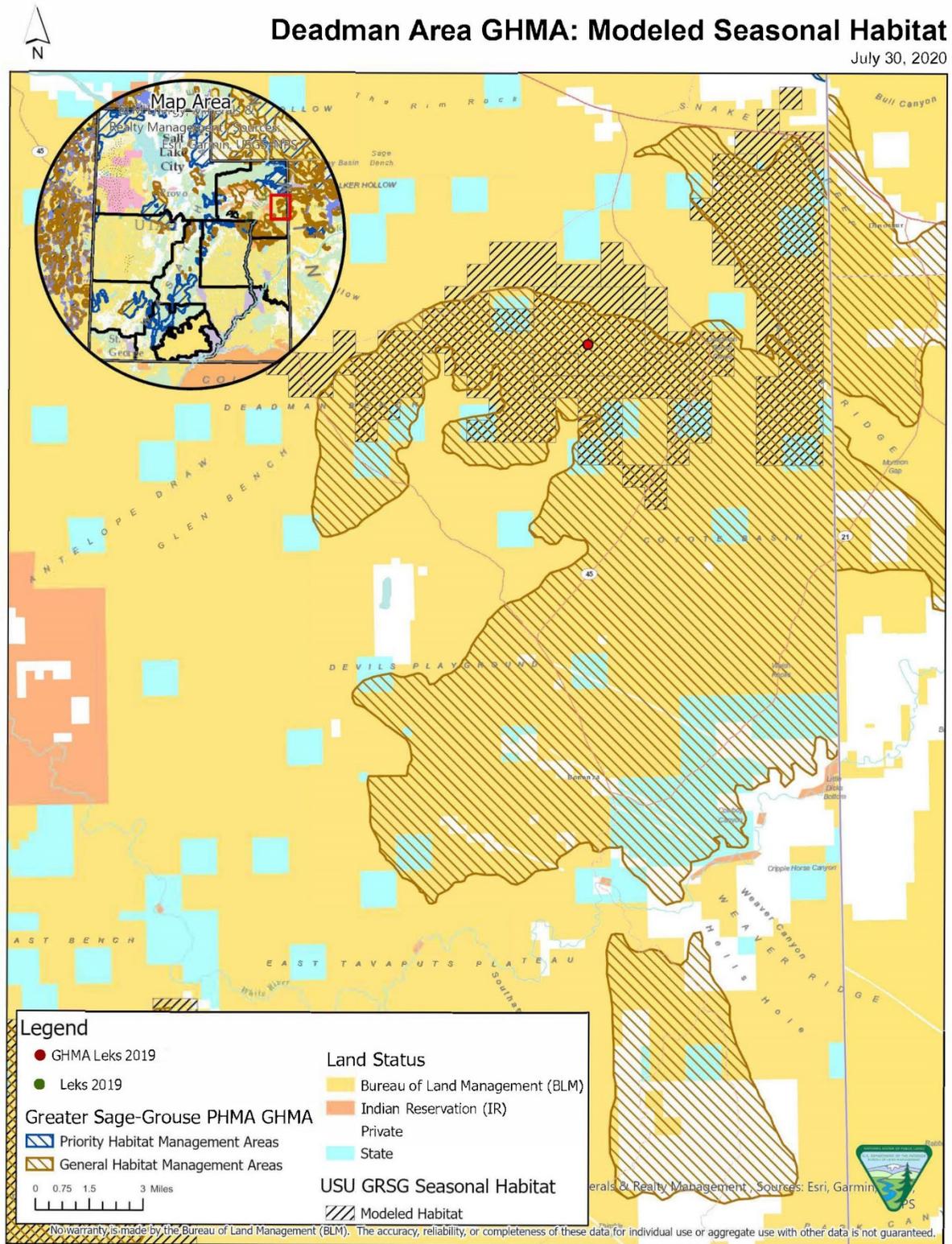
GHMA Contribution to Connectivity

The Deadman Bench is part of the Dinosaur Midscale Habitat Assessment Area which includes lands in Utah, Colorado, and Wyoming. Adjacent lands in Colorado are designated GHMA. Vegetation through the Utah and adjacent Colorado GHMA is a mix of sagebrush, sagebrush associated species, with other non-sagebrush vegetation interspersed. Sagebrush connectivity is present across the area. In 2008, three Greater Sage-Grouse were radio-collared on the North Deadman lek. Two of the birds were found dead north of Highway 40 and the third died near the lek area³ (UDWR 2018). There are no documented instances of these birds moving to Blue Mountain. Anecdotally, a conservation officer did see Greater Sage-Grouse gliding off the south-facing cliffs of Blue Mountain toward the Deadman Bench area; however, it is unknown if they moved to the Deadman Bench area. Very little is known about the connectivity of the Deadman Bench GHMA population to other populations due to lack of data.

³ Brian Maxfield, UDWR Biologist, personal communication

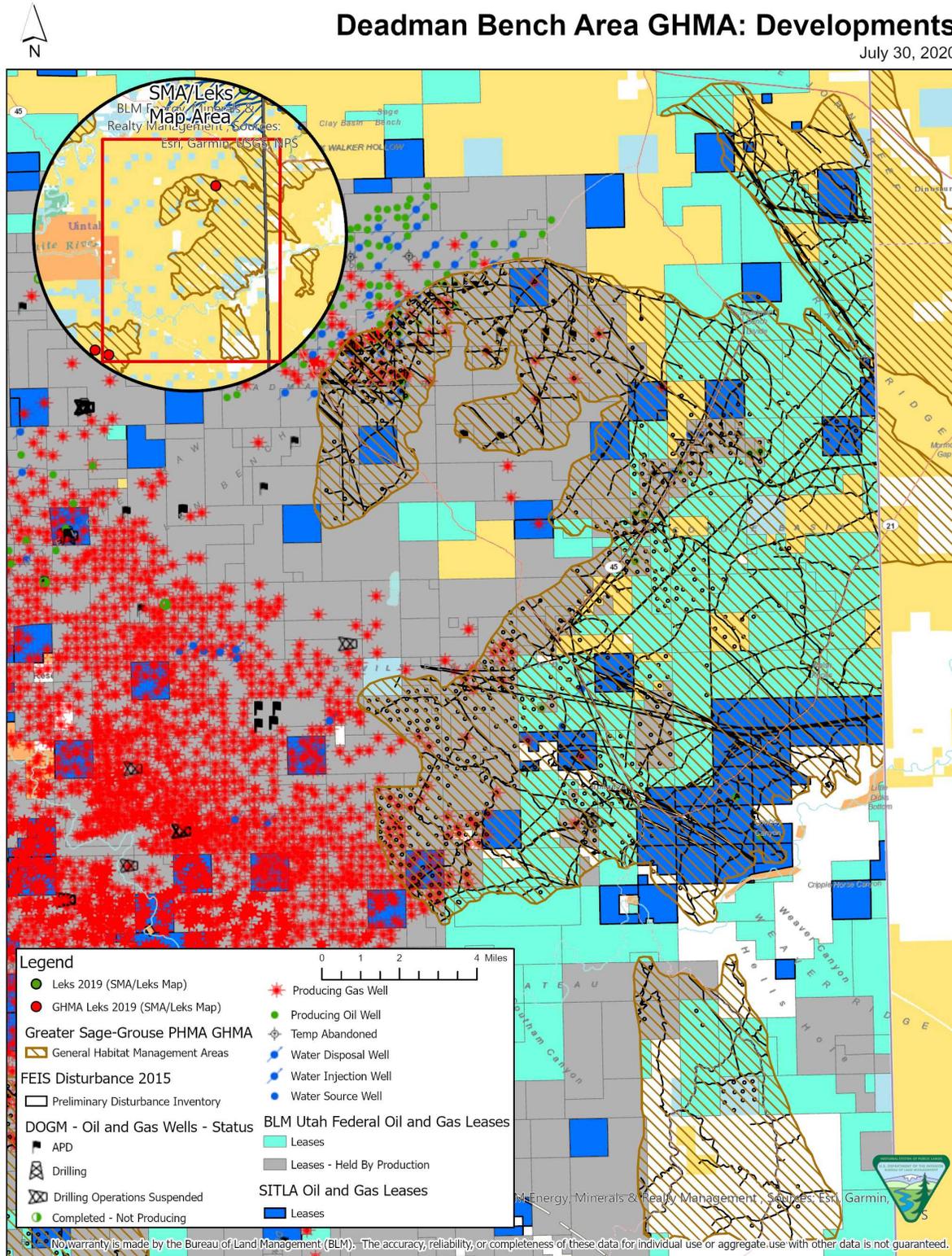






Deadman Bench Area GHMA: Developments

July 30, 2020



BOOK CLIFFS AREA**Habitat Management Area Acres**

- 410,924 acres in GHMA
- 0 acres in PHMA

BLM Decision Area

- 136,437 of the BLM-administered surface acres are in GHMA
- 54,253 of the BLM-administered mineral estate acres are in GHMA
- 0 of the BLM-administered surface acres are in PHMA
- 0 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 262 DOGM wells are in GHMA

Authorized BLM Leases

- 93,390 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 4,787 acres in GHMA

Leks/Seasonal Habitat

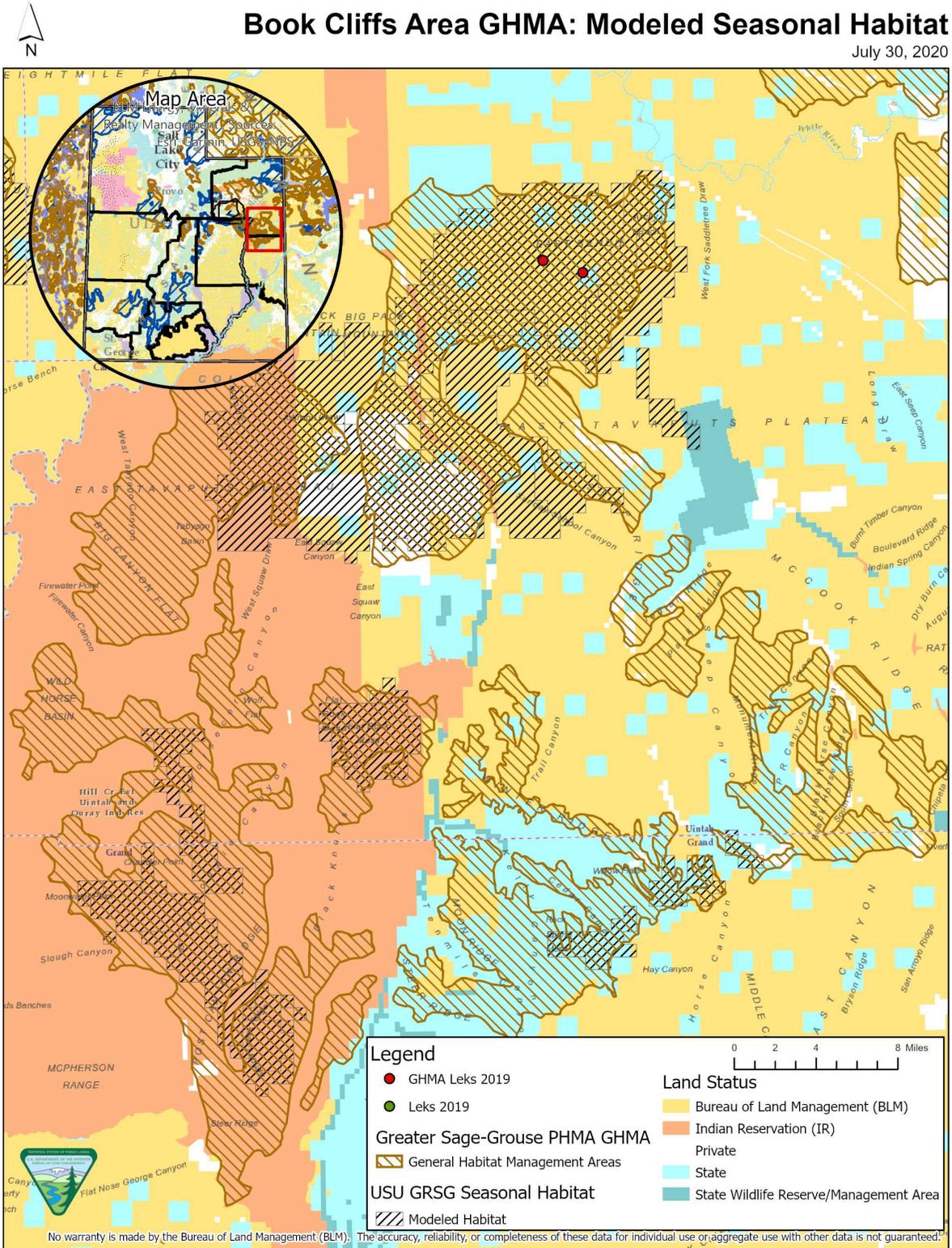
- 2 leks in the GHMA
- 153,243 of the total 153,243 modeled seasonal habitat acres are in GHMA

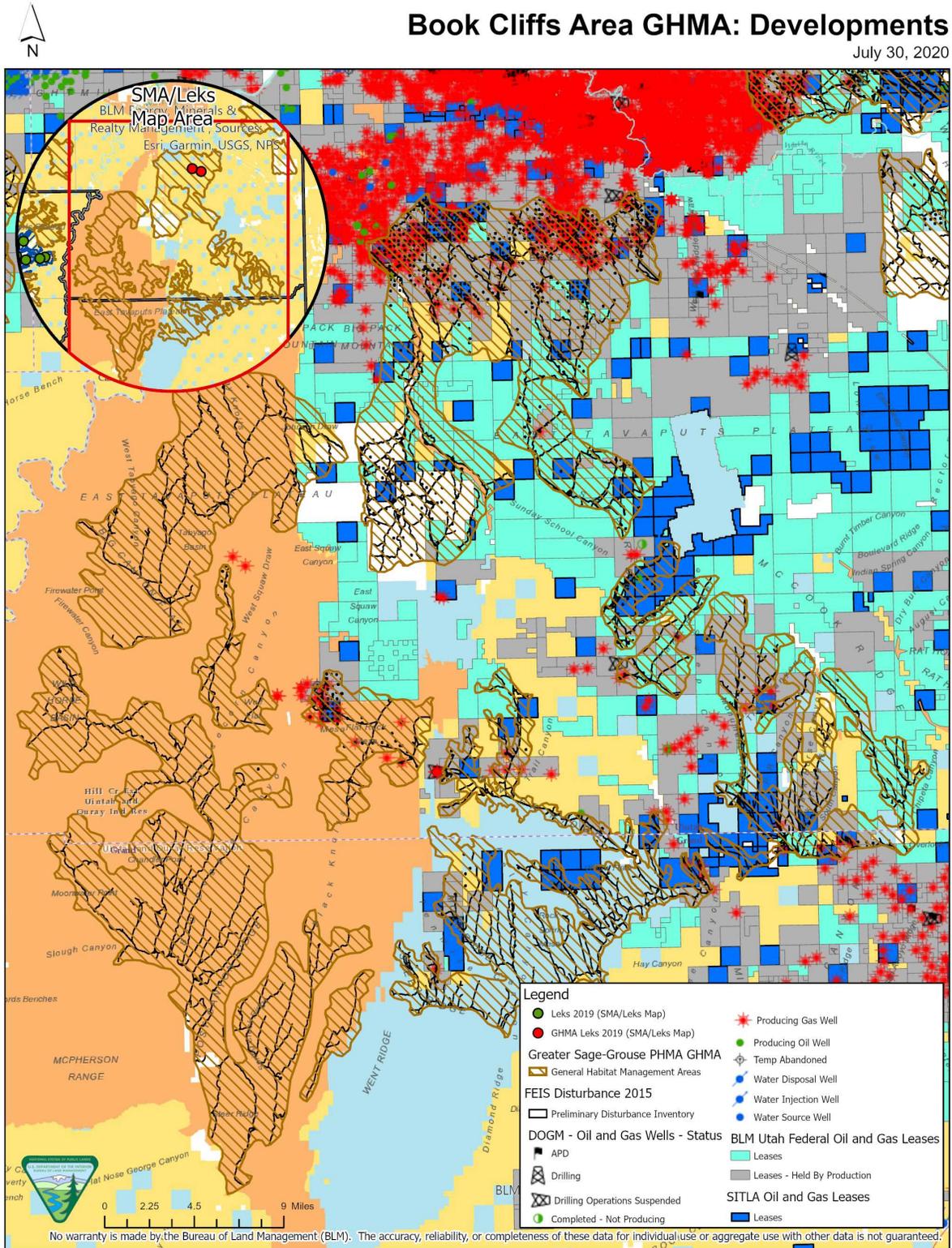
GHMA Contribution to Connectivity

There was one telemetry study done in the Book Cliffs GHMA area on Greater Sage-Grouse in 2007 and 2008. The movement data from the study, indicated that males and broodless hens remained near the leks on East and Middle Bench in the spring and moved approximately 7.7 to 12 miles to Willow Creek and Agency Draw during the summer (Smith 2009). Brood-rearing hens used the Willow Creek area. During the fall, most Greater Sage-Grouse moved back to East and Middle Bench; however, in 2007 and 2008 some males were observed using Agency Draw and Willow Creek in November (Smith 2009). Smith documented a 17.5-mile movement of a hen from Seep Ridge to Ute tribal land; it remained in that area throughout the summer. Greater Sage-Grouse are known to inhabit tribal lands, but very little information is known about the status of these populations and their connectivity to other populations. Other than Smith's movement data, very little is known about the connectivity of the Greater Sage-Grouse population in the Book Cliffs GHMA area.

References

Smith, L. S. 2009. "Greater sage-grouse and energy development in Northeastern Utah: Implications for management." Thesis, Utah State University, Logan, USA.





WEST TAVAPUTS AREA

Habitat Management Area Acres

- 99,828 acres in GHMA
- 50,362 acres in PHMA

BLM Decision Area

- 73,751 of the BLM-administered surface acres are in GHMA
- 8,691 of the BLM-administered mineral estate acres are in GHMA
- 22,640 of the BLM-administered surface acres are in PHMA
- 9,278 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 281 (100%) of the DOGM wells are in GHMA

Authorized BLM Leases

- 36,423 acres leased on GHMA
- 1,078 acres leased on PHMA

Disturbance Acres

- 1,098 acres in GHMA
- 143 acres in PHMA

Leks/Seasonal Habitat

- None of the 6 leks in the habitat management areas are in GHMA
- 34,152 of the total 71,990 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

From the 2007–2017 lek counts, the West Tavaputs Plateau population is estimated to range between 56 and 460 birds (14 to 115 males counted on 6 leks)⁴ (UDWR 2017). There are seven known leks in the area, six of which have been active over the past 10 years, with an average total male lek attendance of 63⁵ (UDWR 2017). There has been a steady increase in West Tavaputs population over the past 10 years, with the past 5 years showing all time high lek counts⁶ (UDWR 2017).

Telemetry monitoring suggests the Greater Sage-Grouse are using most of the mid- to high-elevation sagebrush areas on the plateau to meet breeding, nesting, and brood-rearing habitat needs. During winters, birds are moving to three primary locations lower on the plateau: Lower Steer Ridge, Sage Brush Flats, and Harmon Canyon. These wintering areas are relatively short distance migrations (0.3 to

⁴ Brian Maxfield, UDWR Biologist, personal communication

⁵ Ibid.

⁶ Ibid.

3 miles), depending on snow depths. There is evidence that Greater Sage-Grouse sometimes winter north of Nine Mile Canyon and mix with Anthro Mountain Greater Sage-Grouse⁷ (UDWR 2018).

Greater Sage-Grouse wintering areas were identified approximately 22 miles east of Anthro Mountain, and some Greater Sage-Grouse from Anthro Mountain were located approximately 6 to 22 miles southeast of Anthro Mountain (Duvuvuei 2013). These wintering areas are in the West Tavaputs GHMA area. Resident Greater Sage-Grouse from the Anthro Mountain population have been documented moving from Anthro Mountain to Bishops Ridge on the Tavaput Mountains⁸ (Forest Service 2012; Gruber 2012).

Recent GPS data has indicated movements from Emma Park to the West Tavaputs area⁹ (UDWR 2018). Greater Sage-Grouse that were translocated to Anthro Mountain from Parker Mountain and also resident Anthro birds were documented moving from Anthro Mountain to Emma Park and Whitemore Park (Gruber 2012; Duvuvuei 2013). There was also evidence of Greater Sage-Grouse from a neighboring population on Anthro Mountain migrating nearly 25 miles to summer on Emma Park (Coleman 2004).

All of these aforementioned movements may indicate potential connectivity between West Tavaputs, Wasatch Plateau, and Anthro Mountain Greater Sage-Grouse populations, as well as surrounding populations.

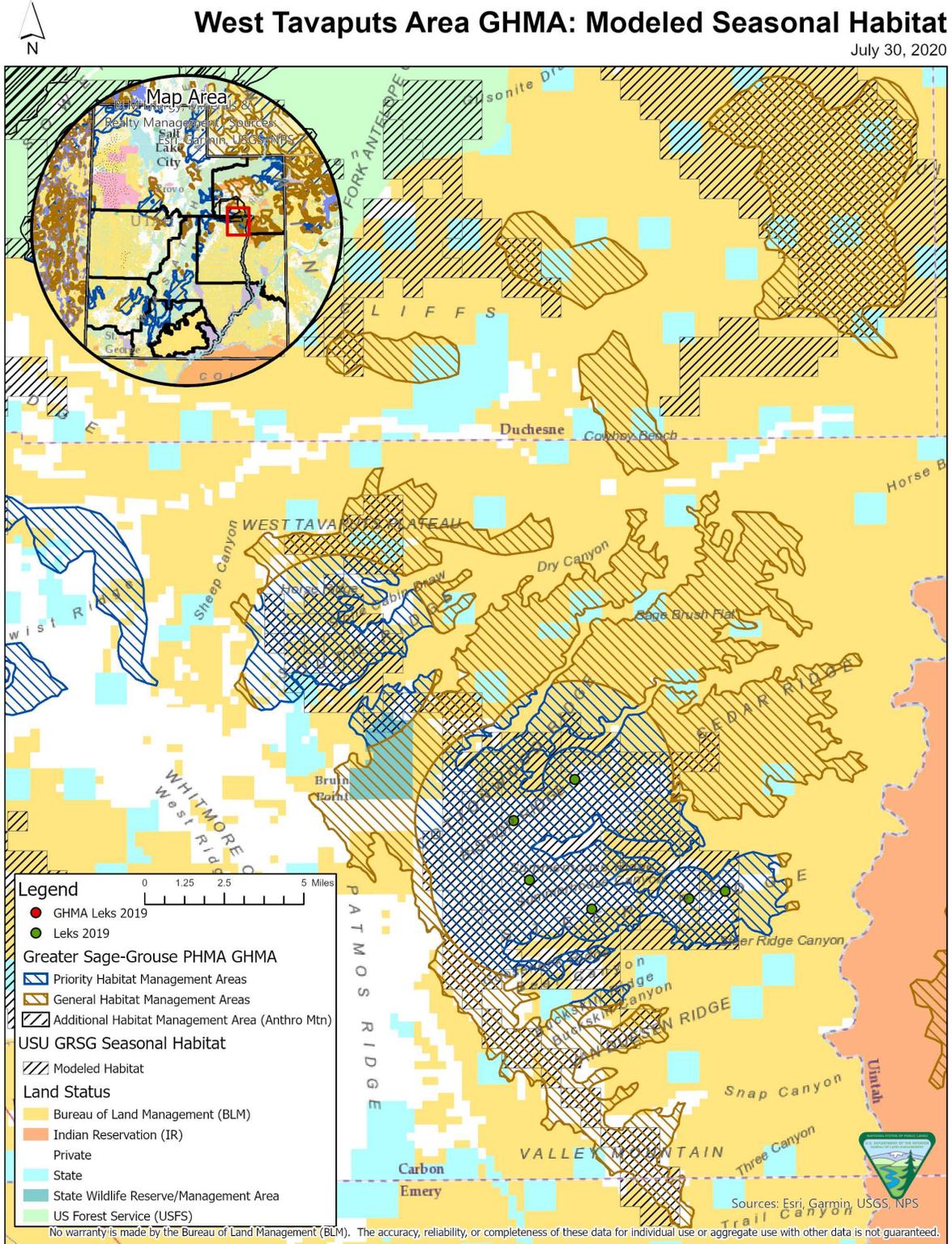
References

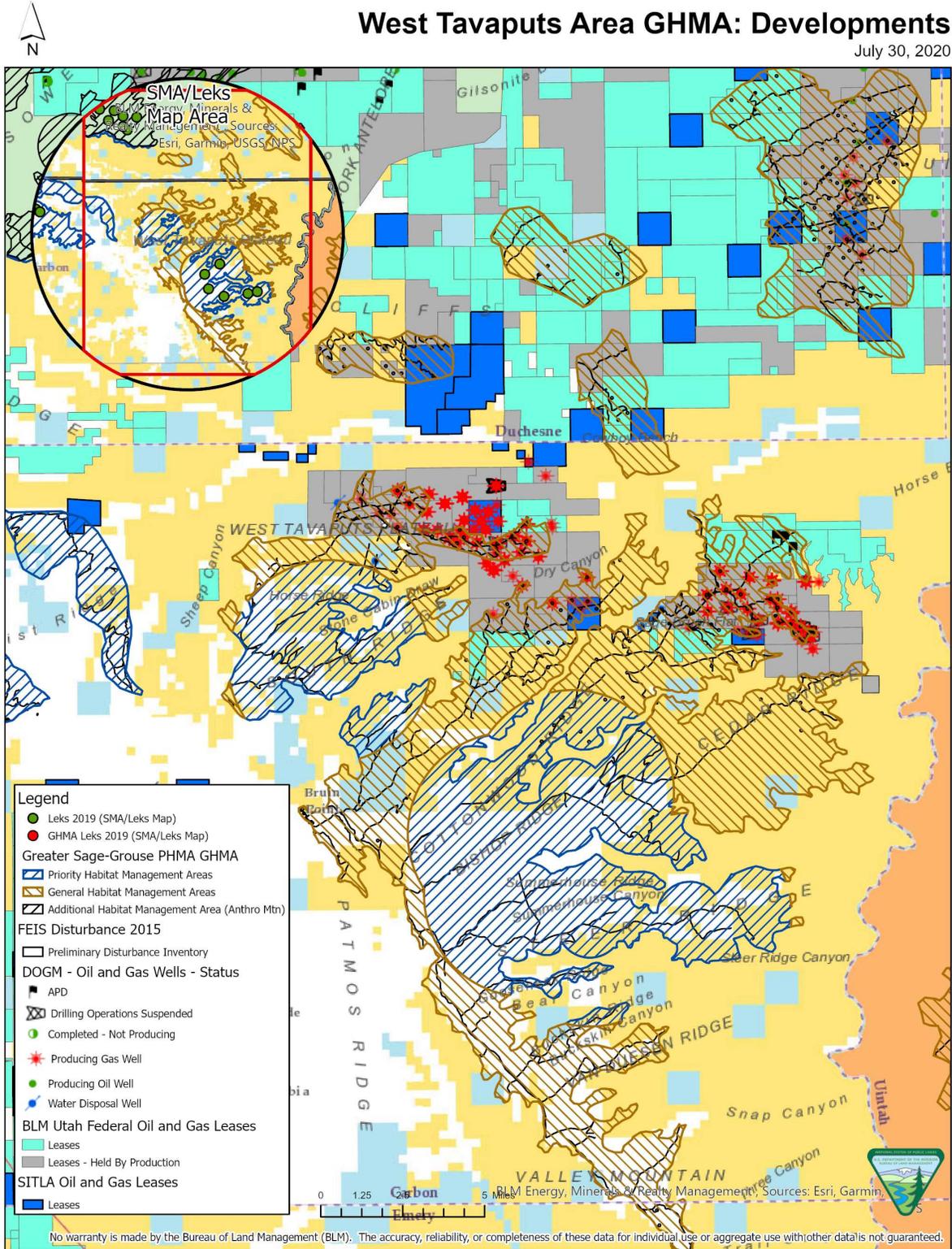
- Coleman, T. 2004. Unpublished Report. Anthro Mountain Sage-Grouse Study. Utah Division of Wildlife Resources.
- Crompton, B. 2005. The sage-grouse of Emma Park-Survival, production, and habitat use in relation to coalbed methane development. Utah Division of Wildlife Resources.
- Duvuvuei, O. V. 2013. Vital rates, population trends, and habitat-use patterns of a translocated greater sage-grouse population: Implications for future translocations. Thesis, Utah State University, Logan, USA.
- Gruber, N. W. 2012. Population dynamics and movements of translocated and resident greater sage-grouse on Anthro Mountain, Utah. Thesis, Utah State University, Logan, USA.

⁷ Ibid.

⁸ Brian Maxfield, UDWR Biologist, personal communication

⁹ Ibid.





WASATCH PLATEAU AREA

Habitat Management Area Acres

- 115,055 acres in GHMA
- 293,112 acres in PHMA

BLM Decision Area

- 8,813 of the BLM-administered surface acres are in GHMA
- 19,395 of the BLM-administered mineral estate acres are in GHMA
- 20,022 of the BLM-administered surface acres are in PHMA
- 199,213 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 141 (58%) of the 245 DOGM wells are in GHMA

Authorized BLM Leases

- 10,878 acres leased on GHMA
- 26,227 acres leased on PHMA

Disturbance Acres

- 1,970 acres in GHMA
- 3,755 acres in PHMA

Leks/Seasonal Habitat

- None of the 19 leks in habitat management areas are in GHMA
- 21,748 of the total 217,011 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

Radio-collared Greater Sage-Grouse from PHMA in the Emma Park area were recorded migrating west over 14 miles to wintering areas (Crompton 2005). Recent GPS data has indicated movements from PHMA in the Emma Park to the West Tavaputs area¹⁰ (UDWR 2018). Greater Sage-Grouse that were translocated to Anthro Mountain, a neighboring population, from Parker Mountain and also resident radio-collared Anthro Mountain birds were documented moving from Anthro Mountain to Emma Park and Whitmore Park and back to Anthro Mountain¹¹ (Gruber 2012; Duvuvuei 2013; Forest Service 2018). In 2002, a hen from Anthro Mountain was recorded nesting in Emma Park to overwinter, and then moving back to Anthro Mountain in the spring¹² (Coleman 2004; Forest Service 2018). Even though Anthro Mountain is not encompassed in a habitat management area in the 2015 ROD/ARMPA for the BLM, birds from Anthro Mountain have been documented moving north up to Highway 40 and 6 to 18 miles southeast of Anthro Mountain (Gruber 2012; Duvuvuei 2013). Also, a radio-collared bird that was

¹⁰ Brian Maxfield, UDWR Biologist, personal communication

¹¹ B. Christensen, US Forest Service, personal communication

¹² Ibid.

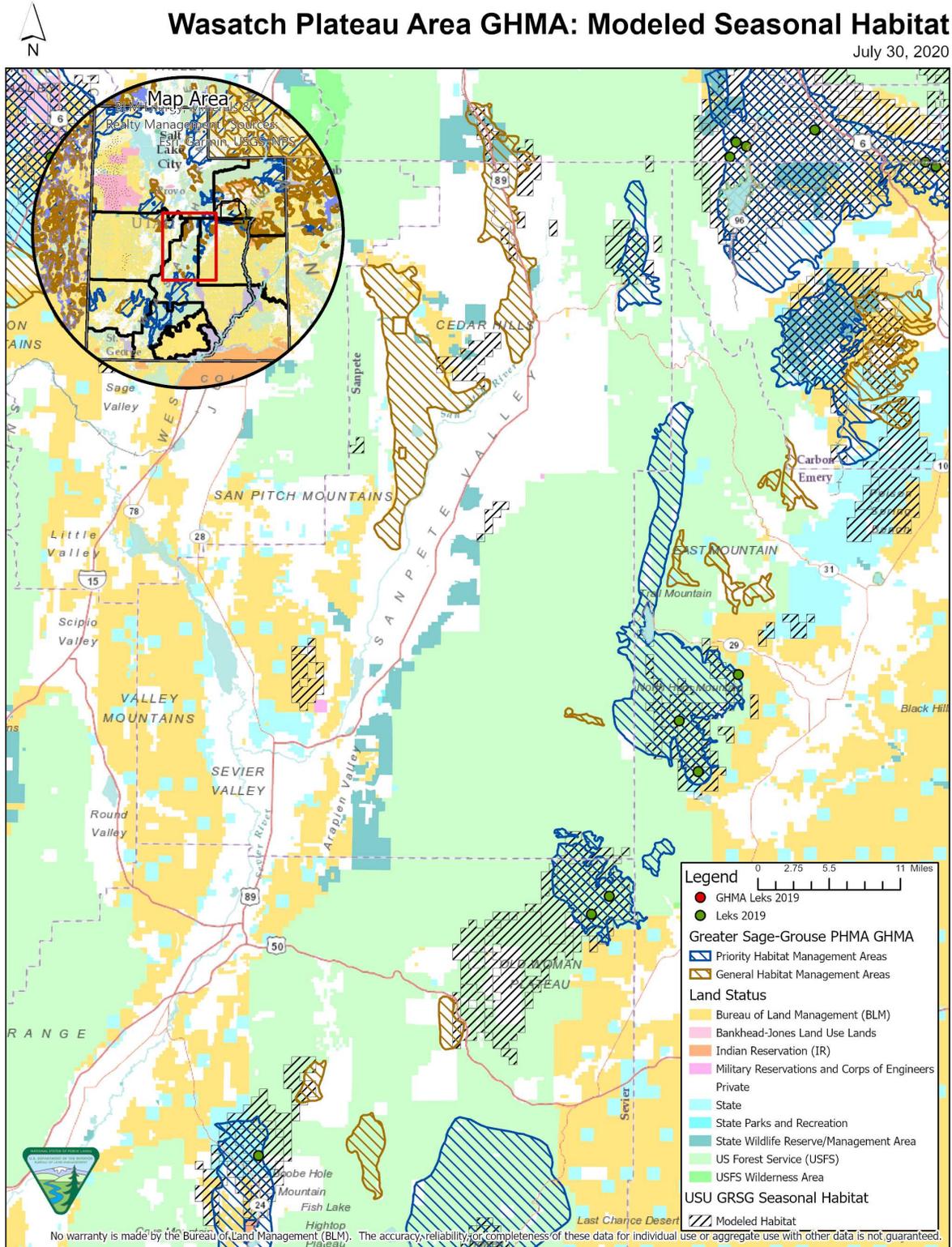
translocated to Anthro Mountain from Parker Mountain was recaptured on a lek near Fruitland (Gruber 2012).

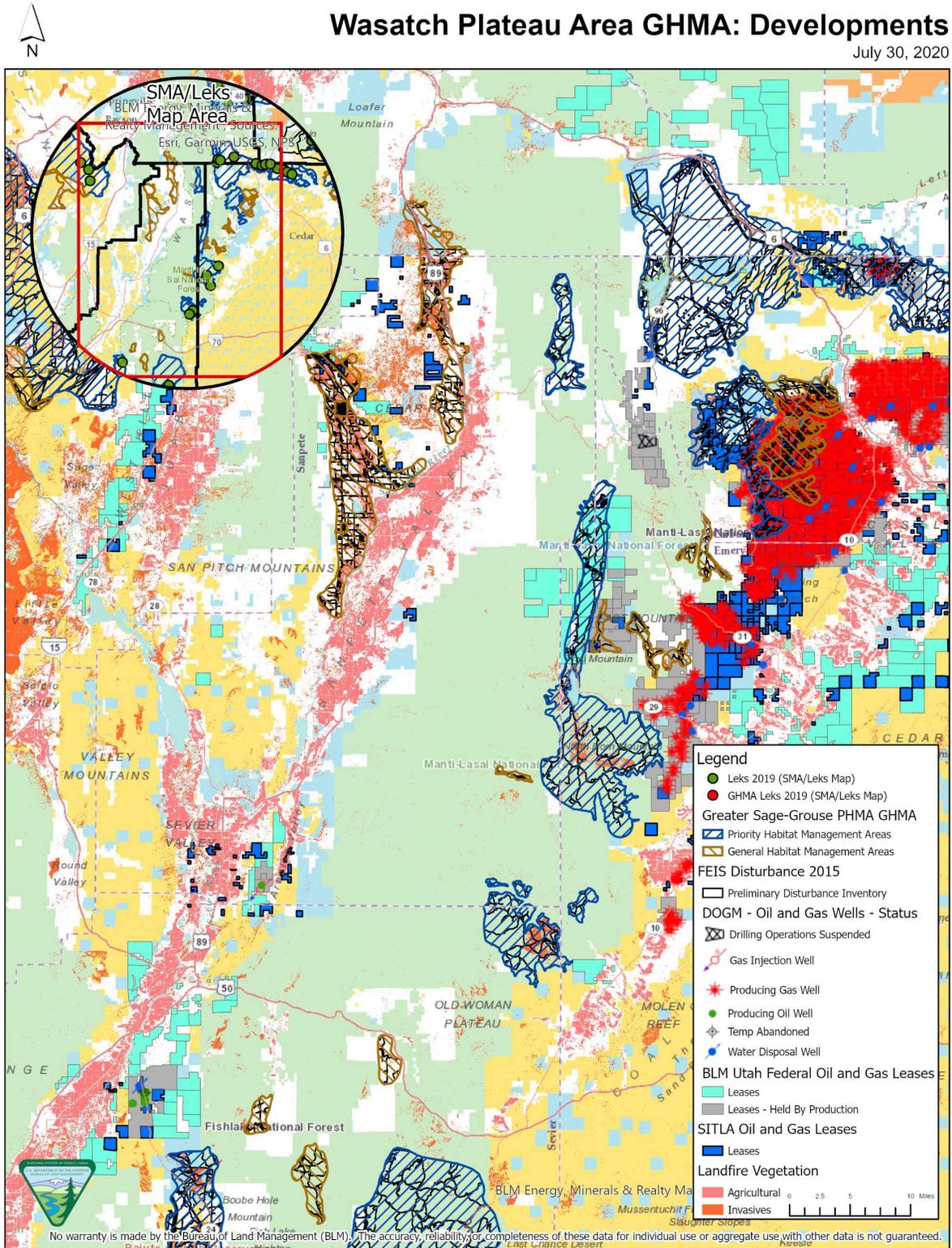
All these aforementioned movements may indicate potential connectivity between the West Tavaputs, Wasatch Plateau, and Anthro Mountain Greater Sage-Grouse populations, as well as surrounding populations.

GHMA in the western portion of the Wasatch Plateau is not known to be significantly important in providing habitat for existing populations or for providing connectivity to other populations. In general, physical barriers (i.e., conifer and topography) contribute to these areas being relatively isolated and therefore, pose a substantial hurdle to natural movements and connectivity between any of the nearest Greater Sage-Grouse populations.

References

- Coleman, T. 2004. Unpublished Report. Anthro Mountain Sage-Grouse Study. Utah Division of Wildlife Resources.
- Crompton, B. 2005. The sage-grouse of Emma Park-Survival, production, and habitat use in relation to coalbed methane development. Utah Division of Wildlife Resources.
- Duvuvuei, O.V. 2013. Vital rates, population trends, and habitat-use patterns of a translocated greater sage-grouse population: Implications for future translocations. Thesis, Utah State University, Logan, USA.
- Gruber, N.W. 2012. Population dynamics and movements of translocated and resident greater sage-grouse on Anthro Mountain, Utah. Thesis, Utah State University, Logan, USA.





LUCERNE AREA

Total Habitat Management Area Acres

- 37,526 acres in GHMA
- 0 acres in PHMA

BLM Decision Area

- 0 of the BLM-administered surface acres are in GHMA
- 12,433 of the BLM-administered mineral estate acres are in GHMA
- 0 of the BLM-administered surface acres are in PHMA
- 0 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells are in GHMA

Authorized BLM Leases

- 0 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 143 (0.4%) acres in GHMA

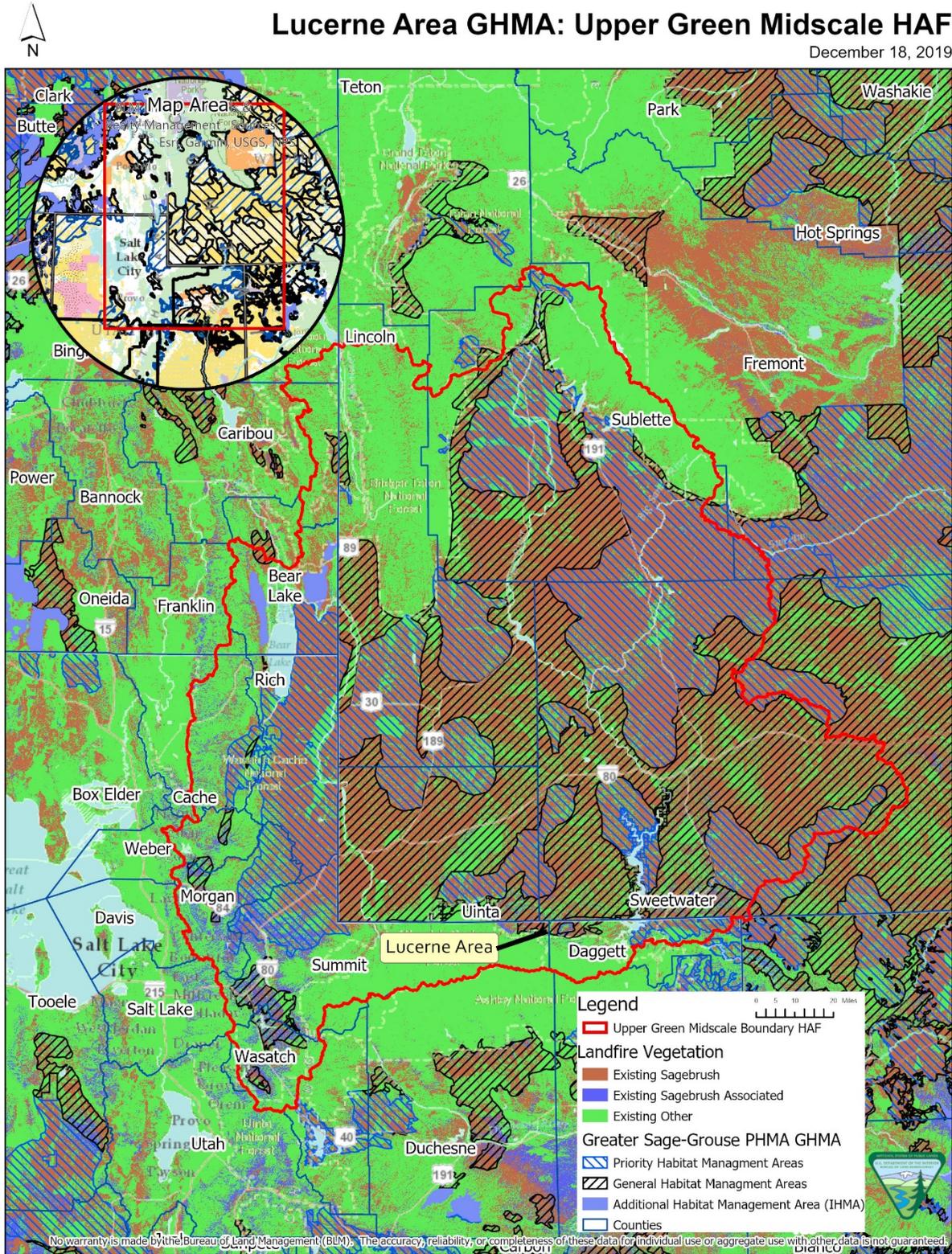
Leks/Seasonal Habitat

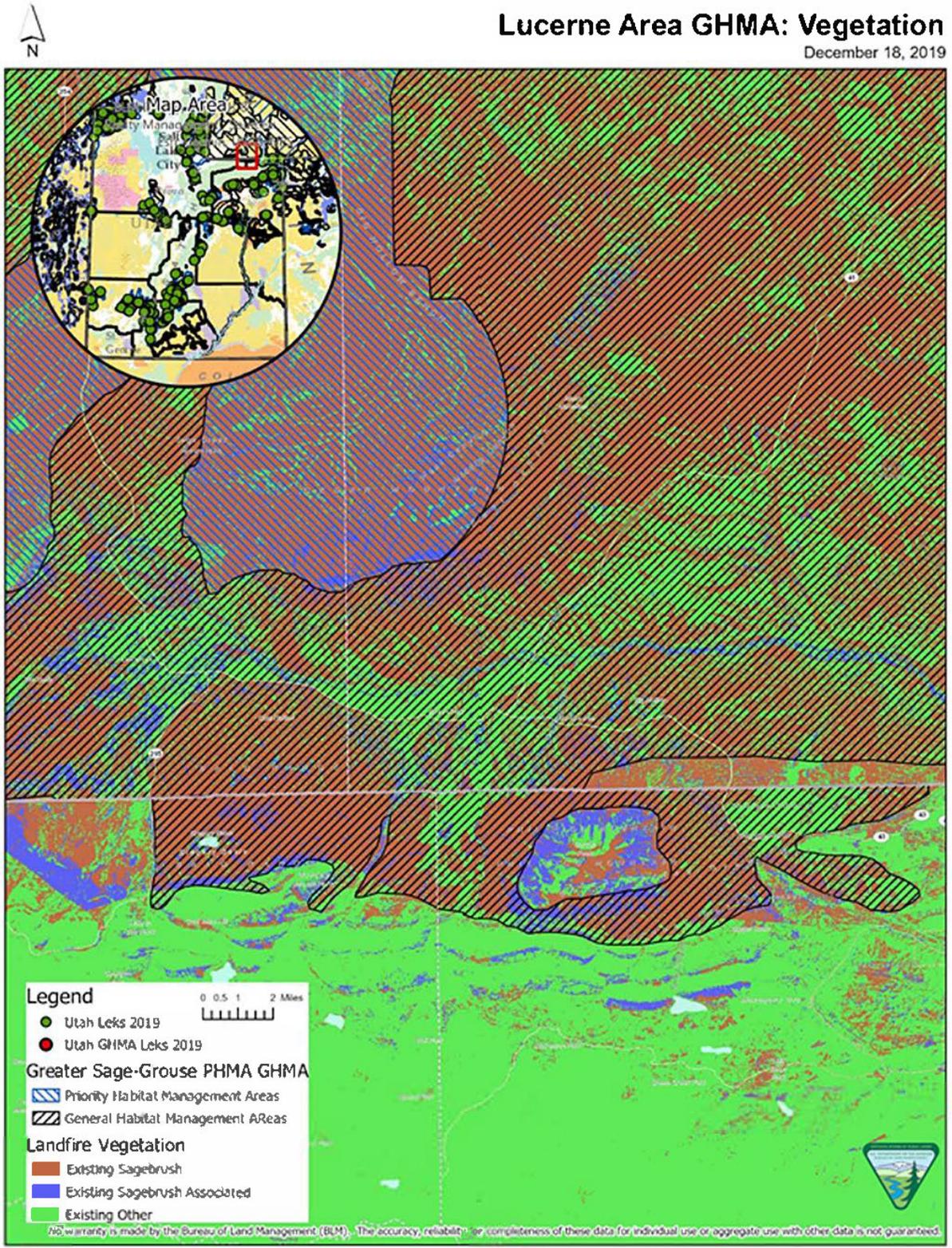
- No leks are in the habitat management areas in Utah
- 5 active leks are outside of Utah but within 10 miles of the Utah-Wyoming-Colorado border
- In Utah 34,390 of the total 34,390 modeled seasonal habitat acres are in GHMA

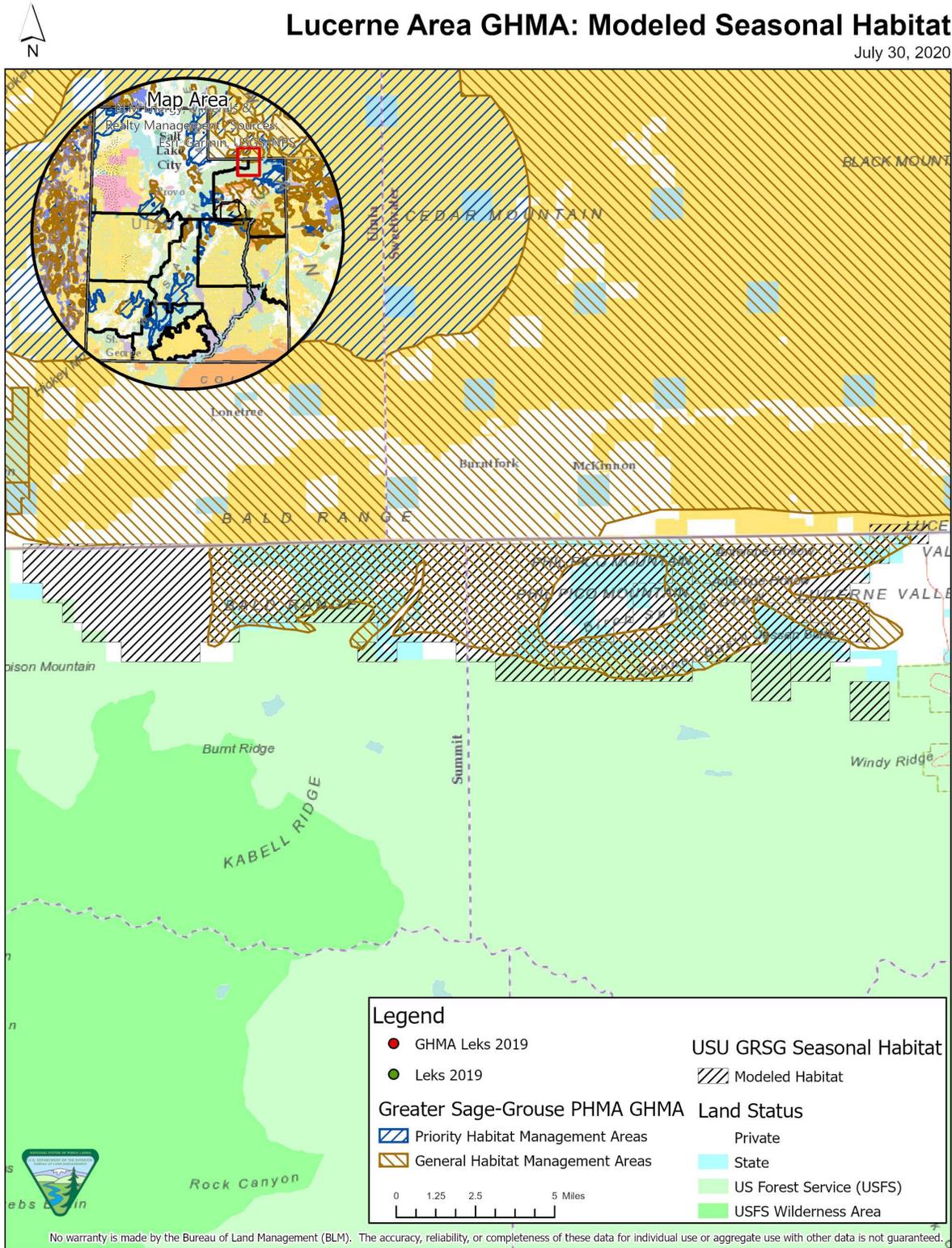
GHMA Contribution to Connectivity

The Lucerne Area is part of the Upper Green River Habitat Assessment Area, which includes lands in Utah, Idaho, Wyoming, and Colorado. Greater Sage-Grouse have been observed using the Bald Knoll area of the Lucerne GHMA, according to UDWR biologist, Brian Maxfield. There is usable sagebrush and brood-rearing habitat in the GHMA area¹³ (UDWR 2018). The Lucerne GHMA area is likely an extension of the southernmost Greater Sage-Grouse habitat and population in southwest Wyoming, as there is contiguous sagebrush vegetation and no geographical barriers between the populations. Connectivity to other populations in Utah is unknown due to lack of data, though not likely due to natural barriers.

¹³ Brian Maxfield, UDWR Biologist, personal communication

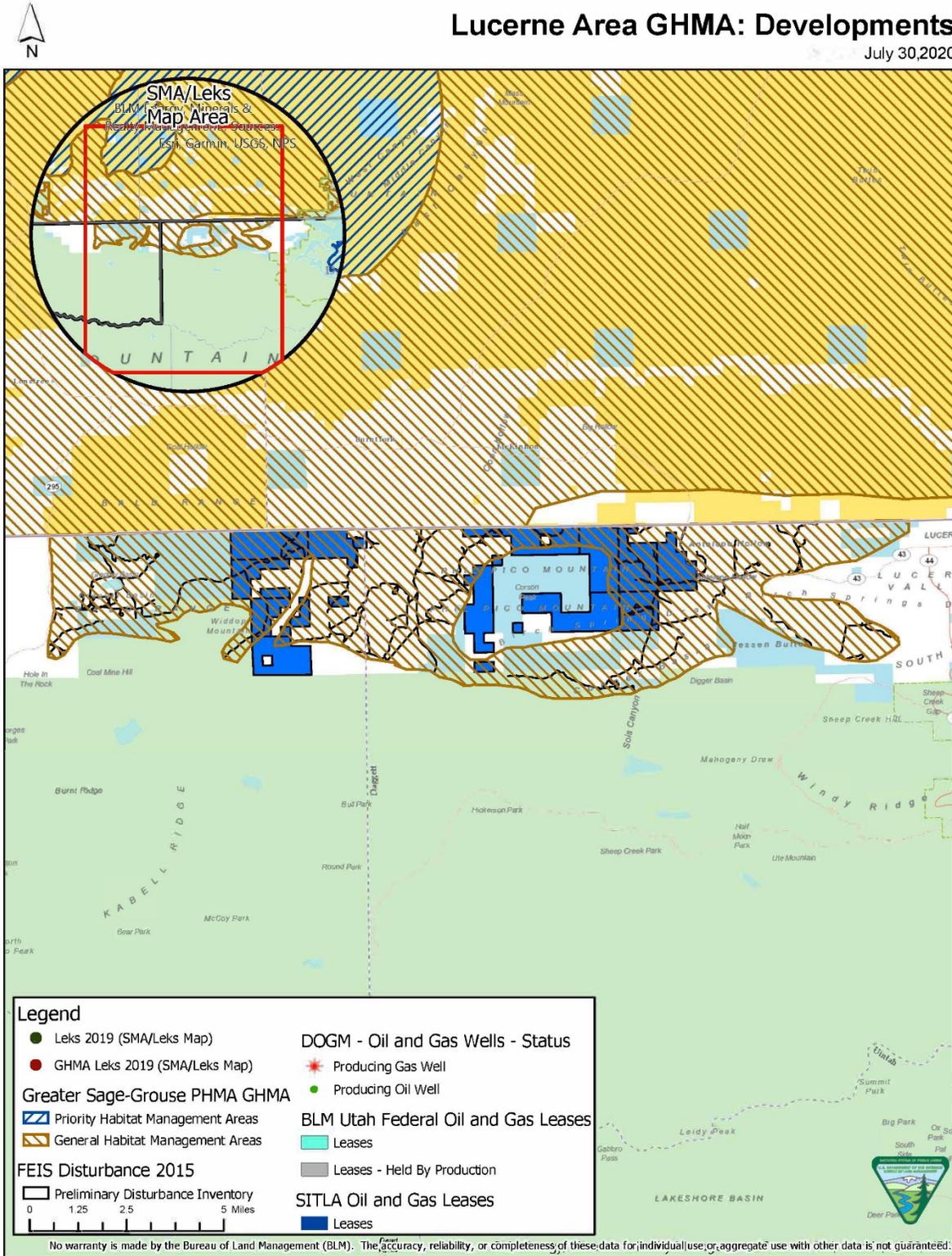






Lucerne Area GHMA: Developments

July 30, 2020



RICH AREA**Total Habitat Management Area Acres**

- 197,900 acres in GHMA
- 1,051,000 acres in PHMA

BLM Decision Area

- 300 of the BLM-administered surface acres are in GHMA
- 23,606 of the BLM-administered mineral estate acres are in GHMA
- 167,000 of the BLM-administered surface acres are in PHMA
- 178,400 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 of the 10 DOGM wells are in GHMA

Authorized BLM Leases

- 0 acres leased on GHMA
- 4,448 acres leased on PHMA

Disturbance Acres

- 1,485 acres in GHMA
- 6,039 acres in PHMA

Leks/Seasonal Habitat

- 7 (10%) of the 68 leks in the habitat management areas are in GHMA, all on lands with surface estate not administered by the BLM
- 60,952 of the total 877,914 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

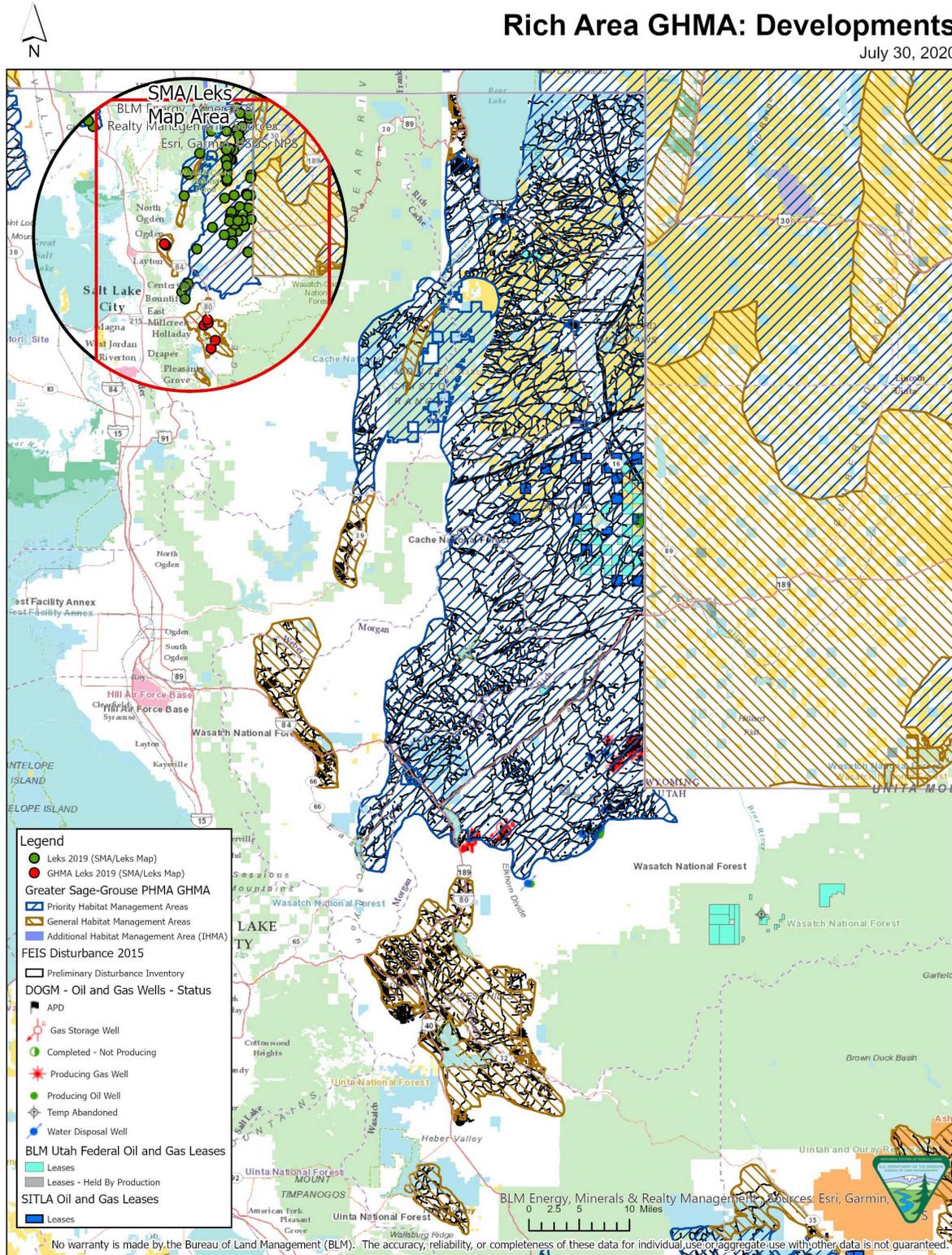
Multiple radio-telemetry studies (VHF and GPS) have been conducted in the Rich area; however, telemetry information has not documented movements to GHMA on the western portion of the Rich area. No birds have been marked in any of the GHMA next to the Rich area (including the GHMA around Jordanelle Reservoir).

Telemetry monitoring conducted in the Morgan-Summit area (25 VHF collars and 10 GPS transmitters) documented that most marked Morgan-Summit birds stayed within a local, small area throughout the year; however, three females moved out of immediate habitat area during the winter. The notable winter movements were two hens that moved southeast, in consecutive years, to GHMA near known leks near Rockport Reservoir and Jordanelle Reservoir. The hens were documented to be with other unmarked hens. It is unknown how important the Jordanelle Reservoir general habitat wintering areas are for the populations in PHMA.

While there is an unquantifiable link between Morgan-Summit area and the Jordanelle Reservoir GHMA, no telemetry information exists for the Jordanelle Reservoir birds (GHMA). Additionally, telemetry information from birds in the Strawberry population, the nearest population, does not document any

Rich Area GHMA: Developments

July 30, 2020



SHEEPROCKS AREA**Total Habitat Management Area Acres**

- 184,500 acres in GHMA
- 646,600 acres in PHMA

BLM Decision Area

- 52,820 of the BLM-administered surface acres are in GHMA
- 34,510 of the BLM-administered mineral estate acres are in GHMA
- 381,100 of the BLM-administered surface acres are in PHMA
- 111,200 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells in Habitat Management Areas

Authorized BLM Leases

- 0 acres leased on GHMA
- 6,869 acres leased on PHMA

Disturbance Acres

- 1,940 acres in GHMA
- 4,322 acres in PHMA

Leks/Seasonal Habitat

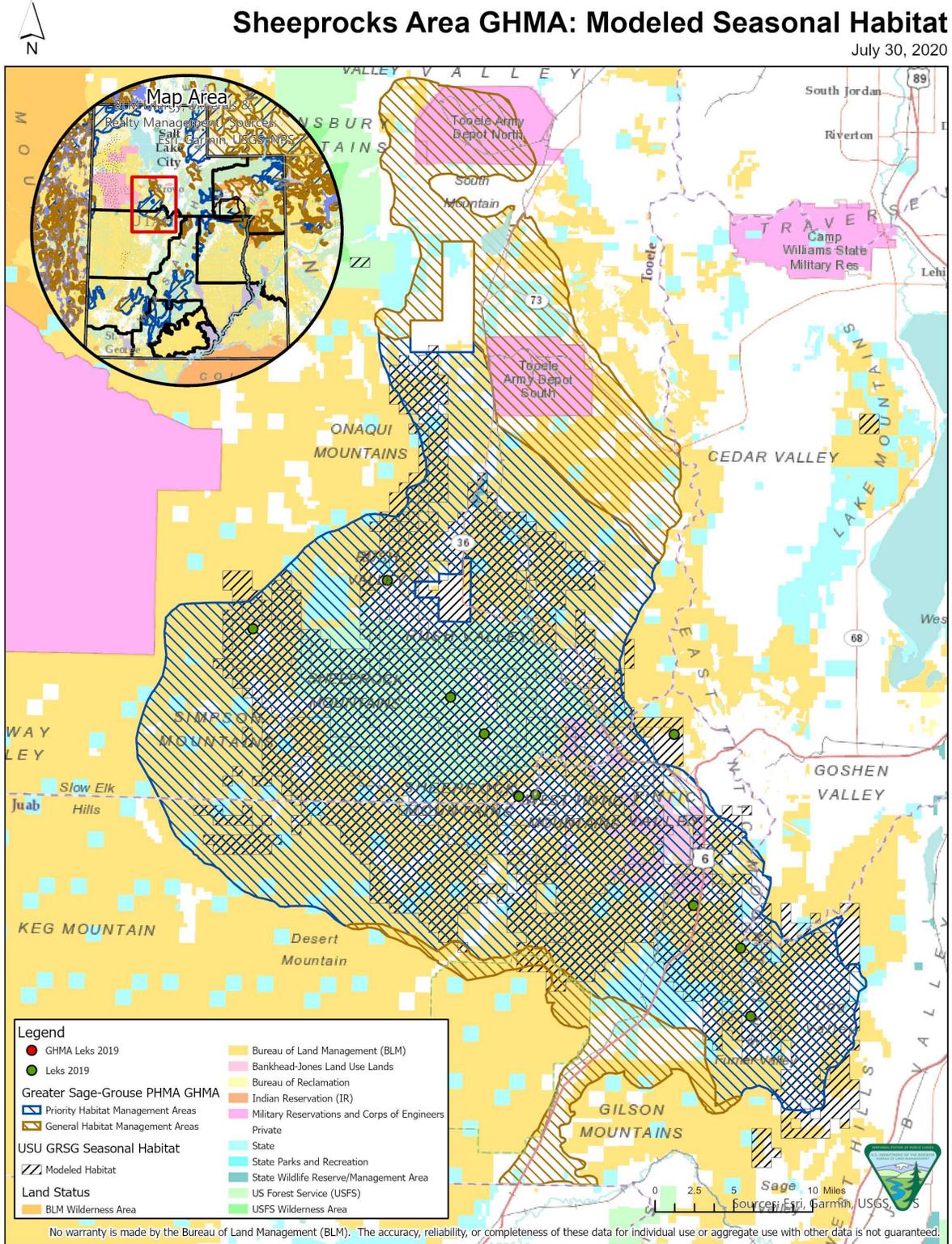
- None of the 9 leks in the habitat management areas are in GHMA
- 2,957 of the total 434,749 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

Graduate students have conducted telemetry in the Sheeprocks area for 5 years, and additional telemetry has been conducted opportunistically. Between 2016 and 2018, birds from the Box Elder and Parker Mountain populations have been translocated into the high-quality habitat in the PHMA in the Sheeprocks population.

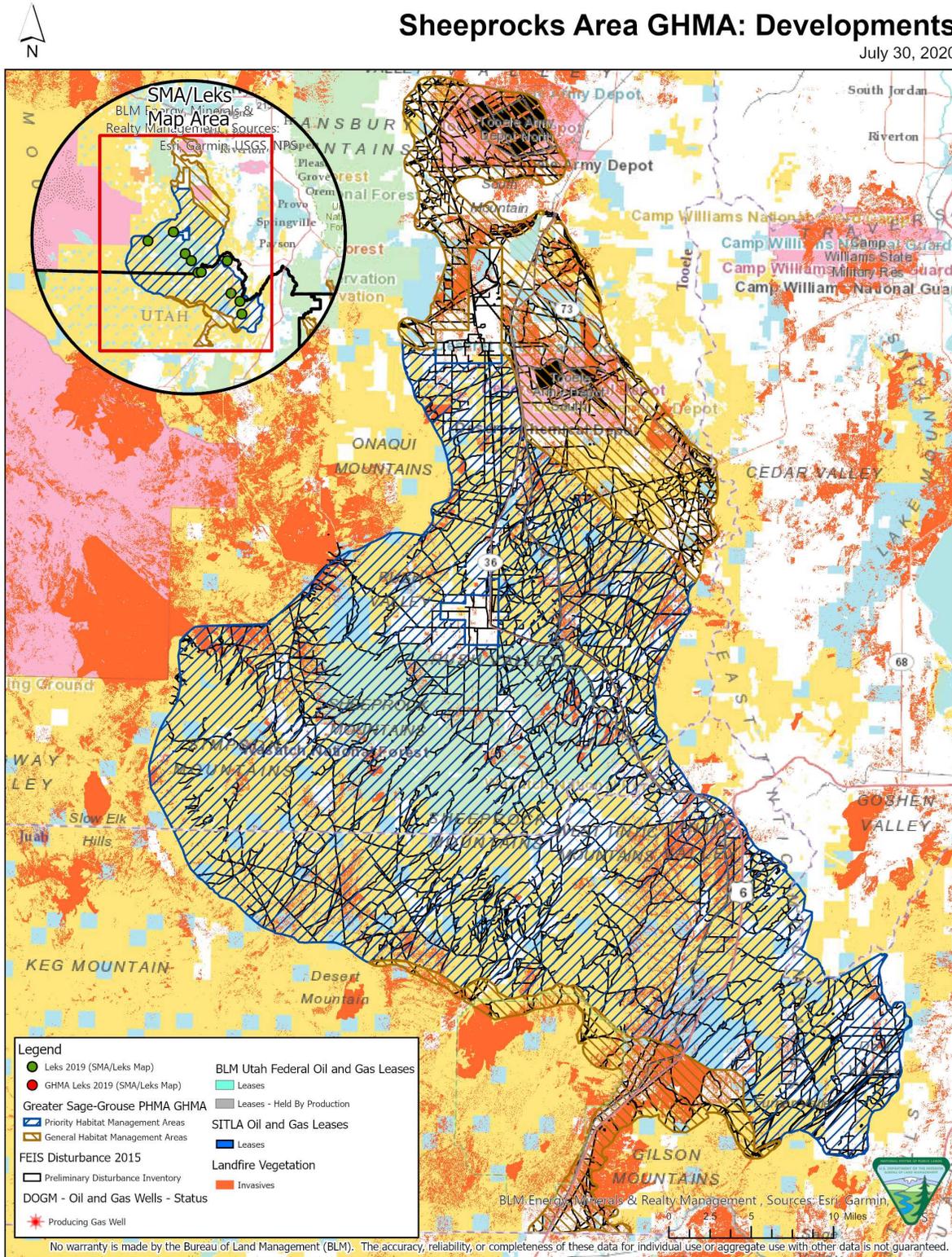
Translocated and resident birds have been collared to help document movement patterns. Collar data indicate large movements from some translocated birds, though, there are no documented instances of birds moving from the core Sheeprocks area to the Tintic leks or to any other Greater Sage-Grouse populations in the state. Similarly, two years of limited telemetry information from collared Tintic birds do not indicate movements to the core Sheeprocks area; nevertheless, there have been reported sightings of birds in the area between the core Sheeprocks area and the Tintic area.

The GHMA in the Sheeprocks area is not known to be important for providing important habitat for populations or connectivity to other populations. In general, physical barriers pose a substantial hurdle to natural movements of any of the nearest Greater Sage-Grouse populations, for example, the Great Salt Lake, the West Desert, Utah Lake, and the developments and mountains associated with the Wasatch Front.



Sheeprocks Area GHMA: Developments

July 30, 2020



IBAPAH AREA**Total Habitat Management Area Acres**

- 10,800 acres in GHMA
- 88,800 acres in PHMA

BLM Decision Area

- 10,100 of the BLM-administered surface acres are in GHMA
- 0 acres are BLM-administered mineral estate acres are in GHMA
- 48,000 of the BLM-administered surface acres are in PHMA
- 700 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells in Habitat Management Areas

Authorized BLM Leases

- 0 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 81 acres in GHMA
- 455 acres in PHMA

Leks/Seasonal Habitat

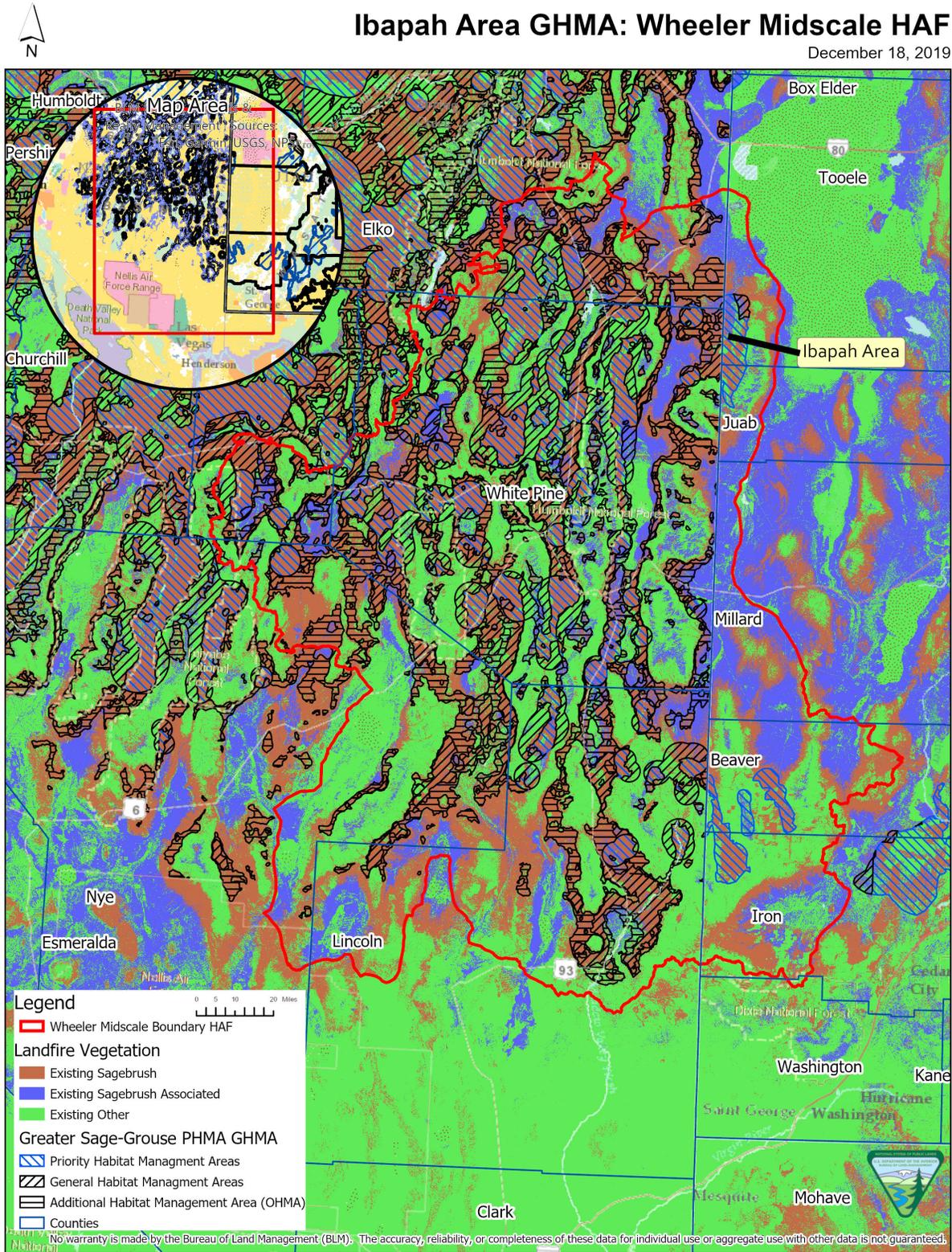
- None of the 4 leks in the habitat management areas are in GHMA in Utah
- 4 occupied leks outside of Utah within 10 miles of the Utah-Nevada border
- In Utah, 3,692 of the total 56,411 modeled seasonal habitat acres are in GHMA

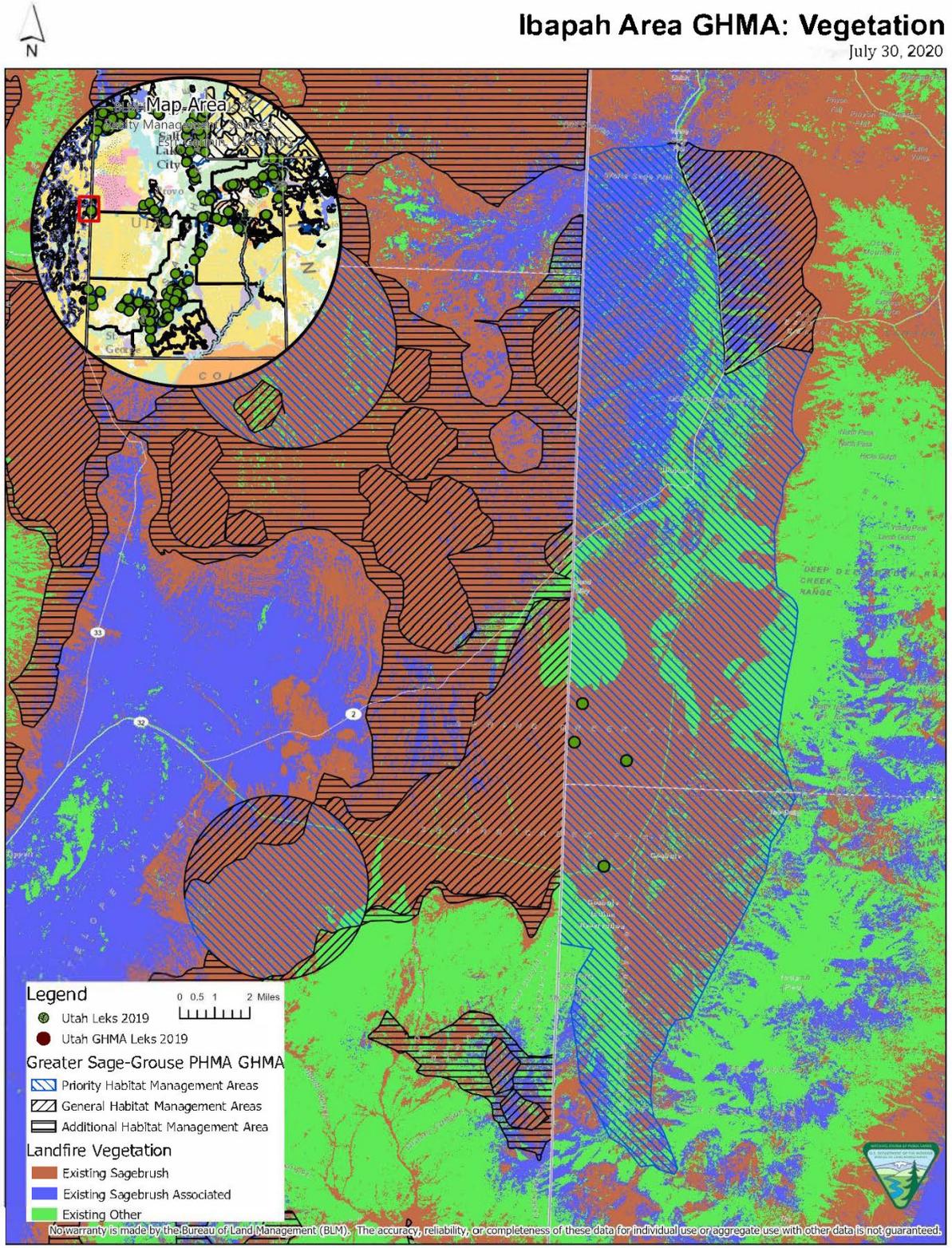
GHMA Contribution to Connectivity

The Ibapah Area is part of Wheeler Midscale Habitat Assessment Area, which includes lands in Utah and Nevada. Habitat across the state jurisdictional boundary in Nevada includes Other Habitat Management Area, GHMA, as well as some PHMA more than 5 miles to the west. The Ibapah Area has limited telemetry (VHF) data (11 birds) from 2005 to 2006 (Robinson 2007). This information suggests that birds primarily use areas close to the leks during nesting, brood-rearing, and wintering; however, the farthest recorded movements were documented during the winter season, where birds moved as far as approximately 10 miles from the nearest lek. Habitat modelling suggests that there is some suitable habitat in the northeast corner of this area, which includes about 81 acres of designated GHMA. Although no birds have been documented in the GHMA in this area, it may still provide some level of habitat. Adjacent areas to the Ibapah GHMA include existing sagebrush, sagebrush associated species, as well as other vegetation interspersed that is not sagebrush. The Ibapah area is not likely to be important for connectivity to the next nearest Greater Sage-Grouse population, the Sheepricks population area, as it is isolated approximately 60 miles to the east as it is separated by large geographic barriers.

Reference

Robinson, J. D. (2007). Ecology of two geographically distinct Greater Sage-Grouse populations inhabiting Utah's West Desert (Masters Thesis). Utah State University, Logan, Utah.

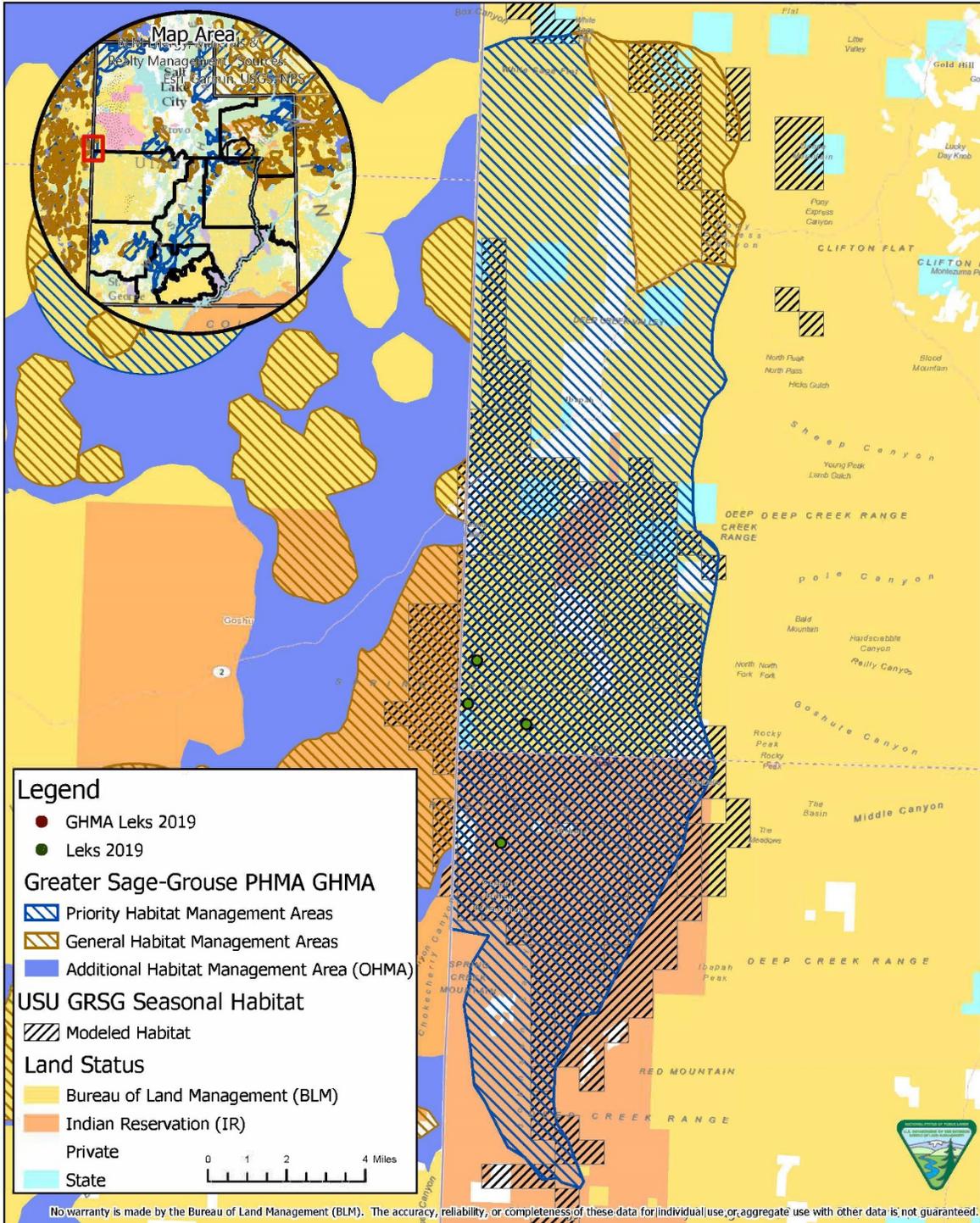






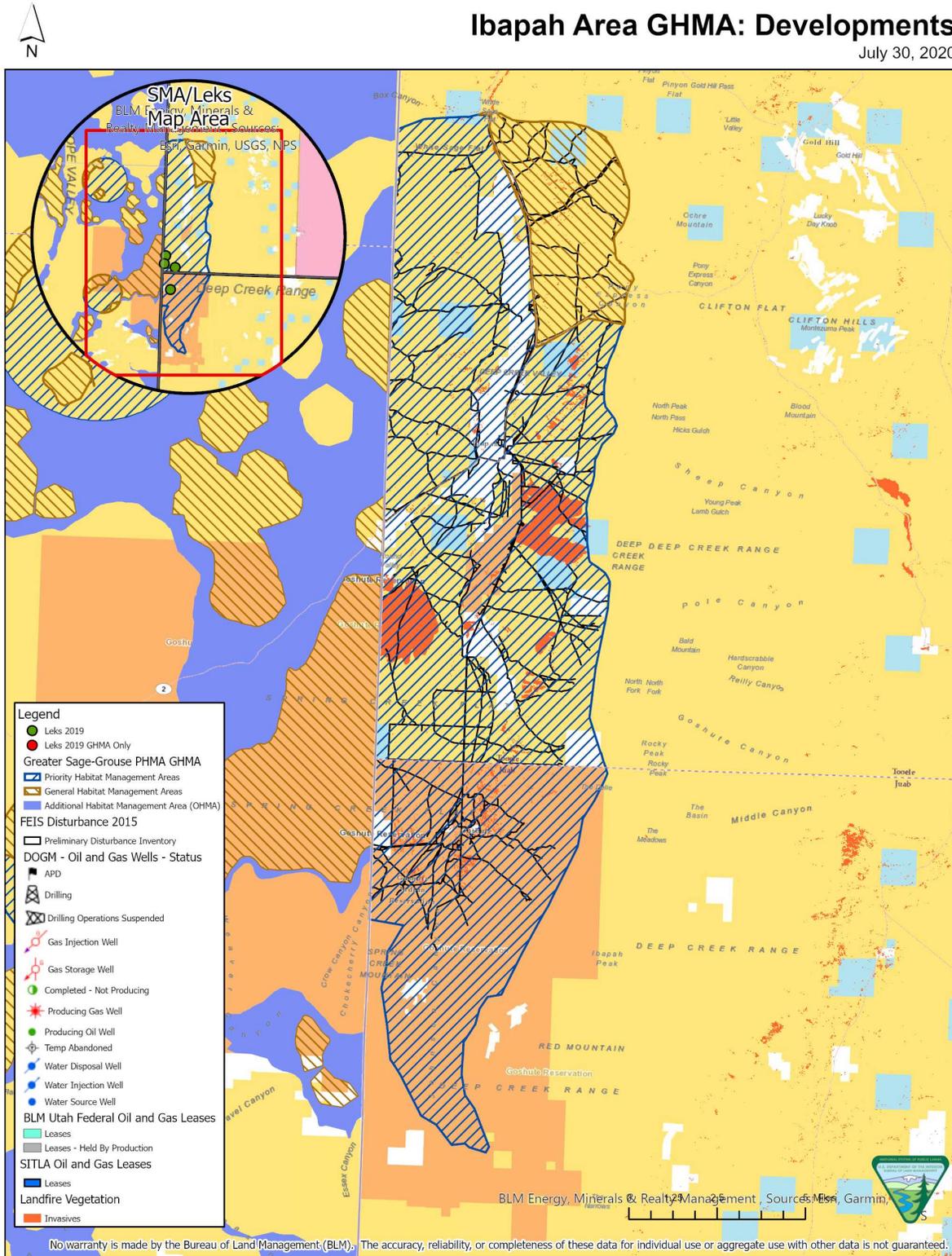
Ibapah Area GHMA: Modeled Seasonal Habitat

July 30, 2020



Ibapah Area GHMA: Developments

July 30, 2020



BALD HILLS AREA

Total Habitat Management Area Acres

- 21,200 acres in GHMA
- 326,400 acres in PHMA

BLM Decision Area

- 8,300 of the BLM-administered surface acres are in GHMA
- 1,241 of the BLM-administered mineral estate acres are in GHMA
- 259,400 of the BLM-administered surface acres are in PHMA
- 5,200 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells in Habitat Management Areas

Authorized BLM Leases

- 0 acres leased on GHMA

Disturbance Acres

- 427 acres in GHMA
- 3,765 acres in PHMA

Leks/Seasonal Habitat

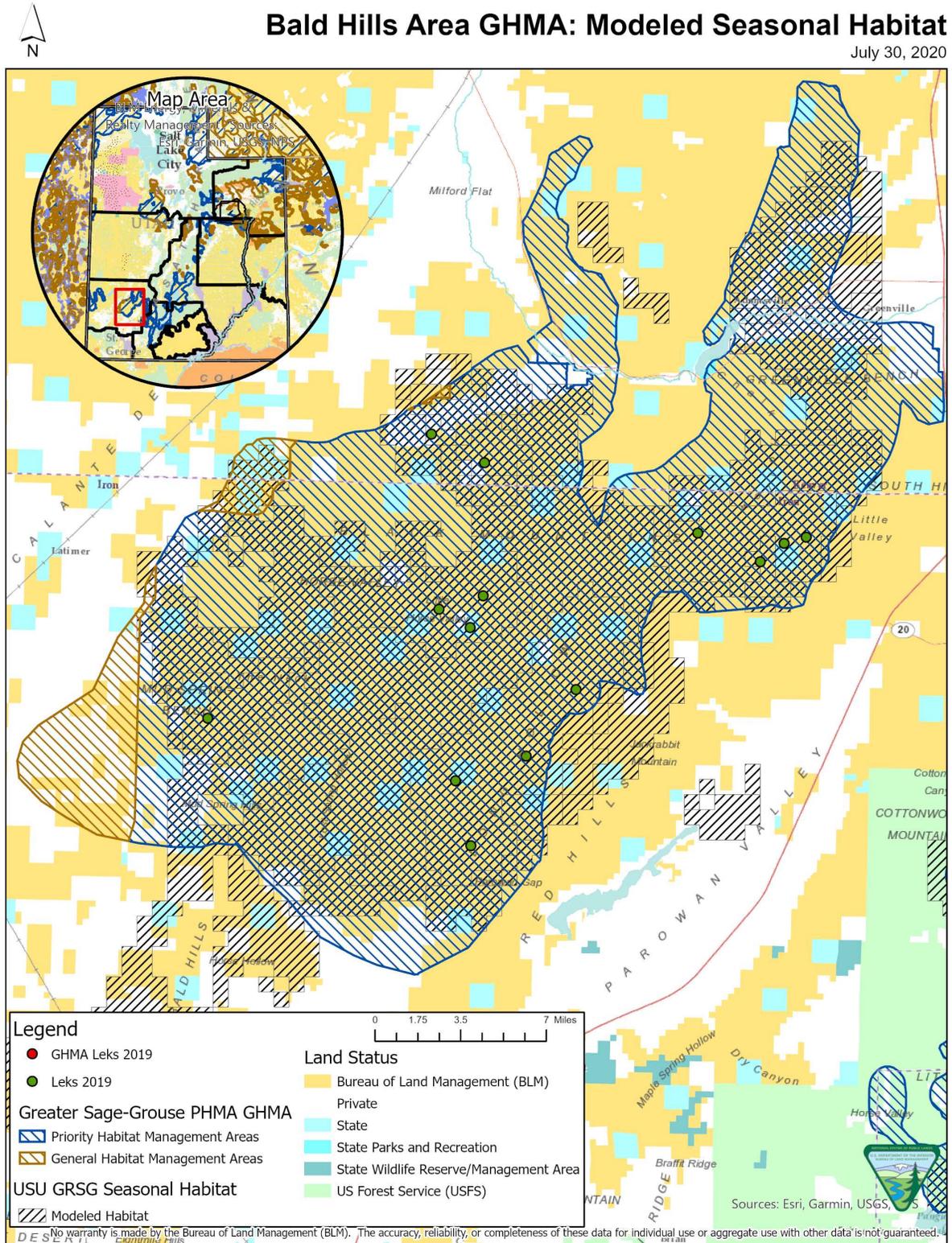
- None of the 14 leks in the habitat management areas are in GHMA
- 3,817 of the total 247,883 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

Greater Sage-Grouse GPS and VHF collars have been deployed throughout the Bald Hills Habitat Management Areas. To date, no birds have been documented using the GHMA; however, one study did indicate the relative “high probability” that Greater Sage-Grouse could use this area (Hansen 2016). Moreover, there is no known connectivity between the Bald Hills population of Greater Sage-Grouse and the Hamlin Valley population. Use of the Bald Hills GHMA areas as a corridor to Hamlin Valley would be the only logical reason birds would move into this GHMA area, and the likelihood of this, given habitat constraints, is low. Connectivity opportunities between the PHMA portions of the Bald Hills population and the Panguitch population of Greater Sage-Grouse is a more likely scenario (movement to the east).

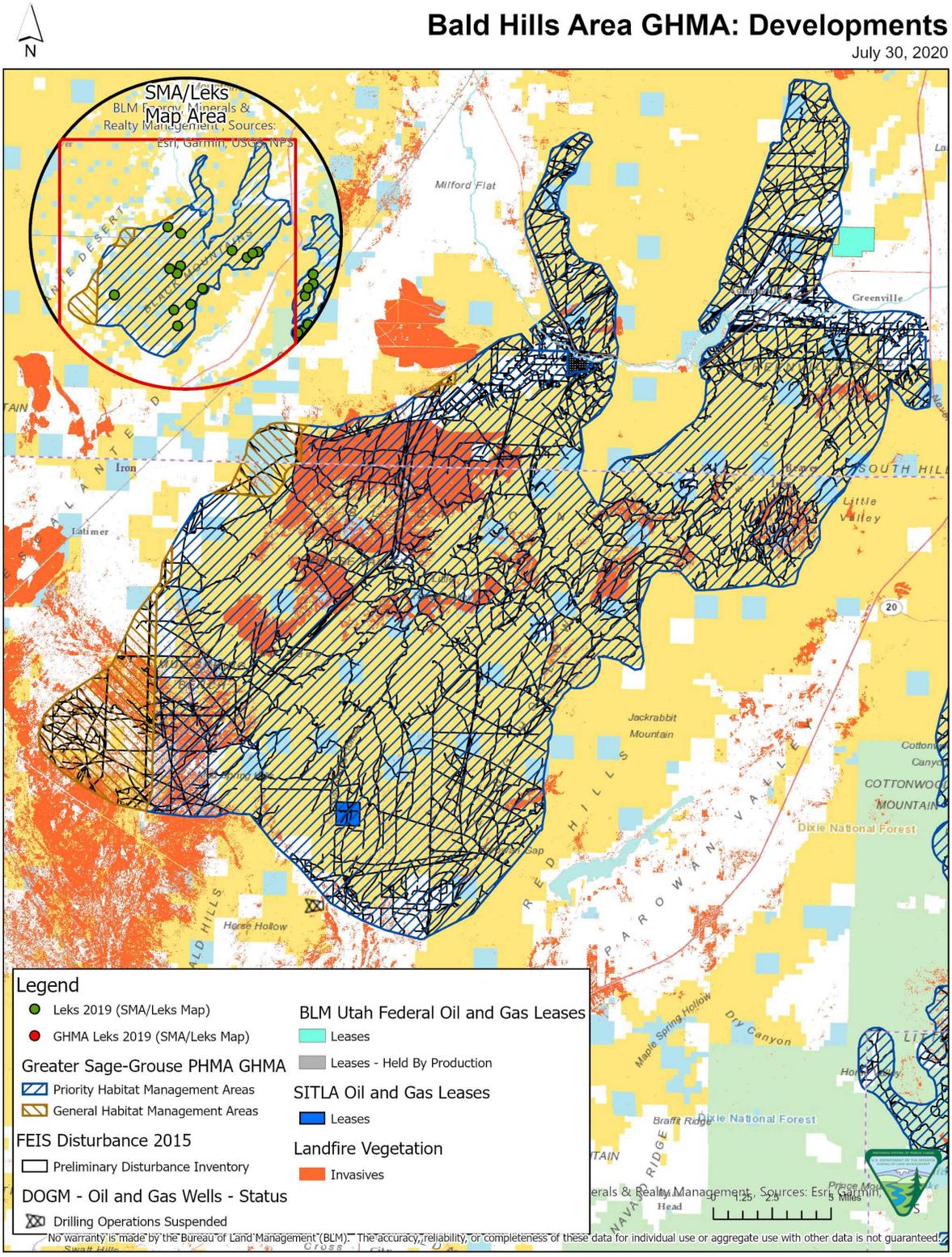
Reference

Hansen, Erica P., "Influence of Disturbance on Greater Sage-Grouse Habitat Selection in Southern Utah" (2016). All Graduate Theses and Dissertations. 5231. <https://digitalcommons.usu.edu/etd/5231>



Bald Hills Area GHMA: Developments

July 30, 2020



This page intentionally left blank.

Appendix 3

Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Appendix 3. Review of the NTT and COT Report’s Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

This appendix outlines how the NTT and COT and reports factored into the planning process for the FEIS, and how NTT, COT, and USGS science was incorporated into the planning process.

3.1 BLM NATIONAL TECHNICAL TEAM REPORT (2011)

In 2010, the US Fish and Wildlife Service (USFWS) determined that Greater Sage-Grouse warranted listing under the Endangered Species Act, but was precluded from listing due to other priorities. In response to this determination, the BLM initiated a land use planning process in 2011. To help inform that process the BLM assembled a “National Technical Team” (NTT), comprising state and federal resource specialists and scientists to review the scientific literature available at that time. On December 21, 2011 the NTT finalized a document entitled *A Report on National Greater Sage-Grouse Conservation Measures*, also known as the National Technical Team Report (NTT Report). The report was developed to provide “the latest science and best biological judgement” from the available literature (NTT Report, Introduction, page 5). Though the NTT Report is not itself science, the NTT used the best science available at that time to inform the conservation measures it identified for BLM decision-makers to consider through the land use planning and NEPA process.

On December 27, 2011, the BLM issued policy in Instruction Memorandum 2012-044 requiring BLM offices to “consider all applicable conservation measures when revising or amending its RMPs in Greater Sage Grouse habitat” (IM-2012-44, Policy/Action). The IM clarified a distinction between “all applicable conservation measures” and those included in the NTT Report by noting in the following sentence that “the conservation measures developed by the NTT...must be considered and analyzed, as appropriate, through the land use planning process” (ibid). Each BLM planning effort complied with this policy by including an alternative based entirely on the conservation measures identified by the NTT. This was Alternative B in the 2013 Draft EIS and 2015 Final EIS, and by extension in the 2018 Draft and Final EISs. Through this alternative and corresponding analysis, the BLM complied with its policy for considering the conservation measures in the NTT Report.

It is critical to clarify that neither the NTT nor the BLM’s policy intended that the conservation measures in the NTT Report were to be automatically applied across the range without intervening consideration through detailed land use planning and NEPA analysis. In the same paragraph that directs the BLM to “consider all applicable conservation measures” from the NTT Report, IM-2012-044 also notes that “while these conservation measures are range-wide in scale, it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order to address local ecological site variability.” Moreover, the NTT understood that the measures in its report would be evaluated alongside competing land use planning considerations and with follow-up

environmental analysis relating to the conservation efficacy of its measures. As the NTT Report described, the conservation measures are not themselves management decisions but rather have been prepared “to assist [the BLM] in making management decisions.” (NTT Report, Introduction, page 5.) In other words, “the conservation measures described in [the] report *are not an end point* but, rather, a *starting point* to be used in the BLM’s planning processes” (ibid, page 5) (emphasis added).

The principle of local adaptation of scientific results and recommended conservation measures derived from them is present in other documents with Greater Sage-Grouse conservation recommendations. In 2014, three years after the NTT Report, the Department of the Interior requested the US Geological Survey (USGS) prepare a report that compiled and summarized published scientific studies regarding buffer distances around Greater Sage-Grouse habitats. In the report titled *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239), USGS scientists note that “responses of individual birds and populations, coupled with variability in land-use patterns and habitat conditions, add variation in research results. This variability presents a challenge for land managers and planners seeking to use research results to guide management and plan for Greater Sage-Grouse conservation measures. Variability between Greater Sage-Grouse populations and their responses to different types of infrastructure can be substantial across the species’ range. Logical and scientifically justifiable departures from the ‘typical response,’ based on local data and other factors, may be warranted when implementing buffer protections or density limits in parts of the species’ range” (USGS Open File Report 2014-1239, page 2). A simple statement from the report indicates this variability, where the USGS scientists noted that “there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range” (ibid, pg. 2).

Further, the BLM’s policy requiring consideration of the conservation measures in the NTT Report allowed for individual planning efforts to make adjustments to the report’s conservation measures. IM-2012-044 states that “the NTT-developed conservation measures were derived from goals and objectives developed by the NTT” and that “these goals and objectives are a *guiding philosophy* that should *inform* the goals and objectives developed for individual land use plans. However, *it is anticipated that individual plans may develop goals and objectives that differ and are specific to individual planning areas*” (emphasis added). The anticipation for variability across the range is even more explicit when the IM notes that “while [the NTT Report’s] conservation measures are range-wide in scale, *it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order to address local ecological site variability*” (emphasis added). With specific consideration of this variability, each BLM planning and NEPA effort developed and analyzed a range of alternative approaches for Greater Sage-Grouse habitat management in each sub-region/state. Through this process, the BLM considered local and regional differences, analyzing the effect of each alternative approach locally and cumulatively.

As the NTT developed its conservation measures, it did not take into consideration other legal and regulatory requirements associated with land use planning and NEPA. For example, the NTT’s range-wide conservation measures did not take into account State or local Greater Sage-Grouse conservation efforts. Further, the NTT Report’s conservation measure that recommends that priority Greater Sage-Grouse habitat areas be designated as unsuitable for all surface mining of coal entirely overlooks the specific process to determine unsuitability prescribed in 43 Code of Federal Regulations (CFR) 3461. Elsewhere the NTT Report states that “a 4-mile [no surface occupancy (NSO) stipulation] likely would not be practical given most leases are not large enough to accommodate a buffer of this size, and lek

spacing within priority habitats is such that lek-based buffers may overlap and preclude all development” (NTT Report, page 21) and therefore presents a conservation measure to close priority Greater Sage-Grouse habitat areas to fluid mineral leasing. This is not consistent with BLM planning guidance directing planning teams that “when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used” (BLM-H-1601 Appendix C page 24); whether or not a lease is large enough to accommodate a large NSO should not be a consideration if NSO provides the necessary protection. In its foundational legislation for the BLM, Congress specifically declared that it neither enlarged nor diminished the authority of the states in managing fish and wildlife. In recognizing this role, as well as local knowledge and expertise, Congress directed the BLM to develop its land use plans to “be consistent with State and local plans to the maximum extent [the BLM] finds consistent with Federal law and the purposes of [FLPMA]” (Federal Land Policy and Management Act {FLPMA}, Section 202 (c)(9)).

In recognition of instances where the NTT Report’s conservation measures were not consistent with law, regulation, or policy, the BLM’s policy direction in IM-2012-044 directs that “when considering the [NTT Report’s] conservation measures...BLM offices should ensure that implementation of any of the measures is consistent with applicable statute and regulation. Where inconsistencies arise, BLM offices should consider the conservation measure(s) to the fullest extent consistent with such statute and regulation.”

Each BLM planning effort fully considered the broad, range-wide recommendations from the NTT Report through the required NEPA process. This consideration was accomplished, as directed by Congress, using a “systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences” (FLPMA Section 202(c)(2)). Through careful consideration of the NTT’s conservation measures, as well as local expertise, monitoring, partnerships, and other resource and land uses, the BLM developed Greater Sage-Grouse management goals, objectives, and management actions that accounted for the variability of habitat and resources across the range. Through the combination of both the 2015 and 2019 planning processes the BLM complied with the statutory requirement that the BLM resolve, “to the extent practical, inconsistencies between Federal and non-Federal Government plans” (FLPMA Sec. 202(c)(9)). Through these efforts, the BLM has met its statutory and regulatory responsibilities related to its consideration of the conservation measures contained in the NTT Report.

What the NTT Report and its Conservation Measures Are:

- The NTT Report included science-based management considerations for Greater Sage-Grouse to promote sustainable Greater Sage-Grouse populations.
- The conservation measures were to be considered and analyzed through the BLM’s land use planning process.
- The conservation measures are range-wide in scale, not accounting for local variability.
- The conservation measures were a starting point to be used in the BLM’s planning process.
- The NTT Report was developed by a team of resource specialists and scientists familiar with Greater Sage-Grouse literature.

What the NTT Report and its Conservation Measures Are Not:

- Unlike FLPMA's requirement that the BLM develop and modify Land Use Plans in coordination with state and local plans and policies, the NTT Report was not developed with input from or consideration of plans, policies, or programs of State, Tribal, or local government agencies.
- The conservation measures were not developed using a systematic interdisciplinary approach, as required by FLPMA for land use plans.
- The NTT Report presented conservation measures that would provide food and habitat for one species of wildlife, but did not consider other FLPMA requirements for BLM to manage for other species and resources while also recognizing the need for sources of minerals, food, timber and fiber from public lands.
- The NTT Report is not a land use plan, or an amendment or revision to a land use plan.
- The conservation measures were based on best available science at the time and do not provide for future updates in scientific knowledge or technological advancements.
- When preparing the NTT Report, the NTT did not complete a NEPA analysis on its conservation measures. Instead, the BLM completed NEPA and land use planning processes in 2015 and 2019 to assess the environmental consequences of the NTT Report's conservation measures, as well as alternatives to those measures—and to account for competing land management considerations.

3.2 US FISH AND WILDLIFE CONSERVATION OBJECTIVES TEAM REPORT (2013)

In 2012 the director of the USFWS convened a Conservation Objectives Team (COT) of state and USFWS representatives. The team developed a peer-reviewed report (COT Report) that delineated objectives based on the “best scientific and commercial data available at the time of its release” (COT Report, page ii). The COT Report, released in March 2013, identifies conservation objectives, measures, and options for each of the Greater Sage-Grouse threats assessed. The COT Report also identified Priority Areas for Conservation (PACs) which were identified as “the most important areas needed for maintaining Greater Sage-Grouse representation, redundancy, and resilience across the landscape” (ibid, page 13). Unique compared to the NTT Report, the COT Report identified threats to each PAC, recognizing that threats vary across the range, and therefore corresponding management should vary to address those threats. The preface to the report is clear that the COT report “is guidance only” and that the “identification of conservation objectives and measures does not create a legal obligation beyond existing legal requirements” (ibid, page ii). Further, the preface notes that the objectives “are subject to modification as dictated by new findings, changes in species' status, and the completion of conservation actions” (ibid, page ii).

The COT Report clearly identifies the necessity to adapt Greater Sage-Grouse conservation goals, objectives, and measures due to variability across the range. The COT noted that “due to the variability in ecological conditions and the nature of the threats across the range of the sage-grouse, *developing detailed, prescriptive species or habitat actions is not possible at the range-wide scale*” (emphasis added) (COT Report, Section 5- Conservation Objectives, page 31). The COT Report summarizes the relationship between its range-wide conservation goals, objectives, and measures and the state-specific planning efforts, noting that “specific strategies or actions necessary to achieve the following conservation objectives must be developed and implemented at the state or local level, with the involvement of all stakeholders” (ibid).

The BLM received the COT Report when developing its 2013 Draft EIS and fully considered it prior to Draft EIS publication, providing for public review of the BLM's evaluation. Upon receipt of the Report the BLM evaluated the range of alternatives and determined that the threats addressed by the COT Report were all addressed in the range of alternatives; this was presented to the public in Appendix C in the 2013 Draft EIS. The BLM also evaluated the impacts to Greater Sage-Grouse from the alternatives and determined that the COT Report objectives were all addressed within the range of alternatives; this was presented to the public in the 2013 Draft EIS Chapter 2 Table 2.4 (Comparison of Alleviated Threats to GRS in the Utah Sub-Region).

Following public comments and development of the 2015 Proposed Plan, Section 2.5 of the Final EIS updated the crosswalk between the USFWS threats and the BLM program areas, showing that all the threats for which the BLM has discretion were addressed. Section 2.11.7 notes that all conservation measures and objectives identified in the COT report were considered within the 2015 Final EIS range of alternatives. Finally, a table was added to the 2015 Final EIS Executive Summary that showed the management actions from the 2015 Proposed Plan that addressed the COT Report threats.

On October 2, 2015, the USFWS determined that "listing the sage-grouse as a threatened or endangered species is not warranted..." (Federal Register Vol. 80, No. 191, 59936). One of the rationale for this determination was that "the new Federal land-management paradigm is established in 98 amended Federal Plans that reduce and minimize threats to the species in the most important habitat for the species" (ibid). Through this language, it is clear that the 2015 planning efforts incorporated the recommendations from the COT Report to a degree that met the report's goal of "long-term conservation of sage-grouse and healthy sagebrush shrub and native perennial grass and forb communities by maintaining viable, connected, and well-distributed populations and habitats across their range, through threat amelioration, conservation of key habitats, and restoration activities" (COT Report, page 13).

What the COT Report and its Objectives, Measures and Options Are:

- The COT Report is a compilation of reasonable objectives, based upon the best scientific and commercial data available at the time of its release, for the conservation and survival of Greater Sage-Grouse.
- The COT Report is guidance to federal land management agencies, state Greater Sage-Grouse teams, and others developing efforts to achieve conservation for Greater Sage-Grouse.
- The COT Report was clear that its objectives were subject to modification based on new findings, changes in species' status, and the completion of conservation actions.
- The COT Report was developed by a team of state and USFWS representatives selected by their respective state or agency.

What the COT Report and its Objectives, Measures and Options Are Not:

- The COT Report is not a recovery plan, conservation strategy, or conservation agreement.
- The COT Report did not include input from BLM biologists or BLM field staff familiar with local habitat conditions and threats.

- The COT Report was not developed with input from the BLM, its managers, planners, wildlife program leads, or field biologists and as such includes objectives, measures and options that do not consider the BLM's statutory, regulatory, or policy requirements.
- When preparing the COT Report, the USFWS did not complete a NEPA analysis on its conservation objectives, measures, and options. Instead, the BLM completed NEPA and land use planning processes in 2015 and 2019 to assess the environmental consequences of the COT Report conservation objectives, measures, and options, as well as alternatives to those objectives, measures, options—as they applied to the development of affected BLM land use planning decisions—while accounting for competing land management considerations.

3.3 EXCERPTS FROM THE UT FINAL EIS NOVEMBER 2018

- **Chapter I: Purpose of and Need for Action**
 - **Section I.1 Introduction. p. 1-2.** On June 7, 2017, the Secretary issued SO 3353 for the purpose of enhancing cooperation among 11 western states and the BLM in managing and conserving Greater Sage-Grouse. SO 3353 directed an Interior Review Team, consisting of the BLM, the USFWS, and United States Geological Survey (USGS), to coordinate with the Greater Sage-grouse Task Force, which is comprised of representatives of the governors of each of the 11 states. They also were directed to review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that may require modification to make the plans more consistent with the individual state plans and better balance the BLM's multiple-use mission as directed by SO 3349.
 - **Section I.4 Planning Criteria. p. 1-5 – 6.** The BLM has identified the following planning criteria:
 - The BLM will comply with all laws, regulations, policies, and guidance related to public lands management and implementing NEPA on BLM-administered lands.
 - On public lands, Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitat managed in partnership by federal, state, and local authorities. In making management determinations on BLM-administered lands, the BLM will use, to the fullest extent practicable, state game and fish agencies' Greater Sage-Grouse data and expertise.
 - Lands addressed in the RMPA/EIS will be BLM-administered land in Greater Sage-Grouse habitat, including surface and split-estate lands with federal subsurface mineral rights. Any decisions in the RMPA/EIS will apply only to BLM-administered lands.
 - This RMPA/EIS will comply with orders of the Secretary, including SO 3353 (Greater Sage-Grouse Conservation and Cooperation with Western States), which strives for compatibility with state conservation plans.
 - This RMPA/EIS will incorporate, as appropriate, information in a USGS report that identified and annotated Greater Sage-Grouse science published since January 2015 (Carter et al. 2018) and a report that synthesized and outlined the potential management implications of this new science (Hanser et al. 2018).
 - The RMPA will incorporate, as appropriate, local- and state-based science, data, monitoring information, and associated analyses and products.

- This RMPA/EIS will comply with BLM Manual 6840, Special Status Species Management.
 - This RMPA/EIS will recognize valid existing rights, including those associated with the Mineral Leasing Act and the 1872 Mining Law. The BLM recognizes that in some circumstances its discretion to deny or regulate a proposed public land use is limited, such as with existing leases, existing contracts, or mining plans of operations. Accordingly, the BLM will ensure that its implementation of the management actions is consistent with the terms and conditions in existing leases or existing contracts, or with the regulations governing mining plans of operation.
 - All activities and uses in Greater Sage-Grouse habitat will be managed to achieve land health standards.
 - This RMPA/EIS will not amend more restrictive land use allocations or decisions for other resources under existing LUPs, such as wilderness study areas, areas of critical environmental concern, cultural resources, and riparian areas.
- **Chapter 2: Alternatives**
 - **Section. 2.2.1 Varying Constraints on Land Uses and Development Activities. p. 2-2.** Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office IM 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
 - **Section. 2.2.1 Varying Constraints on Land Uses and Development Activities. p. 2-2.** The Proposed LUPA in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.
 - **Section 2.2.1 Varying Constraints on Land Uses and Development Activities. p. 2-2 - 3.** The BLM considered the entire range of alternatives from the 2015 Final EIS to identify issues meriting reconsideration, given the BLM's goal of enhancing alignment with state plans. In this manner, the BLM will continue to appropriately manage Greater Sage-Grouse and its habitat through this planning effort in tandem with the 2015 ROD/ARMPA. Further, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse LUPs, the BLM partnered with the USGS to review the best available information published since January 2015, develop an annotated bibliography of that Greater Sage-Grouse science (Carter et al. 2018; see Section 3.1), and incorporate the information into this EIS. In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing

to economic growth and energy independence. As analyzed in the 2015 Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

- **Section 2.2.3 Use of Other Habitat Maps for PHMA Designation. p. 2-3 - 4.** During the scoping, some commenters included requests that the BLM use different habitat maps for use in designating PHMA. Some commenters requested expanding current PHMA to include all areas within 5 miles of any occupied lek, while some requested contracting it to include only areas that currently have sagebrush. An approach based on these comments was considered but eliminated from detailed analysis for the reasons discussed below.
 - The request that any area within 5 miles of a lek be included as PHMA relied on one piece of literature that suggested that impacts from development may extend for 5 miles from occupied leks; however, based on a substantial review of literature regarding lek buffers, the USGS recognized “that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the Greater Sage-Grouse range” (Manier et al. 2014). Additionally, making areas within 5 miles of occupied leks PHMA would increase disparity with the State’s plan and strategies, which is not consistent with the purpose and need. Because of this, an alternative that automatically makes any area within 5 miles of occupied leks PHMA was not analyzed in detail.
- **Table 2-2 Detailed Comparison of Alternatives. p. 2-10 - 46.** US Geological Survey appears.
- **Chapter 3: Affected Environment**
 - **Section 3.1 Introduction. p. 3-1.** The BLM analyzed the management situation in full compliance with its regulations and policies. The BLM evaluated inventory and other data and information, partnering with USGS and coordinating extensively with States, to help provide a basis for formulating reasonable alternatives. The BLM described this process in its Report to the Secretary in response to SO 3353 (Aug. 4, 2017). Among other things, the Report describes how the BLM coordinated “with each State to gather information related to the [Secretary’s] Order, including State-specific issues and potential options for actions with respect to the 2015 Greater Sage-Grouse Plans and Instruction Memorandums (IMs) to identify opportunities to promote consistency with State plans.” (Report to the Secretary at 3.) This process overlapped to some degree with the BLM’s scoping process, which also assisted the BLM in identifying the scope of issues to be addressed and significant issues, and with coordination with the States occurring after the Report.
 - **Section 3.1 Introduction. p. 3-2.** Based on available information, including the USGS reports described below, the BLM has concluded that the existing condition is not substantially different from that of 2015; therefore, the data and information presented in the 2015 Final EIS are incorporated into this RMPA/EIS.

Actions that have been authorized since the 2015 plan were consistent with the 2015 Final EIS. The BLM would continue to implement the decisions in the 2015 plan unless those decisions are amended.

Acreage figures and other numbers were approximated using geographic information systems (GIS) technology; they do not reflect exact measurements or precise calculations.

USGS Reports As part of the consideration of whether to amend some, all, or none of the 2015 Greater Sage-Grouse land use plans, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018) and a report that synthesizes and outlines the potential management implications of this new science (Hanser et al. 2018).

Following the 2015 plans, the scientific community has continued to improve the knowledge available to inform management actions and an overall understanding of Greater Sage-Grouse populations, habitat requirements, and their response to human activity. The review discussed the science related to six major topics identified by USGS and BLM, as follows:

- Multiscale habitat suitability and mapping tools
- Discrete human activities
- Diffuse activities
- Fire and invasive species
- Restoration effectiveness
- Population estimation and genetics

- **Chapter 4: Environmental Consequences**

- **Section 4.7 Cumulative Impacts. p. 4-38.** This RMPA/EIS incorporates by reference the analysis in the 2015 Final EISs and the 2016 SFA Withdrawal Draft EIS, which comprehensively analyzed the cumulative impacts associated with these planning decisions under consideration in that process. The 2015 EISs, and to some degree the 2016 SFA EIS evaluated the cumulative impacts associated with the No-Action Alternative in this RMPA/EIS. The Proposed Plan Amendment's effects are effectively within the range of effects analyzed by the 2015 and 2016 EISs. The 2015 Final EISs are quite recent, and the BLM has determined that conditions in the Utah planning area have not changed significantly based, in part, on the USGS science review (see **Chapter 3**), as well as the BLM's review of additional past, present, and reasonably foreseeable actions in 2018.
- **Section 4.7.1 Range-wide Cumulative Effects Analysis – Greater Sage-Grouse. p. 4-41.** The BLM's assessment that conditions and cumulative impacts have not changed significantly is based, in part, on the USGS science review (see **Chapter 3**) and the BLM's review of additional past, present, and reasonably foreseeable actions in 2018. Since the nature and context of the cumulative effects scenario have not appreciably changed since 2015, and the 2015 plans included analysis by WAFWA MZ across the entire range of the Greater Sage-Grouse, the cumulative effects analysis in the 2015 Final EIS applies to this planning effort and provides a foundation for the BLM to identify any additional cumulative impacts.

- **Section 4.7.2 Why Use WAFWA Management Zones? p. 4-42.** The cumulative effects analysis area for Greater Sage-Grouse extends beyond a state, political, or planning area boundary to reflect the WAFWA MZs because they encompass areas with similar issues, threats, and vegetative conditions important Greater Sage-Grouse habitat management. Each suite of threats to specific Greater Sage-Grouse populations have been identified in the COT report, 2015 Regional RODs, and the Listing Decision. The 2015 Regional RODs identify how planning level allocation decisions address the identified threats to populations, which are aggregated in this analysis by MZs. The threats vary geographically and may have more or less impact on Greater Sage-Grouse and its habitat in some parts of the MZs, depending on such factors as climate, land use patterns, and topography.

3.4 EXCERPTS FROM CHAPTER 2 UT FINAL EIS JUNE 2015 FOR NTT AND COT

Page	NTT	COT	USGS
2-3	–	–	USGS lek buffer study: The Proposed Plans include a management action to incorporate the lek buffer distances identified in the USGS report <i>Conservation Buffer Distance Estimates for Greater Sage Grouse—A Review: USGS Open File Report 2014-1239</i> (Manier et al. 2014) during NEPA analysis at the implementation stage. Although the buffer report was not available at the time of the Draft LUPA/EIS release, applying these buffers was addressed in the Draft LUPA/EIS and is qualitatively within the spectrum of alternatives analyzed.
2-7	Developed one No Action Alternative (Alternative A) and four preliminary action alternatives. The first action alternative (Alternative B) is based on <i>A Report on National Greater Sage-Grouse Conservation Measures</i> (NTT 2011), and the second action alternative (Alternative C) is based on proposed alternatives submitted by conservation groups during scoping, including two sub-alternatives for livestock grazing (C1 and C2).	–	–

Appendix 3. Review of the NTT and COT Report’s Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Page	NTT	COT	USGS
2-8	–	<p>The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS in their 2010 warranted but precluded finding on listing the GRSG, as well as their COT report. The USFWS threats do not necessarily align with BLM or Forest Service resource program areas, and are often integrated into several different resource program areas. Table 2.1 provides a cross-walk between each of the 2010 warranted but precluded finding and COT identified threats and the BLM and Forest Service program areas addressing these threats, with references to specific sections of the Proposed Plan Amendments. For the BLM Proposed Plan, see Section 2.6.2. The Forest Service Proposed Plans can be found in Section 2.6.3 (Utah) and Section 2.6.4 (Wyoming).</p>	–
2-11	–	–	<p>The BLM and Forest Service Proposed Plans consider documents related to the conservation of GRSG that have been released since the publication of the Draft LUPA/EIS. For example, this Proposed Plans consider the USFWS’ October 27th, 2014 memorandum <i>Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes</i> and the USGS’ November 21st, 2014 report <i>Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review</i> (Manier et al. 2014). Based on these documents, the BLM and Forest Service are proposing to designate SFA to further protect highly valuable habitat and is proposing to include lek-buffer distances when authorizing activities near leks. The BLM and Forest Service also updated the Proposed Plans to reflect new GRSG state conservation strategies, including recent State Executive Orders.</p>

Appendix 3. Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Page	NTT	COT	USGS
2-19	–	–	<u>H-Buffers</u> In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS Report <i>Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review</i> (Open File Report 2014-1239) in accordance with Appendix F, Applying Lek-Buffer Distances.
2-20	–	–	<u>C-Buffers</u> In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS Report <i>Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review</i> (Open File Report 2014-1239) in accordance with Appendix F.
2-26	–	<p>MA-FIRE-4 If prescribed fire is used in GRSg habitat, the NEPA analysis for the Burn Plan will address:</p> <ul style="list-style-type: none"> • why alternative techniques were not selected as a viable options; • how GRSg goals and objectives would be met by its use; • how the COT report objectives would be addressed and met; • a risk assessment to address how potential threats to GRSg habitat would be minimized. 	–

Appendix 3. Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Page	NTT	COT	USGS
2-43	-	-	<p>GRSG-GEN-ST-006 During lekking (March 1 to April 30) restrict surface disturbing and disruptive activities, including noise at 10 decibels above ambient (not to exceed 20-24 decibels) measured at the perimeter of an occupied lek, to lekking birds from 6:00 pm to 9:00 am within a buffer distance³ of 3.1 miles.</p> <p>³ Plan buffer distances reflect lower-interpreted range from Manier, D. J., Z. H. Bowen, M. L. Brooks, M. L. Casazza, P. S. Coates, P. A. Deibert, S. E. Hanser, and D. H. Johnson. 2014. Conservation buffer distance estimates for Greater Sage-Grouse—A review: USGS Open-File Report 2014-1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.</p>
2-58	-	-	<p>GRSG-TDDD-ST-015 During lekking (March 1 to May 15), restrict noise to 10 decibels above ambient (not to exceed 20-24 decibels) measured at the perimeter of an occupied lek to lekking birds from 6:00 pm to 9:00 am within a buffer distance⁵ of 3.1 miles.</p> <p>⁵ Plan buffer distances reflect lower-interpreted range from Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014, Conservation buffer distance estimates for Greater Sage-Grouse—A review: US Geological Survey Open-File Report 2014-1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.</p>

Appendix 3. Review of the NTT and COT Report’s Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Page	NTT	COT	USGS
2-73	<p>Alternative B is based on <i>A Report on National Greater Sage-Grouse Conservation Measures</i> (NTT report). In August 2011, the BLM convened the Sage-Grouse NTT, which brought together resource specialists and scientists from the BLM, state fish and wildlife agencies, and other federal agencies. The NTT developed a series of science-based conservation measures to be considered and analyzed through the land use planning process.</p> <p>On December 27, 2011, the BLM released IM 2012-044. In accordance with this IM, the BLM must consider all conservation measures developed by the NTT in at least one alternative in the land use planning process. Alternative B fulfills this requirement.</p>	-	-
2-73	<p>Alternative C includes additional conservation measures to those included in the NTT report. This alternative was developed to address issues raised by interested and affected public during the scoping process. Similar to Alternative B, PHMA (Map 2.2) would be closed to new leasing, closed to mineral materials disposal, recommended for withdrawal from mineral entry, and exclusion for new ROWs.</p>	-	-

Appendix 3. Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Page	NTT	COT	USGS
2-211	<p>Apply the BMPs identified in Appendix E (of the NTT report) (included as Appendix I of the Draft LUPA/EIS), to the extent allowable by law, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:</p> <ul style="list-style-type: none"> • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed. 	-	-

Page	NTT	COT	USGS
2-240	—	<p>As described in Section 2.11.5, many counties developed their own GRSG maps, often by starting with the UDWR maps and removing private lands and areas not currently sagebrush. The result is maps that differ greatly from those contained in the Draft LUPA/EIS, the state's plan, or the COT report. Some counties further fragment habitat protections by re-categorizing the reduced areas as priority, general or opportunity areas based on current vegetation conditions. By so doing, the resulting areas identified for protection do not include all the seasonal life stages and transition zones for the GRSG populations. They also could encourage development in areas that could easily become habitat with treatment or where development could indirectly impact adjacent area of habitat. Further, omitting private lands overlooks the point that is emerging from research from throughout the west that private lands often provide important GRSG habitats due to the presence of deeper soils and more moisture. Such an approach at mapping is not consistent with maintaining and improving GRSG populations and habitat.</p>	—
2-241	—	<p>2.11.7 Conservation Objectives Team Report As part of their comments on the Administrative Draft EIS, the State of Utah commented that the BLM should consider an alternative which focuses on consistency with the COT report. An alternative based on the COT report was not analyzed in detail because all conservation measures and objectives identified in the COT report are considered within the range of alternatives.</p>	—

Page	NTT	COT	USGS
2-241	–	<p>2.11.8 BLM Policies and Regulations In addition recommending consideration of an alternative based on the COT report, the State of Utah suggested that the BLM should consider an alternative based on BLM Manual 6840, Special Status Species Management, and rangeland health regulations, found at 43 CFR 4180.2. The BLM did not consider this alternative in detail because under all alternatives the BLM is required to comply with existing laws, rules regulations and policy (see Section 1.7.1, Planning Criteria). In addition, as discussed in the USFWS listing decision, existing regulatory mechanisms, which includes compliance with these existing regulations and policies has not been sufficient to prevent GRSG habitat loss or population declines. As such, an alternative based on compliance with BLM Manual 6840 and rangeland health regulations would substantially similar in design to the No Action Alternative.</p>	–

- End of tables of excerpts from the UT GRSG 2015 Final EIS and 2018 Final EIS –

3.5 COT, NTT AND USGS 2018 GENERAL INFORMATION

Outline:

- 1) COT and NTT Reports
 - a) Introduction
 - b) Description of each document
 - c) How the reports were considered in 2015 and 2019 LUP decision
 - d) How/which parts were implemented
- 2) USGS 2018 Annotated Bibliography: Research on Greater Sage-Grouse since 2015
 - a) Description
 - b) How it was considered in 2018

I.a. Introduction to COT and NTT reports:

Upon review of the best available science and commercial information, the USFWS concluded in 2010 that the Greater Sage-Grouse warranted protection under the ESA. Two factors leading to the decision to list the species as “warranted but precluded” were threats to habitat and the inadequacy of existing regulatory mechanisms.

I.b.i. Greater Sage-Grouse National Technical Team (NTT). A Report on National Greater Sage-Grouse Conservation Measures. December 2011. https://eplanning.blm.gov/epl-front-office/projects/lup/9153/39961/41912/WySG_Tech-Team-Report-Conservation-Measure_2011.pdf

In 2011, in response to the USFWS 2010 warranted but precluded finding, the BLM initiated a land use planning process and assembled a National Technical Team (NTT) made up of state and federal Greater Sage-Grouse experts to review all of the best available science on Greater Sage-Grouse and habitat impacts and make recommendations for conservation measures that should apply inside Priority Habitats. The report describes the scientific basis for the conservation measures proposed within each BLM program area.

Among the key recommendations of the National Technical Team's final report (NTT 2011) were recommendations to: (1) close Priority Habitats to future mining claims and leasing for oil, gas, and coal; (2) apply four-mile NSO buffers around Greater Sage-Grouse leks for existing oil and gas leases; and (3) cap cumulative habitat disturbance at 3% of the landscape and one industrial site per square-mile.

I.b.ii. Conservation Objectives Team (COT). Greater Sage-Grouse Final Report. February 2013. <https://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf>

In 2012, at the request of the Greater Sage-Grouse Task Force, a group of state and federal representatives (Conservation Objectives Team (COT)) produced a report that identified the most significant areas for Greater Sage-Grouse conservation (Priority Areas for Conservation (PACs)), the principal threats within those areas, and the degree to which such threats need to be reduced or ameliorated to conserve the Greater Sage-Grouse so that it would not be in danger of extinction or likely to become so in the foreseeable future.

I.c. How COT and NTT were considered in 2015 and 2019 LUP decisions:

2015: As directed in the BLM Washington Office IM 2012-044, the conservation measures developed by the National Technical Team were to be considered and analyzed, as appropriate, through the land use planning and NEPA processes by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. IM 2012-144 <https://www.blm.gov/policy/im-2012-044> also directed the BLM to refine the Preliminary Priority Habitat and Preliminary General Habitat data through the land use planning process. The 2013 Draft Greater Sage-Grouse RMP amendments and revisions/Draft EISs contained one alternative based on the conservation measures developed by the National Technical Team and evaluated through the 2012-2015 planning process.

2019: The BLM considered the entire range of alternatives from the 2015 Final EIS to identify issues meriting reconsideration, given the BLM's goal of enhancing alignment with state plans. In this manner, the BLM will continue to appropriately manage Greater Sage-Grouse and its habitat through this planning effort in tandem with the 2015 ROD/ARMPA.

I.d. How/which parts of NTT were implemented:

The 2015 Proposed LUPA incorporated management based on the National Technical Team recommendations.

2 USGS 2018 Annotated Bibliography: Research on Greater Sage-Grouse since 2015

2.a. Description:

In June 2017, Secretarial Order 3353 Greater Sage-Grouse Conservation and Cooperation with Western States established a team to review the federal land management agencies' Greater Sage-Grouse Plan Amendments or Revisions completed on or before September 2015. https://www.doi.gov/sites/doi.gov/files/uploads/so_3353.pdf

In 2018, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse RMPs, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018; see Section 3.1). In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing to economic growth and energy independence. As analyzed in the 2015 Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

2.b. How USGS Bibliography was considered in 2018

As part of the consideration of whether to amend some, all, or none of the 2015 Greater Sage-Grouse land use plans, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018) and a report that synthesizes and outlines the potential management implications of this new science (Hanser et al. 2018).

3.6 HOW THE 2019 ARMPA CHANGES AFFECT ALIGNMENT WITH USFWS CONSERVATION OBJECTIVES TEAM OBJECTIVES

This appendix includes a description of the 2013 USFWS Conservation Objectives Team (COT) Report, including how the 2013 Draft EIS and 2015 Final EIS included sections that documented how the report's objectives were all addressed in the considered range of alternatives. The October 2, 2015 USFWS determination that listing Greater Sage-Grouse as threatened or endangered was partially based on the 2015 ARMPAs incorporating management that reduced or minimized threats. This section summarizes how the 2019 ARMPA affects alignment of the BLM Utah's plan with the COT Report objectives and COT Report's goal of "long-term conservation of sage-grouse and healthy sagebrush shrub and native perennial grass and forb communities by maintaining viable, connected, and well-distributed populations and habitats across their range, through threat amelioration, conservation of key habitats, and restoration activities" (COT Report, page 13).

3.6.1 Issue: Sagebrush Focal Area Designations/Withdrawal Recommendation

Removal of the SFAs does not affect meeting the COT objectives. SFAs are not identified as required to meet any specific COT objective, and are not even mentioned in the COT Report. The 2019 ARMPA still manages all the PHMA inside the former SFAs as PHMA, with the associated goals, objectives, and protective management. Removing the SFA recommendation for withdrawal from locatable mineral entry doesn't change impacts to PHMA as there is low potential for such development, and therefore no threat to Greater Sage-Grouse from mining in the Utah SFAs (see 2016 Draft EIS). Further, prioritizing grazing permit renewals and vegetation treatments within SFAs over all other PHMA (or non-sage-grouse habitat within designated PHMA) could have re-directed limited staff time and funding to areas that already provide functioning Greater Sage-Grouse habitat characteristics and away from areas that may have substantial resource concerns, actually resulting in the increased potential for decreased habitat quality and quantity.

3.6.2 Issue: Administering Disturbance and Density Caps

Providing an exception for the disturbance cap does not affect meeting the COT objectives. The COT Report does not specifically call for implementation of a disturbance cap. Rather, the COT objectives discuss the importance of minimizing disturbance to Greater Sage-Grouse habitat.

The 2019 ARMPA retains the 3% disturbance cap as one management tool to minimize disturbance. The 2019 ARMPA does allow for considering disturbance above 3%, but only on condition that a "technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project *will improve the condition of Greater Sage-Grouse habitat*" and only if the State Director concurs (MA-SSS-3B, emphasis added). These conditions provide for consideration of site specific factors that affect how a project may impact Greater Sage-Grouse, such as "Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors." Consideration of such local factors is consistent with the COT Report's statement that "specific strategies or actions necessary to achieve the...conservation objectives must be developed and implemented at the state or local level" (COT Report, page 31), and later that "addressing energy development and any subsequent successful restoration activities in sagebrush ecosystems *will require consideration of local ecological conditions*" (COT Report, page 43, emphasis added).

The 2019 ARMPA changes to administration of the disturbance cap is in alignment with the COT objectives related to minimizing disturbance and provide for consideration of local ecological conditions.

3.6.3 Issue: Modifying Mitigation Strategy

The COT Report does not include a specific objective with a standard mitigation strategy. However, it does note that “when avoidance is not possible, meaningful minimization and mitigation of the impacts should be implemented” (page 31). It also states that “efforts should be made to restore the components lost within the PAC (e.g., redundancy or representation) in other areas such that there is no net loss of sage-grouse or their habitats” (page 37). The 2019 ARMPA exceeds this standard by committing to “undertake planning decisions, actions and authorizations ‘to minimize or eliminate threats affecting the status of [GRSG] or to improve the condition of [GRSG] habitat’” (MA-SSS-3A).

The COT Report and its objectives do not rest the burden of achieving “no net loss” solely on project proponents, merely that mitigation achieves no loss of habitat. The 2019 ARMPA Compensatory Mitigation Strategy is in alignment with and exceeds the COT report’s standard of “no net loss”. It includes an objective and management action that requires mitigation “improve the condition of GRSG habitat across the planning area” (Objective SSS-2, see also MA-SSS-3A). Achieving that standard by a mix of BLM, state, and voluntary proponent efforts does not negate that the standard would be met, with its corresponding benefits to Greater Sage-Grouse habitat and populations.

3.6.4 Issue: Modifying Habitat Objectives

The COT Report includes general descriptions of Greater Sage-Grouse seasonal habitat needs. It cites several references where various habitat characteristics (vegetation type, density, height, etc.) are detailed. However, the COT chose not to prescribe or recommend a range-wide standard of metrics for habitat characteristics in the COT Report. Instead, the COT objectives are more general, recommending that habitats be managed “in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sagegrouse (e.g. shrub cover, nesting cover)” (COT Report, page 45 – emphasis added).

Consistent with this approach, the 2019 ARMPA makes changes to the specific habitat objective indicators and values (percent cover, height, composition, etc.) based on peer-reviewed literature specific to Greater Sage-Grouse use of habitats throughout Utah. These changes update the metrics from the 2015 ARMPA based on finalization and publication of the Greater Sage-Grouse habitat characteristics for Utah. These changes are precisely aligned with the COT objective to manage habitats “consistent with local ecological conditions” (COT Report, page 45), as well as modifying the specificity of habitat objectives “as dictated by new findings” (COT Report, page ii).

The 2019 ARMPA Habitat Objectives are in alignment with the COT objectives for habitat.

3.6.5 Issue: Waivers, Exceptions, and Modifications for NSO Stipulations

The COT objective for energy development is that it “should be designed to ensure that it will not impinge upon stable or increasing sage-grouse population trends” (COT Report, page 43). It goes on to note that “addressing energy development and any subsequent successful restoration activities in sagebrush ecosystems *will require consideration of local ecological conditions*, which cannot be prescribed on a range-wide level” (ibid, emphasis added).

The 2019 ARMPA does not change the 2015 fluid mineral leasing no surface occupancy (NSO) stipulation for PHMA. As such, the strategy to avoid any potential detrimental impacts of energy development did not change. However, as described in the 2018 Final EIS, PHMA in Utah includes “high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat” (2018 Final EIS page I-4). This is clarified in both Chapter 3 and Appendix K of the 2018 Final EIS, where it describes that “the PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat (see Appendix K of the 2018 Final EIS). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations” (2018 Final EIS page 3-13). Based on state-wide vegetation data approximately 41 percent of the PHMAs “are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species” (ibid).

To provide managers the ability to consider local ecological conditions that could include areas of non-habitat within PHMA, the 2019 ARMPA included adjusted exception, waiver, and modification language for the NSO stipulation. This language was not a carte blanche to develop fluid mineral facilities within PHMA but would instead require fact-specific review relating to the potential impacts of each proposed project, an approach that is consistent with the BLM’s regulations that require that “a stipulation...shall be subject to modification or waiver only if...proposed operations would not cause unacceptable impacts” (43 CFR 3101.1-4).

The 2019 ARMPA defines specific criteria that must be met and documented at the local level in order for an exception or modification to be considered (see MA-MR-3), including documentation that:

- A proposed well must be located in non-habitat portions of PHMA,
- The non-habitat does not provide important connectivity between habitat areas, and
- The development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population.

The exception can only be considered for approval if those identified criteria can be documented based on an evaluation of local ecological conditions. Because of this, no habitat on BLM-administered lands in PHMA could be directly lost to development of oil and gas wells, and no habitat could lose its biological function due to indirect impacts. Any proposed well that would result in such impacts would not be eligible for an exception and would have to conform with the NSO stipulation.

As such, the 2019 ARMPA changes to NSO exception, waiver, and modification language meets the COT objective requirement that energy development “not impinge” on the associated Greater Sage-Grouse population.

3.6.6 Issue: General Habitat Management Areas in Utah

The COT objectives do not specifically address management of GHMA. Instead, they focus on protection of areas defined as Priority Areas for Conservation (PACs). However, the COT Report does note that habitat outside of the PACs “may also be essential, by providing connectivity between PACs (genetic and habitat linkages), habitat restoration, population expansion opportunities, and flexibility for

managing habitat changes that may result from climate change” (COT Report, page 36). It also notes that “conservation of sage-grouse habitats outside of the PACs should be closely coordinated with each state” (ibid).

Consistent with the COT Report language, the BLM coordinated closely with the State of Utah regarding Greater Sage-Grouse habitats outside PHMA. After evaluating those areas, documented in the 2018 Final EIS Appendix 3 (Current Conditions of GHMA in Utah), it was determined the areas within the BLM's jurisdiction didn't meet the COT Reports considerations for protection because they: 1) do not provide connectivity between PACs; 2) do not provide the best opportunities for habitat restoration; 3) correspondingly do not provide opportunities for population expansion; and since most of them are already poor quality, lower in elevation, or impacted by disturbances, 4) they do not provide for flexibility that may result from climate change.

For each GHMA area in Utah the 2018 Final EIS Appendix 3 notes the size, acres within the BLM's jurisdiction, amount of existing disturbance on the ground already effecting the Greater Sage-Grouse population, presence of existing fluid mineral leases (valid existing rights), number of occupied leks, amount of modeled seasonal habitat, and a discussion of how the given GHMA area contributes to connectivity to surrounding Greater Sage-Grouse populations within Utah or to adjacent states based on literature, telemetry studies, and professional judgement of local BLM and state biologists. Based on this evaluation, as well as evaluating lek monitoring data from the State of Utah summarized in Table 3-2 of the 2018 Final EIS (as updated in this 2020 Final SEIS), the BLM determined the following regarding the GHMA that was identified in the 2015 ARMPA:

- GHMA was mostly not within BLM's jurisdiction; BLM administers just 26 percent of the surface estate of mapped GHMA, with an additional approximately 10 percent where the BLM jurisdiction is limited to the mineral estate. Most of the best GHMA habitat (e.g., occupied leks, relatively undisturbed, modeled seasonal habitat, etc.) is not administered by the BLM, so identifying it as GHMA in a BLM management plan has no effect on conservation potential.
- GHMA included just 5% of occupied leks in Utah, and those leks contributed just 3.7% of the males counted in 2019. This means that over 96% of the Greater Sage-Grouse population in Utah is protected within PHMA. From a range-wide perspective, GHMA in Utah provides for just 0.25 percent of the Greater Sage-Grouse population.
- Only 3 of the 18 occupied leks in GHMA (16 percent of the GHMA occupied leks and less than one percent of the state-wide total occupied leks) were located on BLM-administered surface estate (one in the Deadman Bench area one in the South Slope area, and one in the Book Cliffs area), with 3 others in areas where BLM jurisdiction is limited to the mineral estate.
- All the GHMA occupied leks on BLM surface estate were in areas with substantial existing disturbance above that which literature notes will result in long-term persistence of Greater Sage-Grouse population, as well as existing fluid mineral leases (see map on Appendix 3 page App-3-7, showing existing well density throughout the Green River District), as well as maps on pages App-3-6, App-3-10, and App-3-13).
- Unlike GHMA in surrounding states, GHMA in Utah did not provide habitat connectivity between areas of PHMA. Maps and connectivity summaries in the 2018 Final EIS Appendix 3 describe how, outside the areas in the Uintah Basin that are either not within the BLM's jurisdiction or are already heavily impacted by existing fluid mineral development, GHMA did

not include any occupied leks and is comprised of small scattered, poor quality habitat of mixed jurisdiction on the periphery of PHMAs. There is no telemetry or anecdotal evidence of birds using GHMA to move between Greater Sage-Grouse populations in southern, central, or northern Utah (e.g., birds moving from GHMA in Bald Hills to Hamlin Valley, birds moving from GHMA in Sheeprocks to any other population, or birds moving from GHMA in Carbon to Uintah or Parker Mountain). While a recent study (Cross et. al., 2017) suggests that there is a genetic connection from the Parker Mountain population in central Utah to several other populations in the region, that study did not consider or evaluate whether the connection is due to natural migration or the fact that the State of Utah has translocated birds from the strong Parker Mountain population (which is in PHMA) to augment, support, and recover populations through the state. As such, there is no clear evidence that GHMA in Utah has provided natural connectivity between PHMA.

- The management and impacts associated with GHMA in the 2015 ARMPA did not substantially change in the 2019 ARMPA. Labeling an area GHMA did not provide any protection; it is the management associated that determines whether a resource will be protected. The 2015 ARMPA included limited management of GHMA management, including MA-SSS-5 and a few other measures scattered through other actions. Like the 2015 ARMPA, the 2019 ARMPA retained all management in the plans that pre-date 2015, and also retained the requirement to replace habitat lost to development. The 2019 ARMPA still requires that “outside of PHMA...acres of seasonal habitat...lost to habitat degradation actions...are replaced by creating/improving...habitat within PHMA” (MA-SSS-6). There is no difference in the effect of changes in the mitigation strategy between the 2015 and 2019 ARMPAs; Greater Sage-Grouse habitat available in the state would not decrease.
- The 2015 ARMPA language for buffers and required design features (RDFs)/best management practices (BMPs) contains exceptions that could allow disturbances to continue in GHMA, especially if such disturbance is co-located with existing authorizations. Because of the substantial amount of existing development and leases already held by production (see maps in 2018 Final EIS pages App-3-6, App-3-10, and App-3-13), impacts have already occurred, as evidenced by the declining populations in these areas (2018 Final EIS Table 3-2). The presence of exceptions to buffers and RDFs, combined with the existing impacts already seen through monitoring is what led the BLM to disclose in the 2015 Final EIS that the proposed plan (which became the 2015 ARMPA) “could result in human alteration, direct loss, and fragmentation of seasonal [Greater Sage-Grouse] habitats, which, in most cases, have already been fragmented by mineral development activities. Fragmentation could further limit the amount of usable habitat available for the small and declining population of [Greater Sage-Grouse] that occupy this area [GHMA]” (2015 Final EIS, page 4-119). Given the conclusion of continued declines, the 2018 Final EIS concluded that the changes in management of Greater Sage-Grouse habitat outside of PHMA “would continue, if not accelerate these effects” (2018 Final EIS, page 4-21).

In 2013, the COT Report stated that “effective conservation strategies are predicated on identifying key areas across the landscape that are necessary to maintain redundant, representative, and resilient populations” (page 13). In Utah, the BLM has limited managerial jurisdiction for Greater Sage-Grouse habitat outside PHMA. For the areas where the BLM does have jurisdiction there are very few leks and associated populations, there is a lack of documented connectivity between PHMA that uses the former

GHMA areas, and there are already substantial impacts to habitat and populations already present or likely due to the presence of valid existing rights.

The removal of GHMA and the 2019 ARMPA changes in management of Greater Sage-Grouse habitat outside PHMA are consistent with the COT objectives.

3.6.7 Issue: Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

One of the key COT objectives is to “retain sage-grouse habitats within PACs” (COT Report page 37). As noted above, the 2018 Final EIS defined PHMA in Utah as including “high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat” (2018 Final EIS page 1-4). The 2018 Final EIS Chapter 3 and Appendix K show that PHMA is not all Greater Sage-Grouse habitat where it states “the PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat (see Appendix K of the 2018 Final EIS). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations” (2018 Final EIS page 3-13). In fact, based on state-wide vegetation data approximately 41 percent of the PHMAs “are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species” (ibid). Depending on the activity and the local conditions it is possible that development could occur in PHMA and not directly or indirectly impact habitat.

Rather than re-draw PHMA boundaries to include only habitat, the 2019 ARMAP objectives and management actions were applied to both habitat and non-habitat areas within PHMA unless specific conditions were documented. First, the proposed development must occur in non-habitat. Second, after evaluation of local ecological conditions both criteria in MA-SSS-I have to be documented:

- the non-habitat does not provide important connectivity between seasonal habitats; and
- direct and indirect impacts on adjacent seasonal habitats (disturbance to or disruption of) that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project’s NEPA document.

If it were documented and disclosed that the project would not directly impact habitat or indirectly effect the function of adjacent habitat, there would be no need to apply management intended to protect habitat since all habitat in the area would continue to provide for the species’ needs.

This exception was included in the Proposed Plan in the 2015 Final EIS but was removed from applying to PHMA between the Final EIS and the 2015 ROD. The 2018 Final EIS re-evaluated this exception and determined that, given the nature of PHMA in Utah and the conditions that must be met to consider granting an exception, it was consistent with the COT Report language that “local ecological conditions” (page 43) must be considered.

The exception language requires that protective management actions would apply to areas of Greater Sage-Grouse habitat or in non-habitat with the potential to indirectly effect the functionality of adjacent habitats. As such, the exception would only apply if it can be documented that the project avoids habitat,

and that local ecological conditions are such that the function that that habitat would not indirectly impaired by activities that may be permitted in adjacent non-habitat areas. Because the exception could only be granted if habitat were avoided and functionality of adjacent habitat were ensured, this change in the 2019 ARMPA is still consistent with the COT objective to retain Greater Sage-Grouse habitats within PACs.

3.6.8 Issue: Adaptive Management

The COT Report recommends developing and implementing a monitoring plan to track the success of conservation plans. It notes that “without this information... there is no capacity to adapt if current management actions are determined to be ineffective” (ibid). The COT Report suggested development and implementation of adaptive management actions “if the monitoring determines that current management actions are ineffective” (COT Report page 35). However, the COT Report did not identify any specific criteria to monitor or recommend any management responses.

Consistent with COT recommendations, the 2015 ARMPA included an adaptive management approach complete with specific triggers and responses (see 2015 ARMPA MA-SSS-7 and Appendix I). The 2019 ARMPA carried this strategy forward with a few adjustments based on lessons-learned from implementing the strategy. The 2015 ARMPA requires a knee-jerk response, broadly applying suggested management changes before determining if those changes even related to the cause of the declines. The 2019 ARMPA provides for a more responsive approach, as suggested by the COT Report language. Were a trigger to be identified as been met, indicating that current management were somehow ineffective in maintaining current populations, monitoring data would be evaluated to determine which component of habitat or which threat or combination of threats were the problem. Responsive management would then be tailored to what monitoring data indicates is the problem. This approach is consistent with the COT Report's language that recommends monitoring data be gathered to help guide management changes.

Another change to the adaptive management strategy in the 2019 ARMPA was providing for returning the adaptively changed management to that of the original 2019 ARMPA if “ten-year population trends reflect natural fluctuations anticipated for the area” (MA-SSS-7). This provides for returning management priorities if the affected population recovers, allowing for staff and budget priorities to again be evaluated based on needs of similarly properly functioning habitat and populations statewide. Absent this change, any population that exceeds an adaptive management trigger would forever remain in a prioritized state until a plan amendment is completed, even if the population recovers and is functioning consistent with normal population cycles.

Finally, the 2019 ARMPA provided for removing Greater Sage-Grouse management in the unlikely event that adaptive management efforts fail and the entire population is extirpated. This management could only be applied “if all the leks in an area that has met a hard trigger are not active for ten year, becoming unoccupied by definition” (MA-SSS-7). In such an event, the area would obviously no longer quality as a “priority habitat management area” since there would be no birds using the area. If, and only if such conditions are met, the PHMA and associated management would be removed to enable managerial focus to be prioritized to areas that still have Greater Sage-Grouse.

All of these changes in the 2019 ARMPA are consistent with the COT Report's language of adjusting management in direct response to collection and evaluation of monitoring data.

3.6.9 Issue: Prioritization of Mineral Leasing

The COT appropriately recognizes that energy “development results in sage-grouse population declines.” The specific effects of energy development on Greater Sage-Grouse and its habitat are analyzed in detail in the 2015 Final EIS (see pages 4-16 through 4-29), which was incorporated into the analysis of the 2018 Final EIS. The COT objective is that “energy development should be designed to ensure that it will not impinge upon stable or increasing sage-grouse population trends” (COT Report, page 43). One of the suggested conservation measures states plans should “identify areas where leasing is not acceptable, or not acceptable without stipulations for surface occupancy that maintains sage-grouse habitats” (COT Report, page 43). Both the 2015 ARMPA and the 2019 ARMPA align with this objective by requiring an NSO stipulation on all PHMA.

Additionally, the analysis in the 2015 Final EIS Chapter 4, incorporated into the 2018 Final EIS by reference, shows that prioritization objective can be eliminated while still maintaining sufficient protections for the Greater Sage-Grouse. Further analysis included in the 2018 Final EIS correctly points out that prioritization is not the same as a closure, and at best would merely temporarily defer a parcel in PHMA from leasing to a later date. The mineral leasing prioritization objective provides no certain or durable protection to PHMA, while the NSO lease stipulation does, which is more consistent with BLM policy.

The removal of the lease prioritization objective does not remove a stipulated protection, and it also increases alignment with BLM policy, increases conformance with state and local plans, and does not change the alignment of the 2019 ARMPA with the COT objective.

3.6.10 Issue: Land Disposal and Exchanges

The COT Report addresses land disposal and exchanges under the heading “Ex-Urban Development,” with the objective to “limit urban and exurban development in sage-grouse habitats and maintain intact native sagebrush plant communities” (COT Report, page 50). The 2015 ARMPA aligned with this objective by retaining all lands in PHMA and GHMA in federal management unless one of two conditions could be demonstrated: 1) the disposal will provide a net conservation gain, or 2) the disposal will have no direct or indirect adverse impacts on the conservation of the Greater Sage-Grouse. The 2019 ARMPA carried this action forward with a few adjustments to incorporate lessons learned during the implementation of the 2015 ARMPA.

During implementation of the 2015 ARMPA, potential land tenure adjustments raised some managerial concerns with MA-LR-9. For example, if a land exchange would provide an increase in habitat for a species listed as threatened or endangered, but not Greater Sage-Grouse, this action would preclude the BLM from taking that action. Also, there are many situations where the BLM administers parcels so small that they do not provide enough habitat individually to support any seasonal functions without relying on adjacent habitats outside BLM jurisdiction. In such a condition the surrounding habitat on non-BLM-administered lands could be developed resulting in the loss of all habitat functionality, but because the parcel is still in PHMA or GHMA it could not be disposed due to habitat, which no longer exists.

First, the 2019 ARMPA removed GHMA from MA-LR-9 since it was removed from the BLM's plan for the reasons noted above. Second, the language related to “net conservation gain” was changed to “improve the condition of GRSG habitat” to align with the updated mitigation standard in Objective SSS-

2 and MA-SSS-3A. Finally, the second criteria was revised from stating that a land tenure adjustment would “have not direct or indirect adverse impact on conservation of GRSG” to instead note that such adjustments would “not compromise the persistence of GRSG populations within a PHMA.” This change maintains the requirement that analysis be conducted for land tenure adjustments to ensure that the changes do not compromise the purpose for the PHMA, namely that PHMA is large enough “to stabilize populations in the short-term and enhance populations in the long-term” (Objective SSS-1).

These changes in the 2019 ARMPA do not alter the alignment with the COT objective that land tenure adjustments in PHMA are “limited” and that they “maintain intact native sagebrush plant communities,” which is required as a function of “not [compromising] the persistence of GRSG populations within a PHMA.”

3.6.11 Issue: Managing Habitat to Manage Predation

Though the COT Report includes a summary of the threat to Greater Sage-Grouse from predation, it does not include any specific objectives related to predation. The closest COT objectives related to managing habitat as a form of managing predation is under the PAC objectives that note to “restore and rehabilitate degraded sage-grouse habitats in PACs” (COT Report, page 37) and the Pinyon-juniper Expansion objective to “remove pinyon-juniper from areas of sagebrush that are most likely to support sage-grouse (post-removal) at a rate that is at least equal to the rate of pinyon-juniper incursion” (COT Report, page 47). Habitat treatments, including conifer removal that may include corvid nests as added to MA-SSS-3D and MA-VEG-2, align with these objectives.

Additionally, managing predation on Greater Sage-Grouse from other wildlife is an action that is under the management of the State of Utah, and therefore the BLM has no management actions it can take outside of habitat restoration and conservation.

The 2019 ARMPA follows the COT Report objectives related to managing habitat to decrease predation on Greater Sage-Grouse.

3.6.12 Issue: Burial of Transmission Lines

The COT objective for transmission lines is included in the COT Report’s “infrastructure” section and simply states, “avoid development of infrastructure within PACs” (COT Report, page 51). The 2015 ARMPA makes all PHMA an avoidance area for all rights-of-way, including transmission lines. Such infrastructure would be “avoided if possible,” and if not possible they would be “placed in designated corridors where technically feasible...unless using a different alignment better minimizes impacts on GRSG” (2015 ARMPA MA-LR-2). The 2019 ARMPA also includes this same management. However, the 2015 ARMPA management action goes on to note that “outside designated corridors, new transmission lines must be buried where technically feasible.” The 2019 ARMPA revised this action to remove the blanket requirement to consider burying all transmission lines outside corridors, and instead modified the clarifying language that lines would be “placed in designated corridors where technically feasible...unless using a different alignment or construction method (e.g., burial) better minimizes impacts on GRSG” (2019 ARMPA MA-LR-2). This still provides for the option to consider burial as a mitigation approach without requiring that all proposals for new transmission lines consider the technical feasibility of burial. This minor change in management retains the requirement to avoid transmission lines in PHMA, but appropriately defers development of alternative approaches to the

project-level where site-specific issues can be considered. This minor change does not alter the alignment with the 2019 ARMPA is in alignment with the COT Report's objective for infrastructure.

3.6.13 Issue: Modifying Habitat Management Area Boundaries

The COT Report clearly anticipates updating boundaries with the objective that "PAC boundaries should be adjusted based on new information regarding habitat suitability and refined mapping techniques, new genetic connectivity information, and new or updated information on seasonal range delineation" (COT Report, page 37). Language was already in the 2015 ARMPA addressing such adjustments. The 2019 ARMPA added additional detail to clarify PHMA boundary adjustments through the process of collecting and incorporating new information. Additional detail on this is included in the 2018 Final EIS, Section 1.5.2 and in MA-SSS-1. This clarification in the 2019 ARMPA is consistent with the COT objectives.

3.6.14 Issue: Application of Lek Buffers

Buffers are not mentioned in any COT objectives or conservation measures. They are, however, mentioned in the COT Report in the energy development section. That section states, that "if avoidance is not possible within PACs...development should only occur in non-habitat areas...with an adequate buffer that is sufficient to preclude impacts to sage-grouse habitat from noise, and other human activities" (COT Report, page 43).

Avoidance is the primary tool in both the 2015 and 2019 ARMPAs. In addition to the NSO stipulation for development associated with new developments, both plans contain a disturbance cap (MA-SSS-3B), density requirements (MA-SSS-3C), noise restrictions (MA-SSS-3E), tall structure restrictions (MA-SSS-3F), seasonal restrictions (MA-SSS-3G), and required design features (MA-SSS-3I). Additionally, both ARMPAs include management for areas already leased for fluid minerals to minimize impacts to the extent consistent with existing lease rights (see MA-MR-5, MA-MR-6, and MA-MR-7). Given the direct and limited use of buffers in the COT Report, the changes to buffers in the 2019 ARMPA are consistent with the COT objectives for fluid minerals.

The 2015 ARMPA provided direction to apply lek buffer-distances. However, the appendix describing how to apply the buffers was not clear or consistent on whether the buffers were an analysis tool to "evaluate impacts to leks" or "address the impacts to leks as identified in the NEPA analysis" or were a more restrictive tool within which any development would be precluded (e.g., "relocate [projects] outside the applicable lek buffer-distances"). The 2015 ARMPA planning process clearly did not use the buffers as land use plan allocations – areas mapped where development was to be strictly precluded. If that was the intent, such closures or exclusion areas would have been shown on the various minerals and ROW maps. Instead, the 2015 ARMPA appendix includes specific language that "justifiable departures to decrease or increase from [the] distances, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations, state regulations) may be appropriate for determining activity impacts" (2015 ARMPA, Appendix B, page B-1 – emphasis added). This indicates the flexibility to adjust buffers sizes, as well as whether or not buffers were even needed, given the potential presence of "other existing protections."

The 2019 ARMPA clarifies how to "apply" the lek buffers. The 2019 ARMPA carries forward the land use plan allocations from the 2015 ARMPA (e.g., NSO for fluid minerals, closure to mineral materials and non-energy leasable minerals, avoidance for ROWs), as well as the other management actions that

minimize threats (e.g., all the sub-bullets of MA-SSS-3). Application of restrictive buffers would be duplicative given that land use plan allocations avoid impacts from most new development, and that the minimizing measures address specific aspects of development (e.g., disturbance cap, density restrictions, noise restrictions, tall structure restrictions, seasonal restrictions). Instead, the 2019 ARMPA clarifies that the buffers are tools, within which to assess and address “impacts on leks and associated nesting habitats” and to only apply “additional conservation measures... (e.g., locating the action outside of the applicable lek buffer-distance(s))” if the impacts resulting from the activity, in context of “local data, best available science, landscape features, and other existing protections” could affect lek persistence.

The COT objectives for disturbances from minerals, mining, or infrastructure is to avoid the activity in PACs. The 2019 ARMPA mainly accomplishes this through land use plan allocations, applying management to specific aspects of impact to Greater Sage-Grouse for activities that are not otherwise precluded. The buffers provide a tool to analyze specific projects to determine how the entire suite of management protects sensitive breeding and nesting areas, while also providing a failsafe if impacts remain that could result in the loss of leks. This is consistent with the COT objectives for avoiding impacts to Greater Sage-Grouse populations and their habitats.

3.6.15 Issue: Grazing Systems and Prioritization of Grazing Permits

The COT Report includes a table that characterizes threats to Greater Sage-Grouse by population. One of the threats assessed included grazing. For all 12 Utah populations assessed, threats from grazing were identified as “not known to be present” (see COT Report, Table 2, pages 16 through 29).

The COT Report objective for livestock grazing in general is to “conduct grazing management...in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)” (COT Report, page 45). It goes on to note that “areas which do not currently meet this standard should be managed to restore these components.” There are also objectives for range management structures (“avoid or reduce the impact of range management structures on sage-grouse”), and fences (“Minimize the impact of fences on sage-grouse populations”). The 2019 ARMPA livestock grazing management aligns with these objectives.

The 2019 ARMPA has the necessary direction to conduct grazing consistent with local ecological conditions in order to maintain or restore vegetation to provide the essential habitat components for Greater Sage-Grouse. Objective SSS-3 is specific to managing vegetation in PHMA in order to “maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, and winter habitats.” The objective includes the Habitat Objectives Table that includes “indicators, characteristics, values and desired seasonal habitat conditions...to inform the wildlife habitat component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2).” The ARMPA states that “results from the LHS evaluation should be used to support BLM in land use authorization processes” and that “BLM land use authorizations will contain terms and conditions regarding the actions needed to achieve or make progress toward achieving habitat objectives and land health standards.”

The 2019 ARMPA specifically addresses how to manage grazing in areas that do not currently meet the vegetation objectives. MA-LG-6 directs that “in PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards, and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing

authorization modifications, or allotment management plan implementation.” Obviously the specific modification will depend on the local ecological factors and nature of the departure from LHS, but MA-LG-6 provides several examples of the types of modifications that could be considered. The management action includes an additional requirement that multiple potential modifications be analyzed for the authorizing officer to consider immediately and over the course of the permit. This action is consistent with the COT objective.

The 2019 ARMPA includes specific management to address the COT objectives regarding range improvements and fences. MA-LG-10 requires that existing and new water developments have a neutral or beneficial effect to Greater Sage-Grouse habitat. MA-LG-16 addresses minimizing impacts from fences based on a variety of risk factors from literature.

Several livestock grazing management actions from the 2015 ARMPA were removed in the 2019 ARMPA for the reasons summarized below. The grazing actions were reviewed specifically in context of the COT Report's objectives and the COT's characterization of the threat to Greater Sage-Grouse from grazing in Utah. Because of the nature of the threat, those management actions that did not specifically address one of the COT objectives were removed. In addition, the 2015 ARMPA included several management actions in the livestock grazing section that were already addressed in existing agency regulations, policies, or that were duplicative of management actions in other sections of the ARMPA or the original RMPs. Since these actions would continue to be implemented whether or not they appear in the land use plan, they were removed. Further, most of these actions tend to address management on livestock grazing in general, rather than focusing on the threat to Greater Sage-Grouse from improper livestock grazing.

The 2019 ARMPA livestock grazing objectives and management actions are consistent with the COT report.

3.6.16 Issue: Management of Water Developments for Livestock

The COT Report background for range management structures includes water developments. The COT objective is to avoid or reduce the impact of range management structures on Greater Sage-Grouse. The 2015 ARMPA included two management actions that addressed water developments for livestock, one that addressed new water developments (MA-LG-10) and one that addressed existing water developments (MA-LG-11). These were consolidated into one action and superfluous or repetitive concepts were removed to simplify the action to clearly address management of water developments, whether new or existing, to be managed for a neutral or beneficial effect to Greater Sage-Grouse. This change does not alter the consistency with the COT objective; the 2019 ARMPA is still consistent with the COT report.

3.6.17 Issue: Clarifying the Role of the State of Utah and Counties with Respect to Travel Management Planning

Clarifying who needs to be included in coordination for implementation-level travel management planning is not addressed in the COT Report, therefore the changes clarifying this in the 2019 ARMPA would have no effect on alignment with the COT objectives.

3.6.18 Issue: Clarifying the Role of the BLM, State of Utah, and Counties with Respect to Predator Control

Clarifying the role of governmental parties in predator control is not addressed in the COT Report. Therefore the changes in the 2019 ARMPA clarifying this would have no effect on alignment with the COT objectives.

3.6.19 Issue: Management of Surface Coal Mining

The COT objective for mining is to “maintain stable to increasing sage-grouse populations and no net loss of sage-grouse habitats in areas affected by mining” (COT Report, page 49). The COT Report goes on to recommend avoiding new mining activities and/or any associated facilities within occupied habitats, as well as avoiding leasing in Greater Sage-Grouse habitats until other seasonal habitats can be restored to habitats used by Greater Sage-Grouse.

The 2015 ARMPA stated that “PHMA is essential habitat for maintaining [Greater Sage-Grouse] for purposes of the suitability criteria” (MA-MR-18). However, as described in the 2018 Final EIS, PHMA in Utah includes “high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat” (2018 Final EIS page 1-4). This is clarified in both Chapter 3 and Appendix K of the 2018 Final EIS, where it describes that “the PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat (see Appendix K of the 2018 Final EIS). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations” (2018 Final EIS page 3-13). Based on state-wide vegetation data approximately 41 percent of the PHMAs “are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species” (ibid).

The 2019 ARMPA revised MA-MR-18 to reflect the fact that because all PHMA isn't habitat, all PHMA cannot be essential habitat. This change in language did not alter the alignment with the COT objectives since potential surface coal mining leases or associated mine plans would need to incorporate minimization measures identified in MA-SSS-3 (e.g., disturbance cap, noise and tall structure restrictions, mitigation, etc.). These measures would be applied to maintain stable to increasing Greater Sage-Grouse populations, as determined through site-specific analysis considering local ecological conditions.

The 2019 ARMPA is consistent with the COT report.

3.6.20 Issue: Decisions that Require Analysis of Specific Alternatives during Implementation

No COT objectives require analysis of specific alternatives during project reviews, therefore the removing management actions in the 2019 ARMPA that require consideration of such alternatives would have no effect on alignment with the COT objectives.

The 2015 ARMPA included several management actions that did not identify goals, objectives, or any allowable use or action necessary to achieve a desired condition, as required by the BLM planning handbook. Instead, several management actions merely identified direction for future implementation planning efforts. For example, MA-TTM-3 included nine bullets that just identified how future travel management planning should be conducted and what type of alternatives should be considered during

those efforts. Based on guidance in the BLM's planning handbook, Appendix C, instructions on how to conduct implementation efforts and what alternatives should be considered is not a land use plan decision. Instead, such future efforts are required to comply with laws, regulations, and agency policies in place at the time those efforts are conducted. In addition, the range of alternatives considered in those efforts should be driven by the issues identified during scoping. An RMP is not the place to identify what alternatives should be considered in future efforts before any action has been considered by the agency or requested by the public. Because of this, these types of management actions were removed in the 2019 ARMPA.

Appendix 4

Responses to Substantive Public Comments
on the 2020 Draft Supplemental EIS

Appendix 4. Responses to Substantive Public Comments on the 2020 Draft Supplemental EIS

INTRODUCTION

The Notice of Availability (NOA) for the Utah Draft Supplemental Environmental Impact Statement (DSEIS) was published in the *Federal Register* on February 21, 2020 (85 Federal Register 10183, February 21, 2020), followed by a 90-day public comment period ending on May 21, 2020.

The Bureau of Land Management (BLM) received comments primarily through the online comment form that was provided on the project website¹. The BLM recognizes that commenters invested considerable time and effort to submit comments on the DSEIS; as such, the BLM developed a comment analysis method to ensure that all comments were considered, as directed by National Environmental Policy Act (NEPA) regulations.

The BLM developed a systematic process for responding to comments to ensure all comments were tracked and considered. On receipt, each comment letter was assigned an identification number and logged into a tracking database that allowed the BLM to organize, categorize, and summarize comments. Comments were coded by appropriate categories based on content of the comment.

Comments similar to each other were grouped under a topic heading. The BLM then drafted a statement summarizing the issues contained in each group of comments. Responses to all substantive comments submitted on the DSEIS will be provided in the Final Supplemental Environmental Impact Statement (FSEIS) in accordance with 40 CFR 1503.4 – Response to Comments².

Across all six Draft SEISs that were published on February 21, 2020, a total of 125,840 submissions were received; 222 of these were considered unique submissions. Some of the comments received throughout the public comment period expressed personal opinions or preferences, had little relevance to the adequacy or accuracy of the DSEIS, or represented commentary on resource management that is outside the scope of this planning process. These commenters did not provide specific information to assist the planning team in making a change to the DSEIS, did not suggest other alternatives, and did not take issue with methods used in the DSEIS; these comments are not addressed further in this comment summary report. Copies of all substantive comment letter submissions are available upon request.

Several organizations and groups held standardized letter campaigns to submit comments during the public comment period for the DSEIS. Through this process, their constituents were able to submit the standard letter or a modified version of the letter indicating support for the group's position on the DSEIS. Individuals who submitted a modified standard letter generally added new comments or

¹ <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=105596&dctmId=0b0003e88110d407>

² <https://www.govinfo.gov/content/pkg/CFR-2012-title40-vol34/pdf/CFR-2012-title40-vol34-sec1503-4.pdf>

information to the letter or edited it to reflect their main concerns. The BLM received 125,840 campaign letters from two separate organizations, most of which were identical to the master letter.

The BLM read, analyzed, and considered all comments of a personal or philosophical nature and all opinions, feelings, and preferences for one element or one alternative over another. Because such comments were not substantive, the BLM is not responding to them. It is also important to note that, while the BLM reviewed and considered all comments, none were counted as votes. The NEPA public comment period is neither an election nor does it result in a representative sampling of the population. Therefore, public comments are not appropriate to be used as a democratic decision-making tool or as a scientific sampling mechanism.

The BLM received substantive comments regarding best available science and information considered while preparing the DSEIS. These included peer reviewed articles, references, and requests for new studies. The BLM will review the full text citations outlined in these comments and will consider information presented when determining if plan modifications are necessary.

SUMMARIES OF ISSUE TOPICS

This appendix is split up into four sections: Rangewide Comment Responses; Utah-Specific Comment Responses; Rangewide Comments; and Utah-Specific Comments. The Rangewide Comment Responses section contains a summary of comments received that apply mostly rangewide. The BLM recognizes that not all of these comments apply to all states, but they do apply across multiple states. This section also contains a response to the summaries of comments. The Utah-Specific Comment Responses section contains a summary of comments received specific to Utah and responses to those comments. The full text of parsed comments received both rangewide and Utah-specific can be found in the respective sections.

4.1 RANGEWIDE SUMMARY OF PUBLIC COMMENTS AND RESPONSES

4.1.1 Rangewide

Summary: Commenters felt that the DSEIS is lacking in that there is no assessment of broad-scale applicability of these plans to meet the management goals BLM has established.

Response: Each BLM State Office is undergoing a 5-year monitoring reporting process regarding the progress of implementing Greater Sage-Grouse management. Based on the 2015 EIS monitoring plans, the BLM is producing a National Greater Sage-Grouse 5-Year Implementation Monitoring Report that it will submit to WAFWA for its Greater Sage-Grouse 2020 Conservation Assessment. The WAFWA-led team will review multiple reports from state and federal agencies, including BLM's Monitoring Report, to assess the implementation of the conservation commitments that resulted in the not warranted determination in 2015. The WAFWA team will review the Conservation Efforts Database as well. These additional steps are an assessment of the broad-scale applicability of the plans over a subregion.

4.1.2 Purpose and Need

Summary: Commenters asserted that the purpose and need in the DSEIS should reflect the need to address the new circumstances, science, and environmental concerns of the proposed action in the 2018 FEIS allowing for informed decision-making.

Response: The purpose and need was defined specifically to address a preliminary injunction order by the US District Court, which preliminarily found that the 2018 EISs likely needed to be supplemented to address the range of alternatives, a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. The BLM continues to review new science related to Greater Sage-Grouse, and the plan allows for flexibility to consider new science, based on each state's needs and circumstances.

Summary: Commenters noted that the purpose and need in the DSEIS is different from the 2015 EIS and should consider a new range of alternatives.

Response: The purpose and need for this SEIS does differ from the 2015 EISs' purpose and need. In the 2018 FEISs, the BLM analyzed the Management Alignment Alternative and the Proposed Plan Amendment, incorporating the full range of alternatives considered in the 2015 EISs. The purpose and need for the SEIS is solely to address the preliminary injunction order by the US District Court, which preliminarily found that the 2018 EISs likely needed to be supplemented to address the range of alternatives, a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. No new alternatives are needed to satisfy the purpose and need of the SEIS.

4.1.3 Issues

Summary: Commenters requested that the BLM provide additional new analysis in the FSEIS and not just refer to previous analysis.

Response: The purpose and need for this SEIS is solely to address the preliminary injunction order by the US District Court, which preliminarily found that the 2018 EISs likely needed to be supplemented to address the range of alternatives, a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. Only that analysis needed to respond to the purpose and need is included in the SEIS. For example, the cumulative analysis section was updated in the SEIS to account for additional past, present, and reasonably foreseeable projects; there is an updated assessment of habitat and population triggers tripped; and there is an update to the number of acres of habitat treated.

Summary: Commenters expressed concern about dismissing the issue of predators from detailed analysis in the DSEIS.

Response: The issue was not carried forward for additional analysis in the 2019 planning process because predation was not an issue specifically raised by the Governors for consistency and alignment of the BLM's plans with state Greater Sage-Grouse management plans and policies. As such, there was no need to re-evaluate decisions related to predation from the 2015 plans in the DSEIS. The purpose and need for the SEIS is solely to address the preliminary injunction order by the US District Court, which preliminarily found that the 2018 EISs likely needed to be supplemented to address the range of alternatives, a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

Summary: Commenters asserted that the FSEIS should analyze the magnitude of predation as a factor in causing the decline in Greater Sage-Grouse populations.

Response: Under the approved plans, when population triggers are tripped, the BLM does a causal factor analysis to determine the factors in declining populations in an area, which may include predation. The BLM acknowledges the multitude of factors that potentially contribute to population declines, as reflected in the adaptive management strategy.

4.1.4 Range of Alternatives

Summary: Commenters felt that the DSEIS does not explore the differences in the range of alternatives between the 2015 and 2019 plans, and only analyzes two alternatives: a No Action Alternative and the Management Alignment Alternative. Commenters felt that this is an inadequate range of alternatives.

Response: In the 2018 FEISs, the BLM analyzed the Management Alignment Alternative and the Proposed Plan Amendment, while also incorporating the full range of alternatives considered in the 2015 plans. The DSEIS carries this full range of alternatives forward, as described in detail in Section 2.1 of each DSEIS.

4.1.5 New Alternative

Summary: Commenters felt that the BLM should consider a new alternative that withdraws the 2019 ROD and that rejects the 2015 protection measures for Greater Sage-Grouse.

Response: Such a proposal would be the No Action Alternative analyzed in the 2015 EISs and part of the full range of alternatives analyzed in the 2018 FEISs.

4.1.6 Alternatives–Other

4.1.7 Data and Science

Summary: The public submitted studies published since the 2018 USGS synthesis for consideration by the BLM. Additionally, the public submitted reviews of scientific literature for the BLM to consider in the FSEISs.

Response: The BLM partnered with USGS in 2018 to review new information since the 2015 RODs. The BLM subsequently incorporated the management implications of that information into the 2018 EISs. The report from USGS is available [here](#) and referenced throughout the SEIS.

The BLM places great import on the best available information, including new scientific studies and government reports that indicate a potential change in BLM's assumptions or conditions related to a land use planning effort. The BLM has to balance reviewing new information with determining what information is relevant to a decision in light of the BLM's purpose and need. Many commenters highlighted information and studies for the BLM to consider, and the BLM has reviewed each source submitted.

Upon review, the BLM found that the most up-to-date Greater Sage-Grouse science and other information has incrementally increased, and built upon, the knowledgebase of Greater Sage-Grouse management evaluated by the BLM most recently in its 2019 land use plan amendments, but does not change the scope or direction of the BLM's management. While the NTT, the COT and this new science and information remain thus consistent with the scope of the 2019 planning decisions, new science does suggest adaptations to management may be warranted at site-specific scales. This is

precisely the approach envisioned by the NTT and COT reports as well as the BLM's decades long planning efforts to address local actions that may affect Greater Sage-Grouse.

The scientists and managers that authored the COT and NTT reports could not have anticipated all the variables that would affect sage grouse into the future when they provided their recommendations. Varying topographic factors, ecological site potential, changes in methodologies, technological advances, variation in vegetation types, and anthropogenic disturbance, to name a few, make it difficult to adequately address all factors that affect sage grouse populations and habitat. Therefore, where appropriate, the BLM will consider this science and information through implementation-level NEPA analysis, consistent with its approved land use plans, policies, and regulatory frameworks.

Summary: The DSEIS inadequately addresses best available science on anthropogenic climate change.

Response: The BLM has analyzed climate change, including by addressing changes in fire frequency, changes in frequency of drought conditions, and the spread of invasive species. All of these factors can contribute to impacts on Greater Sage-Grouse and its habitat, regardless of the cause. Climate is one factor that affects populations and habitat, but not the only factor.

Summary: The DSEIS neglects the advances in technology that reduce the potential disturbance to Greater-Sage Grouse.

Response: The 2019 plans sought maximum alignment with state management plans for Greater Sage-Grouse within the BLM's management authority. BLM anticipated advances in technology and built in increased flexibility in implementation through things like exceptions, modifications, and waivers for fluid minerals stipulations. This increased flexibility would allow for oil and gas development in instances where impacts on Greater Sage-Grouse can be reduced to acceptable levels, such as through technology advancement.

Summary: The BLM should coordinate and consult with other federal or state agencies that maintain scientific expertise on both sage-grouse and sagebrush habitat to ensure that the conclusions in the FSEIS are scientifically credible.

Response: The BLM places great import on the best available information, including scientific studies and government reports that indicate a potential change in our assumptions or conditions related to a land use planning effort. The BLM acknowledges that states have management responsibility for managing Greater Sage-Grouse populations. In managing Greater Sage-Grouse, the BLM works closely with the states to determine population trends, and coordinates with other federal agencies such as USGS, USFWS, and NRCS on interpreting scientific information related to the species. The BLM has to balance reviewing new information with determining what information is relevant to a decision in light of the BLM's purpose and need. The BLM will continue to coordinate and, as applicable, consult with its partners on Greater Sage-Grouse management.

Summary: A commenter suggests that the need to address and correct the scientific flaws that originated in the 2015 plans and were carried forward to the 2019 plans has become even more urgent. The 2015 plans ignored the full spectrum of on-point, more recent science currently available, and instead relied upon biased and outdated science. BLM should consider usage of a stage-based population dynamic model. The reports erroneously ignore accurate population data and adopt methodologically

flawed modeling approaches that have consistently failed to accurately predict populations. The reports ignore natural population fluctuations and land use plans must consider large-scale climatic fluctuations and Greater Sage-Grouse population responses.

Response: The BLM partnered with USGS in 2018 to review new information since the 2015 RODs and the BLM subsequently incorporated the management implications of that information into the 2018 EISs. The report from USGS is available [here](#) and referenced throughout the SEIS.

The BLM places great import on the best available information, including new scientific studies and government reports that indicate a potential change in our assumptions or conditions related to a land use planning effort. The BLM has to balance reviewing new information with determining what information is relevant to a decision in light of the BLM's purpose and need. Many commenters highlighted information and studies for the BLM to consider, and the BLM has reviewed each source submitted. The BLM will continue to consider new science at the project phase of plan implementation as standard practice, as new science is constantly being published. Amending the plans to incorporate new science is not necessary because authorized officers use best available information to inform their decisions during plan implementation.

The Purpose and Need statement for the 2019 plans included a goal of aligning the BLM's management of Greater Sage-Grouse habitat with state plans. There were several instances during the 2019 planning process where states brought new science to BLM's attention that was used to formulate the Management Alignment Alternative. For example, the BLM incorporated new science on residual grass height, habitat mapping, and effects of oil and gas drilling.

Summary: Declining Greater Sage-Grouse populations in recent years should be considered in the analysis.

Response: Population declines are tracked in the land use plan through the adaptive management strategy. The trigger sensitivity accounts for the cyclical nature of Greater Sage-Grouse population levels. The SEISs address population declines through the disclosure of tripped triggers in Chapter 3 of each state's SEIS. The BLM acknowledges that states have management responsibility for managing Greater Sage-Grouse populations. In managing Greater Sage-Grouse, the BLM works closely with the states to determine population trends, and coordinates with other federal agencies such as USGS, USFWS, and NRCS on interpreting scientific information related to the species. There is a fresh look each year when the BLM receives the annual population data from the states, which, taken with the habitat data collected annually by the BLM, informs any adaptive management needed. If the data indicate that a trigger has been tripped, the BLM works with state and local partners to determine the causal factors and propose management changes.

In areas where triggers have been tripped, as disclosed in Chapter 3 of each state's SEIS, adaptive management has been implemented to prevent new disturbance that would impact Greater Sage-Grouse habitat on BLM-administered lands. The adaptive management framework was set up so that the BLM could respond to population and habitat dynamics without a plan amendment.

Summary: BLM should clarify the shortcomings of the NTT and COT reports.

Response: This was clarified in an appendix to each of the DSEISs titled *Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the [Subregion] Planning Process*.

4.1.8 Direct/Indirect Impacts

Summary: The BLM should include robust assessments of Greater Sage-Grouse population-level response to direct, indirect, and cumulative impacts associated with the alternatives.

Response: The SEISs address population declines through the disclosure of tripped triggers in Chapter 3 of each state's SEIS. In areas where triggers have been tripped, adaptive management has been implemented to prevent new disturbance that would impact Greater Sage-Grouse habitat on BLM-administered lands. The adaptive management framework was set up so that the BLM could respond to population and habitat dynamics without a plan amendment.

4.1.9 Assumptions and Methodology

Summary: Commenter argues that the proposed changes to the 2015 plan contradict scientific recommendations for conserving Greater Sage-Grouse, and the supplemental environmental impact statement fails to analyze and acknowledge the negative impacts that will result from the agency's proposed change in management direction.

Response: No changes were proposed in the 2020 SEISs.

4.1.10 Cumulative Impacts

Summary: The CEA failed to account for a number of relevant activities.

Response: The BLM has updated the past, present, and reasonably foreseeable actions as needed to reflect all current projects in the FSEIS.

Summary: The BLM should clarify in the FSEIS whether the cumulative effects analysis was done at the rangewide level organized by the WAFWA management zones.

Response: The BLM considered cumulative impacts on a rangewide basis, organizing that analysis at the geographic scale of each WAFWA management zone.

4.1.11 Adaptive Management

Summary: Flexibility should be added to adjustments in "Land Tenure," to "Rights-of-Way," and to "Travel Management" relative to site conditions in any FSEIS and plan amendments.

Response: The 2019 plans sought maximum alignment with state management plans for Greater Sage-Grouse within the BLM's management authority. Where such flexibility was needed to align with state plans, it was included in the 2019 Approved Plans. Additional flexibility or changes to decisions from the 2019 Approved Plans is outside the scope of these SEISs.

Summary: BLM should explain how ARMPA's adaptive management will work without monitoring the plan.

Response: BLM's ARMPA adaptive management strategy is based on population data from the states and habitat data collected by the BLM. These data are evaluated annually to determine the need for adaptive management changes as a result of tripped triggers. In addition, the BLM's 5-year monitoring report (completed in 2020) will be used in the WAFWA Greater Sage-Grouse 2020 Conservation Assessment.

4.1.12 Burial of Transmission Lines

Summary: The public submitted studies for consideration by the BLM regarding mitigation to transmission lines.

Response: Mitigation measures will be considered during project design and implementation and will be based on best available science and site-specific conditions.

Summary: Transmission line projects should not be exempt from abiding by the avoidance areas. All high-voltage related projects should comply with the proposed LUPA conservation measures. Alternative routes for these transmission projects exist, and more can be suggested to avoid interference with PHMA and GHMA. Flexibility in these projects to find a balance in interests is still possible to reap the benefits of energy for human use, while also preventing degradation of Greater Sage-Grouse habitat in PHMA and GHMA.

Response: Mitigation measures, including alternative routes, will be considered during project design and implementation and will be based on best available science and site-specific conditions.

4.1.13 Disturbance and Density Caps

Summary: The DSEIS fails to explain why Greater Sage-Grouse in Wyoming are more tolerant of disturbance than other states, or indeed, more tolerant than the best available science demonstrates.

Response: Wyoming BLM's 5 percent disturbance cap includes additional disturbance types (e.g., burned areas) not included in the list of disturbance types in other states, where the disturbance cap was set at 3 percent.

4.1.14 Habitat Management Area

Summary: The spatial extent of habitat management areas should not be modified.

Response: HMAs reflect habitat that is mapped based on best available information. If BLM and the states find that habitat was not reflected correctly in light of new information, plan maintenance or an amendment can be used to update boundaries to reflect the change in information.

Summary: The management prescriptions associated with habitat management areas should not be modified.

Response: The purpose of these plan amendments is to increase consistency with state management. In some cases that resulted in changes to management within the HMAs.

Summary: Restoration targets for Priority Habitat Management Areas (PHMA) should be developed and incorporated into the plans.

Response: While BLM has not developed specific restoration targets, the BLM has committed to significant restoration and recovery actions. The BLM spent considerable time and energy on the development of the FIATs that identify specific areas for specific types of actions and used that as a basis for requesting funding from Congress. Some targets have been developed but are not included in the plans for reasons such as uncertainty of funding to implement the actions to reach the targets.

Summary: The DSEIS fails to take a hard look at tripped triggers and fails to provide a full and clear listing of tripped triggers.

Response: The SEISs address population declines through the disclosure of tripped triggers in Chapter 3 of each state's SEIS. In areas where triggers have been tripped, adaptive management has been implemented to prevent new disturbance that would impact Greater Sage-Grouse habitat on BLM-administered lands. The adaptive management framework was set up so that the BLM could respond to population and habitat dynamics without a plan amendment.

Summary: Commenters state that the 2018 FEIS and DSEIS continue to fail to disclose the basis by which private lands can be considered in a federal land management planning document, and that the BLM has no authority under FLPMA to apply land use plan restrictions on private land. Other commenters request that the BLM apply Greater Sage-Grouse habitat management area definitions to private land.

Response: The BLM acknowledges that this planning effort does not apply land use plan restrictions on private land. However, when calculating disturbance either at the project or BSU level, the BLM does consider the cumulative disturbance in the area, which may include private, state, or other federal land. Based on the total disturbance in the area, the BLM has the authority to apply the management prescribed in the plan on BLM-administered lands. Furthermore, during cumulative effects analysis, the BLM considers past, present, and reasonably foreseeable projects on all lands in the impact area, regardless of jurisdiction.

4.1.15 Habitat Objectives

Summary: The BLM has neglected to acknowledge the habitat conditions and trends across Greater-Sage Grouse range in the DSEISs, despite that trends are currently declining.

Response: The BLM acknowledged habitat changes for Greater Sage-Grouse when in 2010 it undertook a planning action to provide regulatory certainty for the species. Prior to that effort, the BLM partnered with the WAFWA, state wildlife agencies, and others, to manage habitat for Greater Sage-Grouse. Habitat conditions are assessed using the Habitat Assessment Framework. Habitat availability is tracked according to the Monitoring Framework or by the adaptive management strategy described in each land use plan. The adaptive management strategy is designed to respond to changing habitat conditions when triggers are tripped. The BLM considered cumulative impacts on a rangewide basis, organizing that analysis at the geographic scale of each WAFWA management zone.

Summary: The DSEIS inadequately addresses fragmentation within management areas on an individual scale.

Response: Fragmentation was addressed during the 2015 planning process. The analysis was incorporated by reference in the 2019 planning process. Additional information regarding habitat fragmentation was not needed to meet the purpose and need of the SEIS.

4.1.16 Lek Buffers

Summary: Lek buffers should be maintained to protect leks.

Response: The BLM agrees that lek buffers are one of many important conservation tools available to manage sagebrush habitat and protect Greater Sage-Grouse. The BLM is retaining, and in some instances modifying or clarifying, the application of lek buffers as a management tool.

Summary: Lek buffers should be larger than prescribed in the plan amendments.

Response: As applicable, each RMPA has an appendix that addresses lek buffers and allows the BLM to adjust lek buffers based on the best available science, which would allow the BLM to adjust the buffers based on new information as well. Further, some states are clarifying the approach in this RMPA effort, or adjusting to better align with their individual state's management. For more specific information, please refer to the individual plans and their associated lek buffer appendix.

Summary: The 2011 NTT and 2013 COT report have a substantive number of flaws that need to be revised.

Response: The role of the NTT and COT reports is discussed in an appendix to each of the DSEISs titled *Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the [Subregion] Planning Process*. These reports are static reviews of scientific literature. The USGS did an updated review of scientific literature prior to the 2019 planning process. The BLM will continue to take into account best available science for Greater Sage-Grouse management.

Summary: Use of lek buffers and associated modifications must be included for analysis in this SEIS, not left for clarification through plan maintenance, because lek buffers were not fully analyzed in the previous EIS nor provided for public review and consideration.

Response: Lek buffers were part of the 2015 planning process and the public was provided an opportunity to comment during that process. As part of the 2019 planning process, the intent of lek buffers was clarified for some states, which is a maintenance action. For other states, the lek buffers were modified and the intent was clarified. In both cases, the public was provided an opportunity to comment on the 2018 DEIS and this DSEIS.

4.1.17 Livestock Grazing Management

Summary: Rangeland health assessments do not adequately ensure protection and restoration of sage-grouse habitat. The BLM should include a discussion about how changes to scale and timeframe for rangeland health assessments will impact sage-grouse habitat management and agency land managers to adjust grazing practices when standards are not met.

Response: Rangeland health assessments are used to assess whether the rangelands are meeting standards and are not intended to protect or restore Greater Sage-Grouse habitat, although there is a

standard for wildlife/special status species habitat, which would include Greater Sage-Grouse habitat. The analysis of any future changes to the grazing regulations is outside the scope of this analysis and will be disclosed during other decision-making processes.

Summary: The DSEIS inadequately addresses the plan for closure of sage-grouse allotments upon receipt of waived or retired grazing permits.

Response: As explained in the DSEISs, the 2019 planning process incorporated the full range of alternatives from the 2015 planning process. Therefore, neither the 2019 planning process nor these SEISs expressly address this issue because there was no change proposed to the decision in the 2019 process. However, as the commenter acknowledges, the BLM did consider this within the range of alternatives for Greater Sage-Grouse management.

Summary: The DSEIS inadequately addresses the potential impact of livestock grazing on Greater Sage-Grouse habitat.

Response: The impacts of livestock grazing were disclosed in the 2015 plans. The 2019 plans did not change decisions that change the impacts previously disclosed, as described in Chapter 1 of the 2018 FEISs. Therefore, it was neither a subject of analysis in 2019 nor one in the SEISs. Furthermore, the purpose and need for the SEISs is solely to address the preliminary injunction order by the US District Court, which preliminarily found that the EISs likely needed to be supplemented to address the range of alternatives, a hard look at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. No new alternatives are needed to satisfy the purpose and need of the SEISs.

4.1.18 Withdrawal Recommendation and SFAs (Sagebrush Focal Areas)

Summary: Sagebrush focal areas (SFAs) should not be removed from the plans. Inconsistency in retention and removal of SFA across states is arbitrary and capricious. BLM is not legally required to remove SFA. Justifications for eliminating SFAs are inadequate.

Response: BLM is focused on aligning its management with state management. BLM's goal is to promote consistency and alignment with each state's management for Greater Sage-Grouse. Where BLM has increased its management flexibility, it has done so to improve alignment with the state plans and based on local information. In 2019, the BLM determined that SFA designations provided a redundant layer of resource protection and land use prioritization within PHMA and is acting within its discretion to remove SFA designation. Further, the BLM canceled the proposed withdrawal of SFAs through a publication in the *Federal Register* on October 11, 2017 (82 Fed. Reg. 47,248) after findings in the Sagebrush Focal Area Draft EIS noted that there was broadly low potential for locatable minerals within the recommended withdrawal area.

Summary: BLM should remove all reference to SFAs. SFAs are an overreach and unnecessary as priority habitat designations provide adequate habitat protection.

Response: SFAs and associated management direction specific to the SFAs were removed through the 2019 plans, except for in Oregon where they retained the SFA designation.

4.1.19 Mitigation

Summary: A mandatory net-gain compensatory mitigation standard is supported by some commenters and objected to by others.

Response: Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of the public lands (Instruction Memorandum No. 2018-093, *Compensatory Mitigation*, July 24, 2018). Under FLPMA, the BLM has an obligation to ensure that its actions do not result in “unnecessary or undue degradation.” Preventing unnecessary or undue degradation does not mean preventing all adverse impacts upon the land. The negative inference of the words “unnecessary” and “undue” is that a certain level of impairment may be necessary and due under a multiple use mandate. See *Theodore Roosevelt Conservation Partnership v. Salazar*, 661 F.3d 66, 78 (D.C. Cir. 2011) (“FLPMA prohibits only unnecessary or undue degradation, not all degradation.”) (emphasis in the original); see also BLM, Instructional Memorandum No. 92-67 (Dec. 3, 1991) (“‘Unnecessary and undue degradation’ implies that there is also necessary and due degradation. For example, if there is only one route of access possible for development of an existing oil and gas lease, and that route presents the likelihood of some degradation of public lands or resources, such degradation may be considered necessary for the management of the oil and gas resource. . . . As another example, the RMP/EIS or site-specific environmental document may identify mitigation which would result in excessive expenditures of money or unusual technological requirements to achieve compliance. Otherwise there would be some degree of degradation of public lands or resources. If the mitigation would render the proposed operation uneconomic or technologically infeasible so that a prudent operator would not proceed, such degradation may also be considered necessary for the management of the oil and gas resource.”) (emphasis in the original). Accordingly, FLPMA does not require and implicitly counsels against a net-gain standard, which would be inconsistent with the negative inference of the phrase “unnecessary or undue degradation.” Even if the BLM has authority to use compensatory mitigation, the BLM has – consistent with its multiple-use mission – determined that exercise of that authority to meet a net conservation gain mitigation standard is unwarranted. Moreover, as described in the FEIS, the goal of the RMP amendments to– improve the condition of sage grouse habitat – remains as a planning-level objective for sage grouse conservation.. As a practical matter, it is too speculative to analyze the impacts of the shift back to a “no net loss” standard from a “net-gain” standard at the programmatic level. First, the BLM continues to identify ways to avoid, minimize, and rectify the impact of specific projects at the project-specific level. Second, it is impossible to predict the amount of compensatory mitigation that might voluntarily occur in the future and the environmental consequences of that compensatory mitigation. Therefore, analysis of the environmental impact of compensatory mitigation (or lack thereof) is more appropriate for future project-specific NEPA, where it is possible to assess any project-specific compensatory mitigation that is offered voluntarily or as part of a state approach, including avoidance, minimization, and rectification measures applicable to the specific project and site. The BLM is committed to working with the project proponents and States to ensure that those actions are reasonable, effective, and implemented according to best management practices, to the extent that federal law allows.

Summary: Various commenters argued that the “net conservation gain” standard should be retained, modified, or eliminated. Many commenters requested clarification of the BLM’s authority to impose compensatory mitigation.

Response: Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of the public lands (Instruction Memorandum No. 2018-093, Compensatory Mitigation, July 24, 2018). Under FLPMA, the BLM has an obligation to ensure that its actions do not result in “unnecessary or undue degradation.” Preventing unnecessary or undue degradation does not mean preventing all adverse impacts upon the land. The negative inference of the words “unnecessary” and “undue” is that a certain level of impairment may be necessary and due under a multiple use mandate. See *Theodore Roosevelt Conservation Partnership v. Salazar*, 661 F.3d 66, 78 (D.C. Cir. 2011) (“FLPMA prohibits only unnecessary or undue degradation, not all degradation.”) (emphasis in the original); see also BLM, Instructional Memorandum No. 92-67 (Dec. 3, 1991) (“‘Unnecessary and undue degradation’ implies that there is also necessary and due degradation. For example, if there is only one route of access possible for development of an existing oil and gas lease, and that route presents the likelihood of some degradation of public lands or resources, such degradation may be considered necessary for the management of the oil and gas resource. . . . As another example, the RMP/EIS or site-specific environmental document may identify mitigation which would result in excessive expenditures of money or unusual technological requirements to achieve compliance. Otherwise there would be some degree of degradation of public lands or resources. If the mitigation would render the proposed operation uneconomic or technologically infeasible so that a prudent operator would not proceed, such degradation may also be considered necessary for the management of the oil and gas resource.”) (emphasis in the original). Accordingly, FLPMA does not require and implicitly counsels against a net-gain standard, which would be inconsistent with the negative inference of the phrase “unnecessary or undue degradation.” Even if the BLM has authority to use compensatory mitigation, the BLM has – consistent with its multiple-use mission – determined that exercise of that authority to meet a net conservation gain mitigation standard is unwarranted. Moreover, as described in the FEIS, the goal of the RMP amendments to– improve the condition of sage grouse habitat – remains as a planning-level objective for sage grouse conservation.. As a practical matter, it is too speculative to analyze the impacts of the shift back to a “no net loss” standard from a “net-gain” standard at the programmatic level. First, the BLM continues to identify ways to avoid, minimize, and rectify the impact of specific projects at the project-specific level. Second, it is impossible to predict the amount of compensatory mitigation that might voluntarily occur in the future and the environmental consequences of that compensatory mitigation. Therefore, analysis of the environmental impact of compensatory mitigation (or lack thereof) is more appropriate for future project-specific NEPA, where it is possible to assess any project-specific compensatory mitigation that is offered voluntarily or as part of a state approach, including avoidance, minimization, and rectification measures applicable to the specific project and site. The BLM is committed to working with the project proponents and States to ensure that those actions are reasonable, effective, and implemented according to best management practices, to the extent that federal law allows.

Summary: Various commenters argued that recent changes in mitigation policy and the applicability to sage-grouse warrant additional analysis, public review, or an SEIS.

Response: The BLM has prepared this SEIS with the explicit intention of providing commenters and the public at large with an additional opportunity to review and analyze the BLM’s approach to mitigation policy. To wit, the BLM received approximately 70 discreet public comments referencing the BLM’s approach to mitigation and the applicability to Greater Sage-Grouse. These comments build upon and

supplement public input on the 2018 DEISs, which requested comment on implementing mitigation, “including alternative approaches to requiring compensatory mitigation in BLM land use plans.” The 2018 FEISs clarified how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy. This clarification aligned the 2019 ARMPAs with BLM policy and with the scope of compensatory mitigation authority expressly provided by FLPMA. Further, in many cases, the public will have additional opportunity to comment on specific mitigation approaches at the project-specific level.

Summary: Many commenters stated the BLM should clarify how it will implement compensatory mitigation.

Response: The BLM entered into agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah, and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate to implement a state’s compensatory mitigation plan. The BLM will defer to a state methodology for habitat quantification if such a tool exists and incorporate the state’s assessment into the appropriate NEPA documentation. The Proposed Plan Amendment clarified that the BLM will consider compensatory mitigation only as a component of compliance with a state mitigation plan, program, or authority, or when offered voluntarily by a project proponent. The Proposed Plan Amendment further clarified the application of the mitigation standard as a planning-level goal and objective for Greater Sage-Grouse habitat conservation. BLM commits to cooperating with the states to analyze applicant-proffered or state-imposed compensatory mitigation to offset residual impacts. BLM may then authorize such actions consistent with NEPA analysis and the governing land use plan.

Summary: The BLM should work with the states to recommend compensatory mitigation actions.

Response: The BLM follows the memoranda of understanding with the states regarding compensatory mitigation which, as clarified in the 2019 plans, generally states that the states are to recommend compensatory mitigation actions and the BLM is to analyze them in the appropriate NEPA document. Although the states recommend compensatory mitigation, there is close coordination between the BLM and the state wildlife agencies when discussing site conditions and the mitigation hierarchy.

Summary: To be effective, mitigation should be required by the BLM and not left to the states.

Response: Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of the public lands (Instruction Memorandum No. 2018-093, *Compensatory Mitigation*, July 24, 2018). However, the BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The 2019 Proposed Plans clarified how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy. Additionally, compensatory mitigation was one of many tools used in the 2015 plans to balance uses of public land. However, the mechanism for implementing compensatory mitigation has changed since the 2015 plans as the BLM clarified its

mitigation policy. Furthermore, since the 2015 plans were implemented, many states have established their own compensatory mitigation programs and increased their own investment in restoring and improving Greater Sage-Grouse habitat. The BLM sought comment on compensatory mitigation again as part of this SEIS.

4.1.20 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals

Summary: The uncertainty with how waivers, exceptions, and modifications will be used introduces uncertainty to protections that are not fully analyzed. Criteria for the use of waivers, exceptions, and modifications should be more narrowly prescribed.

Response: Under the 2019 ARMPAs, waivers, exemptions, and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's Approved Plan Amendment balanced the risk of uncertainty against the benefits of management flexibility when considering whether to grant a waiver, exception, or modification. Planning criteria identified for that amendment include consideration of how planning decisions may impact future listing determinations under the Endangered Species Act.

Summary: BLM should monitor the use of waivers, exceptions, and modifications.

Response: Some BLM State Offices, through the fluid minerals program, track waivers, exceptions, and modifications. The BLM is currently reviewing whether and how to apply these practices at the national level. It should be noted that waivers, exceptions, and modifications would only be authorized upon meeting the criteria in the Approved Plans, which demonstrate that Greater Sage-Grouse and its habitat would not be adversely impacted.

4.1.21 Prioritization of Mineral Leasing

Summary: The BLM does not address the elimination of prioritizing project-level development outside PHMA, which is required under the 2015 ARMPAs but eliminated under the 2018/2020 EISs.

Response: The BLM has implemented the plans in conformance with its regulations and policies. IM 2018-026 explicitly states that "BLM does not need to lease and develop outside of Greater Sage-Grouse habitat management areas before considering any leasing and development within Greater Sage-Grouse habitat." Prioritization of oil and gas leasing outside of PHMA and GHMA is included as an objective in the 2015 plans, not an allocation. The 2018 plan continues restrictive stipulations in PHMA and may serve to encourage leasing and development outside of PHMAs but does not represent a prohibition on doing so and is consistent with IM 2018-026. The BLM will continue to work with states in determining appropriate prioritization of leasing outside of PHMA.

4.1.22 Greater Sage-Grouse

Summary: Regulatory changes and regulatory uncertainty increase the likelihood of listing of the species under the Endangered Species Act. The impacts analysis is deficient. Protections afforded by the plans are not sufficient to prevent listing of the species.

Response: The BLM's 2018 proposed plans balance the risk of uncertainty against the benefits of management flexibility and alignment when considering changes to the 2015 plans. Planning criteria

identified for the 2019 amendments include consideration of how planning decisions may impact future listing determinations under the Endangered Species Act.

Summary: The FSEIS needs to evaluate current population status and trends and disclose how the various alternatives would impact future population trends, which directly affect the risk that Greater Sage-Grouse may face “potential listing” under the Endangered Species Act.

Response: Population declines are tracked in the land use plan through the adaptive management strategy. The trigger sensitivity accounts for the cyclical nature of Greater Sage-Grouse population levels. The SEISs address population declines through the disclosure of tripped triggers in Chapter 3 of each state’s SEIS. The BLM acknowledges that states have management responsibility for managing Greater Sage-Grouse populations. In managing Greater Sage-Grouse, the BLM works closely with the states to determine population trends, and coordinates with other federal agencies such as USGS, USFWS, and NRCS on interpreting scientific information related to the species. There is a fresh look each year when the BLM receives the annual population data from the states, which, taken with the habitat data collected annually by the BLM, informs any adaptive management needed. If the data indicate that a trigger is tripped, the BLM works with state and local partners to determine the causal factors and propose management changes.

In areas where triggers have been tripped, as disclosed in Chapter 3 of each state’s SEIS, adaptive management has been implemented to prevent new disturbance that would impact Greater Sage-Grouse habitat on BLM-administered lands. The adaptive management framework was set up so that the BLM could respond to population and habitat dynamics without a plan amendment.

Because part of the purpose for the 2015 plans was to provide for regulatory certainty with respect to Greater Sage-Grouse management and prevent the listing of the species, analysis of the alternatives considered in 2015 inherently included a risk assessment regarding the potential for listing. One of the alternatives considered in each of the plans in 2015 was the state management plans. In the 2019 planning process, the BLM again evaluated the state management plans as the management alignment alternatives and agreed-upon changes as the proposed plan amendments. Many factors outside of the BLM’s authority contribute to population fluctuations; therefore, BLM management cannot be directly linked to predicting future population trends.

Additionally, while planning criteria identified for the 2019 amendments included consideration of how planning decisions may impact future listing determinations under the Endangered Species Act, it is not within the BLM’s authority to determine whether certain actions would be sufficient to avoid listing. NEPA does not require the BLM to disclose whether the proposed changes provide regulatory certainty to support a determination that is within the jurisdiction of the USFWS. The BLM has disclosed the impacts of the changes in management regarding mitigation.

4.1.23 Non-Greater Sage-Grouse

Summary: There is a lack of information in the DSEIS regarding the environmental baseline and information needs to be updated.

Response: The BLM acknowledged that there have been changes to the landscape since 2015; however, due to the scale of the analysis in the 2019 planning process, data collected consistently across the range indicate that the extent of these changes to the landscape are relatively minimal. For example,

BLM monitoring data collected and analyzed annually at the BSU scale, as outlined in the Greater Sage-Grouse Monitoring Framework, indicate that there has been a minimal overall increase in estimated disturbance within PHMA. Moreover, there has been an overall minimal decrease in sagebrush availability in PHMA within BSUs. Based on available information, including the USGS reports, the BLM concluded that the existing condition was not substantially different from that which existed in 2015; therefore, the data and information presented in the 2015 FEISs were incorporated by reference into the 2018 RMPAs/EISs. Where notable changes to the baseline condition changed, a discussion was included.

4.1.24 Fluid Minerals

Summary: The BLM does not disclose acreage of oil and gas leasing activities rangewide and must correct this.

Response: Existing oil and gas leases form the affected environment. To the extent detail is needed to support analysis, information has been disclosed through the 2015 and 2019 planning processes. The BLM continues to offer oil and gas leases in conformance with the Greater Sage-Grouse management plans.

4.1.25 Fire and Fuels

Summary: Many commenters requested use of managed livestock grazing as a means of reducing fuel loads and affirmed that restricting grazing will increase vegetative fuel loads and increase wildfires.

Response: Restricting livestock grazing (specific to identifying areas as unavailable to livestock grazing) is not analyzed or incorporated in the RMPA. In addition, use of managed livestock grazing as a means of reducing fuel loads (targeted grazing) is a tool that BLM can implement and would not be prevented based on the provisions in any of the alternatives analyzed in this planning effort.

Summary: The BLM needs to address the threat of invasive plant species as well as sagebrush and other shrub encroachment in fire management considerations. Outcome-based grazing practices could be a tool to control these species.

Response: Management prescriptions associated with reducing invasive species were analyzed and discussed in the 2015 FEIS and were incorporated by reference in the 2018 EIS. Outcome-based grazing is a tool that can be implemented where appropriate and is authorized through 43 CFR 4120.2 of the livestock grazing regulations during permit renewal.

4.1.26 Vegetation

Summary: The BLM did not disclose the effectiveness of treatments in recent years for Greater Sage-Grouse habitat enhancement.

Response: A NEPA analysis of BLM-proposed vegetation treatments is performed at the local level, and post-treatment monitoring is conducted at that level. Treatments are expected to be successful when fully implemented as described in the project NEPA. No national repository of effectiveness of treatments exists. Projects are designed at the field level based on current conditions, past success, recent literature, and the purpose and need for the proposal.

Summary: Commenters caution that juniper-removal projects in Greater Sage-Grouse habitat may result in expansion of cheatgrass. Activities should be limited that cause soil disturbance (grazing, drilling, etc.) in order to prevent the spread of invasive species.

Response: The 2015 plans include RFDs to prevent the spread of invasive species. It is also common practice to implement such measures during project design and implementation.

4.1.27 Guidance and Policy

Summary: As cooperating agencies, the Counties should be involved throughout the NEPA process, including the preparation of this SEIS. BLM should thoroughly consider these plans and alternatives and coordinate with the Counties on the final land use plans.

Response: The BLM values its coordination with local jurisdictions as it does other federal and state agencies. The BLM relied on the special expertise of these entities as cooperating agencies during the 2015 and 2019 planning processes. The SEISs were undertaken solely to respond to the preliminary injunction order. No new decisions are required to be made. Instead, BLM clarified and updated its existing NEPA analysis, highlighting the issues raised in Judge Winmill's order. Although many agencies have special expertise related to Greater Sage-Grouse management, such expertise was not necessary to comply with the purpose and need for these SEISs.

4.1.28 Statutes and Regulations

Summary: The BLM inappropriately tiered to a document of equal scope. The BLM failed to summarize and relate applicability of material incorporated by reference to the new plans.

Response: BLM is using incorporation by reference to streamline its analysis consistent with administrative priorities. Incorporation of the 2015 EIS by reference is allowable under BLM regulations and is appropriate in this circumstance because the purpose of this action builds upon the goals and objectives of the 2015 EIS. Further, the CEQ 40 Questions, Question 24c, states that, "Tiering is a procedure which allows an agency to avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an environmental impact statement of broader scope into one of lesser scope or vice versa." The BLM summarized and referenced applicable aspects of the 2015 EIS throughout the 2018 EIS, but especially in Chapters 2 and 4.

Summary: The BLM has failed to consult with USFWS about the impacts of the proposed plan.

Response: The BLM coordinated with USFWS in 2018 regarding the changes in the Proposed Plan Amendments to determine if there would be different effects from those referenced in the Biological Opinions. All states received concurrence letters from USFWS that, while the 2019 plans constituted a change to the 2015 plans, the effects described in the 2019 plans were consistent with those analyzed during 2015 consultation efforts and did not consider re-initiation of Endangered Species Act Section 7 consultation necessary. Because no new decisions are being considered in the SEISs, consultation as part of this effort is not necessary.

4.2 UTAH-SPECIFIC SUMMARY OF PUBLIC COMMENTS AND RESPONSES

4.2.1 Adaptive Management

Summary: In the FSEIS, commenters asserted that the BLM should revise the language to explain why reversing adaptive management actions, once adverse effects are resolved, would not result in a return of the causal factor, and its impacts for removing this provision from the Proposed Plan Amendment. In addition, commenters requested that the BLM should include an assessment of potential impacts from the proposed adaptive management changes, including the longer timeframe for management to respond to a trigger and for the new qualifications on when corrective strategies must be implemented.

Response: Untripping triggers does not guarantee that the causal factor will not return and trip a trigger again. If that were to happen, though, adaptive management would again be implemented. As noted in Table 4-3 of the DSEIS, adaptive management identified in the strategy is analyzed through the 2015 and 2019 planning processes. Additional implementation management measures would be analyzed through appropriate NEPA.

4.2.2 Burial of Transmission Lines

Summary: Commenters noted that the DSEIS no longer requires burial of transmission lines within Greater Sage-Grouse habitat management areas, which may increase the potential for predation of Greater Sage-Grouse from raptors who use utility poles for perches.

Response: The DSEIS describes the impacts from changing the requirement to bury transmission lines. As described on page 4-53 of the DSEIS, constructing transmission lines above-ground could increase predator perches, which may lead to increased take of Greater Sage-Grouse and their nests; however, impacts of the increased presence of potential predator perches would be minimized by conforming with right-of-way avoidance allocations, application of tall structure restrictions in PHMA, use of perch deterrents on poles, and micro-siting lines to avoid important Greater Sage-Grouse leks and adjacent seasonal habitats. Constructing transmission lines above the ground could also maintain more habitat than the burial of lines because it offers more protection for sensitive habitat areas. Removal of sagebrush and associated vegetation would be avoided with placement of surface lines, which minimizes habitat disturbance and the potential for invasive/noxious weeds. The specific impacts of this change in management would depend on site-specific conditions, but the removal of the requirement would allow interdisciplinary teams and local managers to evaluate site-scale impacts and minimize impacts at the project level, providing the flexibility to make the best decision for the local Greater Sage-Grouse population and their habitat. Further, the DSEIS does not preclude consideration of burial, only that such a mitigation strategy would not be required. If avoidance is not possible, alignment and construction methods would be considered in the range of alternatives to minimize impacts on Greater Sage-Grouse (see MA-LR-2 on page 2-32).

4.2.3 Cumulative Impacts

Summary: In the FSEIS, commenters recommended that the BLM should overlay maps of Greater Sage-Grouse habitat (PHMA, GHMA, and SFA) with land management decision data layers to better understand the cumulative effects of land management decisions on Greater Sage-Grouse and their habitats. Example maps to include would be Greater Sage-Grouse habitat overlaid with layers such as: prescribed and wildland fires, habitat improvement treatments, invasive species treatments, land use and realty decisions, grazing parcels, and leasable minerals other than oil and gas).

Response: Performing such an overlay is not cumulative impacts. Commenters described direct and indirect impacts of Greater Sage-Grouse management on the topics identified and vice-versa. Such impacts were disclosed in the 2015 Final EIS. Where management direction changed or where baseline conditions changed such that the impacts would be different from those disclosed in the 2015 Final EIS, those impacts are disclosed in the 2018 Final EIS and this SEIS. Further, the information requested by the commenter is already presented in the DSEIS: Table 3-4 of the DSEIS shows the combined acreages of areas affected by disturbance in Greater Sage-Grouse habitat management areas. Table 3-6 shows the acres of habitat improvement treatments, while Tables 3-8 and 3-9 show acres of wildfire. Overlaying all these effects on one map is not necessary to consider their cumulative effects on Greater Sage-Grouse habitat and populations.

Summary: Commenters noted that the Proposed Plan Amendment reduced the amount of GHMA excluded from solar energy development (from 29% to 4%), but the DSEIS lacks analysis regarding the cumulative effects of this change, and if any portion of the changed status applies to Greater Sage-Grouse habitat in Utah. Commenters asserted that the BLM should disclose where these changes would occur, what type of habitat would be affected, and how.

Response: The commenter incorrectly states that GHMA would no longer be excluded from solar energy development in Utah. As noted in the 2019 ROD/ARMPA MA-RE-1 on page 90 and 91, “The BLM’s Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States (October 2012) excluded all Greater Sage-Grouse occupied habitat to new utility-scale solar development. Because the existing land use plans already exclude solar development in Greater Sage-Grouse habitat; this plan amendment process does not need to make additional decisions related to solar development (Figure 2-9, Solar [Appendix A]).” As such, even though GHMA would no longer be specifically identified/mapped in the Proposed Plan Amendment, it would still be excluded from solar energy development, since MA-SSS-6 clearly notes that outside PHMA the BLM would “implement Greater Sage-Grouse management actions included in the RMPs and project-specific mitigation measures associated with decisions that pre-dated the 2015 amendments.” As such, there are no cumulative impacts from reducing the amount of GHMA excluded from solar energy development in Utah, since no such reduction was proposed.

4.2.4 Disturbance and Density Caps

Summary: Commenters noted that the current 3 percent limit on surface disturbance at both the project level and BSU level (disturbance cap) and average density of one energy and mining facility per 640 acres (density cap) range-wide are too low, and may have the potential to spread or encourage development into other undeveloped areas of Greater Sage-Grouse habitat to avoid exceeding that level. Commenters recommended that the BLM should remove the disturbance and density cap restrictions at the project level if site specific Greater Sage-Grouse habitat and population information, combined with project design elements, indicate a project will improve habitat within the project area or PHMA where the project is located.

Response: The DSEIS Proposed Plan Amendment already considers exceeding the disturbance cap and density cap if “site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area or within the PHMA in the population area where the project is located” (see MA-SSS-3B, Draft SEIS page 2-18). The DSEIS discloses that although this introduces the

potential for localized impacts to the species, functional habitat available to the population will be maintained (see pages 4-45 and 4-46 of the DSEIS).

Summary: Commenters recommended that the BLM should include all trends, since 2015, in development and disturbances in Greater Sage-Grouse habitat, in the FSEIS. Useful indicators to measure the effectiveness of the management decisions in BLM's 2015 Plan Amendment for PHMA, GHMA, and other habitat management areas would include the following metrics: number of leases issued per year, the associated acreage, the rate of leasing in acres per month, and the rate of Applications to Permit to Drill (APD) in APDs per month.

Response: The DSEIS already included updated information on the various threats to Greater Sage-Grouse and its habitat. This includes the updated number of leases in PHMA and GHMA, as well as the number of wells - including the number of APDs that have been approved but not yet drilled (see section 3.15.1). This said, these numbers, of themselves, would not be indicators of effectiveness, as the 2015 ROD/ARMPA, and the updated 2019 ROD/ARMPA, both left PHMA and GHMA open to leasing with varying levels of constraints (e.g., NSO in PHMA). Although the suggested metrics may be interesting, they are already part of metrics used when evaluating projects against the density and disturbance caps. On their own, they do not indicate anything about habitat quality or availability, or population trends.

4.2.5 Fluid Minerals

Summary: Commenters pointed out that the DSEIS states that "it is anticipated that 2,968 oil and gas wells will be drilled within occupied Greater Sage-Grouse habitat within the population areas, of which 2,289 wells are anticipated to be producing wells." Commenters felt that it is unclear to whether these estimates include the current and upcoming BLM lease sales in June and September 2020. In the FSEIS in the cumulative effects section, commenters asserted that the BLM should include the numbers of acres currently leased and acres that have the potential to be leased in the future.

Response: The DSEIS already included updated information on the number of leases in PHMA and GHMA, as well as the number of wells - including the number of APDs that have been approved but not yet drilled (see section 3.15.1). As noted in the citation the commenter includes, the 2,968 anticipated wells are based upon the reasonable and foreseeable development assumptions described in the DSEIS chapter 4. A reasonably foreseeable development scenario (RFDS) is not a running number of developed wells or leases, an industry projection for development or a plan of when wells will be developed. As described in Appendix R from the 2015 Final EIS, an RFDS is "a rational estimate of development" that considers mineral potential, market forces and technology at the time of the estimate, and the potential effect management restrictions could have on future development. The RFDS includes the potential development associated with currently leased areas, as well as those that would be available for lease under the management proposed in the various alternatives. As such, the RFDS is intended to be inclusive of all leasing and development activities for the period of projection. The analysis in the DSEIS assumes that those wells would be developed at some point and discloses the general impacts from such development, even though the exact location of those wells is not known until specific proposals are presented and analyzed in future NEPA documents. It would be incorrect to additively consider impacts from leases, full-field development proposals, and individual APDs to the impacts already considered from developing the wells assumed in the RFDS, as the RFDS would be the forward-looking scenario comprised of all the subsequent fluid mineral leasing and development activities. To consider them in

sum would effectively double- or triple-count impacts from activities already considered at the planning scale in the RFDS.

4.2.6 General Habitat Management Areas

Summary: Commenters recommended that in the FSEIS, the BLM should include the steps they will take to accomplish PHMA habitat replacement in lieu of requiring compensatory mitigation.

Response: The actions the BLM will take to meet its planning and policy objectives are already included in the DSEIS. As noted in the BLM's Planning Handbook, "decisions in land use plans guide future land management actions and subsequent site-specific implementation decisions" (BLM-H-1601 – Section A). The DSEIS objective to "improve the condition of Greater Sage-Grouse habitat across the planning area" (see Objective SSS-2 and MA-SSS-3A) was never intended to be the sole responsibility of public land users, but an objective the agency worked to achieve in coordination with its partners. Several objectives and actions from the 2015 ROD/ARMPA that would be carried forward directly address the BLM's intent to improve Greater Sage-Grouse habitat. Objective SSS-3 identifies the habitat objectives the BLM would apply to maintain or improve habitat condition. Objective SSS-4 speaks specifically to the BLM's objective to "increase the amount and functionality of seasonal habitats" through proactive habitat improvement projects, including the identification of aspirational treatment objectives. Chapter 3 of the DSEIS describes how the BLM has adjusted its activities in habitat improvement since 2015 in response to this new management. Beyond the agency's own actions with its partners to create and improve Greater Sage-Grouse habitat, the BLM has entered into agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah, and Wyoming that clarify how BLM, project proponents, and state management agencies will collaborate to implement a State's compensatory mitigation plan. Due to limitations in authority from FLPMA, the Proposed Plan Amendment clarifies that BLM will consider compensatory mitigation only as a component of compliance with a state mitigation plan, program, or authority, or when offered voluntarily by a project proponent. In fact, relying solely on in lieu compensatory mitigation to manage Greater Sage-Grouse habitat would severely reduce efforts taken to date. As noted in Table 3-4 of the DSEIS, if every acre of existing disturbance were replaced by an in-kind acre of habitat improvement, that would result in just under 60,000 acres of habitat improvement. This ignores the fact that nearly all of those 60,000 acres of disturbance predate any requirement for such mitigation. In contrast, as noted in Table 3-6 of the DSEIS, the BLM and its state partners have implemented over 348,000 acres of habitat conservation action just in the 4 years since the plans were completed. Given the information already presented to the public in the DSEIS, the BLM has demonstrated how it will be able to meet its RMP objective to "improve the condition of Greater Sage-Grouse habitat across the planning area" through a mix of proactive treatments and mitigation projects. As such, no additional changes are necessary.

Summary: Commenters asserted that the BLM should maintain GHMA because GHMA contain a significant amount of Greater Sage-Grouse breeding, summer, and winter habitat, and the BLM should discuss in the Final SEIS why these protections were removed.

Response: The DSEIS already includes information related to the quality and quantity of GHMA in Utah, as well as the effects of changing its management. As noted in the DSEIS, nearly 96% of Greater Sage-Grouse populations in Utah are in PHMA. Of the 4% of Greater Sage-Grouse populations outside PHMA, most use leks that are not affected by BLM management, such as those on Tribal lands in the South Slope area of the Uinta Mountains, or on private lands in the Morgan/Summit area. Based on this

context and intensity of analyzed impacts, significant impacts from eliminating the GHMA classification are not anticipated. Additional information specific to the magnitude of existing threats, presence of leks, jurisdiction of BLM management, and known points of connectivity through GHMA are presented in the DSEIS Appendix 3. Finally, Appendix 4 of the DSEIS, section 4.6.6, notes that the Fish and Wildlife Service's COT objectives do not address management of GHMA, rather it notes that "conservation of sage-grouse habitats outside of the PACs should be closely coordinated with each state" (page 4-24). The appendix goes on to describe in detail the various considerations regarding GHMA based on such coordination. No new information has been provided by the commenter that would change this determination. Removing GHMA was evaluated as a way to better align federal management with that of the state, consistent with BLM planning law and regulations.

4.2.7 Habitat Management Area

Summary: Commenters recommended that the BLM should give land managers more flexibility to manage lands that are beyond the designated habitat boundaries established by the BLM, given that Greater Sage-Grouse may expand beyond the mapped habitat boundaries.

Response: As noted in the DSEIS, MA-SSS-6 already specifically addresses Greater Sage-Grouse management outside PHMA. While such areas are not the focus of the BLM's conservation efforts, as there is no indication that there are substantial or sustainable populations of Greater Sage-Grouse outside of identified habitat management areas in Utah, there is language to consider those areas if local data warrant. Additionally, MA-SSS-1 provides for adjusting boundaries of PHMA based on site-specific habitat and use data through the appropriate planning process to account for minor adjustments (see DSEIS page 2-33). Finally, if it is demonstrated that there more substantial changes to prioritization and management are needed, the plans could be amended to redefine habitat management area boundaries.

4.2.8 Habitat Management Area Boundaries

Summary: Commenters noted that the Proposed Plan Amendment removes the management of GHMA, including all the protections to Greater Sage-Grouse in those areas, and habitat for the Sheeprocks population. In the Final SEIS, commenters recommended that the BLM should address why removing these GHMA protections will not additionally adversely impact the Greater Sage-Grouse Sheeprocks population, discuss any further investigations to verify that this habitat is indeed unoccupied, and discuss measures that the BLM can implement to address recovery and resiliency of the Sheeprocks population.

Response: The DSEIS already includes substantial information related to the quality and quantity of GHMA in Utah, as well as the effects of changing its management. In reference to "all the protections" associated with GHMA, it is important to clarify that in the 2015 ROD/ARMPA, management in GHMA was limited to net conservation gain for new disturbances, unclear language on lek buffers for the 3 leks in GHMA on BLM-administered lands – all in the Uintah Population Area (see Draft SEIS Appendix 3 and Appendix 4), and required design features for fluid mineral development. All stipulations for minerals or rights-of-way were carried forward from plans that predated the 2015 planning effort. As described in the 2015 FEIS, 2018 FEIS, and 2020 DSEIS, such management would not result in the long-term maintenance of Greater Sage-Grouse populations in GHMA. Based on this context and intensity of analyzed impacts, significant impacts from eliminating the GHMA classification are not anticipated. Additional information specific to the magnitude of existing threats, presence of leks, jurisdiction of BLM management, and known points of connectivity through GHMA are presented in the DSEIS Appendix 3.

Finally, Appendix 4 of the DSEIS, section 4.6.6, notes that the Fish and Wildlife Service's COT objectives do not address management of GHMA, rather it notes that "conservation of [Greater Sage-Grouse] habitats outside of the PACs should be closely coordinated with each state" (page 4-24). The appendix goes on to describe in detail the various considerations regarding GHMA based on such coordination.

Specifically related to GHMA in the Sheeprocks area, given the changes in PHMA already applied based on the response to the adaptive management triggers, there are no leks in GHMA. Appendix 3 of the Draft SEIS already discusses the nature of GHMA in the Sheeprocks area (see pages App-3-32 through App-3-35). No new information has been provided by the commenter for the BLM to consider. Finally, additional measures to recover the Sheeprocks population are not an RMP-level decision. The management response to an area meeting an adaptive management trigger is described in the DSEIS Appendix I.

4.2.9 Habitat Objectives

Summary: Commenters felt that the BLM should base habitat objectives relating to sagebrush cover on adequate scientific support, and should provide a justification of these proposed changes.

Response: The BLM's habitat objectives reflect the best available information defining habitat conditions that Greater Sage-Grouse preferentially select. The USGS report confirms BLM's assumption that such understanding may change over time. The BLM has developed flexibility in the plans to modify seasonal habitat objectives based on new science or site-specific information. For the habitat objectives in Utah, the adjustments were based directly off of peer-reviewed literature associated with an empirical approach to refining Greater Sage-Grouse habitat guidelines associated with data collected from grouse populations throughout Utah.

Summary: Commenters noted that the BLM should describe the actions available to address allotment areas that are not meeting habitat objectives or Land Health Standards because several, typical mechanisms for addressing such failures have been removed from the Proposed Plan Amendment.

Response: The DSEIS, at MA-LG-6, already presents several potential modifications available for consideration to address areas that are not meeting habitat objectives or Land Health Standards. The specific modification/action would be entirely dependent on the causal factor for not meeting, as well as the local ecological conditions of the area not meeting. The BLM will continue to address land health through land health assessments and permit renewals according to established law, regulation and BLM policy.

Summary: Commenters requested that the BLM revise language from "the causal factor" to "a causal factor" in the DSEIS because livestock grazing may be one of multiple but equally important causal factors. Additionally, commenters requested that the BLM should revise the language from "improper livestock grazing" to "livestock management practices are determined to not be compatible with meeting or making progress towards habitat objectives."

Response: Text in the DSEIS referencing causal factors leaves the door open for there to be multiple factors. Improper livestock grazing is already defined in the DSEIS by specifically identifying it in reference to its definition (see MA-LG-6 and the use of the term "i.e." which is an abbreviation of the Latin term "id est" which translates to "that is" denoting that the subsequent list is the total list of options for meaning). As such, no changes are necessary.

4.2.10 Lek Buffers

Summary: Commenters pointed out that the 2015 Plan Amendment applied the lek buffer distances from the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse. The Proposed Plan Amendment changes the application of a specific lek buffer for development to an action where BLM would assess and address any impacts of development within the USGS buffer distance. In the Final SEIS, commenters requested that the BLM include the section and page numbers in the 2015 EIS of where the analysis of lek buffer distances is located so the analysis of this change can be more easily identified.

Response: As described in the DSEIS Section I.4.3, during scoping for the 2019 ARMPA, an issue was raised questioning whether the lek buffers identified in the 2015 ARMPA were tools to analyze and reduce impacts or to preclude activities in the buffer area. The BLM's 2015 ARMPA appendix describing how to apply the buffers was not consistent on whether the buffers were a tool to "evaluate impacts to leks" or to "relocate [projects] outside the applicable lek buffer-distances." Thus, the changes in language regarding lek buffers was not change in management, but a clarification based on a review of the record. This is further explained in the DSEIS in Appendix 4, on pages 4-30 and 4-31 where it notes that the 2019 ARMPA clarifies how to "apply" the lek buffers. It further notes that "application of restrictive buffers would be duplicative given that land use plan allocations avoid impacts from most new development, and that the minimizing measures address specific aspects of development (e.g., disturbance cap, density restrictions, noise restrictions, tall structure restrictions, seasonal restrictions). Instead, the 2019 ARMPA clarifies that the buffers are tools, within which to assess and address "impacts on leks and associated nesting habitats" and to only apply "additional conservation measures... (e.g., locating the action outside of the applicable lek buffer-distance(s))" if the impacts resulting from the activity, in context of "local data, best available science, landscape features, and other existing protections" could affect lek persistence." Finally, lek buffers were part of the 2015 planning process and the public was provided an opportunity to comment during that process. As part of the 2019 planning process, the intent of lek buffers was clarified, which is a maintenance action.

4.2.11 Livestock Grazing

Summary: Commenters asserted that the BLM should require that all grazing permits be assessed prior to renewal to determine whether improper grazing is occurring and to ensure that allotments are meeting Greater Sage-Grouse habitat standards and rangeland health standards.

Response: The BLM will comply with its legal, regulatory and policy requirements when renewing its grazing permits. RMP decisions for livestock grazing does not include developing requirements for processing permit renewals that go beyond what is already provided for in law or agency policy.

4.2.12 Mitigation

Summary: Commenters requested that the BLM address how the Utah plan will provide the regulatory certainty needed to support the conclusion that Greater Sage-Grouse listing will remain 'not warranted' under the Endangered Species Act, by including an evaluation in the FSEIS, with the most up to date science, to support the conclusion that a "no-net-loss mitigation goal" will be sufficient to avoid listing.

Response: The Proposed Plan Amendment was chosen based on the BLM's stated purpose and need, coordination with cooperating agencies, and public comment. The no action was not the sole factor that

the USFWS relied upon when reaching its 2015 listing determination. The BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering the selection of a proposed plan. Additionally, while planning criteria identified for the 2019 amendment included consideration of how planning decisions may impact future listing determinations under the ESA, it is not within the BLM's authority to determine whether certain actions would be sufficient to avoid listing. NEPA does not require the BLM to disclose whether the proposed changes provide regulatory certainty to support a determination that is within the jurisdiction of the USFWS. The BLM has disclosed the impacts of the changes in management regarding mitigation.

Summary: Commenters requested that the FSEIS should specify any anticipated limits of federal law, regulation, and policy on the BLM's ability to fully adopt the Utah Greater Sage-Grouse Plan. Further, commenters requested that the BLM clarify whether the Utah Plan would apply to BLM actions that do not require a state permit, and the FSEIS should disclose what type of actions on BLM lands do not require a state permit and how prevalent those actions are.

Response: Consistent with FLPMA section 202(9) and SO 3353, the BLM has coordinated Greater Sage-Grouse management activities closely with the state, including making several changes in management to improve consistency with the State's 2019 "Utah Conservation Plan for Greater Sage-Grouse." However, the BLM has not, and cannot simply adopt the State's plan and apply it to uses on public lands. The State's plan has been written for a broad application across private, state, and federal lands. As such, it does not comply with the various laws, regulations, and policies the BLM considers when developing and implementing its Congressionally required land use plans. The BLM will continue to coordinate with the State of Utah on the inventory, planning and management of Greater Sage-Grouse management activities on public lands, regardless of whether a state permit is required for a project. However, nothing in this planning effort changes the legal or regulatory requirements or processes for permitting or authorizing activities on BLM-administered public lands.

Summary: Commenters felt that the mitigation requirement ratio of 4:1 is arbitrary, has no proportionate nexus to the impact, and ignores functional tools developed by other states to provide a scientifically defensible approach towards mitigation. The BLM should instead use a Habitat Quantification Tool in the FSEIS analysis.

Response: The 2018 FEIS does not include a mitigation ratio, or even a requirement for mitigation. To the extent a project proponent voluntarily engages in compensatory mitigation, the BLM would coordinate on a project-specific basis with the State of Utah. As noted in the 2018 DEIS, page 2-33, the BLM and the State of Utah would develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. This was clarified in the 2018 FEIS in Section 2.6, where it notes that the BLM and the State of Utah will coordinate to develop a memorandum of agreement to guide the mitigation hierarchy and compensatory mitigation actions for future project authorizations in Greater Sage-Grouse habitat on BLM-administered lands.

Summary: To the extent the BLM relies on the State of Utah's Greater Sage-Grouse mitigation policy, commenters recommended that the BLM ensure that the resulting standards guarantee it has the authority to incorporate, implement, and enforce state Greater Sage-Grouse mitigation programs that meet a recognized set of principles.

Response: Compensatory mitigation would be applied consistent with BLM policy, when it is proffered by the proponent on a voluntary basis, or as required by the State of Utah. These determinations would be made on a project-specific basis in coordination with the State of Utah.

4.2.13 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals Determinations

Summary: Commenters recommended that the BLM clarify the criteria for allowing exceptions to NSOs, specifically within PHMA, and include a discussion of how they evaluated these factors in the FSEIS. Commenters asked the BLM to also explain what is meant by “proposed to be undertaken as an alternative so a similar action occurring on a nearby parcel”, and in the FSEIS, clarify the meaning of this exception and provide examples of the types of situations or scenarios in which it might apply.

Response: The language in the DSEIS is sufficiently detailed to provide the framework for managers to consider exceptions in the future. The DSEIS describes in Chapter 3 that “PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat” and that “some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations.” There interspersed areas of habitat and non-habitat in the Utah PHMA is such that approximately 41 percent of the PHMA is associated with vegetation communities that do not include sagebrush as either a dominant or primary component of the vegetative mix. Rather than re-draw the boundaries to exclude all these areas, the plan applied management with the ability to take site-specific conditions into account when considering exceptions, as is specifically allowed by BLM regulation. The exception language in the DSEIS was developed to be consistent with 43 CFR 3101.1-4, where such an exception can only be granted “if proposed operations would not cause unacceptable impacts.” The criteria for determining those impacts are described in MA-MR-3. In the first criteria, an exception could only be granted if 1) the proposed action was in non-habitat, 2) that non-habitat didn’t provide important connectivity (to be determined based on local movement patterns, and 3) the development would not cause indirect disturbance or disruption of adjacent habitats that would impair their biological function. Any exception would have to have documentation that documents that these conditions are met. The impacts of applying any exception that met such criteria are disclosed in the DSEIS on pages 4-48 and 4-49.

The second criteria is to provide for rare instances where an operator may be able to directionally drill to federal minerals from adjacent non-federal lands. If those non-federal lands provide habitat of greater value than the adjacent federal land with the NSO stipulation (e.g., non-federal lands with a lek or wet meadow compared to federal land with poor-quality habitat or habitat that is readily available across the landscape), an exception to the NSO could be granted as a way of protecting the higher value habitat.

Consistent with 43 CFR 3101.1-4, if a stipulation involves an issue of major concern to the public, the exception, modification or waiver “shall be subject to public review for at least a 30-day period.” In addition, MA-MR-3 in the DSEIS preferred alternative notes that “approved exceptions will be made publicly available at least quarterly.”

4.2.14 Prioritization of Mineral Leasing

Summary: Commenters recommended that, in the FSEIS, the BLM analyze to what extent their previously determined areas of low, medium, and high mineral potential overlap with SFA, PHMA, GHMA, and winter concentration areas, and remaining linkage areas. In addition, commenters stated

that the BLM should calculate what percent of each habitat area has already been leased, and what remaining unleased areas have low, medium, or high mineral potential.

Response: As a product that incorporated by reference material from the 2015 FEIS and 2018 FEIS, the DSEIS includes in consideration Map 3.21-2 (the Oil and Gas Occurrence Potential) from the 2015 FEIS. The acreages in the tables showing development potential in the 2015 FEIS have not changed, and therefore were retained by reference.

Regarding existing leases and wells, Section 3.15.1 of the DSEIS shows updated acreages of leased PHMA and GHMA, leases that are held by production, and number of existing wells (which includes approved APDs that have not been drilled yet).

As described in Appendix R from the 2015 FEIS, oil and gas potential (high, medium, or low) was taken into account as part of development of the RFDS, as was past well success rates (producing wells vs. non-producing wells), average well pad size, average road length needed to access a well pad, and the potential need for pipelines. All these factors were considered as part of developing the RFDS, with the corresponding number of acres of foreseeable disturbance associated with number of foreseeable wells.

Because all this information has been considered as a part of development of the RFDS and/or presented in one or more documents incorporated by reference, there's no need to repeat the information in the FSEIS.

Summary: Commenters requested that the BLM should retain the objective to prioritize leasing outside of PHMA and GHMA, using various criteria to minimize impacts to Greater Sage-Grouse.

Response: Retaining the objective to prioritize leasing outside of PHMA and GHMA was considered as part of the 2018 FEIS No Action Alternative. Appendix C in the BLM's planning handbook (BLM-1601-1) identifies land use planning decisions for fluid minerals. A land use plan is to identify, "consistent with the goals and objectives for natural resources," areas that are 1) open to leasing subject to the terms and conditions of the standard lease form; 2) open to leasing subject to moderate constraints such as seasonal and controlled use restrictions; 3) open to leasing subject to major constraints such as no-surface-occupancy (NSO); 4) closed to leasing. The handbook also notes, similar to language from the Energy Policy and Conservation Act, that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-1601-1 Appendix C page 24). The 2015 ARMPA identified PHMA as open to leasing, subject to NSO stipulations. However, the combination of the "open to leasing subject to NSO" stipulation and the "prioritize leasing outside PHMA and GHMA" has created a situation that has been confusing to the public over whether PHMA is open for leasing or not, and with what stipulations. The objective to prioritize leasing outside PHMA and GHMA was not intended to preclude leasing. As described in section II-B-2-a of the BLM's planning handbook, RMP decisions include allowable uses which includes allocations that "identify surface lands and/or subsurface mineral interests where uses are allowed, including any restrictions that may be needed to meet goals and objectives" (BLM-1601-1, page 13). Objectives are not themselves actions, but are instead "desired outcomes" that are achieved through implementation of allowable uses and management actions (see BLM-1601-1, page 12). As such, allocating PHMA to be open to leasing subject to no surface occupancy stipulations and including management actions such as surface disturbance and density caps, noise restrictions, and required design features were all intended to limit the potential to develop leases in PHMA so as to prioritize development, and by extension leasing, outside of PHMA. In

addition to not being consistent with the BLM's planning guidance, the analysis in the DSEIS Chapters 3 and 4 shows that prioritization can be eliminated while still maintaining sufficient protections for the Greater Sage-Grouse through application of the allocations and management actions intended to achieve the prioritization. Finally, prioritization is an implementation-level tool that the BLM uses to manage staff and budget resources. With the removal of the objective, the plan language is more consistent with BLM planning guidance, as well as more consistent with State, local and Tribal plans.

4.2.15 Range of Alternatives

Summary: Commenters felt that the range of alternatives is insufficient and does not meet the BLM's obligations pursuant to NEPA. Commenters request that the BLM should add a new section to Chapter I that identifies where the DSEIS explicitly stated that all alternatives from the 2015 FEIS were being considered, instead of just stating conclusory statements that "all alternatives were considered."

Response: The range is adequate to address the purpose and need for these amendments. In the 2018 Final EISs, the BLM analyzed the Management Alignment Alternative and the Proposed Plan Amendment to respond to the 2018 purpose and need, thus expanding the full range of alternatives considered for Greater Sage-Grouse management to include those analyzed in the 2015 plans and the additional alternatives considered in 2018. This is described in detail in Section 2.1 of the DSEIS.

4.2.16 Sagebrush Focal Area (SFA) Designations

Summary: Commenters felt that the BLM should keep SFAs in the FSEIS because elimination of SFAs, the highest priority sagebrush habitat, in this and other plans, reduces the amount of protection for key sagebrush habitat needed to support Greater Sage-Grouse populations by allowing increased development within these areas including oil and gas development, modifications and waivers to stipulations designed to protect habitat, and hard-rock mineral entries.

Response: The BLM canceled the proposed withdrawal of SFAs through a publication in the Federal Register on October 11, 2017 (82 Fed. Reg. 47,248) and findings in the Sagebrush Focal Area DEIS noted that there was broadly low potential for locatable minerals within the recommended withdrawal area, and less than 10,000 acres (of the 10 million proposed) may be impacted by hard rock mining. The impact of applying NSO with waivers, exceptions or modifications instead of NSO without waivers, exceptions, or modifications is described on page 4-49 of the DSEIS.

Summary: Commenters asserted that in the FSEIS, the BLM should address inconsistencies in the DSEIS regarding mining and SFA habitat, and further consider the impacts to Greater Sage-Grouse habitat by mining operations.

Response: Table 4-2 of the DSEIS is a summary of impacts of the alternatives analyzed in the 2015 FEIS. Therefore, the Proposed Plans referenced in this table is the No Action analyzed in 2018. Impacts of removing the SFA are more easily understood by looking at Table 4-3 of the DSEIS and reading the analysis. Finally, section 3.15.5 describes that the new mining claims are not in the SFA area, lending further support to the fact that management for locatable minerals in SFAs was attempting to address a threat to Greater Sage-Grouse that was not present.

4.2.17 Greater Sage-Grouse

Summary: Commenters felt that the DSEIS consists of an inadequate analysis of the potential impacts to Greater Sage-Grouse and sagebrush habitat from the proposed management changes, as many of the proposed changes rely on findings of only localized impacts in determining that conservation of the Greater Sage-Grouse will not be affected. Commenters recommended that the BLM should evaluate whether the conservation measures in the Proposed Plan Amendment would be expected to reduce or eliminate the declines in Greater Sage-Grouse and its habitat.

Response: The DSEIS analyzed the impact of the Proposed Plan Amendment and its effects on Greater Sage-Grouse and other resources, as appropriate. The effects were analyzed at the population, subregional, and the WAFWA zone scales. The BLM designed the plans to reduce or eliminate the declines in Greater Sage-Grouse and its habitat to the extent that the BLM can influence such outcomes. Regarding the commenter's concern that proposed changes rely on findings of localized impacts, impact analysis has relied on the best available science regarding the impacts from various activities. Where science is lacking, professional judgement from qualified biologists, coordinated with input from cooperating agencies with special expertise, has been used to describe impacts. There is no literature that describes impacts to Greater Sage-Grouse that are nominal at the local scale but significant at a regional scale. Regional impacts to habitat quality, quantity, or populations are comprised of the compilation of cumulative local impacts. As such, if impacts to local populations are avoided or mitigated, there will not be a collective impact at the regional scale.

4.2.18 Solid Minerals

Summary: Commenters recommended that the FSEIS include additional analysis and disclosure of the entire range of impacts associated with implementing the Management Alignment Alternative and its effect on the development of phosphate resources in Utah.

Response: The 2015 Final EIS described the impact on new phosphate leasing and developments. However, it also noted that lands under existing leases and development associated with these valid existing rights would provide future development opportunities that exceeded the timeframe of the FEIS's analysis. The analysis in the DSEIS was adjusted to reflect new information.

4.2.19 Surface and Coal Mining

Summary: Commenters noted that in Table 4-2, the BLM notes measures to protect Greater Sage-Grouse and its habitat include net conservation gain requirements for impacts due to coal mining. Commenters recommended that the BLM explain in the FSEIS how it will require a net conservation gain for impacts due to coal mining, given that the BLM is no longer requiring compensatory mitigation and that the State's mitigation program is only voluntary.

Response: Table 4-2 in the DSEIS summarizes impacts from alternatives considered in the 2015 Final EIS. The proposed plan in that table is the No Action of the 2018 Final EIS. While the BLM has determined that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation to offset environmental effects beyond the proponents level of impact, the action noted in the 2015 ARMPA remains, and therefore was considered in the DSEIS. This language was included in the DSEIS as part of the No Action Alternative. CEQ provides that a Federal agency can consider alternatives in an EIS that are outside their jurisdiction. In the DSEIS Table 2-3, the

2018 Proposed Plan Amendment alternative does not carry the net conservation gain requirement forward.

4.3 RANGEWIDE COMMENT EXCERPTS

4.3.1 Range-wide

State-level approaches to managing sage-grouse differ substantially across the range of the species. While some of these programs have been evaluated for effectiveness at statewide or smaller scales, other state plans are untested. Further, the potential collective effectiveness of these programs has not been examined, and the BLM provides no assessment of broad-scale applicability of these programs to meet the management goals the agency has established for itself. It is critical that the BLM evaluates the local programs it relies on and aligns only with programs that rigorously demonstrate that the conservation efforts collectively have a high probability of maintaining the long-term viability of sage-grouse populations across the range of the species.

4.3.2 Purpose and Need

There is no need to undertake the massive effort and expense of a totally new planning process. We urge the BLM to complete the 2020 DSEISs and issue a new record of decision based on the 2015 and 2019 NEPA analyses, as supplemented, rather than initiate a new land use planning process to consider new alternatives or information.

4.3.3 Issues

The 2019 plan amendments fail to provide adequate protections for sage grouse habitats from mineral development, livestock grazing, renewable energy development, range improvement structures, recreational facilities (including motorized trails), transmission lines, and other permitted activities, and also fail to consider reasonable alternatives to add science-based protections to avoid or minimize these impacts

BLM has failed to take a hard look at noise impacts to sage-grouse, and the resulting noise restrictions are scientifically invalid. We raised this issue in earlier comments and protests on all the plans (see Appendices B-K) and provided the relevant science supporting our claims. The DSEISs persist in allowing noise levels that will be harmful to sage-grouse.

BLM made no effort at all to analyze the impacts of noise on sage-grouse in PHMA in the FEISs; it makes the same mistake in the DSEISs. See Idaho DSEIS at 4-30; Wyoming DSEIS at 4-98. There is no analysis of the impacts of allowing limitless noise during the breeding and nesting seasons. There is no analysis of the impact of disturbing and stressing sage-grouse using habitats that surround leks, or of the magnitude of impact of displacement, reduction of nest success or brood success, and potentially lek abandonment that would result from daytime noise authorized within PHMA, IHMA, and GHMA. There is also no analysis on the effects of allowing noise greater than 25 dBA by failing to set baseline levels at natural ambient noise levels that have been empirically established. Indeed, if there is already human-caused noise at a lek site, and this noise level becomes the new ambient baseline (which is permitted under the wording of the DSEIS), then noise levels could be authorized to steadily creep upward until surrounding habitats and leks are abandoned by grouse. But the DSEISs do not disclose this, because the DSEISs do not make a good-faith effort to take a hard look at the impacts of noise, and instead perpetuates the problems of the FEISs..

4.3.4 Range of Alternatives

The document only analyzes 2 alternatives -- a no-action alternative and the Management Alignment Alternative. This is an inadequate range of alternatives, particularly as one of them is "Do-nothing".

There is an inadequate range of alternatives – only 2 were actually analyzed: No Action Alternative and the Management Alignment Alternative

In the 2019 Plan Amendments, there were two alternatives, but one - the "No Action" alternative - was not actually an alternative, since the BLM concluded that it would not meet the stated purpose and need. Similarly, while BLM purported to incorporate its evaluation of alternatives from the 2015 Sage-grouse Plans, those alternatives also did not meet its purpose and need for the 2019 Amendments. The court found: "Common sense and this record demonstrate that mid- range alternatives were available that would contain more protections for sage grouse than this single proposal." *WWVP v. Schneider*, 417 F.Supp.3d at 1332. The court found that BLM must consider reasonable alternatives, including mid-range alternatives that would contain more protections for sage grouse than the "Management Alignment Alternative." *Id.* Nonetheless, in the Draft Supplemental EISs, BLM declines to consider any new alternatives and continues its commitment to the only action alternative in the 2019 Amendments. With respect to other alternatives, BLM states that "all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands," which is in conflict with the goals and purpose of SO 3353 to "promote habitat conservation, while contributing to economic growth and energy independence." Oregon Draft SEIS, p. 2-3. Clearly, BLM is not evaluating the alternatives from the 2015 Sage-grouse Plans or any other alternatives. Rather, the agency is just re-explaining an approach that the court has already rejected. The range of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA requires BLM to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions, including considering more environmentally protective alternatives and mitigation measures. See 40 C.F.R. §§ 1502.14(a) and 1508.25(c); see also, *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1122-1123 (9th Cir. 2002) (and cases cited therein)

In this new DSEIS, the BLM has added nearly 300 pages of analyses of alternatives. However, these alternatives were considered in the 2015 LUPA process and decision, and not considered as alternatives in the 2019 RMPA process or in this DSEIS process. It is unclear how including these alternatives will cure the likely NEPA violation described in the Preliminary Injunction. "The stated goals of a project necessarily dictate the range of 'reasonable' alternatives. *Id.* An agency need not consider alternatives that are 'unlikely to be implemented or those inconsistent with its basic policy objectives.' *Id.*" 13 Presumably this set of alternatives, like the No Action Alternative would not comport with the purpose and need of the 2019 RMPA because the 2019 RMPA purpose and need comports with new science and new policy implemented after the 2015 effort.

The DSEISs defend the failure to consider a range of alternatives in the 2018 FEIS by citing back to the 2015 plans' range of alternatives. See, e.g., Idaho DSEIS at ES-4; NV/CA DSEIS at 2-1 to 2-3. But the DSEISs fail to explore the differing contexts of the 2015 and 2018 plans, including the decrease in sage-grouse populations since the 2015 plans and the 2.4 million acres of new oil and gas leases the 3,570 new drilling permits in designated sage-grouse habitat allowed between January 2017 and March 2019. The "No Action" alternative has thus changed significantly since 2015.

BLM's regulations require BLM to "develop several complete alternatives for detailed study" in land-use planning. 43 C.F.R. § 1610.4-5. BLM cannot legitimately claim that it "considered" all of the alternatives evaluated during the 2015 Plan Amendment NEPA process. BLM eliminated these from reconsideration in 2019 because they "were predicted to result in a loss of development opportunities." See e.g., ID 831-33.11. Alternatives not considered in detail cannot be used to meet the agency's obligations to "rigorously explore" alternatives. Moreover, the Ninth Circuit has flatly rejected the approach of "incorporating" previously considered but rejected alternatives. See *Sierra Forest Legacy v. Rey*, 577 F.3d 1015 (9th Cir. 2009); *Sierra Forest Legacy v. Sherman*, 646 F.3d 1161 (9th Cir. 2011).

ICA believes that when the BLM conducted their analysis for the 2019 RMP, they considered a reasonable range of alternatives. During that process, they also referenced the alternatives that were extensively analyzed in the 2015 planning process. The DSEIS accurately justifies this process and underscores that a reasonable range of alternatives were presented and adequately analyzed.

4.3.5 New Alternative

We have repeatedly proposed a number of reasonable alternatives and BLM should evaluate them and others. As part of addressing the court's ruling, BLM should consider the alternatives we have proposed, including: * An alternative that is explicitly focused on enhancing cooperation with the states while conserving, enhancing and restoring sage-grouse habitat. We submitted a proposed alternative that would accomplish these goals, set out in detail in Attachment 1 to Exhibit 2 (our overarching comments), incorporated herein by reference. * Alternatives to complete additional analysis of net conservation gain and Sagebrush Focal Areas (SFA), which the 2019 Amendments eliminated in some states. * An alternative to maintain SFAs without the previously-proposed mineral withdrawal, while considering how application can be better coordinated with the states. * An alternative to strengthen criteria and restrictions for waivers, exceptions and modifications to lease stipulations. * An alternative to strengthen the approach to prioritizing oil and gas leasing and development outside habitat.

4.3.6 Alternatives - Other

BLM claims to have incorporated by reference alternatives from the 2015 ARMPA EIS process, and to have "Fully Analyzed" these alternatives, along with others, in the DSEIS. Table 2-2, Idaho DSEIS at 2-19; Table 2-2, Wyoming DSEIS at 2-13; NV/CA DSEIS at 2-9 to 2-12 (Table 2-2a); Northwest Colorado DSEIS at 2-5 (Table 2-1). This table is immediately followed by Table 2-3, "Detailed Comparison of 2019 Alternatives," in which only a No Action Alternative, the Management Alignment Alternative, and the Proposed Plan (essentially identical to the Management Alignment alternative) are described. Idaho DSEIS at 2-23; Wyoming DSEIS at 2-28; NV/CA DSEIS at 2-16; Northwest Colorado DEIS at 2-9 (Table 2-2). The Management Alignment Alternative and Proposed Plan are so similar that BLM provides a single, common impacts analysis for both, with no differentiation between the effects of the two alternatives. See Wyoming DSEIS at 4-91. Thus, the 2019 plan amendment EIS considers basically two alternatives: a No Action alternative (which would leave the 2015 Plan Amendment, with all its weaknesses and inadequacies, unchanged), and the Management Alignment/Proposed Plan alternative, which the agency ultimately adopted and which significantly weakened sage-grouse habitat protections provided under the 2015 plan amendment. This Management Alignment alternative is designed to make federal sage-grouse protections mirror state policies

4.3.7 Data and Science

The Winmill Decision reinstates the 2015 Plans, pending a ruling on the merits, and BLM has stated that it is accordingly implementing the 2015 Plans in the affected states.³ Consequentially, the need to address and correct the scientific flaws that originated in the 2015 Plans and carried forward to the 2019 Plans has become even more urgent.

The 2015 Plans ignored the full spectrum of on-point, more recent science currently available, and instead relied upon biased and outdated science. Namely, BLM relied on several outdated and faulty reports: the National Technical Team ("NTT") Report, the Conservation Objectives Team ("COT") Report, the Comprehensive Review of Ecology and Conservation of the Greater Sage Grouse: A Landscape Species and its Habitats ("the Monograph"), and the "Conservation Buffer Distance Estimates for Greater Sage-Grouse-A Review" (the "Buffer Report")⁴(collectively "the Reports."). ⁴ Daniel J. Manier, et al., Conservation Buffer Distance Estimates for Greater Sage-Grouse-A Review, U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 2014-1239 (2014), <http://dx.doi.org/10.3133/ofr20141239>.

The Reports erroneously ignore accurate population data and adopt methodologically- flawed modeling approaches that have consistently failed to accurately predict populations. This selective use of science is wholly misleading, and assumes GRSG populations are in decline despite evidence to the contrary. More specifically, the Reports ignore natural population fluctuations; single out human-driven activities for alleged declines; and, again, overlook actual threats to GRSG such as weather, predation, and hunter harvest-primary drivers of GRSG population changes (in contrast to anthropogenic disturbance) (see Blomberg et al. 2014⁹ Guttery et al. 2013¹⁰, and Ramey et al. 2018¹¹). Other factors not seriously considered were raven predation (see, e.g., Coates et al. 2016¹²) and hunter harvest at times of the year and during life stages when GRSG are most vulnerable (see, e.g., Blomberg et al. 2015¹³; Caudill et al. 2017¹⁴). It is worthwhile to note that GRSG hunter harvest reports from the states of Colorado, Utah, Wyoming, Montana, Oregon, Nevada, and California show a take of approximately 129,095 birds between 2000 and 2018. ⁹ Erik J. Blomberg, et al., Carryover Effects and Climatic Conditions Influence the Postfledging Survival of Greater Sage-Grouse, 4(23) *ECOLOGY & EVOLUTION*, 4488-4499 (2014), <https://doi.org/10.1002/ece3.1139>. ¹⁰ Michael R. Guttery, et al., Effects of Landscape-Scale Environmental Variation on Greater Sage-Grouse Chick Survival, 8(6) *PLoS ONE* e65582 (2013), <https://doi.org/10.1371/journal.pone.0065582>. ¹¹ Rob Roy Ramey II, et al., Local and population-level responses of Greater sage-grouse to oil and gas development and climatic variation in Wyoming. *PeerJ* 6: e5417 (2018), <http://doi.org/10.7717/peerj.5417>. ¹² Peter S. Coates, et al., Landscape characteristics and livestock presence influence common ravens-Relevance to greater sage-grouse conservation: *ECOSPHERE*, v. 7, no. 2, article e01203, 20 p., <https://doi.org/10.1002/ecs2.1203>. ¹³ Erik J. Blomberg, et al., The influence of harvest timing on greater sage-grouse survival-A cautionary perspective: *J. OF WILDLIFE MANAGEMENT*, v. 79, no. 5, p. 695-703 (2015). ¹⁴ Danny Caudill, et al., Individual heterogeneity and effects of harvest on greater sage-grouse populations: *J. OF WILDLIFE MANAGEMENT*, v. 81, no. 5, p. 754-765 (2017).

the Reports themselves were premised on a faulty bias-the presumption that GRSG populations are in decline due to disturbance from various land use activities, of which oil and gas development was allegedly a primary factor. The NTT Report also failed to acknowledge lower impact technologies and mitigation that emerged and became the standard in the oil and gas industry around 2005, such as hydraulic fracturing and directional drilling. These modern technologies, along with 3-D and 4-D

remote-sensing of underground hydrocarbon reservoirs and other developments, have radically minimized disturbance compared to the practices in use just a decade or more previously which were reviewed by the studies cited by the Reports.¹⁵ See Rob Roy Ramey II, et al., Oil and Gas Development and Greater Sage Grouse ("Centrocercus urophasianus"): A Review of Threats and Mitigation Measures, 35 (1/2) J. OF ENERGY AND DEV., 49-78 (2011)

GRSG research published since 2015 is "extensive and collectively supersedes the NTT and COT reports." See Exhibit A at 1; see also Exhibit A-1. Much of the new research has occurred thanks to improvements in: estimating seasonal habitat, modeling population trends in light of climate variables, and determining causality behind predation and disturbances. Further, new science has shown that GRGS dispersal is much more expansive than was thought prior to 2015, both in distances flown and dispersal frequency. In addition, improved means of mitigation and habitat recovery have decreased overall GRSG disturbances. In sum, the scientific understanding of GRSG populations and how various factors affect said populations has advanced far beyond the biased and limited work upon which the 2015 Plans (and, to a certain extent, the 2019 Plans) rely.

Since 2005, studies have analyzed large-scale climatic fluctuations and the resulting effects on inland species, including GRSG. Notably, research has emphasized the impacts sea surface temperature variations in the North Pacific Ocean have on GRSG populations due to the resulting climatic patterns. The PDO is one of several climate indices useful in estimating population responses. Ramey et al. 2018. In sum, GRSG populations experience cyclic fluctuations "linked to patterns of temperature and precipitation. . .which affect reproduction and survival. . ." Exhibit B at 1. To maintain accuracy, any land use plans must take into account large-scale climatic fluctuations and GRSG population responses.

GRSG populations fluctuate naturally due to "population density feedbacks affect[ing] population growth rate" and "inter-annual and multi-decadal variation in large-scale regional weather patterns." See Exhibit D at 1. Therefore, any research which calculates population estimates in terms of the effect of anthropogenic activities must also account for population changes resulting from these natural factors. Furthermore, changes to one GRSG lek population may affect nearby leks. Id. at 2. Ideally, population modeling should incorporate data from unrelated leks (to function as a control group) and data regarding effects from climate changes and density feedbacks. We urge BLM to consider usage of a stage-based population dynamic model. "The advantages of stage-based population dynamic models are that multiple sources of information for different life-stages and sexes including prior information from previous analysis can be readily incorporated while lags are readily accounted for thus providing tighter linkages between population drivers and lek counts." Id. This will bring sage grouse management into the contemporary realm of real-time population modeling.

Mathematical Error in Edmunds et al. 2017¹⁶ Managers must be cognizant of errors scientific papers that can compromise results and interpretations, even if identified and "corrected" later. We highlight here, a paper by Edmunds et al. (2017) that found that "populations in 5 of the 8 working group[s] in Wyoming] significantly declined ($? < 1$ with $p < 0.05$) between 1993 and 2015; and 2) that [sub]populations within working groups can follow different trends." See Exhibit E at 1. However, Edmunds et al. later published an erratum (Edmunds et al. 2018)¹⁷ finding that the mathematical calculations were incorrect, thereby invalidating their first conclusion: that the populations in 5 of the 8 working group significantly declined ($? < 1$ with $p < 0.05$) between 1993 and 2015. However, they authors did not state that needed change to the text of their erratum. Thus, managers could easily

misinterpret the conclusions as valid, when they are not. Beyond this issue, a central failure of many past papers (including those cited by the Reports), is that they do not account for population-wide temporal oscillations (i.e., those driven by climatic variation/weather). Moreover, analyzing subpopulation-level differences in trends merely adds noise to analyses. 16 David R. Edmunds, et al., Greater sage-grouse population trends across Wyoming: WY Sage-Grouse Population Viability Analysis. *J. WILDLIFE MANAGEMENT*, 82(2): 397-412 (2017), <http://doi.org/10.1002/jwmg.21386>. 17 David R. Edmunds, et al., Erratum-Greater sage-grouse population trends across Wyoming. *J. WILDLIFE MANAGEMENT*, 82(8):1808 (2018).

The agency should emphasize the use of locally-collected monitoring and transparent assessment data and the continued development and integration of local data and information, peer-reviewed science (with publicly-available data), and other high quality information.

The Counties urge BLM to consider innovative new tools, such as the use of unmanned aerial vehicles with infrared sensing, and new statistical approaches to undertake more accurate population counts.

Federal population targets and triggers are inappropriate and unwarranted. First, local governments may have better information. Second, wildlife management is a state issue. To the extent population numbers are utilized, the BLM should rely upon state and local population data

It is vital that the BLM develop processes to use data from a variety of sources, including peer-reviewed journals with associated data, agency data, and local collected partner information. BLM should also rely upon locally-relevant science and data to inform implementation of management actions, data sharing, and the development of methods to gather and use local and traditional ecological knowledge. BLM must review and consider the DQA Challenges with respect to the Reports underpinning the land use plan amendments and the GRS listing decision and revise its planning documents and decisions appropriately. The Counties strongly support peer review, transparency and reproducibility in regards to science as well as the relevance to local conditions. Had BLM recognized the flaws brought to bear in the Challenges and new science available, the Winmill Decision may have turned out differently.

Sage-Grouse populations have declined precipitously over the past three years; The Draft SEIS's do not take into account the significant declines (30-60 percent) in Sage-Grouse populations in all 7 states over the past 3 years (2016-19) California – reduced 3.86 percent/year since 1999 (60 percent total) Montana – 40 percent reduction since 2016 Oregon – the lowest population levels ever recorded; 28% loss in one year Idaho – 52 percent reduction since 2015 Nevada – one third reduction since 2016 Wyoming – 44 percent reduction since 2016 Utah – 61 percent reduction since 2015 Colorado – 5 out of 6 leks showed a 69 percent reduction since 2016

The draft EIS does not mention or take into account that all 7 states where populations were monitored from 2016 to 2019 showed significant population declines ranging from 30% to over 60% decline.

The Draft SEIS's do not take into account the significant declines (30-60 percent) in sage-grouse populations in all 7 states over the past 3 years (2016-19)

On a related note, DNR encourages the BLM to consider the most recent available data in its analyses in future versions of this supplemental review process. We note, for instance, that Section 3.3 in the 2020 DSEIS, Changes to Affected Environment Since 2015, replicates the same section from the 2018

PRMPA/FEIS, which considered 2014-2017 data in calculating the 3-year average High-Male Count (HMC) used to estimate GrSG populations. Subsequent revisions to this EIS should examine data from the previous two years (2018-2019) when calculating the most recent 3-year average HMC. In addition, the BLM mentions Reasonably Foreseeable Actions as an item to be clarified in the 2020 DSEIS, but the document does not take any new information into account in its analysis. 20 Future EIS revisions or planning decisions should incorporate updated data, recent events, BLM actions, new plans and decisions, revised regulations, etc., when presenting reasonably foreseeable scenarios both in the evaluation of cumulative or other environmental effects and in consideration of changed conditions that could warrant new review (see Appendix 2, Section 2.1, Table 1, Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions). For example, a recent report suggests a significant increase in the rate of fluid mineral leases issued within GHMA and PHMA under the 2015 CO GrSG RMPA, as compared to in recent years.²¹ 20 DSEIS, I-13. 21 National Audubon Society, Oil and Gas Leasing on Federal Lands and in Sage Grouse Habitats: October 2015 through March 2019 (July, 2019), Tables 2-4.

Improved Prioritization of GRSG Management Author: Doherty et al. Year: 2016 Title: Importance of regional variation in conservation planning-A rangewide example of greater sage-grouse: *Ecosphere*, v. 7, no.10, article e01462, 27 p. Implications: Improved spatial population models show overlap of habitats, populations, conservation actions, and threats. Threats to, or conservation actions in, these hotspots could affect a large proportion of GRSG populations. Thresholds in vegetation cover types, disturbance, and other factors varied spatially, so results from one location may not extrapolate to other locations. GRSG in MZ VI (Columbia Basin) and MZ I (Northern Great Plains) appeared to diverge in functional habitat selection from other MZs. The authors emphasize the large spatial scale of this analysis and that on-the-ground management actions may need to be informed by analyses at smaller spatial scales. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Conservation planning Significance: Management prioritization, improved methodology Comments: Underscores the fact that a one-size fits all approach is inappropriate.

Improved Prioritization of GRSG Management Author: Chambers et al. Year: 2016 Title: Using resilience and resistance concepts to manage threats to sagebrush ecosystems, Gunnison sage-grouse, and greater sage-grouse in their eastern range-A strategic multi-scale approach: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-356, 143 p., Implications: "This [USDA] report provides a strategic approach developed by a Western Association of Fish and Wildlife Agencies interagency working group for conservation of sagebrush ecosystems, Greater sage-grouse, and Gunnison sage-grouse. It uses information on (1) factors that influence sagebrush ecosystem resilience to disturbance and resistance to nonnative invasive annual grasses and (2) distribution and relative abundance of sage-grouse populations to address persistent ecosystem threats, such as invasive annual grasses and wildfire, and land use and development threats, such as oil and gas development and cropland conversion, to develop effective management strategies." "Areas for targeted management are assessed by overlaying matrix components with Greater sage-grouse Priority Areas for Conservation and Gunnison sage-grouse critical habitat and linkages, breeding bird concentration areas, and specific habitat threats. Decision tools are discussed for determining the suitability of target areas for management and the most appropriate management actions." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Conservation management Significance: Prioritization of management; Provides a holistic approach to managing threats, conservation, and restoration. Comments: Caveat: long-term projections based on untestable Global Circulation Models

Improved Prioritization of GRSG Management Author: Chambers et al. Year: 2017 Title: Science framework for conservation and restoration of the sagebrush biome: Linking the Department of the Interior's Integrated Rangeland Fire Management Strategy to long-term strategic conservation actions. Part 1. Science basis and applications: Gen. Tech. Rep. RMRS-GTR-360. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 213. Implications: This comprehensive report provides the scientific basis and applications for the DOI's Conservation and Restoration Strategy for sagebrush ecosystems. As such, it is a highly influential document. The Science Framework is intended to "help prioritize areas for management and determine the most appropriate management strategies. The Science Framework is based on: (1) the likely response of an area to disturbance or stress due to threats and/or management actions (i.e., resilience to disturbance and resistance to invasion by nonnative plants), (2) the capacity of an area to support target species and/or resources, and (3) the predominant threats." Supersedes NTT: Yes Supersedes COT: Yes Issue: Comprehensive conservation strategy. Significance: Likely highly influential document. Comments: Additional review suggested.

Improved Prioritization of GRSG Management Author: Chambers et al. Year: 2017 Title: Using resilience and resistance concepts to manage persistent threats to sagebrush ecosystems and greater sage-grouse: Rangeland Ecology and Management, v. 70, no. 2, p. 149-164. Implications: From the paper's conclusions: "We successfully operationalized resilience and resistance concepts in a risk-based framework to help managers reduce persistent threats to a species of high concern in one of the largest terrestrial ecosystems in North America. By linking our understanding of sagebrush ecosystem resilience to disturbance and resistance to invasive annual grasses to sage-grouse distribution and habitat requirements, we provided a means for decision makers to strategically allocate resources and triage complex problems. This approach offers an innovative decision support system to address the needs of at-risk species in the context of dynamic and adaptive ecosystems. We believe this approach is applicable to species conservation in other largely intact ecosystems with persistent, ecosystem-based threats such as invasive species and altered disturbance regimes." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; identification of threats; conservation triage Significance: Improved methodology and prioritization of management Comments: Utilize an operational definition of resistance and resilience.

Improved Prioritization of GRSG Management Author: Crist et al. Year: 2019 Title: Science framework for conservation and restoration of the sagebrush biome: Linking the Department of the Interior's Integrated Rangeland Fire Management Strategy to long-term strategic conservation actions. Part 2. Management applications. Gen. Tech. Rep. RMRS-GTR-389. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 237 p. Implications: The strategic, long-term, multiscale approaches described in this report, as well as associated tools, will aid resource managers in implementing on-the-ground management actions in the sagebrush biome. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management. Likely highly influential. Comments: Additional review suggested.

PAW maintains the NTT Report does not represent the best available science as it relates to oil and gas impacts to sage-grouse habitat. The technological improvements associated with oil and gas development also reduced the threats of oil and gas as outlined in the COT Report. BLM should not solely rely on these documents when forming oil and gas stipulations and conservation measures. We

are encouraged that BLM included a review of these Reports and analyzed their relevance to the planning process in Appendix F to the Draft SEIS.

PAW supports the analysis provided in the Draft SEIS, particularly as the 2015 ARMPAs analyzed impacts that were as a result of previous technological techniques and the science does not reflect the significant changes that have taken place over the past decade. Specifically, the timeframe of the research included in the NTT and COT Reports predates significant technological advancements that have taken place in the oil and gas industry during that timeframe. These advancements have played a dramatic role in reducing well pad and road density and disturbance associated with oil and gas development.

the NTT report failed to recognize that the level of disturbance and activity associated with a well is not constant throughout its life. The highest level of surface disturbance associated with oil and gas development occurs during the construction, drilling and completion phases, which can last up to a few months, depending upon the time it takes to complete the well. Once production ensues, these activities subside dramatically, especially with the increased use of remote monitoring of oil and gas operations. Shortly after well completion, the operator normally begins interim reclamation to restore any impacted habitat that is not being used. This interim reclamation remains in effect until the well has been depleted. Upon conclusion of production activities, the operator will then move forward with plugging and abandonment procedures, which also includes final reclamation that will ultimately result in full restoration of the site and its return to productive habitat.

they believe that a wide variety of peer-reviewed publications which collectively provide the best available science for sage-grouse should form BLM's basis for conserving the species. They went on to recommend that management and regulatory mechanisms be centered upon the best available science which would provide the best strategy for near- and long-term management of sage-grouse and provide the best opportunity for precluding a listing under the Endangered Species Act (ESA).

Based upon these new documented findings, the assumptions contained in the NTT are incomplete. They are predicated upon widespread development of oil and gas using tightly spaced vertical wells and, therefore, result in inaccurate hypothesis that oil and gas development "impacts are universally negative and typically severe."

More importantly, new science and new technology in the deployment of oil and gas development indicates impacts to sage-grouse will be significantly lower than those described in the NTT Report.

The 2015 plans resulted from years of negotiations between ranchers, scientists, state and Federal agencies, and the conservation community. It is a science based plan that was agreeable to all the stakeholders. It led to the USFWS withdrawing it's plan to list the species under the Endangered Species Act. If the 2015 plan is NOT adopted, I feel that the Greater Sage-Grouse SHOULD be listed under the Endangered Species Act

Similarly, while BLM refers to its reliance on "best available science," that is not defined or explained in the Draft Supplemental EISs. In fact, as discussed in detail in a June 2018 letter submitted by numerous sage-grouse scientists recognized as experts in this field, the 2019 Amendments were contrary to the best science. See, June 2018 Sage-grouse scientists letter, attached as Exhibit 3.

BLM is also obligated to evaluate "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts" through supplemental NEPA. 40 C.F.R. § 1502.9(c)(ii). There are significant new circumstances and information that BLM must take into account, some of which we have repeatedly highlighted in previous comments and protests but have continued to intensify. These are discussed in detail in a letter from expert sage-grouse scientists, attached as Exhibit 4. Sage-grouse populations have been declining and this trend has become even more concerning. As noted in the attached sage-grouse scientists' letter, state-level data indicates sage-grouse populations have declined 44% on average over the last four years, with estimated statewide declines in strongholds of between 33% and 52% in Oregon, Idaho, Nevada, Montana, and Wyoming. BLM must take these losses and the continued projected declines into account in evaluating the impacts of the proposed changes to the 2015 Sage-grouse Plans.

Specifically, the DSEIS does not update the No Action Alternative using the best available science. It remains based on analysis that was not comprised of the best available science and includes outdated and improper habitat mapping, 15 an issue that this County and others repeatedly explained throughout the RMPA process.¹⁶ As the Court pointed out in its October 2019 decision, "In order to be adequate, an environmental impact statement must consider "not every possible alternative, but every reasonable alternative."¹⁷ The No Action Alternative, as it is currently presented and analyzed, is not a reasonable alternative as it fails to include the best available science or comport with current BLM policy. A possible solution therefore is for BLM to update the science behind the No Action Alternative so that it is current with the science used in the Management Alignment Alternative. The County hopes that the BLM will update the science of the No Action Alternative in order to demonstrate how the preferred alternative better aligns with the BLM's stated policy goals and the conservation of Sage-grouse.

Chapter 5, Consultation and Coordination, does not indicate any coordination or consultation with other Federal (USFWS, USGS) or state agencies, who maintain scientific expertise on both sage-grouse and sagebrush habitat. Without consultation with these scientific experts, the conclusions of this document on potential impacts to the Greater sage-grouse lack scientific credibility.

The Idaho District court granting the motion to preliminarily enjoin the 2019 plans relies in large part on the assumption that the 2015 plans were based on the sound science, specifically the findings and suggestions contained in the 2011 National Technical Team (NTT) and 2013 Conservation Technical Team (COT) Reports.¹¹ The Idaho District Court incorrectly assumed in its decision that the NTT and COT reports represent the best available science, and therefore, any deviation from these reports amounts to an unjustified reduction in protection for the Sage Grouse.¹² This reliance on the NTT and COT Reports is misplaced. ¹¹ See *Western Watersheds Project et al v. Schneider et al*. Case No. CV-00083-BLM, 2019, at 11, 17. (D. Idaho Oct. 16, 2019). ¹² *Id.* The 2011 NTT Report and the 2013 COT Report did not receive adequate peer review and suffered from a number of substantive flaws including: ignoring substantial threats such to the Greater Sage Grouse such as predation in favor of unsupported conjectures regarding human impact; failure to account for natural population fluctuations due to weather patterns; not using the best available science, and were policy rather than science driven. These flawed reports suggested the adoption of equally flawed measures that became central to the 2015 planning effort including the designation of Sage Brush Focal Areas (SFAs) and the establishment of 1ek buffers.

the application of lek buffer distances was integrated into another document previously not available or included in the DEIS for public review: a U.S. Geological Survey (USGS) report entitled Conservation Buffer Distance Estimates for Greater Sage-grouse - a Review, USGS Open File Report 2014 1239. Both SFAs and lek buffer distances were allowed to evolve from the NTT and COT reports into the 2015 plans without receiving adequate review and comment and in place of utilizing existing conservation tools already available.

Although the SFAs and the lek buffers constituted substantial changes to the proposed action, no supplemental EIS was prepared to analyze them and the public was not provided an opportunity to offer input on their use as guiding elements of the 2015 land use plans. As a result, the 2015 plans did not reflect the best scientific information available to and used by the states that are home to the Greater Sage Grouse.

Sage-grouse population declines and habitat loss represent significant new environmental information that bears on the management actions established in the 2015 and 2019 sage-grouse RMP amendments. BLM must address these circumstances through supplements to the EISs used to inform those RMPs as prescribed in 40 CFR 1502.9(c)(1)(ii) of the National Environmental Policy Act (NEPA). Specifically, the regulations require agencies to: "prepare supplements to either draft or final environmental impact statements if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." The Draft SEISs released February 11, 2020 do not reflect the reality of these new circumstances and provide no scientific justification for the majority of BLM management decisions given the current situation. Accordingly, BLM must expand the scope of these SEISs to address this new information and set of circumstances facing sage-grouse and sagebrush habitat.

The BLM needs to expand the scope of the Draft SEISs to address new circumstances described and substantiated with recent population and sagebrush habitat trends. Expansion of the scope provides an opportunity for the BLM to more rigorously analyze and assess the direct, indirect and cumulative impacts of management decisions on sage-grouse populations and habitats. Accomplishing such assessments is entirely feasible given the expertise, data, and analytical tools currently available to the BLM. The U.S. Geological Survey (USGS) in their synthesis of relevant literature published from 2015 to 2017 describe several decision-support tools that would apply directly to such analyses. The BLM itself has developed the Assessment, Inventory, and Monitoring (AIM) strategy and the Fire and Invasives Assessment Tool (FIAT) which are expressly meant to provide the agency with analytically derived information for making impact and habitat management decisions. Further, in each of the 2015 Final EISs the BLM included a Greater Sage-grouse Monitoring Framework which established metrics and approaches for monitoring response of sage-grouse to management actions. The data and analytical tools established in this framework are also directly applicable to analyses we suggest.

2015 Greater Sage Grouse Plans Were Not Supported by the Best Available Science The Idaho District court granting the motion to preliminarily enjoin the 2019 plans relies in large part on the assumption that the 2015 plans were based on the sound science, specifically the findings and suggestions contained in the 2011 National Technical Team (NTT) and 2013 Conservation Technical Team (COT) Reports.11 The Idaho District Court incorrectly assumed in its decision that the NTT and COT reports represent the best available science, and therefore, any deviation from these reports amounts to an unjustified

reduction in protection for the Sage Grouse.¹² This reliance on the NTT and COT Reports is misplaced.

we believe it is imperative that BLM clarify how the 2019 plans relied on the best available science, a critical component of the decision in the district court. As such, we request that BLM update and supplement its review of the scientific information on which it relies for conservation of sage grouse habitat and management of those federal lands. Specifically, BLM must take into account scientific information that has been developed since the reports prepared by the National Technical Team (NTT)¹ in 2011 and the Conservation Objectives Team (COT)² in 2013, including over 150 scientific papers and reports prepared since 2014 that are described and referenced in the materials we submit as attachments to this letter (Attachment B and F below). These reports make clear that the NTT and COT reports are no longer the best available science, contra the district court's assertion. 1 Report on National Greater Sage-Grouse Conservation Measures Produced by the BLM Sage-Grouse National Technical Team, Bureau of Land Management (Dec. 2011). 2 Greater Sage-Grouse (*Centrocercus urophasianus*) Conservation Objections: Final Report, U.S. Fish and Wildlife Service (Feb. 2013).

The Trades previously argued that BLM's reliance in the 2015 Land Use Plan Amendments (LUPAs) on the U.S. Fish and Wildlife Service's COT Report and BLM's NTT Report in determining stipulations, restrictions, and conservation measures for operations in sage-grouse country was arbitrary and capricious under the Administrative Procedures Act. The NTT Report and the COT Report failed to utilize the best available science; failed to adhere to the standards of integrity, objectivity, and transparency required by the agency guidelines implementing the Data Quality Act, and suffered from inadequate peer review (Attachment A below). The NTT Report fails to adequately support its propositions and conclusions. For example, the NTT Report provided no scientific justification for the three percent disturbance cap, which was described in the 2015 LUPAs. Rather, the disturbance cap was based upon the "professional judgment" of the NTT authors and the authors of the studies they cited, which represents opinion, not fact. The noise restrictions and required design features in the 2015 LUPAs, also recommended by the NTT report, are likewise based upon studies that relied on unpublished data and speculation, and employed suspect testing equipment under unrealistic conditions. Conservation measures based upon "professional judgment" and flawed studies do not constitute the best available science, and BLM should not have relied upon these studies or the NTT Report in the 2015 LUPAs

the NTT Report failed to cite or include numerous scientific papers and reports on oil and natural gas operations and mitigation measures that were available at the time the report was created. For example, the NTT Report failed to cite a 2011 paper (which was made available to the NTT authors) that discusses the inadequacy of the research relied upon by the NTT Report in light of new technologies and mitigation measures designed to enhance efficiency and reduce environmental impacts

The COT Report likewise fails to utilize the best available science, and the BLM and other agencies inappropriately relied upon it in the 2015 LUPAs. The COT Report provides no original data or quantitative analyses, and therefore its validity as a scientific document hinges on the quality of the data it employs and the literature it cites. The COT Report contains serious methodological biases and mathematical errors, and the report's data and modeling programs are not public and thus neither verifiable nor reproducible. Finally, the COT Report provides a table assigning various rankings to GrSG threats, but gives no indication that any quantitative, verifiable methodology was used in assigning these

ranks. Absent a quantifiable methodology, these rankings are subjective and rather than relying upon any conservation measures derived from these rankings.

more recent genetic studies with large sample sizes and data from GPS tagged birds reveal that sage grouse disperse over much greater distances than previously thought, refuting previous assumptions central to the NTT and COT reports that sage grouse dispersal was limited. These same data also refute the assumptions behind the extinction predictions by Garton et al. (2011) that were central to the COT report and the 2010 "Warranted but Precluded" ESA-listing decision. Finally, this new body of science provides extensive documentation of refined mitigation measures and habitat restoration that reduce impacts to GrSG. This dramatically improved body of research is more precise and reliable than the studies previously relied upon in the NTT and COT Reports, and other reports relied upon in the development of the 2015 LUPAs.

as the information we're submitting with this letter will describe in more detail, various advancements in operational efficiency, with secondary benefits to sage grouse, have also been implemented in exploration and production operations carried out within the GrSG range, both as voluntary efforts and as measures undertaken in compliance with regulatory requirements. These improvements in operational efficiency translate into reduced drilling and completion times, reductions in operational footprints, reduced noise and truck traffic, and therefore, reduced disturbance to sage grouse and other species. Virtually all of these innovations came after the primary and most influential studies on which the NTT and COT Reports rely were conducted (i.e. after 2006)

The Pinedale Planning area is an area in which a significant population of the GrSG occurs as well as a region within which periods of noteworthy oil and natural gas resource development have taken place during the past 100 years. Therefore, we think it is particularly important to note that another difference between past and current oil and natural gas development, particularly in the Pinedale Planning Area, has been the implementation of extensive mitigation measures designed to reduce overall impacts to sage grouse and enhance their habitat. Pinedale was the subject of many of the reports upon which the findings and conclusions of the NTT and COT Reports were based. These factors demonstrate the importance of BLM's management of these lands and lands elsewhere in the range of the GrSG being informed by the best available science (Attachment E).

What would be the most effective strategy to ensure that an effort to revise and update LUPs are not again influenced by misguided information and recommendations of the Monograph and NTT, COT, and Buffer reports? With over 150 scientific papers and reports produced on greater sage-grouse biology and conservation since 2014, a straightforward solution would be to either file new DQA challenges, describing why the Monograph and reports are outdated and superseded by new research, or work with the BLM to help them reach the same conclusion and revise its contested RMPs accordingly

we produced our annotated bibliography as a spreadsheet (Attachment F). This spreadsheet lists: the lead author, citation, implications, whether it supersedes the NTT or COT reports, the primary issue addressed, the significance of the findings, and additional comments. We have also flagged papers for additional review because of their potential to be highly influential during the upcoming USFWS status review and land use plan revisions. After reviewing these papers, several key observations emerge: 1) The science that has been published since 2015 is extensive and collectively supersedes the NTT and COT reports. Importantly, improved methodologies such as: refined technology to estimating GRSG seasonal habitat, models that incorporate climate variables to predict population trends, and cause and

effect mechanisms that drive predation or disturbance. Additionally, several recent papers document how new oil and gas technologies (i.e. directional drilling) and environmental regulations (i.e. Wyoming's Core Areas) have measurably reduced impacts to GRSG. Similarly, genetic studies with large sample sizes and data from GPS tagged birds reveal that GRSG disperse over much greater distances than previously thought, refuting previous assumptions central to the NTT and COT reports that GRSG dispersal was limited. These same data also refute the assumptions behind the extinction predictions by Garton et al. (2011) that were central to the COT report and the 2010 "Warranted but Precluded" ESA-listing decision. And finally, this new body of science provides extensive documentation of refined mitigation measures and habitat restoration that reduce impacts to GRSG. This dramatically improved body of research is more precise and reliable than the studies previously relied upon in the NTT, COT, Buffer Report, and land use plans.

We expect that anthropogenic climate change will be cited in the upcoming USFWS status review as a serious threat to sage grouse. That assessment is based on multiple papers that make long-range projections regarding the future of GRSG habitat, forward in time to 2050, 2070, and 2100. The weakness of these papers however, is three-fold. First, these papers base their long-range predictions on downscaled general circulation models (IPCC or similar) and rely on linking outputs of several models, thus multiplying uncertainty. Second, we found that at least two of these papers utilize the "unlikely high-risk future" scenarios of the IPCC Representative Concentration Pathway RCP8.5. A recent January 29, 2020 paper in the journal *Nature* pointed out the fallacy of basing predictions on such worst-case scenarios as they are highly unlikely to come true (<https://www.nature.com/articles/d41586-020-00177-3>). And third, such long-range predictions are inherently untestable as hypotheses because: a) their predictions extend far enough into the future that they exceed a typical human career span (i.e. 30 years), thus it is highly unlikely that they will ever be tested, and b) because of the fast pace of climate science, no one bothers to testing the validity of such predictions at shorter intervals in the first place. This general lack of potential falsifiability puts many climate science predictions outside the realm of empirical, testable science.

numerous papers point to a stable or not-so troubling GRSG declines to a stable equilibrium, there are a handful of authors who consistent seem to find severe, ongoing declines in the same data sets. It would be worthwhile reviewing these papers in detail to understand why this is the case. These reviews should be completed before the USFWS status review gets underway

It is well documented in the scientific literature that annual fluctuations in sea surface temperatures in the North Pacific Ocean drive multi-year variation in temperature and precipitation patterns in western North America. The Pacific Decadal Oscillation (PDO) is an index of the sea surface temperature variation in the North Pacific Ocean that has a significant influence on temperature and precipitation patterns (<http://research.jisao.washington.edu/pdo/PDO.latest>). This regional climatic variation (i.e. periodic fluctuations in large-scale weather patterns) in turn affect marine and terrestrial plant and animal population cycles, and contributes to phenomena such as summer heat and fire frequency in the western USA. Large-scale climate indices, such as the PDO, often outperform local temperature and precipitation data in predicting population dynamics and ecological processes (Stenseth et al. 2002; Hallett et al. 2004). Multiple authors have reported that greater sage-grouse populations experience cyclic fluctuations, and that these population dynamics are linked to patterns of temperature and precipitation, or the PDO, which affect reproduction and survival (Blomberg et al., 2012, 2014, 2017; Green, Aldridge & O'Donnell, 2016; Coates et al., 2016; Gibson et al., 2017; Ramey et al. 2018). This

relationship between climatic variation on population dynamics of greater sage-grouse is not surprising as there is a long and ecologically important history of studies examining the influence of climatic variation on the population dynamics of other tetraonids, including black grouse, ptarmigans, and prairie chickens. Those papers include: Moran (1952, 1954); Ranta, Lindstrom & Linden (1995); Lindström et al. (1996); Cattadori, Haydon & Hudson (2005); Ludwig et al. (2006); Kvasnes et al. (2010); Selås et al. (2011); Viterbi et al. (2015); Ross et al. (2016); Hagen et al. (2017). Significance The significance of these findings to the conservation of sage grouse, and to future land use plans in particular, are threefold: 1) State and federal agencies need to account for the predictable responses to periodic regional climatic fluctuations when managing sage grouse in Wyoming and elsewhere in the western USA in an adaptive management framework. This is especially important as the current USFS and BLM Land Use Plans for greater-sage grouse make no mention of this obviously important demographic phenomenon. 2) Policies based on population "triggers" (i.e. additional restrictions and conservation measures that are implemented when a population dips to a certain level) are flawed unless the effects of the PDO are taken into account so that natural fluctuations are not misinterpreted. Such triggers should be defined as the percent divergence from the expected carrying capacity, with the carrying capacity tracking the regional climate. Several of the current triggers will be tripped during the course of natural population fluctuations. 3) The current pattern of the PDO indicates that sage grouse populations will be at a temporary low ebb in 2020 when the US Fish and Wildlife Service conducts a status review and reconsiders an Endangered Species Act "threatened" listing

Neilson et al. (2005) were the first to hypothesize that inter-annual and inter-decadal climate variability of El Niño-La Niña (ENSO) and the Pacific Decadal Oscillation (PDO) affect sagebrush ecosystem dynamics in the Great Basin, with the PDO being the primary driver of wet-dry cycles

Fedy and Doherty (2011) Reported on the synchrony between population cycles of Wyoming cottontail rabbits (*Sylvilagus* spp.) and greater sage-grouse, and hypothesized "a broad-scale causal influence" of weather cycles affecting these species.

Blomberg et al. (2012) reported that as much as 75% of the annual variance in greater sage-grouse population size in their study area over 12 years could be accounted for with annual variation in precipitation variables. The authors concluded that, "These results are consistent with bottom-up regulation of sage-grouse populations, where abundance is determined in large part by climate-driven variation in resource availability."

Guttery et al. (2013) reported that large-scale climatic variability in Utah and Idaho plays a primary role in determining greater sage-grouse reproductive success and that temperature and precipitation variables were found to have significant effects on chick survival. They concluded that, "An understanding of large-scale population drivers is essential for effective wildlife conservation planning and provides a baseline for developing meaningful hypotheses about specific local factors affecting populations at smaller spatial and temporal scales."

Coates et al. (2016 and 2017) demonstrated the importance of modeling climatically driven population cycles of sage grouse in Nevada and eastern California to understand "the difference between when populations are responding naturally to weather related patterns, compared to experiencing more localized- and habitat-based declines."

3D seismic surveys The rapid evolution of 3D seismic survey technology and its widespread adoption in the mid-1990s was arguably the most significant change to how oil and gas exploration and development occurred in sage grouse habitat (Gray et al. 2002; Chopra and Marfurt 2005). While this technology resulted in the discovery and development of new oil and gas fields, it also led to far more efficient and concentrated development of those resources than was previously possible. Consequently, the previous practice of grading access roads and drilling numerous exploratory "wildcat wells" across the landscape became obsolete by the late 1990s. With concentrated development possible directly over the most concentrated resources, planned oil and gas development was possible along with large, planned conservation set-asides for sage grouse and other species. In the Pinedale Planning Area, this led to large no surface occupancy areas being set aside by the BLM for sage grouse and other species. To visualize one-hundred years of change in surface development in the Pinedale Planning Area, from the era of wildcat well exploration and development to 3D seismic exploration and development (post 1995)

The most environmentally-significant of these new technologies has been improvements to and widespread adoption of directional drilling (Arthur and Cornue 2010; BLM 2006a; Ramey, Brown, and Blackgoat 2011; Seto 2011; Applegate and Owens 2014). Directional drilling involves drilling multiple wells (up to 50 presently) that angle away from a centralized well pad and single rig to tap oil and gas deposits a mile or more away and thousands of feet below the surface (https://www.rigzone.com/training/insight.asp?insight_id=295). This is a far more efficient, economical, and less environmentally impactful method than drilling many vertical wells to tap the same resource, because operators can access subsurface resources over a broad area from a single pad. (Directional wells that start vertically and make a 90-degree turn to traverse laterally to access in horizontal strata are known as horizontal wells.) Formerly, many closely-spaced vertical wells on separate pads were required to tap the same resource, which resulted in extensive surface disturbance, such as that seen in aerial photographs of the Jonah Field in Wyoming in the early 2000s. The Jonah Field underwent extensive vertical drilling in the 1990s before the widespread adoption of directional drilling and more stringent regulations on well pad spacing. While many directional wells currently traverse laterally a distance of less than two miles, the most recent records for lateral distance is 6.1 miles in the USA and 6.8 miles in Qatar (<https://www.drillingcontractor.org/corva-helps-break-north-american-drilling-record-for-longest-lateral-with-32468-ft-well-53647>; <https://www.guinnessworldrecords.com/world-records/longest-drilled-oil-well/>). These records illustrate that under ideal conditions a single well pad has the potential to access oil and gas resources in a subsurface area of over 19 square miles (12,265 acres) with minimal surface disturbance. Data from the Pinedale Planning Area shows that the transition from predominantly vertical wells to directional wells occurred around 2004 (Figure 1). This represented a major shift in drilling efficiency and subsequently less surface disturbance. Directional wells now account for virtually all of the wells drilled in the Pinedale Planning Area and those planned for the Normally Pressurized Lance Field. More recently, advances in computational geoscience coupled with down-hole, near-the-drill-bit gamma ray, resistivity, and navigational sensors, allow real-time, high resolution 3D visualization of subsurface features in rocks surrounding the bore as drilling proceeds. This technology, coupled with the advent of rotary steerable system drill bits (first introduced on the Pinedale Anticline in 2008) dramatically decreases drilling time (Okafor et al. 2009). This combination of technologies, along with more recent advances in dynamic point-the-bit rotary steerable systems and analytical software has ushered in a new era of "geosteering" which has further increased the efficiency of tapping subsurface resources (Zhang et al. 2019). In simple terms, higher drilling efficiency translates into less surface disturbance and activity above ground, both of which can affect sage grouse. Directional drilling of multiple wells from the same well pad has also led to a new type of operational efficiency, one

that was not possible during the single-well-per-pad-era: the co-location of supporting infrastructure for completion and production activities being simultaneously carried out on different wells drilled from the same well pad. This translates into reduced surface disturbance, equipment moving on and off site, and manpower required. For example, drilling rig moves that used to take 150 or more truck trips to move between pads, are now accomplished by skidding the rig a few feet to a nearby location on the same pad (Kreckel, 2011). See attachment for Figure 1. Figure 1. Annual number of vertical and directional wells drilled by the oil and gas industry in the Pinedale Planning Area from 1973 to 2012. The annual number of traditional vertical bore wells is indicated in red, and directional wells (including horizontal wells) are indicated in blue. The transition from predominantly vertical wells to directional wells took place in 2004. As of 2010, virtually all new wells drilled in the Pinedale Planning Area are directional wells.

Advances in technology allow shorter drilling and completion times, reducing potential disturbance to sage grouse. More efficient technology has also resulted in shorter drilling and well completion times. While the averages we report show marked improvement (from spudding to completion), it should be noted that these completion times also include periods of inactivity at a well site due to interruptions from logistical and seasonal constraints. Therefore, actual drill and completion times (not including inactive periods), may provide a more accurate portrayal of the duration of potentially disturbing activities to sage grouse. For example, companies reported that drilling a well on the Pinedale Anticline (with an average depth of 13,000 feet) took an average of 65 days in 2002 and this decreased to 35 days by 2006 (OGJ 2007). By 2011 this had improved further, to an average of 14 days of drilling to depth, and in 2013, QEP Resources reported that they had achieved a well to depth time of 9.3 days, a new record (QEP 2013). Similar improvements in drilling and completion efficiency have been reported elsewhere (DTC Energy Group 2013). Overall, uninterrupted completion times have dropped from six months to as few as 2 to 3 days in 2013 (AECOM 2013). Currently (as of January 2020), the average well depth on the Pinedale Anticline is 13,700 feet and drilling from spud to total depth takes an average of 8 days (range 6 to 10 days). Completions take approximately 3 days for two wells which are done in pairs for greater efficiency (data from Ultra Resources, Inc.). Collectively, these data illustrate that much has changed in drilling and completion technology over the 18 years from 2002 to 2020, resulting in reduced industrial activity and subsequent potential disturbance to sage grouse.

Beginning in the early 2000s closed-loop drilling fluid systems began to replace open reserve pits adjacent to wells being drilled. Closed-loop drilling fluid systems are a best management practice that has emerged as a more environmentally responsible and economically viable alternative to open reserve pits and evaporation ponds that require frequent truck trips, can trap sage grouse and other birds, and represent a potential source of groundwater pollution (US Environmental Protection Agency 2019). Closed-loop systems separate drilling fluid from drill cuttings and other solids, which are dewatered for solid waste disposal in landfills. Water is then recycled back into the drilling process, minimizing fresh water use and making solid waste easier to dispose of (Colorado School of Mines. 2009; Pei et al. 2011). While an increasing number of companies have adopted closed loop drilling systems and on-site water purification systems to recycle produced water (Colorado Department of Natural Resources 2019, as cited in U.S. Environmental Protection Agency 2019), some have gone further and implemented a comprehensive, field-level liquid gathering systems (LGS) and water purification facilities. The most notable of these liquid gathering and water purification facilities went online on the Pinedale Anticline in 2012 and was designed to eliminate 165,000 truck trips per year (BLM 2005). A study conducted over two winters reported that the LGS system reduced overall human activity at LGS-equipped well pads, as compared to conventional well pads, by at least a factor of two and thereby reduced avoidance by sage

grouse (Holloran et al. 2015). That study concluded that "implementing efforts to decrease anthropogenic activity levels associated with infrastructure of natural gas fields during both drilling and production phases of development (i.e. using LGS) may also help reduce effects of the infrastructure on wintering sage-grouse." A similar LGS and water purification system is also planned for the Normally Pressurized Lance Field for the same reasons

Other advancements in operational efficiency, with secondary benefits to sage grouse, have also been implemented in the Pinedale Planning Area, both as voluntary and regulatory efforts. The most significant of these to sage grouse have included: - Installation of remote telemetry systems to monitor wells and condensate tanks (initiated in 2008 and completed in 2012; BLM 2008a,b). - Electrification of the Pinedale Anticline (BLM 2012), allowing equipment to be powered with electricity rather than internal combustion generators and motors. While this change was originally intended to reduce high levels of ozone accumulation in the Pinedale Planning Area, it has the secondary benefit of reducing engine noise and truck traffic (needed to refuel and maintain internal combustion engines). - Required use of EPA compliant Tier II diesel engines on drill rigs, with phase out into more efficient Tier III and IV designs, all of which reduce noise (and pollutants) compared to non-compliant engines in use prior to 2006. Collectively, these improvements in efficiency translate into reduced drilling and completion times, reduced noise and truck traffic, and therefore, reduced disturbance to sage grouse and other species. Virtually all of the innovations listed above came after the primary and most influential studies were conducted at Pinedale (i.e. after 2006). Admittedly, the development of more efficient oil and gas development and production technology is often driven by economic considerations, however the benefits to the environment are obvious: reduced drilling and completion time which translates into less noise, less traffic, and less overall disturbance to wildlife

The biggest limitation of a statistical approach is the uncertainty in the effect of an individual project. At more local scales, this uncertainty can be substantially reduced by including data from other similar projects in the analyses while allowing for inter-project variation in the response (LaMontagne et al. 2002) through a random effect (Kéry 2010). Large-scale projects such as land-management plans may have to be broken into a series of smaller activities in order to estimate the effect with sufficient certainty for it to be useful in decision-making. The models should strive to analyse all available lek count data including historical counts using stage-based population dynamic models (Kery and Schaub 2011; McCaffery and Lukacs 2016). The advantages of stage-based population dynamic models are that multiple sources of information for different life-stages and sexes including prior information from previous analysis can be readily incorporated while lags are readily accounted for thus providing tighter linkages between population drivers and lek counts. However, computational memory and/or run-time requirements may necessitate the fitting of simpler models to reduced datasets if they cannot be overcome through the use of supercomputers

Mining Author: Petersen et al. Year: 2016 Title: Response of greater sage-grouse to surface coal mining and habitat conservation in association with the mine: *Human-Wildlife Interactions*, v. 10, no. 2, p. 205-216. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: The authors conclude that surface coal mining and associated mitigation did not cause a decline in the existing GRSG population at the Alton/Sink Valley area of southwest Utah. Habitat fidelity and acclimation to a long history of anthropogenic activities may have affected GRSG behavior in this region. GRSG at this location did not avoid mining activities as other GRSG populations have been observed to

do elsewhere in the range. Supersedes NTT: Yes Supersedes COT: Yes Issue: Coal mining; mitigation Significance: Lack of avoidance is notable, the question is why?

Predation Author: Harju et al. Year: 2018 Title: Common raven movement and space use: influence of anthropogenic subsidies within greater sage-grouse nesting habitat: *Ecosphere*, v. 9, no. 7, article e02348, 16 p, <https://doi.org/10.1002/ecs2.2348>. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Lethal control of ravens at primary subsidies likely does not impact breeding ravens, who tend to utilize these sources less and pose a greater threat to GRSG through nest depredation. Inducing nest failure may cause ravens to change their space use and movement patterns to a wider-ranging nonbreeding pattern, which would likely, and leave them more vulnerable to lethal control at primary subsidies. Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation; mitigation (Technique refinement) Significance: Ravens Comments: Potential method to disrupt raven behavior making them more susceptible to lethal control.

Author: Creutzburg et al. Year: 2015 Title: Climate change and land management impact rangeland condition and sage-grouse habitat in southeastern Oregon: *AIMS Environmental Science*, v. 2, no. 2, p. 203-236. Implications: This paper, "evaluated varying scenarios of future climate and management and their implications for rangeland condition and habitat quality, ... simulations indicate that climate change may have both positive and negative implications for maintaining sage-grouse habitat." Supersedes NTT: Yes Supersedes COT: Yes Issue: Climate (long range predictions) Significance: Potential changes to habitat are positive and negative for GRSG Comments: "Linking multiple models creates greater complexity and creates new opportunities for error." In this case, four models with unknown error.

Climate (long range predictions) Author: Homer et al. Year: 2015 Title: Forecasting sagebrush ecosystem components and greater sage-grouse habitat for 2050-Learning from past climate patterns and Landsat imagery to predict the future. *Ecological Indicators*, v. 55, p. 131-145. Implications: Predicted losses of GRSG habitat to 2050 based on two extreme scenario, downscaled IPCC general circulation models. Issue: Climate (long range predictions) Significance: Questionable long-range predictions Comments: Caveats: Old error-prone data mixed with new data (1984-2011); Predictions rely on two highest anthropogenic radiative forcing models

Climate (long range predictions) Author: Balzotti et al. Year: 2016 Title: Beyond the single species climate envelope-A multifaceted approach to mapping climate change vulnerability: *Ecosphere*, v. 7, no. 9, article e01444, 23 p., <https://doi.org/10.1002/ecs2.1444>. Implications: Long-range predictions of habitat changes in Nevada and Utah (to 2070) were based on machine-learning software utilizing regional predictions derived from previously published, downscaled global general circulation models and data from 1961-90 "normal period." Issue: Climate (long range predictions) Significance: Long-term predictions on habitat or population trends Comments: Caveat: Long range predictions to 2070. Predictions untestable.

Climate (long range predictions) Author: Boyte et al. Year: 2016 Title: Boyte, S.P., Wylie, B.K., and Major, D.J., 2016, Cheatgrass percent cover change-Comparing recent estimates to climate change-driven predictions in the northern Great Basin: *Rangeland Ecology and Management*, v. 69, no. 4, p. 265-279. Implications: Identified areas where cheatgrass was likely to change and projected the potential future magnitude of change for years 2050 and 2070. Climate projections were based on scenarios from the Intergovernmental Panel on Climate Change (IPCC) for 2050 and 2070. Issue: Climate (long range predictions) Significance: Evaluated potential cheatgrass spread in future Comments: Caveat: Climate projections based on scenarios derived from IPCC general circulation models

Climate (long range predictions) Author: Palmquist et al. Year: 2016 Title: Mid-latitude shrub steppe plant communities—Climate change consequences for soil water resources: *Ecology*, v. 97, no. 9, p. 2342-2354 Implications: Long-range predictions (to 2100) based on global circulation models (GCM), representative concentration pathways (RCPs), and process-based soil water model. Longer, drier summers will likely have a negative effect on sagebrush regeneration and seedling survival and may result in changes to plant functional group composition within current GRSG habitats. Outcome depends on GCM chosen. Issue: Climate(long range predictions) Significance: Questionable very long-range predictions Comments: Caveats: Predictions based on down-scaled general circulation models and outputs of multiple linked models.

Climate (long range predictions) Author: Palmquist et al. Year: 2016 Title: Spatial and ecological variation in dryland ecohydrological responses to climate change- Implications for management: *Ecosphere*, v. 7, no. 11, article e01590, 20 p., Implications: Long-range predictions (2050) based on GCM and RCPs. Predict drier summer conditions in higher elevation areas could lead to increased suitability for big sagebrush, whereas mid to lower elevation sites could become less suitable for big sagebrush and consequently GRSG. This information could help prioritize areas for conservation of shrub steppe ecosystems into the future (but they do not say how). Issue: Climate (long range predictions) Significance: Questionable long-range predictions based on most extreme warming scenario (i.e. 5°C by 2100). Comments: Caveat: Predictions based on most extreme scenario RCP8.5 (i.e. unlikely high-risk future) and outputs of multiple linked models.

Regional climatic variation and weather Author: Caudill et al. Year: 2016 Title: Factors affecting seasonal movements of juvenile greater sage-grouse—A reconceptualized nest survival model: *The Condor*, v. 118, no. 1, p. 139-147. Implications: Results suggested that precipitation, rather than snow accumulation or depth, was the primary driver of juvenile migration. Movement from late fall habitats to winter habitats was variable, indicating that the effects of harvest may vary with harvest timing and its relation to seasonal movements. Changes in climate may negatively affect GRSG if the onset of winter conditions is delayed, affecting the movement of juveniles to winter habitat. The model application presented here may be used to develop a better understanding of relations between environmental factors and GRSG behavior. Supersedes NTT: Yes Supersedes COT: Yes Issue: Seasonal climate and juvenile GRSG migration; Technique refinement: hunting season Significance: Measurable effects of weather on seasonal movements and habitat use; prioritization of management

Regional climatic variation and weather Author: Gibson et al. Year: 2017 Title: Weather, habitat composition, and female behavior interact to modify offspring survival in greater sagegrouse: *Ecological Applications*, v. 27, no. 1, p. 168-181. Implications: The authors evaluated relations between (1) weather and brood survival, (2) drought and breeding site selection, and (3) shifts in breeding site selection and brood survival of GRSG. Chick survival was negatively related to drought severity. Nest sites at low elevations may contribute little to reproduction in drought years, and extended droughts may be detrimental to GRSG populations that cannot access high elevation sites. Supersedes NTT: Yes Issue: Climate (local/seasonal and regional drought) Significance: Local/seasonal effects of weather and drought on vital rates, nesting behavior, and population Comments: GRSG exhibit behavioral response to drought although prolonged drought can be deleterious.

Regional climatic variation and weather Author: Coates et al Year: 2018 Title: The relative importance of intrinsic and extrinsic drivers to population growth vary among local populations of greater sage-

grouse: an integrated population modeling approach: AUK, v. 135, no. 2, p. 240-261. Implications: Using integrated population modeling allowed the authors to disentangle the effects of precipitation variability on GRSG populations at the DPS level from those at the sub-population level. This information will help resource managers understand how growth rates in the Bi-State DPS can appear stable, while at the same time, certain sub-populations may decline due to extrinsic factors such as drought, unless management actions are taken. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; population trends Significance: Measurable local, seasonal effects of precipitation variability on population dynamics.

Regional climatic variation and weather Author: Mathews et al. Year: 2018 Title: An integrated population model for greater sage-grouse (*Centrocercus urophasianus*) in the bi-state distinct population segment, California and Nevada, 2003-17: US Geological Survey Open-File Report 2018-1177, 89 p., <https://doi.org/10.3133/ofr20181177>. Implications: Results suggested that GRSG use increased following pinyon-juniper conifer removal treatments. Modeling showed annual variations in subpopulations, with an overall 2 percent decline in the Bi-State population from 2003 to 2017. The overall decline in the Bi-State population was likely a result of drought events; subpopulations that are stable or increasing are insulated from drought due to water availability. Issue: Climate (regional variation and drought); Habitat restoration; Translocation Significance: Population trends in response to drought, Positive response to habitat restoration) Comments: Increased GRSG use after tree removal, drought causes population declines. Mixed results for translocated broods.

Regional climatic variation and weather Author: Ramey et al Year: 2018 Title: Local and population-level responses of greater sage-grouse to oil and gas development and climatic variation in Wyoming: PEERJ, v. 2018, no. 6, p. e5417, <https://doi.org/10.7717/peerj.5417>. Implications: Hierarchical models were used to estimate the effects of the areal disturbance due to well pads as well as climatic variation on individual lek counts and Greater sage-grouse populations (management units) over 32 years. Modeling revealed that oil and gas had a strong negative effect on local-scale lek attendance within a 3.2 km radius around a well. Oil and gas was a weak predictor of population-scale changes, but appeared consistent with local-scale responses. The PDO was found to be a strong predictor of long-term population density fluctuations at local and population scales. Supersedes NTT: Yes Supersedes COT: Yes Issue: Climate (regional climatic variation); population fluctuations; oil & gas Significance: PDO was the major driver of population trends rather than oil and gas development Comments: Wildlife agencies need to account for the effects of regional climatic variation when managing sage-grouse populations.

Translocation and Captive Breeding for GRSG Restoration Author: Thompson et al. Year: 2015 Title: Captive rearing sagegrouse for augmentation of surrogate wild broods-Evidence for success: Journal of Wildlife Management, v. 79, no. 6, p. 998-1013. Implications: Egg collection and hatching, rearing, and adoption of captive-raised chicks into wild broods is feasible. Supersedes NTT: Yes Supersedes COT: Yes Issue: Captive rearing GRSG; itigation Significance: Another paper showing population augmentation is feasible

Translocation and Captive Breeding for GRSG Restoration Author: Gruber-Hadden et al. Year: 2016 Title: Population vital rates of resident and translocated female greater sage-grouse: Journal of Wildlife Management, v. 80, no. 4, p. 753-760. Implications: Retention of translocated GRSG within the targeted release site was 82 percent. There was not statistical support for a difference between resident and translocated birds for female, nest, and chick survival. Nest initiation rates and clutch sizes were

generally higher for residents compared to translocated GRSG. Nest success was positively related to grass height. Successful translocations will depend on resolving issues that have imperiled the resident population. Supersedes NTT: Yes Supersedes COT: Yes Issue: Mitigation Significance: Translocation Comments: Small sample size, more data needed

Translocation and Captive Breeding for GRSG Restoration Author: Apa, et al. Year: 2017 Title: Apa, A.D., Thompson, T.R., and Reese, K.P., 2017, Juvenile greater sage-grouse survival, movements, and recruitment in Colorado: *Journal of Wildlife Management*, v. 81, no. 4, p. 652-668. Implications: Experimentally introduced domestically-hatched chicks into existing wild broods. Was deemed successful because survival rates of these birds were comparable to wild-hatched birds. Supersedes NTT: Yes Supersedes COT: Yes Issue: mitigation; translocation Significance: Translocation successful; reintroduction and augmentation are viable techniques Comments: Successful experimental reintroduction technique.

Translocation and Captive Breeding for GRSG Restoration Author: Duvuvuei et al. Year: 2017 Title: Contribution of translocated greater sage-grouse to population vital rates: *Journal of Wildlife Management*, v. 81, no. 6, p. 1033-1041. Implications: Translocating adult females may maximize translocation success overall, as adults are more likely than juveniles to raise a brood in the first year. Authors recommend continuing monitoring for multiple years following translocations. They suggest that factors causing declines in the focal GRSG population be mitigated prior to receiving translocated females. Supersedes NTT: Yes Supersedes COT: Yes Issue: Mitigation Significance: Translocation/population augmentation Comments: One of several recent studies that have shown translocation is a useful tool for GRSG conservation.

Translocation and Captive Breeding for GRSG Restoration Author: Ebenhoch et al. Year: 2019 Title: Effects of post-release movements on survival of translocated sage-grouse: *The Journal of Wildlife Management*, v. 83, no. 6, p. 1314-1326. Implications: Supersedes NTT: Newly translocated GRSG had smaller home ranges and traveled longer daily distances than either resident or previously translocated birds, but distances moved between seasonal centers did not differ among the three groups. Annual survival was not significantly lower in newly translocated birds; males and birds that moved greater daily distances had greater mortality risk. Newly translocated birds initiated nests less often than other groups, but nest initiation date and nest survival did not vary with residency status. Nest success was higher when nests were initiated later in the nesting season. Resident GRSG nested farther from active leks than translocated birds. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique improvement; Mitigation Significance: Translocation of GRSG is a potential tool for augmenting declining populations or reestablishing ones that have been extirpated. Comments: It has long been argued that translocation is unsuccessful despite data to the contrary (Strawberry Hill). This information also suggests that survival of translocated birds does not differ from resident birds

Translocation and Captive Breeding for GRSG Restoration Author: Heinrichs et al. Year: 2019 Title: Optimizing the use of endangered species in multi-population collection, captive breeding and release programs: *Global Ecology and Conservation*, v. 17, article e00558, 12 p, <https://doi.org/10.1016/j.gecco.2019.e00558>. Implications: Modeled tradeoffs of releasing captive bred birds to augment populations. Reported, "Releases into small and rapidly declining populations provided the greatest near-term reductions in extinction risk, but improvements were short-term. Yet releases into larger and more stable populations resulted in longer lasting conservation benefits than in more

vulnerable populations but required greater initial release effort. Systematic modeling approaches that evaluate a spectrum of trade-offs and quantify conservation risks and benefits can help direct the expectations and effort invested in captive breeding and release programs." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; captive breeding and release Significance: Captive breeding and release is a potentially effective tool to bolster wild populations.

Improved Habitat Mapping and Assessment Author: Gibson et al. Year: 2015 Title: Observer effects strongly influence estimates of daily nest survival probability but do not substantially increase rates of nest failure in greater sage-grouse: *The Auk*, v. 132, no. 2, p. 397-407 Implications: Observer-induced nest abandonment can decrease estimates of daily nest survival. The authors recommend assessing the potential costs and benefits of nest surveys on sensitive populations and incorporating bias corrections into estimates of nest survival. Supersedes NTT: Yes Issue: Technique refinement; nest survival studies Significance: Researchers can have deleterious effect on parameter they are studying. Comments: Raises concern that some previous studies may have biased results.

Improved Habitat Mapping and Assessment Author: McCaffery et al. Year: 2016 Title: Improved analysis of lek count data using N-mixture models: *Journal of Wildlife Management*, v. 80, no. 6, p. 1011-1021 Implications: The authors found that N-mixture models produced more accurate population trend estimates than naive lek count data, largely because they corrected for substantial year-to-year variability in detection probability. Using naive lek count data may result in inaccurate and misleading estimates of GRSG population size and trend when compared to results obtained by using an N-mixture modeling approach that can better account for variable detection probability and missing data. The authors provide suggestions for lek monitoring designs that can be analyzed using N-mixture models Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; population trend estimates Significance: Highly significant paper on estimating population trend estimates than traditional methods from lek count data. Comments: Additional review suggested

Improved Habitat Mapping and Assessment Author: McCaffery and Lukacs Year: 2016 Title: A generalized integrated population model to estimate greater sage-grouse population dynamics: *Ecosphere*, v. 7, no. 11, article e01585, 14 p., Implications: Integrated population models improved estimates of annual GRSG population dynamics by smoothing variability attributable to sampling noise. The authors conclude that their integrated population model framework could provide robust assessments of population size and trend, information on mechanisms underlying observed trends, and a unified tool for use by GRSG biologists studying various populations throughout the range of the species. The authors suggest that future field sampling efforts should seek improved information on sex and age ratios, female population sizes, sex-specific survival rates by life stage, and the proportion of leks surveyed annually in a given area. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement: Improved analysis of lek count data using N-mixture models Significance: Highly significant paper for future estimating of population trends and abundance Comments: Additional review suggested

Improved Habitat Mapping and Assessment Author: Caudill et al. Year: 2017 Title: Individual heterogeneity and effects of harvest on greater sage-grouse populations: *Journal of Wildlife Management*, v. 81, no. 5, p. 754-765. Implications: "Using the revised formulae, the authors demonstrated that effects of selective harvest on grouse tend to be depensatory [adult mortality contributes to reduced productivity and/or survivorship in the population] when robust individuals are more susceptible to harvest, and some level of compensation is likely when frail individuals are more

susceptible to harvest." Issue: Technique refinement; Hunting Significance: Mitigating potential population-level effect of hunting Comments: Example of effective application of determining cause and effect mechanisms for effective mitigation.

Improved Habitat Mapping and Assessment Author: Forby et al. Year: 2017 Title: Emerging technology to measure habitat quality and behavior of grouse-Examples from studies of greater sage-grouse: *Wildlife Biology*, article wlb.00238, 10 p., <https://doi.org/10.2981/wlb.00238> Implications: Significant changes in our understanding of GRSG ecology may arise from new technologies, but they will require scientific testing, calibration, and communication between managers and scientists to overcome challenges and target data collection and use Supersedes NTT: Yes Issue: Potential technique refinements Significance: Showcasing of various potential Improvements in methodology via UAVs, spectral imaging, robotic animals and biotelemetry systems. Comments: Caveat: Except for spectral imaging of vegetation, seems like high tech methods in search of a question.

Improved Habitat Mapping and Assessment Author: Fregman et al. Year: 2017 Title: Necklace-style radio-transmitters are associated with changes in display vocalizations of male greater sage-grouse: *Wildlife Biology*, article wlb.00236, 8 p., <https://doi.org/10.2981/wlb.00236>. Implications: Vocalizations made by males with necklace-style radio transmitters fell outside the normal range of vocalizations produced by males throughout the range of GRSG, suggesting that radio collars may impair their ability to produce normal vocalizations. The use of necklace-style collars that sit on the necks of GRSG are not recommended for use in behavioral studies of GRSG. Alternative attachment methods should be developed and tested. Supersedes NTT: Yes Issue: Technique refinement Significance: Necklace-style transmitters alter behavior. Comments: Raises concern that previous studies that used this and other outdated technology may have biased results.

Improved Habitat Mapping and Assessment Author: Hagen et al. Year: 2018 Title: Estimating sex-ratio, survival, and harvest susceptibility in greater sage-grouse: making the most of hunter harvests: *Wildlife Biology*, article wlb.00362, 7 p., <https://doi.org/10.2981/wlb.00362>. Implications: The authors suggest that demographics of harvested populations can be modeled for GRSG or other game birds using a mark-recovery approach of harvested individuals. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; population estimation Significance: Hunter harvested sage grouse are an important source of data on survivorship. Comments: Caveat: requires hunting

Improved Habitat Mapping and Assessment Author: Monroe et al. Year: 2019 Title: The importance of simulation assumptions when evaluating detectability in population models: *Ecosphere*, v. 10, no. 7, p. 1-17., <https://doi.org/10.1002/ecs2.2791>. Implications: Using simulation scenarios with systematic trends in detectability may be more informative for evaluating population models than scenarios that assume detectability is constant or random. With finite monitoring resources available, using auxiliary data on lek attendance to model GRSG populations with N-mixture models may allow more leks to be studied less intensively. However, additional investigation is needed to evaluate the extent to which auxiliary data are appropriate for different GRSG populations across their range. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; estimating abundance and population trend Significance: Simulations used to evaluate proposed analytical approach which performed favorably

Improved Habitat Mapping and Assessment Author: Severson et al. Year: 2019 Title: Global positioning system tracking devices can decrease Greater Sage-grouse survival: *The Condor*, v. 121, p. 1-15. Implications: The authors reported, "We found lower survival for GPS marked compared to VHF-

marked sage-grouse across most sex, age, and seasonal comparisons. Estimates of annual survival for GPS-marked sage-grouse were 0.55-0.86 times that of VHF-marked birds with considerable variation among sex and age classes. Differences in survival could be attributed to features associated with GPS devices, including greater weight, position of attachment (e.g., rump-mount harness), and a semi-reflective solar panel." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; GPS tagging Significance: GPS tagged individual had decreased survival compared to older VHF rtechnology. Studies using GPS tags assume no cost to survival or fitness, an assumption obviously violated. Comments: Consistent with other studies. Previos studies using GPS may have biased results.

Improved Prioritization of GRSG Management Author: Dahlgren et al. Year: 2015 Title: Greater sage-grouse and range management-Insights from a 25-year case study in Utah and Wyoming: *Rangeland Ecology and Management*, v. 68, no. 5, p. 375-382. Implications: This retrospective analysis used 25 years of data across three large landscapes in northern Utah and southwestern Wyoming to assess sage-grouse population change and corresponding land management differences and sagebrush treatments (prescribed fire, chemical treatment, and grazing) in a case study design to test hypotheses and make recommendations based on research. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat and population management Significance: Long-term research used to inform effective habitat and population management.

Improved Prioritization of GRSG Management Author: Carlisle et al. Year: 2018 Title: Identifying holes in the greater sage-grouse conservation umbrella: *Journal of Wildlife Management*, v. 82, no. 5, p. 948-957. Implications: The authors conclude that species with small distributions or those with habitat requirements that are only partly similar to those of GRSG will receive relatively fewer conservation benefits from GRSG as an umbrella species. These species may need seperate protections established for their conservation. The authors further suggest that applying the umbrella species concept to GRSG and sagebrush habitats requires attention to details regarding the umbrella species, habitat reserves created to benefit the species, and the degree of habitat similarity shared with co-occurring species. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; GRSG as a conservation "umbrella species" Significance: Prioritization of management actions; unintended consequences Comments: The NTT, COT, and LUPs completely fail to take into account other species and can have negative impacts on other species at a local level. The one-size fits all, single species managemnt approach has proven adverse effects to other species.

Improved Prioritization of GRSG Management Author: Hanser et al. Year: 2018 Title: Greater sage-grouse science (2015-17)-synthesis and potential management implications: U.S. Geological Survey, Open-File Report 2018-1017, 46 p., <https://doi.org/10.3133/ofr20181017>. Implications: This is a USGS synthesis of papers from the USGS annotated bibliography on GRSG literature by Carter et al. (2018) covering topics: The six primary topics were: Multiscale habitat suitability and mapping tools; Discrete anthropogenic activities; Diffuse activities; Fire and invasive species; Restoration effectiveness; Population estimation and genetics. Supersedes NTT: Yes Supersedes COT: Yes Issue: Literature review 2015-2018 Significance: Likely influential in USFWS 2020 status review. Comments: USGS literature review. Potentially influential, additional review recommended.

Habitat Improvement Author: Gustafson et al. Year: 2018 Title: Using object-based image analysis to conduct high-resolution conifer extraction at regional spatial scales: *International Journal of Applied Earth Observation and Geoinformation*, v. 73, p. 148 - 155. Implications: The maps produced can help to

inform land managers on where to target pinyon-juniper treatment in order to aid sagebrush restoration and GRSG conservation. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management actions; Unintended consequences Comments: The NTT, COT, and LUPs completely fail to take into account other species and can have negative impacts on other species at a local level. The one-size fits all, single species management approach has proven adverse effects to other species.

Habitat Improvement Author: Gustafson et al. Year: 2018 Title: Using object-based image analysis to conduct high-resolution conifer extraction at regional spatial scales: *International Journal of Applied Earth Observation and Geoinformation*, v. 73, p. 148 - 155. Implications: The maps produced can help to inform land managers on where to target pinyon-juniper treatment in order to aid sagebrush restoration and GRSG conservation. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat mapping; Pinyon-juniper treatment Significance: Habitat mapping; habitat restoration Comments: Potential technique for offset mitigation.

Habitat Improvement Author: Ricca et al. Year: 2018 Title: A conservation planning tool for greater sage-grouse using indices of species distribution, resilience, and resistance: *Ecological Applications*, v. 28, no. 4, p. 878-896. Implications: The CPT could help resource managers evaluate potential costs and benefits of treatments in particular locations in order to facilitate restoration prioritization decisions across landscapes used by GRSG. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat restoration Significance: Prioritization of management; new planning tool Comments: An improved planning tool. Also undermines the argument that habitats cannot be restored by recognizing the BLM prioritization process for restoring lands needs improvement. This tool can help with that.

Habitat Improvement Author: Davee et al. Year: 2019 Title: Using beaver dam analogues for fish and wildlife recovery on public and private rangelands in Eastern Oregon: Research Paper PNW-RP-617. Northwest Climate Hub, U.S Department of Agriculture, Forest Service, Pacific Northwest Research Station, p. 32. Implications: Beaver dam analogues can improve habitat for fish and wildlife, including GRSG, but implementing this tool may require navigating new or yet-to-be established regulatory pathways and obtaining by-in from private landowners and ranchers is an important consideration for increasing implementation of this tool. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Mitigation; Habitat restoration Significance: Innovative method for habitat restoration; habitat expansion Comments: Expands mesic areas making them more resilient (potentially useful for drought/climate mitigation and/or conservation offset).

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Farzan et al. Year: 2015 Title: Western juniper management-Assessing strategies for improving greater sage-grouse habitat and rangeland productivity: *Environmental Management*, v. 56, no. 3, p. 675-683. Implications: The study showed that juniper removal can benefit both GRSG and cattle forage production, but the benefits depend on site characteristics and how sites were selected. Sites chosen to maximize forage did not substantially benefit GRSG. Sites chosen for GRSG habitat did benefit forage production, but larger habitat treatments had decreasing returns on investment. The benefits achieved for either goal were altered by agency coordination, budgetary constraints, and wildfire. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; pinyon-juniper removal Significance: Management can be

prioritized to benefit GRSG habitat and cattle forage Comments: Management actions can have a dual purpose.

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Coates et al. Year: 2017 Title: Pinyon and juniper encroachment into sagebrush ecosystems impacts distribution and survival of greater sage-grouse: *Rangeland Ecology and Management*, v. 70, no. 1, p. 25-38. Implications: From the authors: "Collectively, these results provide clear evidence that local sage-grouse distributions and demographic rates are influenced by pinyon-juniper, especially in habitats with higher primary productivity but relatively low and seemingly benign tree cover. Such areas may function as ecological traps that convey attractive resources but adversely affect population vital rates. To increase sage-grouse survival, our model predictions support reducing actual pinyon-juniper cover as low as 1.5%, which is lower than the published target of 4.0%." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Improved standards for pinyon-juniper removal Significance: New threshold for pinyon-juniper removal provided greater benefits to GRSG

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Prochazka et al. Year: 2017 Title: Encounters with pinyon-juniper influence riskier movements in greater sage-grouse across the Great Basin: *Rangeland Ecology and Management*, v. 70, p. 39-49. Implications: The authors conclude that GRSG are negatively affected by pinyon-juniper encroachment because this habitat type stimulates faster, high-risk movements, such as flight, which likely attract visual predators. Further, the study quantifies age-specific GRSG mortality risk when individuals move through landscapes containing pinyon-juniper stands. Supersedes NTT: Yes Supersedes COT: Yes Issue: Pinyon-juniper; predation risk Significance: Pinyon-juniper; predation risk Comments: Cause and effect mechanism explaining predation risk

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Reinhardt et al. Year: 2017 Title: The authors conclude that the optimization framework and models used in this study illustrate an approach, increasingly available to land managers, which can augment or complement standard expert-based approaches to planning and prioritization. Such approaches could reduce planning and implementation time for landscape-scale conifer removal treatments. Topics: broad-scale habitat characteristics, conifer expansion, new geospatial data, habitat restoration or reclamation Implications: Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; conifer removal Significance: Prioritization of management Comments: Improved methodology

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Davies and Bates Year: 2019 Title: Longer-term evaluation of sagebrush restoration after juniper control and herbaceous vegetation trade-offs: *Rangeland Ecology & Management*, v. 72, no. 2, p. 260-265. Implications: Following juniper control in dense stands that lack sagebrush, mountain big sagebrush re-establishment is likely to be accelerated by seeding, whereas herbaceous vegetation cover may be reduced. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; pinyon-juniper removal and sagebrush restoration

Mitigation-Wildfire Author: Davis and Crawford Year: 2015 Title: Case study-Short-term response of greater sage-grouse habitats to wildfire in mountain big sagebrush communities: *Wildlife Society Bulletin*, v. 39, no. 1, p. 129-137. Implications: The authors sought to identify the short-term (<11 year) response of GRSG nesting and brood-rearing habitats to wildfire. In mountain big sagebrush communities where sagebrush is abundant, the understory is composed of adequate native perennial grasses and forbs, and invasive annual grasses are limited, prescribed burning may be a useful tool for

improving GRSG nesting and brood-rearing habitat. The application of fire treatments in less mesic sagebrush communities with fewer forbs may not produce the desired results, which emphasizes that management decisions need to be made in light of existing conditions and documented GRSG seasonal habitat needs. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; prescribed fire Significance: Selective use of prescribed fire to improve GRSG habitat. Comments: Supersedes NTT because fire treatments may benefit higher elevation mountain big sagebrush communities i.e. not a one-size-fits-all strategy.

Mitigation-Wildfire Author: Coates et al. Year: 2016 Title: Wildfire, climate, and invasive grass interactions negatively impact an indicator species by reshaping sagebrush ecosystems: Proceedings of the National Academy of Sciences of the United States of America, v. 113, no. 45, p. 12745-12750. Implications: The authors describe, "Using three decades of sage-grouse population count, wildfire, and climate data within a modeling framework that allowed for variable postfire recovery of sagebrush, we provide quantitative evidence that links long-term declines of sage-grouse to chronic effects of wildfire. Projected declines may be slowed or halted by targeting fire suppression in remaining areas of intact sagebrush with high densities of breeding sage-grouse." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; targeted wildfire suppression Significance: Prioritization of fire suppression to minimize deleterious effects to GRSG Comments: Important preplanning strategy to reduce threat of wildfire.

Mitigation-Wildfire Author: Ellsworth et al. Year: 2016 Title: Ecosystem resilience is evident 17 years after fire in Wyoming big sagebrush ecosystems: Ecosphere, v. 7, no. 12, article e01618, 12 p., <https://doi.org/10.1002/ecs2.1618>. Implications: Results demonstrate post-fire resilience of the xeric Wyoming big sagebrush system, possibly because of its high quality and presence of unburned patches within the fire perimeter. The conditions are representative of xeric Wyoming big sagebrush communities prior to the invasion of cheatgrass, where there were islands of sagebrush left after fire which helps the system recover from fire and provide habitat for GRSG. Controlled burning of some xeric sagebrush systems that are in good condition and dominated by natives may have benefits for ecosystem heterogeneity and herbaceous cover. Authors conclude, "Our results illustrate that management of all habitat components, including natural disturbance and a mosaic of successional stages, is important for persistent resilience and that suppression of all fires in the sagebrush steppe may create long-term losses of heterogeneity in good condition Wyoming big sagebrush ecosystems." Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; mitigation strategy Significance: Selective use of prescribed fire

Mitigation-Wildfire Author: Foster et al. Year: 2018 Title: Potential effects of GPS transmitters on greater sage-grouse survival in a post-fire landscape: Wildlife Biology, v. 2018, no. 1, p. 1-5. Implications: Survival rates measured in this post-fire study were much lower than observed in other studies in the Great Basin, though they did eventually increase to comparable levels (after the conclusion of this study). If the slightly lower survival rates of birds with GPS versus VHF devices observed in this study are confirmed (5% lower survival), they are of concern because of the increasing use of GPS units and the potential for effects of this magnitude to affect population growth rates. Findings from this study were limited by small sample sizes. Supersedes NTT: Yes Supersedes COT: Yes Issue: Post-fire study; GPS transmitters affect survival Significance: GPS transmitters reduce survival compared to VHF transmitters Comments: Authors appropriately recognize that the GPS may have biased the conclusions. As such, this study better informs future study designs.

Mitigation-Wildfire Author: Shinneman et al. Year: 2018 Title: A conservation paradox in the great basin-altering sagebrush landscapes with fuel breaks to reduce habitat loss from wildfire: US Geological Survey, v. XXX, no. XXX, p. XXX*Open File Report. Implications: The authors conclude that more research is needed to document fuel break effectiveness, effects on plant communities, and effect on wildlife. However, they suggest that installing fuel breaks in an effort to protect intact sagebrush habitat may provide long-term benefits to sagebrush-associated species, even if these benefits come at a cost to some individual species at local scales. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; fuel breaks Significance: Supports the reality that historical habitat was not a vast sagebrush sea, but rather an ecosystem made up of sagebrush islands. Comments: Suggest additional review due to significance as a mitigation measure.

Mitigation-Wildfire Author: Foster et al. Year: 2019 Title: Greater sage-grouse vital rates after wildfire: Journal of Wildlife Management, v. 83, no. 1, p. 121-134. Implications: GRSG continued to use areas within the wildlife perimeter, but had lower nest and adult survival rates compared to other reported values for GRSG in the Great Basin. Apparent decreased nest site fidelity within the fire perimeter may relate to increased habitat fragmentation. Increased nest survival in the second year may relate to increased vegetation in the burned area. Findings suggest that fire suppression activities to maintain intact habitat patches may be a critical tool for managers of GRSG populations and habitat in landscapes prone to fire. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; mitigation strategy Significance: Improved Wildfire firefighting strategy to benefit GRSG.

Mitigation-Wildfire Author: Shinneman et al. Year: 2019 Title: The ecological uncertainty of wildfire fuel breaks: examples from the sagebrush steppe: Frontiers in Ecology and Environment, v. 17, no. 5, p. 279-289. Implications: To produce a robust cost-benefit analysis regarding fuel break effectiveness and ecological impacts, more research is needed. The authors suggest several specific research questions that could provide useful information to policy and decision-makers "to disentangle their ecological costs and benefits." Supersedes NTT: Yes Supersedes COT: Yes Issue: wildfire; fuel breaks Significance: Ecological cost benefit analysis of fuel breaks Comments: Ecological cost benefit analysis of fuel breaks

Mitigation-Wildfire Author: Stenvoorden et al. Year: 2019 Title: The potential importance of unburned islands as refugia for the persistence of wildlife species in fire-prone ecosystems: Ecology and Evolution, DOI: 10.1002/ece3.5432. Implications: Population dynamics of leks located within fire perimeters are negatively impacted. Unburned islands play an important role as refugia, and maintaining unburned vegetation may be vital for the success of GRSG populations after a wildfire event. The recovery of natural vegetation postfire may also benefit GRSG populations. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; fire suppression Significance: Prioritization of fire suppression to maintain unburned refugia and enhance post-wild fire restoration.

Other Mitigation Author: Blomberg et al. Year: 2015 Title: Blomberg, E.J., 2015, The influence of harvest timing on greater sage-grouse survival-A cautionary perspective: Journal of Wildlife Management, v. 79, no. 5, p. 695-703. Implications: The author concluded that timing of mortality, coupled with potential effects indicated by compensatory and additive mortality models, suggests that moving harvest to later in the year will not benefit GRSG populations and may have unintended negative consequences. Issue: Technique refinement: hunting season Significance: Reducing population effects but shifting hunting season Comments: Applies only to where GRSG are hunted

Other Mitigation Author: Wing and Messmer Year: 2016 Title: Impact of sagebrush nutrients and monoterpenes on greater sage-grouse vital rates: *Human-Wildlife Interactions*, v. 10, no. 2, p. 157-168. Implications: Study results confirmed the importance of black sagebrush as pre-nesting season forage and suggested that any forage selection related to monoterpenes may reflect some aspect of an individual monoterpene rather than the total concentration of all monoterpenes. Study results should be interpreted cautiously because of the small sample size, single year, and single study site. Supersedes NTT: Yes Supersedes COT: Yes Issue: black sagebrush; GRSG forage

Other Mitigation Author: Blomberg et al. Year: 2015 Title: Blomberg, E.J., 2015, The influence of harvest timing on greater sage-grouse survival-A cautionary perspective: *Journal of Wildlife Management*, v. 79, no. 5, p. 695-703. Implications: The author concluded that timing of mortality, coupled with potential effects indicated by compensatory and additive mortality models, suggests that moving harvest to later in the year will not benefit GRSG populations and may have unintended negative consequences. Issue: Technique refinement: hunting season Significance: Reducing population effects but shifting hunting season Comments: Applies only to where GRSG are hunted

The BLM 2020 draft SEISs do not address or offer any substantive analysis or cumulative impact assessments of its management decisions.

Only after thoroughly analyzing these eminently reasonable, science-based sage-grouse habitat protections will BLM have given the requisite consideration to a range of reasonable alternatives under its plan amendment SEISs. (We also note that BLM did not provide a scoping period for the SEIS; this is WWP et al.'s first opportunity to provide comments on the scope of the 2020 draft SEIS.)

Also notable is BLM's claim that "it did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective." New information on habitat and population declines clearly provides such "new information" suggesting that protections should be increased. Moreover, BLM's claim begs the question: did BLM discover new science suggesting the agency should decrease the level of conservation?

BLM has a NEPA duty to evaluate how baseline sage-grouse conditions have changed since its last analysis in the 2015 Plans and since BLM prepared its 2018 FEIS. The DSEIS, like the FEIS, is flawed because it fails to look at updated data on sage-grouse populations and analyze the proposed actions against this new baseline.

The BLM's failure to consider updated population data is just one failing of the agency to take a hard look and use the best available science in informing its decision-making. In fact, population declines have continued across the species' range.

In Montana, the population dropped more than 40 percent in the past three years. MFWP 2019.

In North Dakota, a spring 2019 survey found just 29 male grouse, despite having supplemented the population with birds from Wyoming since 2017.¹⁰ https://bismarcktribune.com/news/state-and-regional/years-long-effort-to-save-sage-grouse-in-nd-takes-a/article_ff07b771-1ad0-5861-8ea1-e2c7d2695805.html ? In South Dakota and Washington, sage-grouse populations are vanishingly small.

WWP has gathered population data directly from state wildlife agencies and, upon review and analysis, verified the reported trajectories; presumably, the BLM should be able to obtain, analyze, and disclose the same downward trends in this SEIS process. BLM should provide a spatially explicit lek trend analysis, determining whether downward population counts are proximate to habitat impacts authorized by these plans, and/or whether management and land tenure makes a difference as to the population trajectory on leks. This analysis should include all of the states with Greater sage-grouse-including Washington, North and South Dakota, and Montana-not just the states included in the recent plan revisions.

Another new and relevant study pertaining to sage-grouse populations that should be considered is Edmunds et al. 2018, which discusses how the scale of a population analysis may obscure the site-specific population impacts of disturbance. BLM should collect the spatial population data for every state and take a fresh, hard look at the lek trends relative to the disturbances allowed by the plans.

The BLM must also consider the new scientific evidence that pinyon-juniper forests comprise an enormous amount of the Great Basin's potential for carbon storage. See Fusco, et al. 2019. The impacts of the vegetation treatment projects that BLM is promoting must be balanced against the loss of this potential. The BLM must also consider the new evidence that shows how coniferous forests are able to respond to climate change and analyze how the proposed vegetation projects undermine that potential.¹⁵ BLM must also analyze how its habitat improvement projects for sage-grouse affect the habitat of other sagebrush species, such as mule deer. Morano et al. 2019. Additionally, the predictions of climate-adaptations and species movement should be used for determining the connectedness of sage-grouse populations and the need for more protected habitats, not fewer, as the 2019 plans provide.¹⁶ ¹⁵ D. Scott Mackay, Philip R. Savoy, Charlotte Grossiord, Xiaonan Tai, Jonathan R. Pleban, Diane R. Wang, Nathan G. McDowell, Henry D. Adams, John S. Sperry. Conifers depend on established roots during drought: results from a coupled model of carbon allocation and hydraulics. *New Phytologist*, 2019; 225 (2): 679 DOI: 10.1111/nph.16043 ¹⁶ Lawler JJ, Rinnan DS, Michalak JL, Withey JC, Randels CR, Possingham HP. 2020 Planning for climate change through additions to a national protected area network: implications for cost and configuration. *Phil. Trans. R. Soc. B* 375: 20190117. <http://dx.doi.org/10.1098/rstb.2019.0117>

BLM seems to claim, in identical or virtually-identical appendices to the DSEISs, that the NTT Report and COT Report no longer represent the best available science on sage-grouse needs in light of new State sage-grouse plans, or else that BLM relied on the best available science because it included the U.S. Fish and Wildlife Service as a cooperating agency in developing the 2019 sage-grouse plans, or else that it did not need to apply the best available science in the NTT Report, only consider it, and the Plans comply with the COT Report. See, e.g., WY DSEIS at 1-3 to 1-4; ID DSEIS at 1-3. These statements are incoherent and inaccurate; sage-grouse habitat needs have not changed since 2011, nor has our scientific understanding of those needs, nor could the implementation of State plans alter sage-grouse biology. BLM's failure to apply the science-based recommendations set forth in the NTT Report was an error in its 2015 Plans that carried over in the 2019 Plans and persists in the rationalizations set forth in the DSEISs now.

The NTT Report set forth science-based protections recommended to protect sage-grouse from the effects of activities shown to be harmful to the species and its habitat. The reasons BLM gives for departing from NTT's recommendations reveal that BLM's motivation in this planning effort is not to

implement protections the sage-grouse needs, but rather to loosen restrictions on activities known to harm the species.

BLM claims that it can depart from the NTT Report recommendations because IM-2012- 044 states "while [the NTT Report's] conservation measures are range-wide in scale, it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order to address local ecological site variability." ID DSEIS at Appx. S-1-2 (emphasis added). But this highlights one of the problems with the Plans that we have repeatedly identified; adjustments to sage-grouse habitat needs identified in the NTT are not being made "to address local ecological site variability," they are being made based upon what is politically acceptable to powerful State and industry interests. BLM has not identified any science on "local ecological site variability" that would support its departures from the NTT report. Indeed, BLM's initiation of this new NEPA process to advance "management alignment" and backfill its decision to depart still farther from NTT's science-based recommendations only underlines that the process is being dictated by politics and not by what science says the species needs to survive and recover.

BLM makes much of the assertion that the NTT prescribes conservation measures that are applicable rangewide, and are not tailored to local conditions or political preferences. See, e.g., Northwest Colorado DSEIS at App-3-3, App-3-4. This is because NTT recommendations are based on the best available science, whereas politics are bound to influence local decision-making more so than science. . The habitat requirements of sage-grouse do not differ substantially from state to state, or from county to county. Sage-grouse require large tracts of undeveloped sage-grouse habitat, everywhere throughout their range. Sage-grouse are sensitive to industrial activity, and are disturbed and displaced by it, everywhere throughout their range. The large majority of sage-grouse nest within 4 miles of the lek site, everywhere throughout their range (and this has been shown in habitats as disparate as the cold deserts of western Wyoming (Holloran et al. 2005), the mixed-grass prairies of the High Plains in the Dakotas (Kaczor et al. 2011), and the hot deserts of Nevada (Coates et al. 2013)). Sage-grouse require at least 7 inches of grass height (10.2 inches in the far eastern end of their range) for hiding cover to maximize their nest success and ability to escape predation, and this has been demonstrated definitively from the shortgrass prairies on northeastern Wyoming (Doherty et al. 2014) to the arid deserts of the Great Basin in Oregon (Gregg et al. 1994). This objective, as listed in the objective table, needs to be an enforceable standard that is applied annually as a term of use for every livestock grazing lease.

The burden of proof is upon the BLM if they wish to show a scientific basis for altering protection measures from region to region, but there is no such scientific basis. Instead, BLM seeks only to defer to the desires of certain state and local governments, and industry lobbyists, to minimize sage grouse protections to levels that would be more profitable for local, politically influential industries, but detrimental to sage-grouse based on the best available science. The habitat requirements of sage-grouse do not differ significantly, rangewide, and it is therefore inappropriate for sage-grouse habitat protection thresholds to differ rangewide.

BLM seems to be trying to address its failure to adhere to the recommendations of the NTT Report by now claiming the NTT Report somehow does not represent the best available science. WY DSEIS at I-3. "Of course, agencies may change their policies over time. But an agency must at least display awareness that it is changing position and show that there are good reasons for the new policy." Oregon Nat. Desert Ass'n v. Rose, 921 F.3d 1185, 1190 (9th Cir. 2019), reh'g denied (July 3, 2019) (internal

quotations omitted). BLM seems intent on ignoring that the NTT Report is still the only available resource recommending science-based measures to protect sage-grouse. Until BLM and other agencies produce equally robust and scientifically-supported recommendations on measures to protect sage-grouse, the NTT measures remain what science says is required to protect sage-grouse. The burden of proof is upon the BLM if they wish to show a scientific basis for altering protection measures from region to region, but there is no such scientific basis.³⁸ BLM posits that Carter et al. (2018) and Hanser et al. (2018) constitute significant advancements in the best available science on sage-grouse that should inform plan amendments. See, e.g., ID DSEIS at S-1-14. However, neither the annotated bibliography provided by Carter et al. (2018) - essentially a collection of abstracts - nor the Hanser et al. (2018) which adds two paragraphs of generalizations about the need for more sagebrush science and science-based management decisions to accompany its collection of abstracts (without making a single recommendation regarding a sage-grouse habitat protection threshold) attempt a current review of the science leading to science-based sage-grouse habitat management prescriptions. Which is not to say these publications are devoid of scientific value. Hanser et al. (2018) includes abstracts for papers by Shinneman et al. (2018) (reviewing the science and concluding that fuel break construction has no proven value for reducing the intensity or extent of fires in sagebrush habitats, while the impacts of fuel break construction to sage grouse are known and certain), Shinneman et al. (2019) (showing that fuel breaks could be vectors for cheatgrass invasion, fragment sagebrush habitats, and increase predation on sage-grouse by ravens and other predators), Pilliod et al. (2017) (showing that cheatgrass expands during wet years), Coates et al. (2016a) (fire and subsequent cheatgrass invasion have contributed significantly to sage-grouse declines in the Great Basin), and Coates et al. (2016b) (showing that the presence of livestock significantly increased raven occurrence, to the detriment of sage-grouse). However, for most of the key issues surrounding the appropriate levels of habitat protections under the Wyoming DSEIS (appropriate size of lek buffers, appropriate disturbance density, legitimacy of DDCT/BSU-level analysis of disturbance density thresholds, appropriateness of Wyoming lek buffers in PHMA or GHMA, appropriate allowable noise levels, or appropriateness of sage-grouse PHMA boundaries), the studies in these two compendia of abstracts are silent, and the best available science either was reviewed in the NTT report, or has been brought forward to the BLM's attention by conservation NGOs like WWP et al. in comments on the sage-grouse RMPA process.

In addition to arbitrarily downplaying the importance of the NTT Report, the DSEISs contains a misleading analysis of why the 2019 amendments are supposedly consistent with the COT Report. See, e.g., UT Appx 4 at 4-21; CO Appx 3 at App-3-16; ID Appx S-1 at App-S-1-15; WY Appx F at App-F-15. But the COT report was primarily focused on identifying threats to the sage-grouse, not on undertaking a comprehensive review of the scientific literature (as NTT did) nor recommending measurable sage-grouse protections based on that science to be applied in land-use plans (as NTT did). Simply complying with the COT Report (to the extent the Plans do) is not enough - they must also implement the protections required by NTT.

As someone who cares about birds and the places they need, I strongly oppose any changes to the BLM sage-grouse management plans from what was originally agreed to in 2015. The health of our nation's public lands is important to me. It is a legacy that we are passing on to future generations. BLM should focus on engaging communities in implementing the 2015 plans. In 2010, the U.S. Fish and Wildlife Service determined that Greater Sage-Grouse populations were in serious trouble and warranted protection under the Endangered Species Act. An unprecedented numbers of stakeholders across the West worked for many years on ensuring that sage-grouse management is based on science and good

for local economies. The plans that were agreed to in 2015 led the USFWS to reverse its 2010 decision and find the future for sage-grouse was secure. Weakening the plans would not be good for western states, put years of good work to waste, and revive the risk of a threatened or endangered species listing that was averted in 2015. BLM must use this supplemental process to thoroughly evaluate how its proposed change in management direction is likely to harm Greater Sage-Grouse habitat and is inconsistent with accepted science that tells us to meaningfully protect it. An honest analysis should lead to a different conclusion. Management of our nation's public lands should be based on science and take the long-term needs of communities into consideration, not the short-term political gains of a few.

The DSEIS addresses the agency's past and present use of the 2011 National Technical Team report (NTT) and the 2013 Conservation Objectives Team report (COT). In general, ICA both approves of and encourages the agency's use of the best available science throughout the NEPA analysis process and when decisions are made. We have long maintained significant concerns with the 2011 National Technical Team report (NTT). Among other things, the NTT was a one-size-fits-all management prescription that treated livestock grazing as a primary threat, contrary to the COT Report and the best available science. Further, the use of the NTT report was problematic as it contained overly burdensome recommendations that were not based on local conditions in Idaho. The NTT report failed to make use of the latest scientific and biological information available. According to an independent review of the report, it contained many methodological and technical errors, selectively presented scientific information to justify recommended conservation measures, and was disproportionately influenced by a small group of specialist advocates. By contrast, the COT allows land managers to be more responsive to localized threats and concerns and emphasizes the importance for state-based plans.

Predation Author: Howe and Coates Year: 2015 Title: Observations of territorial breeding common ravens caching eggs of greater sage-grouse: *Journal of Fish and Wildlife Management*, v. 6, no. 1, p. 187-190. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Ravens can significantly influence reproductive success of GRSG at local scales, but population-level effects remain unclear. Breeding ravens may target GRSG nests more than nonbreeders. Declines of GRSG may be compounded by anthropogenic activities that have improved nesting habitat for ravens in sagebrush ecosystems. Supersedes NTT: Yes Supersedes COT: Yes Issue: predation; mitigation (Technique refinement) Significance: Predator management and mitigation Comment: Examined cause and effect mechanisms behind predation

Predation Author: Coates et al. Year: 2016 Title: Landscape characteristics and livestock presence influence common ravens-Relevance to greater sage-grouse conservation: *Ecosphere*, v. 7, no. 2, article e01203, 20p., <https://doi.org/10.1002/ecs2.1203>. Background: Over the last four decades, Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation mitigation; reducing GRSG nest and brood predation by ravens Significance: Anthropogenic subsidies; Ravens Comment: Important as it examined cause and effect mechanisms.

Predation Author: Dinkins et al. Year: 2016 Title: Effects of common raven and coyote removal and temporal variation on climate on greater sage-grouse nesting success: *Biological Conservation*, v. 202, p. 50-58 Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: The authors asked whether (1) changes in raven density and coyote abundance following removal efforts affected GRSG nest success and (2) weather conditions influenced these results for coyotes.

Management of breeding and transient ravens may be a viable mitigation action in areas with high raven densities because it can reduce raven abundance and may increase GRSG nest success. However, long-term solutions, such as reducing supplemental food sources and perch structures, are necessary. Coyote removal likely results in lowered GRSG nest success because of the potential expansion of mesopredators (for example, badgers, skunks, and raccoons), which do better at smelling and thus locating and predating GRSG in wetter years. Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation; Potential mitigation (Technique refinement) Significance: Recommendations for more effective predator management; Mesopredator release after coyote removal Comment: Also, noted increased coyote predation on GRSG in wet years (like due to smell) - good investigation of cause and effect mechanisms.

Predation Author: Peebles et al. Year: 2016 Title: Effectiveness of the toxicant DRC-1339 in reducing populations of common ravens in Wyoming: *Wildlife Society Bulletin*, v. 40, no. 2, p. 281- 287. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Results indicated that raven populations near GRSG nests can be reduced through DRC-1339 poisoning. However, populations quickly recovered to pretreatment levels, suggesting that annual treatment may be needed. The authors also suggested limiting anthropogenic sources of food for ravens and frequently removing roadkill. Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation (Technique refinement) Significance: Prioritization of management actions; raven management using DRC-1339 avicide

Predation Author: Walker et al. Year: 2016 Title: Mapping and prioritizing seasonal habitats for greater sage-grouse in Northwestern Colorado: *Journal of Wildlife Management*, v. 80, no. 1, p. 63-77. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Study in Northwestern Colorado. GRSG generally selected for vegetation characteristics at small spatial scales (100-400 m); terrain roughness was also a strong negative predictor at 100 m in all seasons. A mosaic of habitats with sagebrush are important in multiple seasons, and actions that increase sagebrush within 400 m and reduce forest within 100-400 m may be most beneficial. Topics: broad-scale habitat characteristics, new geospatial data, effect distances or spatial scale, behavior or demographics, habitat selection, site-scale habitat characteristics Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat mapping Significance: Improved habitat mapping for enhancement (i.e. piñon-juniper removal) and mitigation.

Predation Author: Conover and Roberts Year: 2017 Title: Predators, predator removal, and sage-grouse-A review: *Journal of Wildlife Management*, v. 81, no. 1, p. 7-15. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: This was a literature review of past studies of varying quality, methods, and conclusions. The authors concluded that predation is not a likely factor in rangewide GRSG trends, with the exception of ravens in recent years. Issue: Predation Significance: Literature review Comments: Caveat: literature review of papers looking at different predator species and using different methods.

Predation Author: Peebles et al. Year: 2017 Title: Adult sage-grouse numbers rise following raven removal or an increase in precipitation: *Wildlife Society Bulletin*, v. 41, no. 3, p. 471-478. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation; mitigation (Technique refinement) Significance: Prioritization of management; Predator control Comments: Makes a connection between weather conditions and predator control, suggesting that when used in conjunction managers can increase GRSG survival.

Predation Author: Gibson et al. Year: 2018 Title: Effects of power lines on habitat use and demography of greater sage-grouse (*Centrocercus urophasianus*): Wildlife Monographs, v. 200, no. 1, p. 1-41. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: There was support for GRSG avoidance of power lines to 10 km, for decreased demographic rates to 12.5 km, and for decreased population growth to 5 km. Multiple effects of transmission lines varied with raven abundance, which increased near the transmission line in this study. Some effects were small, highlighting the importance of long-term (10-20 year) studies of impact assessment. Transmission line effects on GRSG may be mitigated by decreasing raven numbers near the line, but the effectiveness of previous predator control and perch deterrent efforts have been inconclusive. Co-locating, burying, or routing lines outside of GRSG habitat may be options. Supersedes NTT: Yes Supersedes COT: Yes Issue: Transmission lines; associated predation; mitigation Significance: Potential mitigation of raven predation near transmission lines. Comments: Negative effects can be potentially mitigated

Predation Author: Kirol et al. Year: 2018 Title: Using DNA from hairs left at depredated greater sage-grouse nests to detect mammalian nest predators: Wildlife Society Bulletin, v. 42, no. 1, p. 160-165. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: This study presents a novel, noninvasive, and cost-effective survey method that minimizes collection bias and can be used at larger spatial scales to gain insight on mammalian predators that influence GRSG nest productivity. It can also help to identify exotic predators that benefit from human subsidies and habitat modification. This methods could be expanded to include other forms of DNA (e.g. feathers or saliva) for greater inference. Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation (Technique refinement) Significance: Potential method for identifying mammalian predators of GRSG nests. Comment: Trail cameras at nests would provide data with shorter turn-around time.

Predation Author: O'Neil et al. Year: 2018 Title: Broad-scale occurrence of a subsidized avian predator-reducing impacts of ravens on sage-grouse and other sensitive prey: Journal of Applied Ecology, v. 55, no. 6, p. 2641-2652., <https://doi.org/10.1111/1365-2664.13249> Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: The authors proposed that their anthropogenic influence index can be used to identify priority areas where ravens are more likely to affect GRSG. It can also be used to target where management of anthropogenic features can help reduce raven expansion. Finally, they argued that their methods can be applied to the management of other generalist predators. Supersedes NTT: Yes Supersedes COT: Yes Issue: predation (Technique refinement) Significance: Prioritization of management; improved methodology for more effective predator management

Predation Author: O'Neil et al. Year: 2018 Title: Broad-scale occurrence of a subsidized avian predator-reducing impacts of ravens on sage-grouse and other sensitive prey: Journal of Applied Ecology, v. 55, no. 6, p. 2641-2652., <https://doi.org/10.1111/1365-2664.13249> Implications: The authors proposed that their anthropogenic influence index can be used to identify priority areas where ravens are more likely to affect GRSG. It can also be used to target where management of anthropogenic features can help reduce raven expansion. Finally, they argued that their methods can be applied to the management of other generalist predators. Supersedes NTT: Yes Supersedes COT: Yes Issue: predation (Technique refinement) Significance: Prioritization of management; improved methodology for more effective predator management

Predation Author: Smith et al. Year: 2018 Title: Phenology largely explains taller grass at successful nests in greater sage-grouse: *Ecology and Evolution*, v. 8, p. 356-364 Implications: The available evidence for a causal relation between grass height and nest success was weak, although grass height remained positively correlated with nest survival in the Powder River Basin of Wyoming after correction. Variations in results suggested that taller grass may be beneficial to nest survival in some circumstances (such as where shrub cover is low), but this explanation was not supported by the data analyzed here. Nest site selection or other life stages (for example, brood survival) may be affected by the structure of grasses. The authors suggested that findings from previous studies may have led to an overemphasis of the role of grass height in GRSG nesting habitat quality. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement: habitat quality mapping Significance: Grass height is over emphasized in evaluating habitat quality.

Predation Author: Dudko et al. Year: 2019 Title: Movements of female sage grouse *centrocercus urophasianus* during incubation recess: *IBIS*, v. 161, no. 1, p. 222-229. Implications: Data suggest that a larger area around nests than previously thought may be important for nesting success, which is an important consideration in determining minimum patch sizes needed for nesting and appropriate spatial scales for evaluating nesting habitat. The flights associated with recesses may expose GRSG to predation by ravens. Striking vertical structures during these flights, which typically occur during low light conditions, may be a mortality risk. Issue: Predation risk; Potential mitigation Significance: Ravens Comments: Provides a behavioral mechanism for susceptibility to raven predation, and therefore informs better predator control methods.

Predation Author: Kammerle and Storch Year: 2019 Title: Predation, predator control and grouse populations: a review: *Wildlife Biology*, article wlb.00464, 12 p., <https://doi.org/10.2981/wlb.00464>. Implications: Well-designed predator control programs are likely to cause short-term benefits to various grouse species. However more research is needed, particularly on how the competitive interactions of predator species influence grouse predation risk and whether removing certain predator species may have unintended cascading effects. Supersedes NTT: Yes Supersedes COT: Yes Issue: Predation; mitigation (Technique refinement) Significance: Predator management Comments: Looked at cause and effect mechanisms behind unintended consequences.

Predation Author: Smith et al. Year: 2019 Title: Approaches to delineate Greater Sage-grouse winter concentration areas: *The Journal of Wildlife Management*, v. 83, no. 7, p. 1495-1507. Implications: The authors suggest that individual-based resource selection function models(RSF) can be useful when data on flock sizes are not available in winter concentration areas. They also suggest that their survey and modeling approach was constructive for identifying habitat selection and determining whether currently protected areas are adequate for all seasons of use by GRSG (. They conclude that an important amount of GRSG winter habitat might not be adequately protected by Core Areas in Wyoming (although this conclusion is not well justified). Issue: Potential technique refinement Significance: This is duplicative of other methods to delineate winter habitat.

Analysis and mitigation to address impacts of predation of sage-grouse should also be taken into consideration. NACD encourages BLM to work with state and local governments and other appropriate federal agencies (such as U.S. Fish and Wildlife Service and USDA-Wildlife Services) to determine the most sensible approach to reduce the impacts of predation. Species such as the Common Raven have a

disproportionate impact on sage-grouse but also have paradoxical protections under the Migratory Bird Treaty Act

The DSEISs and the BLM still haven't taken a hard look at the effects of anthropogenic infrastructure and the subsidization of sage-grouse predators. We have provided extensive discussions of this in the past, but BLM continues to ignore the fact that its actions are creating improved conditions for predatory species such as ravens. Three new papers illuminate raven interactions with sage-grouse. Harju et al. (2018) discusses breeding ravens' use of structures (including oil and gas facilities) and the differences in the use of space between breeding and non-breeding ravens, which has implications for raven management that induces nest failure (such as oiling eggs) as a means for affecting predation on sage-grouse. O'Neil et al. (2018) provide spatial information about the effects of anthropogenic infrastructure and discuss how removing these subsidies could assist in preventing raven predation on sage-grouse. Dudko et al. (2019) posit that movements by sage hens assist in raven detection of nests, and that habitat important for nesting "may be more extensive than previously appreciated."

Habitat Improvement Author: Davee et al. Year: 2019 Title: Using beaver dam analogues for fish and wildlife recovery on public and private rangelands in Eastern Oregon: Research Paper PNW-RP-617. Northwest Climate Hub, U.S Department of Agriculture, Forest Service, Pacific Northwest Research Station, p. 32. Implications: Beaver dam analogues can improve habitat for fish and wildlife, including GRS, but implementing this tool may require navigating new or yet-to-be established regulatory pathways and obtaining buy-in from private landowners and ranchers is an important consideration for increasing implementation of this tool. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Mitigation; Habitat restoration Significance: Innovative method for habitat restoration; habitat expansion Comments: Expands mesic areas making them more resilient (potentially useful for drought/climate mitigation and/or conservation offset).

Mining Author: Pratt and Beck Year: 2019 Title: Greater sage-grouse response to bentonite mining: The Journal of Wildlife Management, v. 84, no. 4, p. 866-879 Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: In general, the adverse effects of bentonite mining on GRS appear to be consistent with those of energy development. A greater proportion of the Bighorn Basin GRS population is affected by mining during the winter season than at other times of the year. Therefore, prioritization of winter habitat may be a key management strategy there. Further, reclaimed mines remain unsuitable for GRS due to slow regeneration of sagebrush cover, so intense promotion of sagebrush regeneration is important for restoring GRS habitat. Issue: bentonite mining impacts Significance: Reclaimed mines not utilized by GRS due to slow regeneration

Re-setting noise limits to a maximum of 25 dBA, in accordance with the best available science;

Sage-grouse lek population declines occur once noise levels exceed the 25 dBA level. With this in mind, ambient noise levels should be defined in all plans as 15 dBA and cumulative noise should be limited to 25 dBA in occupied breeding, nesting, brood-rearing, and wintering habitats, which equates to 10 dBA above the scientifically-derived ambient threshold.

4.3.8 Direct/Indirect Impacts

Lastly, the terms "minor", "negligible", "similar", and "no measurable effects" run rampant throughout Chapter 4, however, none carry any objective definitions relative to the currently proposed alternatives.

For example, consider Section 4.11 Impacts on Livestock Grazing Subsection 4.11.2 Management Alignment Alternative: "Despite minor differences between the actions described in the Management Alignment Alternative and those analyzed in the 2015 Final EIS, the difference between the nature and type of impacts described would be negligible.

These impacts are discussed in Section 4.10 of the 2015 Final EIS." Modification of management procedures and stipulations regarding millions of acres of public land is hardly "minor," therefore, the impacts of such modifications cannot be "negligible." Furthermore, referencing an impact analysis corresponding to the current policy as analyzed in the past bears no merit to a "hard look" at impacts pertaining to the proposed modification of the current policy relative to its potential impacts in the future.

There is an inadequate analysis of the impacts to sage-grouse and sagebrush habitat from the proposed management changes, including increased oil and gas leasing, reduced mitigation, elimination of buffers, and the increased opportunity to use waivers, exemptions or modifications to oil and gas permit stipulations including within priority sage-grouse habitat. The conclusion that these changes will have no additional impact to sage-grouse populations is not supported. Allows county governments to determine whether waivers should be allowed rather than the scientists from the state wildlife agencies and U.S. Geological Survey.

The proposed management changes in the EIS which include increased oil and gas leasing, reduced mitigation, and oil and gas permit stipulations either being reduced or eliminated in sage grouse priority habitat are profoundly significant changes yet the document states that these changes will have no significant impact-- a conclusion that simply makes no sense. These changes will instead have significant impact.

It is imperative the scope of the current SEIS process be expanded to include robust examinations of multiscaled assessments of sage-grouse population-level response to direct, indirect, and cumulative impacts associated with management alternatives. Informed decision-making requires scientifically-valid approaches to assessing these impacts that expressly take into account the uncertainty and risk inherent in sagebrush habitat management.

4.3.9 Assumptions and Methodology

The attempts by the BLM to weaken the 2015 plan are putting our sagebrush ecosystem, and the hundreds of species that rely on it, at risk. The proposed changes to the 2015 plan contradict scientific recommendations for conserving greater sage-grouse, and the supplemental environmental impact statement fails to analyze and acknowledge the negative impacts that will result from the agency's proposed change in management direction.

4.3.10 Cumulative Impacts

In the 2019 Plan Amendments, BLM failed to conduct sufficient analysis of the proposed changes. As an example, the court found that BLM did not justify limiting its cumulative effects analysis to state boundaries, finding "sage grouse range covers multiple states and that a key factor - connectivity of habitat - requires a large-scale analysis that transcends the boundaries of any single State." *WWP v. Schneider*, 417 F.Supp.3d at 1333. Although the court noted BLM's unique position in being able to analyze cumulative impacts over the entire range of sage-grouse, the Draft Supplemental EISs ignore the

opportunity to conduct a sufficient analysis. Instead, BLM states: Conditions on public land also have changed little since the 2015 Final EISs, and to the extent that there have been new actions or developments, the impacts associated with those actions or developments are in line with the projections in the 2015 Final EISs regarding reasonably foreseeable actions and effects. . . . Since the nature and context of the cumulative effects scenario has not appreciably changed since 2015, and the 2015 analysis covered the entire range of the Greater Sage-Grouse, the BLM's consideration of cumulative effects in the 2015 Final EISs adequately addresses most, if not all, of the planning decisions to be made through this planning effort. Nevada Draft SEIS, pp. 4-53. This statement outright rejects the purpose of supplemental analysis, which is to supplement previous analysis to address impacts that have not yet been sufficiently considered, and ignores the substantial changes in condition on public lands. The 2019 Plan Amendments present sweeping changes across sage grouse range, yet fail to analyze large-scale impacts, as found by the court. Similar to the Richardson case, "BLM neglects the fundamental nature of the environmental problem at issue" that location of development widely influences the impacts on wildlife. 565 F.3d at 705. Reliance on previous analysis utterly fails to address the need for additional environmental review.

The court also found that BLM must conduct a "robust cumulative impacts analysis" but did not take into account impacts outside of state boundaries, even though "the sage grouse range covers multiple states and that a key factor - connectivity of habitat - requires a large-scale analysis that transcends the boundaries of any single State." *WWP v. Schneider*, 417 F.Supp.3d at 1332.

Instead of expanding its cumulative impacts analysis to the requisite scope, BLM made no changes and states: Since the nature and context of the cumulative effects scenario has not appreciably changed since 2015, and the 2015 analysis covered the entire range of the Greater Sage-Grouse, the BLM's consideration of cumulative effects in the 2015 Final EISs adequately addresses most, if not all, of the planning decisions to be made through this planning effort. Nevada Draft SEIS, p. 4-55. This is the same statement that BLM included in the 2019 Amendments. Further, the cumulative impacts analysis does not appear to address leasing and development that has occurred since 2018, which makes a significant contribution to overall impacts across the species' range. See, Appendix H (Cumulative Effects Supporting Information); Nevada Draft SEIS, p. 4-55. The BLM is required to consider the cumulative environmental impacts to sage-grouse and sage- grouse habitat in these FEISS. Cumulative environmental impacts are defined as: The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. 40 C.F.R. § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." *Id.* Cumulative impacts must be considered in the scope of an EIS. *Id.* § 1508.25(c). BLM has not complied with this requirement, which would require evaluation of the impacts of the changes in the 2019 Amendments across the range of the sage-grouse, including population declines, loss of habitat to fire, the likely effects of fuel breaks projects, and the impact of increased oil and gas leasing and drilling.

Cumulative Impacts ? We agree with using the cumulative effects analysis (CEA) of the 2015 FEIS as a fundamental data to identify the additional cumulative impact. However, there is no clear information about the past cumulative effects analysis in the 2019 DEIS. It will impede public review and confuse decision makers. We request that it is made clear that the CEA in 2015 FEIS must appear in the 2019 EIS. According to the past cumulative effects analysis, the 2019 EIS also needs to clearly provide additional cumulative impacts between 2015 FEIS and 2019 EIS. ? The CEA does not include all relevant

activities, with oil and gas projects in Wyoming and other scheduled lease sales not contributing to the assessment. We ask that the BLM consider all relevant activities while conducting the CEA. When writing the FEIS, we ask that the BLM provide all past, present, and expected actions that will impact connected projects. ? Although Management Action 4 would allow Greater-Sage Grouse to be considered through site-specific analysis, it seems safer to keep the specific language regarding Greater-Sage Grouse in the Proposed Plan in Wyoming. This would guarantee that the Greater-Sage Grouse is considered when taking action. ? The preservation of Greater-Sage grouse habitat is vital, and millions of dollars have been spent protecting the species. Regarding the use and development of sage grouse critical habitat mentioned in the Unavoidable Adverse Impacts, a no net loss policy should be implemented to at least maintain the current amount of habitat available.

The counties have consistently opposed range-wide cumulative effects analysis and opposed the use management zones that go beyond a local BLM field office planning area or a particular National Forest. The counties' position on this has not changed. However, as to the question whether the DSEIS has clarified that the cumulative effects analysis was done at the range wide level organized by WAFWA management zones

Science-based Decision Making Data-driven, statistically-sound assessments of potential responses of sage-grouse populations and habitats to proposed management are necessary to ensure informed decision-making. Yet, the BLM in the 2020 Draft SEISs does not offer any substantive analysis of the indirect and cumulative impacts to sage-grouse of its management decisions. Given current circumstances, rigorous cumulative impact assessments are especially important because of BLM's reliance on the largely disjunct set of management approaches being implemented across the species' range (i.e., state-to-state coordination is limited). The BLM has failed to inform its decision making by not conducting rigorous impact analyses. This oversight will likely jeopardize the agency's ability to meet sage-grouse management goals.

NEPA requires adequate disclosure of the cumulative impacts of the proposed action "when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions." 40 C.F.R. § 1508.7. If separate proposed actions themselves are connected or cumulative, they must be analyzed in a single EIS. Id. § 1508.25(a). Here, BLM improperly fragmented its analysis into six EISs, in violation of 40 C.F.R. § 1508.25(a), and then also failed to conduct any meaningful cumulative impacts analysis within each EIS, in violation of 40 C.F.R. § 1508.25(c).

For example, the oil and gas leasing cumulative effects supporting data for the NW Colorado, Nevada/California, Utah, and Wyoming SDEIS analyses is out of date or non-existent. The Utah DSEIS does not include acreages for oil and gas lease sales held after December 2018 or that are currently pending, even though these lease sales include designated sage-grouse habitat management areas, which means that BLM is using outdated information for its decision- making.^{25 25} See Nevada/California DSEIS at H-4 and Utah DSEIS at D-8.

It is arbitrary and capricious for BLM to consider oil and gas leasing acreages in its sage- grouse plan NEPA analyses for some states but not all. Moreover, all of these acreage omissions must be remedied in the FSEIS for each state with oil and gas leasing. In order that BLM can make an informed decision about these greater sage-grouse plans, cumulative effects oil and gas leasing acreages should include both an acreage total and acreage breakouts by sage-grouse habitat management area type.

4.3.11 Adaptive Management

However, we oppose the universal retention as to "Land Tenure"; we oppose the universal avoidance of "Rights-of-way" in PHMA and IHMA, and we oppose the universal limited access as to "Travel management" - for the reasons we previously addressed in our comments. Specifically, flexibility should be added to adjustments in "Land Tenure", to "Rights-of-Way, and to "Travel Management" relative to site conditions in any FSEIS and plan amendments.

The SEISs also must disclose the known flaws in the methodology of Coates and others, which has resulted in some questions about the triggering changes from various states. The BLM should revisit all the states' data to see where triggers have been met with new and improved methods, and explain in the forthcoming EISs what causal factor analyses have resulted in which adaptive management changes

4.3.12 Burial of Transmission Lines

Wind Turbines and Transmission Lines Author: LeBeau et al. Year: 2017 Title: Greater sage-grouse habitat selection, survival, and wind energy infrastructure: *Journal of Wildlife Management*, v. 81, no. 4, p. 690-711. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: GRSG appeared to select nest sites without regard to wind energy infrastructure but avoided such infrastructure during brood rearing and summer. Stronger effects of disturbance associated with wind energy on brood-rearing habitat selection in the later time period suggest a lagged population-level response. GRSG survival did not appear to be negatively affected by the facility. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wind energy; GRSG habitat use and survivorship Significance: Apparent lag effect of wind energy infrastructure.

Wind Turbines and Transmission Lines Author: Kohl et al. Year: 2019 Title: The effects of electric power lines on the breeding ecology of greater sage-grouse: *Plos One*, v. 14, no. 1, p. E0209968., <https://doi.org/10.1371/journal.pone.0209968> Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: The authors proposed 2.3 km buffer zones around active leks as a best management practice for new transmission line construction. They also proposed site-specific management for distribution lines, and colocation with existing disturbances for all new power lines. Maintenance of sagebrush cover around power lines may improve GRSG habitat suitability, despite the presence of human disturbance. Issue: Mitigation Significance: Transmission lines

Wind Turbines and Transmission Lines Author: LeBeau et al. Year: 2019 Title: Greater Sage-grouse habitat function relative to 230-kV transmission lines: *The Journal of Wildlife Management*, p. 1-14. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: The authors suggest that future transmission line placement decisions should consider potential negative effects on GRSG habitat and demographics and that transmission lines should be located in areas of lower GRSG habitat suitability and greater than 3.1 km from occupied leks if possible. Issue: Mitigation Significance: Transmission lines

4.3.13 Disturbance and Density Caps

Uniquely among the ARMPAs, the Wyoming 2019 RMPA applied a disturbance density cap of 5% in PHMA rather than the 3% applied under other plans. The DSEIS fails to explain why sage-grouse in Wyoming are more tolerant of disturbance than other states, or indeed, more tolerant than the best available science demonstrates. Knick et al. (2013) concluded that 99% of the active leks in the study area (encompassing the entire western range of the greater sage grouse) were surrounded by habitat

with 3% or less surface disturbance (defined using GIS as residential or industrial development). Kirol (2012), found for his Wyoming study area that surface disturbance greater than or equal to 4% of the land area had a significant negative impact on greater sage grouse brood rearing habitat.

4.3.14 Habitat Management Area

Definitions and management actions associated with BLM habitat designations need to be removed from private land as they apply specifically to BLM administered lands; therefore there is no basis for including private land in density and disturbance calculations.

As Simplot noted in previous comments to the Draft ARMPA, the Final EIS and DSEIS continue to fail to disclose the basis by which private lands can be considered in a federal land management planning document. This seems to suggest a de-facto critical habitat designation without a listed endangered or threatened species. While section 4 of the ESA can take into consideration conservation efforts on state and private lands to avoid a listing, BLM has no authority under FLPMA to apply land use plan restrictions on private land. The Draft RMPA, the Final EIS and the DSEIS continue to apply Sage-Grouse habitat management area definitions, designated through the BLM planning process specifically for BLM administered land, to private land (including Planning Area, PHMA, IMHA and BSUs).

The DSEIS offers absolutely no science-based justification for the "modification" of HMAs. The only justification that can be ascertained from the document amounts to nothing more than an argumentum ad verecundiam opinion: "BLM recognizes that landscape level mapping may not accurately reflect on-the-ground conditions. Therefore, the HMAs (Figure 2-1 b) do not constitute a land use plan decision but rather a landscape level reference of relative habitat suitability. " (DSEIS Table 2-2b). Clearly as based on fundamental logic, HMAs constitute a land use plan decision because each HMA requires an explicit set of stipulations regarding how the land is utilized within each HMA. For example, as defined in the 2015 ARMPA for the Great Basin, SFAs are not simple "landscape level mapping" that "may not accurately reflect on-the-ground conditions". Rather, SF As are areas identified by interagency GRSG experts based on on-the-ground research that has occurred for decades. SF As are thus identified by the U.S. Fish and Wildlife Service (FWS) as GRSG "strongholds" and represent "a subset of priority habitat most vital to the species persistence within which we recommend the strongest levels of protection" (2015 ARMP A, Page I-16). "The strongest levels of protection" can be further defined as No Surface Occupancy (NSO) to be applied without waiver, modification, or exception.

For example, consider W AFW A MZ III. How many acres of each HMA designation will be removed? How many acres are currently leased and planned to be leased for Minerals and Energy? How will modification of each HMA designation in W AFW A MZ III change the current HMA designation stipulations relative to Minerals and Energy development requirements? How many acres of currently leased and planned to be leased public lands for Minerals and Energy development occur in SF As? How would removal of SF As and their associated "NSO without waiver, exception, or modification, for fluid mineral leasing" stipulation both directly and indirectly impact GRSG?

In order to take a hard look, the DSEIS needs to consider the effects of existing management and predict the impacts of future decisions. Without considering the current context of population and habitat triggers in each state, the agency is failing to take a hard look at its proposed amendments.

Aside from a brief, but incomplete (and already now outdated) narrative summary, the DSEIS fails to provide a full and clear listing of the PACs and tripped triggers, and how they relate to the key RNAs. BLM fails to include its Causal Factor Analyses ("CFA"), including the worksheets, annual review documents, and full reports, as an appendix to the EIS or otherwise. In fact, we understand that BLM has failed to complete many of the required CFAs. Again, the DSEIS fails to discuss this information essential to meaningful public review and informed agency decision making.

These results show that the ARMPA sage-grouse protections are not having the desired effect of recovering sage-grouse populations and habitats, but instead that populations and habitats across the West continue to deteriorate and "trip triggers" toward more intensive management actions. Thus, the BLM is using more protective management as a backstop when populations and habitats are in trouble instead of preventing the trouble in the first place through adequate regulatory mechanisms. The DSEIS is being issued in this context, and the BLM must take a hard look at this information in assessing the impacts of the proposed plans, including the effects on the ground of existing management.

Nor can BLM write off the tripping of these triggers as unrelated to management and excuse its failure to rein in industrial uses of sage-grouse habitats that way. Regardless of whether BLM management or some other factor is the direct cause of population declines and habitat degradation, BLM should address those problems by limiting known disturbances in sage-grouse habitats. To the extent the existing Plans or revised Plans allow the agency to do otherwise, they are inadequate to protect sage-grouse.

The 2019 amendments in certain states purport to allow BLM to adjust habitat management area boundaries through plan maintenance. These provisions must be cabined to ensure compliance with BLM land-use planning regulations, which provide that land use plan maintenance is only proper to reflect "minor changes in data." 43 CFR § 1610.5-4 (emphasis added) Thus, plan maintenance cannot properly be used to make anything exceeding a minor adjustment to habitat boundaries. See also *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549 (9th Cir. 2006) ("whenever resource management plans are changed in any meaningful way, the changes must be made via amendment (i.e., supported by scientific environmental analysis and public disclosure"); see also *Conservation Nw. v. Sherman*, 715 F.3d 1181, 1186 (9th Cir. 2013) (observing that there is a "low threshold to trigger formal amendment procedures").

4.3.15 Habitat Objectives

Section: 2.5 Page: 2-23 Paragraph/Line/Figure/Table: Table 2-2b Issue: Modifying Habitat Objectives

Comment: No-Action Alternative: We do not support this approach as it does not allow for incorporation of the best available science that has emerged since, was not considered or was omitted previously, or will emerge. Additionally, the Habitat Objectives themselves are not achievable, applicable, or warranted in many areas of GRSG range, particularly in those areas that have crossed an ecological threshold to some other state. Setting objectives that are not SMART - specific, measurable, achievable, relevant, and time-certain - violates the BLMs own planning handbook. Proposed Plan Amendment: We generally support this alternative and the ability to incorporate best available science moving forward as well as the clarification as to how objectives are to be viewed and implemented. The following suggested revisions are intended to strengthen this alternative. Please revise the second paragraph to read "The Habitat Objectives (Table 2-2) in the 2015 Final EIS would be implemented following this guidance: The Habitat Objectives (Table 2-2) in the 2015 Final EIS are desired habitat conditions that are broad goals

based on Greater Sage-Grouse habitat selection that may not be achievable or applicable in all areas. The ability of a site to achieve the objectives should be based on site potential informed by ecological site descriptions, state-and-transition models, Disturbance Response Groups, etc. We also request adding a citation to the MOU that BLM and other federal agencies signed with NRCS regarding update and use of ESDs. The following references also support the use and application of these tools: * BOLTZ, S., AND G. PEACOCK. 2002. Ecological sites: understanding the landscape. *Rangelands* 24:18-21. * BRISKE, D.D., B.T. BESTELMEYER, T.K. STRINGHAM, AND P.L. SHAVER. 2008. Recommendations for development of resilience based state-and-transition models. *Rangeland Ecology & Management* 61:359-367. * SOIL SURVEY DIVISION STAFF. 1993. Soil survey manual. Soil Conservation Service US Department of Agriculture Handbook 18. * STRINGHAM, T.K., P. NOVAK-ECHENIQUE, P. BLACKBURN, C. COOMBS, D. SNYDER, AND A. WARTGOW. 2015. Final report for USDA ecological site description state-and-transition models, Major Land Resource Area 28A and 28B Nevada. University of Nevada Reno, Nevada Agricultural Experiment Station Research Report 2015-01. p. 1524. Available at: <http://www.cabnr.unr.edu/resources/MLRA.aspx>. * STRINGHAM, T.K., P. NOVAK-ECHENIQUE, P. BLACKBURN, D. SNYDER, AND A. WARTGOW. 2015. Final report for USDA ecological site description state-and-transition models by disturbance response groups, Major Land Resource Area 25 Nevada. University of Nevada Reno, Nevada Agricultural Experiment Station Research Report 2015-02:572. Available at: <http://www.cabnr.unr.edu/resources/MLRA.aspx>. * STRINGHAM, T.K., P. NOVAK-ECHENIQUE, D. SNYDER, S. PETERSON AND K. SNYDER. 2016. Disturbance Response Grouping of Ecological Sites Increases Utility of Ecological Sites and State-and-Transition Models for Landscape Planning in the Great Basin. *Rangelands* 38(6):371-378. Previous Unaddressed Comment on 2019 RMPA?: Yes

The DSEIS adequately addresses fragmentation within management areas on an individual scale. This is problematic because the management plans don't properly address fragmentation between management areas. This inadequacy is alarming from an ecological standpoint due to the likelihood of speciation.

Habitat Improvement Author: Pyke et al. Year: 2015 Title: Restoration handbook for sagebrush steppe ecosystems with emphasis on greater sage-grouse habitat-Part 1. Concepts for understanding and applying restoration: U.S. Geological Survey Circular 1416, 44 p. Implications: This report will help resource managers make decisions about where and how to conduct restoration treatments in former sagebrush ecosystems for the benefit of sagebrushobligate species like GRSG. Topics: broad-scale habitat characteristics, fire or fuel breaks, habitat restoration or reclamation, nonnative invasive plants. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management Comments:

Habitat Improvement Author: Pyke et al. Year: 2015 Title: Restoration handbook for sagebrush steppe ecosystems with emphasis on greater sage-grouse habitat-Part 2. Landscape level restoration decisions: U.S. Geological Survey Circular 1418, 21 p Implications: This report and the decision tool that it describes will help resource managers make decisions for prioritizing landscapes for restoration work. Once priority landscapes are determined, managers can move to selecting sites for restoration and use Part 3 in the handbook series. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management

Habitat Improvement Author: Pyke et al. Year: 2017 Title: Restoration handbook for sagebrush steppe ecosystems with emphasis on greater sage-grouse habitat-Part 3 . Site level restoration decisions: U.S.

Geological Survey Circular 1426, 62 p Implications: This report and the tool it describes will help resource managers make decisions that should enhance their success in restoring sagebrush ecosystems and thus GRSG habitat at an individual site. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management

The BLM made no meaningful effort to look at the habitat conditions and trends across sage grouse range in the DSEISs, despite this being identified as a major failing of the 2019 plans. Instead, the BLM touts the acres of vegetation "treatments" on the plans' cover pages, without acknowledging that some of these "treatments" are untested, unsuccessful, and may not result in actual sagebrush restoration for many decades, if ever. The mere fact that treatment has occurred does not indicate that the habitat has successfully been restored. In fact, habitat conditions and trends across the range show widespread degradation.

It is not sufficient to protect only sage-grouse breeding, nesting, and brood-rearing habitats; if sage-grouse cannot survive the winter due to degradation or industrialization of their winter habitats, populations will decline toward extirpation. PHMAs were designated on the basis of buffers around active lek sites, which encompass the breeding and nesting habitats used by grouse during spring and summer. But protecting wintering habitats is equally important to assuring the continued existence and ultimate recovery of the species, and these wintering habitats are frequently located outside the protective boundaries of designated Priority Habitats. BLM's analysis highlights the importance of protecting these habitats. Haak (2020, Attachment O) demonstrates that the 2019 plans are insufficiently protective of all sage-grouse habitats, and states, in her professional opinion: I was also concerned by BLM's failure to assess the conservation value of peripheral sage-grouse populations and habitat. For example, in discussing the impacts of the elimination of GHMA in Utah, BLM asserts that "there would be no significant effect of accelerating the impacts on the small populations in former GHMA[.]" See Utah FEIS at 4-21. This statement fails to consider that peripheral sage-grouse populations and habitats help ensure the species continues to exist by contributing to redundancy, representation, and resilience. See U.S. Fish and Wildlife Service, Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report (Feb. 2013) ("COT" Report), at 12- 13. As explained above, recent studies have also emphasized the importance of the landscape outside of PHMA as stopover habitat for long-distance migrants and corridors to seasonal habitats (Newton et al. 2017; Crist et al. 2015) as well as pathways for genetic connectivity and dispersal from population centers to low population areas around the range margins (Cross et al. 2018; Heinrichs et al 2018; Row et al. 2018). These surrounding habitats are also important for the preservation of conservation options as environmental conditions change (Burkhalter et al. 2018). BLM's FEISs failed to consider these values provided by GHMA and other non-priority habitats. Haak's observation here applies equally to wintering habitats outside of the protected HMAs. The DSEISs do nothing to reconcile this inadequacy, but forthcoming iterations of the plans should identify wintering habitats, connectivity corridors, and marginal habitats (including habitats and populations in Washington and the Dakotas, which have basically been written off by BLM in these revisions). Cross et al. (2018) provide the genetic analysis of sage-grouse networks that demonstrate the relative importance of each sage-grouse population to the maintenance of resilient and viable populations over time. Row et al. (2018) provides spatial insights into maintaining functional connectivity and causal resistance. Ricca et al. (2018) also provides insights into the significance of management on species distribution, resilience, and resistance.

Retaining 7-inch residual grass height requirements in lands currently designated as PHMA and IHMA and increase grass-height requirement effectiveness by adding a requirement that this provision be applied each spring to all BLM grazing allotments;

4.3.16 Lek Buffers

Kirol et al. (2020)¹⁷ studied greater sage-grouse at six locations across Wyoming from 2008-2014, measuring the impacts to grouse of both fossil fuel energy and renewable energy. Kirol et al. found that ongoing surface disturbance from energy development within 8 km (4.97 miles) of a greater sage-grouse nest decreased the likelihood of nest success. Sage-grouse broods within 1 km (0.62 miles) of ongoing surface disturbance from energy development were less likely to survive than those further away. As ongoing disturbance increased, sage-grouse nests had an increasing rate of failure. Furthermore, female sage-grouse avoided habitat with higher levels of disturbance in favor of habitat with lower levels of disturbance. This means that current BLM greater sage-grouse nest buffers are too small to conserve grouse and implementing disturbance caps of 3-5% does not eliminate the negative impacts of ongoing disturbance on nest survival. While this paper is specific to leks in Wyoming, it should be used in each of the forthcoming SEISs as evidence of the inadequacies of current and proposed regulations.

The 2011 NTT Report and the 2013 COT Report did not receive adequate peer review and suffered from a number of substantive flaws including: ignoring substantial threats such to the Greater Sage Grouse such as predation in favor of unsupported conjectures regarding human impact; failure to account for natural population fluctuations due to weather patterns; not using the best available science, and were policy rather than science driven. These flawed reports suggested the adoption of equally flawed measures that became central to the 2015 planning effort including the designation of Sage Brush Focal Areas (SFAs) and the establishment of lek buffers. Rather than using the established land management tools, the SFA framework was formalized in the pronouncement of an October 27, 2014 memorandum from former FWS Director Dan Ashe entitled "Greater Sage-grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes". Similarly, the application of lek buffer distances was integrated into another document previously not available or included in the DEIS for public review: a U.S. Geological Survey (USGS) report entitled Conservation Buffer Distance Estimates for Greater Sage-grouse - a Review, USGS Open File Report 2014 1239. Both SFAs and lek buffer distances were allowed to evolve from the NTT and COT reports into the 2015 plans without receiving adequate review and comment and in place of utilizing existing conservation tools already available.

Improved Habitat Mapping and Assessment Author: Dahlgren et al. Year: 2016 Title: Evaluating vital rate contributions to greater sage-grouse population dynamics to inform conservation: *Ecosphere*, v. 7, no. 3, article e01249, 15 p., Implications: Lek counts reliably estimate changes in GRSG populations, and telemetry studies are useful for demographic monitoring. In combination, these two methods can be used to measure life-cycle dynamics. Results suggest that GRSG females can exploit varying environmental conditions and may respond to management actions, whereas nest survival is highly variable and more affected by natural environmental variation. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Lek count and telemetry studies Significance: Improved methodology for populaion management

Improved Habitat Mapping and Assessment Author: Fregman et al. Year: 2016 Title: Male greater sage-grouse detectability on leks: *Journal of Wildlife Management*, v. 80, no. 2, p. 266-274. Implications:

Conducting sightability surveys to establish correction factors is recommended to avoid underestimation of regional GRSG abundance, particularly if vegetation and snow cover vary among leks. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique improvement; lek counts Significance: Sightability estimates are key to estimating population density or abundance from count data. Comments: Improves lek counting, outdates previous methods and anything that relied on previous standards

Improved Habitat Mapping and Assessment Author: Fregman et al. Year: 2017 Title: Male greater sage-grouse movements among leks: *Journal of Wildlife Management*, v. 81, no. 3, p. 498-508. Implications: The reported frequency of crossing between leks is higher than in previous estimates. As such, movements between leks may explain a substantial amount of variability in annual lek counts, reducing the ability of lek count data to accurately depict GRSG population abundance or trends. Lek counts done earlier in the spring are less likely than those done later (at peak attendance) to reflect population abundance, particularly in areas where male GRSG move to higher elevations as snowpack melts. Conducting lek counts during peak attendance and avoiding counts during days with precipitation, particularly at higher elevations, is recommended. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique improvement; lek counts Significance: Timing of lek counts is important to maximizing sighting of males at leks.

Improved Habitat Mapping and Assessment Author: Shyvers et al. Year: 2018 Title: Dual-frame lek surveys for estimating greater sage-grouse populations: *Journal of Wildlife Management*, v. 82, no. 8, p. 1689-1700. Implications: Study in northwestern Colorado. Authors report that, "We estimated that annual lek surveys captured an average of 45-74% of active leks and 43-78% of lekking males each year. Our results suggest that many active leks remain unknown and annual counts fail to account for a substantial, but variable, proportion of the number of active leks and lekking males in the population in any given year. Managers need to recognize this potential source of bias in lek-count data and, if possible, account for it in trend analyses and management efforts." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; lek counts Significance: Important for estimating population density and trends in low density populations. Comments: Data used by CPW and BLM for RMP development for NW Colorado is obviously biased.

Improved Habitat Mapping and Assessment Author: Coates et al. Year: 2019 Title: Estimating sightability of Greater Sage-grouse at leks using an aerial infrared system and N-mixture models. *Wildlife Biology*, 2019: wlb.00552, p. 1-11. Implications: The authors suggest that ground-based lek surveys are likely to result in population estimates about 14% lower than true values, especially in areas with high sagebrush cover. Using aerial integrated infrared imaging system surveys resulted in greater sightability rates, however using repeated morning ground-based surveys or generalized correction values provided by the authors could improve GRSG population estimates derived from ground-based lek counts. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; lek counts Significance: New method for estimating lek attendance and therefore, population trends.

Improved Habitat Mapping and Assessment Author: Fregman et al. Year: 2019 Title: Weather conditions and date influence male sage grouse attendance rates at leks: *IBIS*, v. 161, no. 1, p. 35-49. Implications: Considering potential biases of attendance, detection can improve the performance of lek counts as indices of population abundance. Attendance here was strongly influenced by precipitation, consistent with other studies and supporting lek-count protocols that discourage counts during rain. Slight negative effects of wind observed here also support avoiding counts during high winds. Supersedes NTT: Yes

Supersedes COT: Yes Issue: Technique refinement; lek counts Significance: Don't count sage grouse in the rain.

Improved Habitat Mapping and Assessment Author: O'Donnell et al. Year: 2019 Title: Designing multi-scale hierarchical monitoring frameworks for wildlife to support management: a sage-grouse case study: *Ecosphere*, v. 10, no. 9, p. 1-34. Implications: The ability to cluster GRSG leks into nested, biologically meaningful lek clusters may aid researchers and managers in producing population trend estimates at different spatial scales and help them determine drivers of trends across scales. This information will be important for developing effective management actions. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; population trends Significance: Additional research required for evaluation for implementation

Improved Habitat Mapping and Assessment Author: Wann et al. Year: 2019 Title: Assessing lek attendance of male greater sage-grouse using fine-resolution gps data-implications for population monitoring of lek mating grouse: *Population Ecology*, v. 61, no. 2, p. 183-197., <https://doi.org/10.1002/1438-390X.1019>. Implications: Lek-switching occurred at a higher rate than previously thought. Therefore, the authors recommended that surveys of leks within 4 km of each other should be conducted on the same morning to reduce the chance of double counting males. Date-corrected daily lek counts using attendance probability can reliably estimate population sizes, allowing more leks to be monitored less frequently. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; lek counts Significance: Potentially resolves issue with males moving between multiple leks by counting simultaneously.

Ramey et al. (2018) reported that regional climatic variation, as indexed by the Pacific Decadal Oscillation (PDO), was an important positive predictor of density changes at both the local and population level, particularly in the most recent part of the time series when lek count data were of higher quality.

In essence, the local and population-level effects should be quantified by the relative change in abundance of sage grouse after controlling for intrinsic factors such as density-dependence and extrinsic factors such as climatic variation (Coates et al. 2018; Ramey et al. 2018). As described below, these methods include analysis of lek counts based on stage-based population dynamic models. The sage grouse abundance should be based on lek counts (Walsh et al. 2004) as this data is relatively inexpensive and non-intrusive to collect, has been collected historically via ground-based visual surveys for several decades in many areas and provides an index of population abundance (Monroe et al. 2016). In particular, the counts of male sage grouse should be corrected for sightability (Fremgen et al. 2016; Coates et al. 2019), seasonality (Wann et al. 2019) and where possible time of day to provide an estimate of the absolute male attendance at each lek in each year. Lek counts from ground based visual surveys can be supplemented by more extensive aerial infrared surveys (Gillette et al. 2013), provided they are also corrected for sightability (Coates et al. 2019).

The change in abundance due to human activity should be quantified in terms of the change in male lek attendance relative to what the attendance would have been in the absence of the activity. In order to estimate this term it is not enough to simply compare the lek attendance before the activity to the lek attendance after the activity. This is because lek attendance in sage grouse like other tetraonids (Kvasnes et al. 2010) undergoes large oscillations driven by density-dependence (i.e. population density feedbacks affect population growth rate) and regional climatic variation (i.e. inter-annual and multi-decadal variation

in large-scale regional weather patterns) (Ramey et al. 2018). In other words, we must be able to account for these two naturally interacting processes in any analysis of human influences. Without accounting for these, the result could be an activity with a negative impact appearing neutral or even beneficial if it was undertaken while the population was recovering from lowered densities due to suboptimal climatic conditions. Likewise, a downturn may be entirely due to natural processes, rather than the activity in question (e.g. a low ebb in the Wyoming sage grouse can be expected as part of a population cycle, based almost entirely on the natural processes).

In addition to accounting for temporal dependencies due to population fluctuations, the statistical models also need to account for spatial dependencies in the response of individual leks. In particular the effect of an activity is expected to decay by distance while reductions at one lek could lead to decreases or increases at neighboring leks depending on whether depensation (i.e. decrease in local population density or number due to the loss of breeding adults) or compensation (i.e. displacement of breeding sage grouse to nearby, undisturbed leks) is occurring. The extent to which these mechanisms are operating and how best to model them remains an open question. However, this is an important question to answer because it is central to quantifying, the extent to which a locally-observed decrease in sage grouse density in a project area may, or may not be, contributing to an overall decrease in the carrying capacity of the larger, surrounding population, or the cumulative effects of multiple projects and activities on a population. In other words, the question of "how much is too much" development, relative to a desirable population threshold.

Depending on the scale, the most promising method(s) include statistical analyses that can either use other leks that are outside the zone of influence as controls and/or explicitly model density-dependence, climatic variation and other extrinsic factors (Ramey et al. 2018). Ideally they would do both. The resultant effect size should be expressed as the estimated n-fold change due to the activity with 95% confidence/credible intervals (Bradford et al. 2005). As described below, explicit models should be stage-based population dynamics models.

Excluding new primary, secondary, or high-activity roads within 1.9 miles of leks, and excluding all new road construction or location within 0.6 miles of leks (with no exceptions, waivers, or modifications)

The downward lek trends and population declines are worrisome; while sage-grouse are a cyclical species, the current downward trajectory is an anomaly.

Despite our extensive analysis and comments on the proposed changes in the 2019 RMPAs in regard to lek buffers, the DSEISs persist in maintaining the inadequate protections of the previous plans. We refer BLM to our previous comments - and extensive scientific evidence provided in literature - on this issue.

There have been a number of scientific studies demonstrating that lek buffers greater than the 0.25-mile lek buffers (e.g. authorized in the 2018 Idaho EIS for IHMA and GHMA, and also greater than the 0.6-mile buffers authorized for PHMA and SFA in the Idaho plan), are necessary to maintain current sage-grouse populations in the face of industrial development. No scientific study has ever recommended a lek buffer of 0.25 mile as an adequate conservation measure. The DSEISs don't provide any new or justifiable rationale for having weakened these standards in the FEIS or for rejecting the recommendations of an interagency team of sage-grouse experts from state and federal agencies who performed a comprehensive review of the scientific literature and recommended a 4-mile lek buffer for

siting industrial development in sage-grouse habitat (National Technical Team 2011), a prescription in greater accord with the science.

4.3.17 Livestock Grazing Management

BLM fails to consider new science showing harms to sage-grouse habitat from livestock grazing and fails to consider that even under the more-restrictive 2015 Plans, few changes to livestock grazing to address sage-grouse needs have occurred. BLM is treating addressing harms to sage-grouse from livestock grazing as a paper exercise instead of taking the substantive actions needed to protect the species' habitat. BLM's failure to address grazing by implementing the 2015 Plans only confirms that those Plans do not go far enough to protect sage-grouse and the 2019 Plans and SDEISs only repeat and exacerbate this error. New scientific studies more definitively link the presence of livestock grazing with cheatgrass. Time-series data and results in Williamson et al. (2019) indicate that grazing corresponds with increased cheatgrass occurrence and prevalence regardless of variation in climate, topography, or community composition, and provide no support for the notion that contemporary grazing regimes or grazing in conjunction with fire can suppress cheatgrass. None of the BLM's DSEISs incorporate or interpret this potential impact of livestock grazing on sage- grouse habitat.

The BLM has indicated in its scoping materials for the planned grazing regulations revision that it intends to make significant changes in how NEPA will be applied to grazing authorizations. According to the documents provided, the BLM will be seeking to eliminate the requirement for notice, comment, protest, and appeal on a substantial number of authorizations. These might include permits for trailing and crossing of livestock and temporary permits for "targeted grazing," supposedly to reduce fuel loads and wildfire risk. Targeted grazing authorizations are likely to include livestock infrastructure including fencing, water tanks and wells all of which can have significant negative impacts to sage-grouse in addition the impacts of the grazing itself which is likely to segment habitat and create barriers to sage-grouse migration, breeding, nesting and brood rearing. The BLM must address the impacts of targeted grazing on sage-grouse and discuss how any new categorical exclusions proposed in the grazing regulations revision might impact sage-grouse habitat.

the revisions to MD LG 16 omit including into the alphabetical items in MD LG 16 the clarification made in the DSEIS relative to its reliance upon the COT and NTT Reports in Appendix S-1. Specifically, Appendix S-1 allows revision of livestock management direction "to incorporate key components of the Governor's sage grouse plan into BLM Management Direction (MD)" so as to include: (a) removing the threshold and response requirement during livestock permit renewal; and (b) reiterating that grazing is guided by the C.F.R. 4100 Regulations. See DSEIS, Appendix S-1, at page APP-S-1-18. We support this approach, though the DSEIS erroneously fails to apply that approach in its revision of MD LG 16 and of MD LG 17 by not explicitly speaking to remove the threshold and response requirement during livestock permit renewal.

Grazing Author: Monroe et al. Year: 2017 Title: Patterns in greater sage-grouse population dynamics correspond with public grazing records at broad scales: *Ecological Applications*, v. 27, no. 4, p. 1096-1107, Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: High levels of grazing in this study represent intensities near maximum allowable levels defined by the Bureau of Land Management. Study findings did not suggest that reducing these grazing levels would benefit GRSG populations, but rather that grazing may have both positive and negative effects on GRSG, depending on timing and intensity. Study results suggest that broad-scale analyses are important to

capture the range of responses that wildlife can have to land-use and livestock management. These findings could also help guide sustainable livestock management decisions, such as delaying high-level grazing until after peak vegetation productivity, in similar habitats. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; grazing management Significance: Prioritization of management actions to improve grazing in GRSG habitat.

Grazing Author: Cutting et al. Year: 2019 Title: Maladaptive nest-site selection by a sagebrush dependent species in a grazing-modified landscape: *Journal of Environmental Management*, v. 236, no. Epub 2019, p. 622-630 Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: These findings suggest that certain sagebrush habitats may function as ecological traps, whereas others may be undervalued, especially in an actively grazed setting. Additional fencing in these locations may lower GRSG nest survival rates. Author Highlights, " Nest survival in preferred sagebrush type was one-fourth the rate in type avoided. Nest survival was four times higher when placed >100 m away from nearest fence. Timing of graze could best achieve herbaceous requirements for successful nesting. Fence modifications along with prioritization of sagebrush type are discussed." Issue: Grazing; mitigation Significance: Recommendations to avoid ecological traps in areas subject to grazing

Grazing Author: Runge et al. Year: 2019 Title: Unintended habitat loss on private land from grazing restrictions on public rangelands: *Journal of Applied Ecology*, v. 56, no. 1, p. 52-62. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Restricting grazing on public lands could result in increased GRSG habitat loss on private land over the next 30 years. It is important to consider the connections between public land policy and private land use change. Policies that balance the need to conserve habitat on public lands with economic needs of ranchers are promising. Supersedes NTT: Yes Supersedes COT: Yes Issue: Grazing management Comments: Unintended consequences

Grazing Author: Taylor et al. Year: 2019 Title: Economic impact of sage grouse management on livestock grazing in the Western United States: *Western Economics Forum*, v. 17, no. 1, p. 98-114. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Reducing or eliminating livestock grazing on federally protected lands recognized as GRSG habitat would create negative economic impacts on both a ranch-scale and regional-scale, and may create increased economic burdens for rural communities in western states. Issue: Grazing

In addition, the DSEISs inexplicably fail to consider closure of sage-grouse allotments upon receipt of voluntarily waived grazing permits. This action was identified within one of the alternatives in each of the 2015 plans, but not carried forward into the 2018 analyses or 2019 decisions. The interest in and need for grazing permit retirement has only grown since the earlier plans, but none of the DSEISs consider the action.

Our previous comments and protests have discussed the inadequacy of current rangeland health assessments to ensure the protection and restoration of sage-grouse habitat. The BLM, as a central component of the grazing regulations revision, appears to be advocating for moving from site-specific assessments of rangeland health on a 10-year timeline to larger scale assessments at the watershed or even RMP level which may only occur every 30 years or more. The BLM, therefore, must include in its current analysis a discussion about how any changes to scale and timeframe for rangeland health assessments will impact sage-grouse habitat management and the responsiveness of agency land managers to adjust grazing practices when standards are not met.

4.3.18 Withdrawal Recommendation and SFAs (Sagebrush Focal Areas)

Lack of consultation and coordination with state and local partners is a failure that plagued the 2015 land use plan development process throughout. As a result, the U.S. District Court for the District of Nevada held that BLM and USFS violated NEPA by failing to prepare a supplemental EIS to examine the SFA designations and allow for public comment. This failure underscores the process by which the overly restrictive 2015 plans were developed and the shortcomings that could have been avoided had the agencies deferred to state plans for Greater Sage Grouse conservation.

The Idaho District Court characterized the elimination of SFAs and "downgrading" these areas to Priority Habitat Management Areas (PHMAs) as a reduction in protection for the Greater Sage Grouse, and that in removing the SFAs, the final EISs for the revised plans "failed to identify any changes on the ground - or in the science - since the COT Report that had explained the need for the SFAs and designated those areas or the highest protection from energy development and other surface disturbance."¹³ Here again the Court ignored the fundamental change that had occurred - the rescission of the discretionary 10-million-acre mineral withdrawal that the SFA designation was created to support in the first place. ¹³ *Western Watersheds Project et al v. Schneider et al*. Case No. CV-00083-BLM, 2019, at 11. (D. Idaho Oct. 16, 2019).

The lack of basis for the withdrawal, and the contrived SFA designation designed to support it, was fully demonstrated by the BLM's own conclusion that mining impacted less than 0.1 percent of the Sage Grouse population.¹⁴ The DEIS explained that SFAs duplicate many protections already in place in PHMAs and do not provide appreciable benefit to the Greater Sage Grouse, including addressing the primary threats of wildfire and invasive species.¹⁵ As discovered during the NEPA process commenced to facilitate the withdrawals, the purported threat to the Greater Sage Grouse as dictated by the FWS was infinitesimal compared to the overall acreage proposed to be withdrawn. The BLM DEIS noted: "The total amount of mining related disturbance in Sagebrush habitat under the No Action Alternative [no withdrawal] would be 9,554 acres . . . , or approximately one-tenth of 1 percent of the total withdrawn area."¹⁶ (Emphasis added.) Indeed, the difference in acres that could be disturbed over 20 years between no withdrawal and a withdrawal of approximately 10 million acres was a mere 6,934 acres. Due to the compelling evidence related to the relatively small footprint of anticipated and foreseeable mining activities, on October 11, 2017, BLM allowed the two-year segregation period to expire by operation of law and cancelled the proposed SFA withdrawal.¹⁷ The shortcomings of the SFA designation and lek buffers included in the 2015 land use plans and grounded in the NTT and COT reports are well documented in the administrative record, and the Idaho District court erred in finding that deviation from these mechanisms constituted a reduction in Greater Sage Grouse protection without adequate review. ¹⁴ *Sagebrush Focal Areas Withdrawal Environmental Impact Statement*, Idaho, Montana, Oregon, and Wyoming (Dec. 2016) at 4-71. ¹⁵ *Id.* ¹⁶ *Id.* ¹⁷ 82 Fed. Reg. 195, Oct. 11, 2017 at 47248.

Gold deposits like Gravel Creek (worth a gross \$3 billion and growing) and Doby George are extremely rare, costly, and difficult to find; the odds of finding another similarly promising deposit elsewhere are extremely remote. Although the withdrawal was cancelled as unnecessary (which was appropriate) the segregation of these lands effective September 24, 2015 created a significant cloud of uncertainty on the project and continued development and had a chilling effect on Western's ability to continue raising necessary funds for its development. This is yet another reason why the No Action alternative should not be adopted and the BLM should consider this effect on WEX and similarly-situated mining

companies with valid existing rights in the DSEIS and should consider clarifying and confirming that such analysis must occur prior to any proposed withdrawal (based on existing law and regulations to avoid such harm in the future) in the future. WEX strongly supports and urges the BLM to adopt the provisions in the Management Alignment Alternative that eliminate the SFAs, remove any reference to any potential withdrawal of lands from mineral entry and reject in totality the No Action Alternative the adoption of which would not comport with the law.

the proposal for a potential mineral withdrawal included in the 2015 GSG LUPA was just that and not a foregone conclusion that it would be completed. As WEX argued to the Nevada District Court, we believe it was a legal shortcoming that the 2015 LUPA SEIS did not include a mineral potential report before proposing the withdrawal in the SEIS of 10 million acres of land (and was improper segmentation of the necessary NEPA processes). Once the proper NEPA analysis including the mineral potential in the area and a proper socioeconomic analysis of the impacts of such a withdrawal, the decision was clear: "the proposal to withdraw 10 million acres was unreasonable in light of the data that showed that mining affected less than 0.1 percent of Greater Sage-Grouse-occupied range." See DSEIS, Sec. 4.5.2, p.4-42 (quoting the BLM's Notice of Cancellation of Withdrawal Application and Withdrawal Proposal).

B. The Cancellation Of The Proposed SFA Withdrawal Necessitates Removal Of The SFA Designations
As previously mentioned, part of the additional management package that accompanied the designations of SFAs was the recommendation to withdraw approximately ten million acres from operation of the Mining Law. The recommendation to withdraw in the 2015 Amendments was put into action upon the issuance of the RODs/LUPAs. See 80 Fed. Reg. 57,635 (Sept. 24, 2015) (notifying the public of the proposed withdrawal of BLM and Forest Service lands identified as SFAs in Idaho, Montana, Nevada, Oregon, Utah, and Wyoming). This notice also began the two- year segregation period, which prohibited entry and location on those lands. When the 2016 DEIS for the proposed withdrawal was released, it was clear the withdrawal of approximately ten million acres was not necessary to protect the greater sage-grouse or its habitat. For instance, even if no withdrawal occurred only 9,554 acres of the approximately ten million acres proposed for withdrawal could be disturbed by mining over a 20-year period. DEIS at vii, 4-87 ("The total amount of mining related disturbance in sagebrush habitat under the No Action Alternative [i.e., no withdrawal] would be 9,554 acres ..., or approximately one-tenth of 1% of the total withdrawal area." (emphasis added)). In fact, the difference in acres that could be disturbed over 20 years between no withdrawal and the withdrawal of approximately ten million acres was only 6,934 acres

Although the SFAs and the lek buffers constituted substantial changes to the proposed action, no supplemental EIS was prepared to analyze them and the public was not provided an opportunity to offer input on their use as guiding elements of the 2015 land use plans. As a result, the 2015 plans did not reflect the best scientific information available to and used by the states that are home to the Greater Sage Grouse. Comments included in the SFA EIS Scoping Report and critiques by Western governors raised serious questions regarding the scientific integrity of the SFAs and their usefulness in the stated objective of Greater Sage Grouse conservation. Commenters also noted that portions of the SFAs were not suitable as Greater Sage Grouse habitat and that certain areas included within the designation are uninhabitable by the species due to past wildfire and lack of sagebrush ecosystems, facts which would have been obvious if BLM adequately assessed these lands on the ground in concert with state and local partners. Lack of consultation and coordination with state and local partners is

a failure that plagued the 2015 land use plan development process throughout. As a result, the U.S. District Court for the District of Nevada held that BLM and USFS violated NEPA by failing to prepare a supplemental EIS to examine the SFA designations and allow for public comment. This failure underscores the process by which the overly restrictive 2015 plans were developed and the shortcomings that could have been avoided had the agencies deferred to state plans for Greater Sage Grouse conservation. In addition to the procedural and scientific flaws of the SFA designation, SFAs were principally designed to support a 10-million-acre withdrawal of lands from location or entry under the General Mining Law of 1872 that was unjustified and which has since been rescinded. The Idaho District Court characterized the elimination of SFAs and "downgrading" these areas to Priority Habitat Management Areas (PHMAs) as a reduction in protection for the Greater Sage Grouse, and that in removing the SFAs, the final EISs for the revised plans "failed to identify any changes on the ground - or in the science - since the COT Report that had explained the need for the SFAs and designated those areas or the highest protection from energy development and other surface disturbance."¹³ Here again the Court ignored the fundamental change that had occurred - the rescission of the discretionary 10-million-acre mineral withdrawal that the SFA designation was created to support in the first place.

The lack of basis for the withdrawal, and the contrived SFA designation designed to support it, was fully demonstrated by the BLM's own conclusion that mining impacted less than 0.1 percent of the Sage Grouse population.¹⁴ The DEIS explained that SFAs duplicate many protections already in place in PHMAs and do not provide appreciable benefit to the Greater Sage Grouse, including addressing the primary threats of wildfire and invasive species.¹⁵ As discovered during the NEPA process commenced to facilitate the withdrawals, the purported threat to the Greater Sage Grouse as dictated by the FWS was infinitesimal compared to the overall acreage proposed to be withdrawn. The BLM DEIS noted: "The total amount of mining related disturbance in Sagebrush habitat under the No Action Alternative [no withdrawal] would be 9,554 acres . . . , or approximately one-tenth of 1 percent of the total withdrawn area."¹⁶ (Emphasis added.) Indeed, the difference in acres that could be disturbed over 20 years between no withdrawal and a withdrawal of approximately 10 million acres was a mere 6,934 acres. Due to the compelling evidence related to the relatively small footprint of anticipated and foreseeable mining activities, on October 11, 2017, BLM allowed the two-year segregation period to expire by operation of law and cancelled the proposed SFA withdrawal.¹⁷ The shortcomings of the SFA designation and lek buffers included in the 2015 land use plans and grounded in the NTT and COT reports are well

documented in the administrative record, and the Idaho District court erred in finding that deviation from these mechanisms constituted a reduction in Greater Sage Grouse protection without adequate review.

4.3.19 Mitigation

BLM must evaluate the impacts of not requiring compensatory mitigation and alternatives to address those impacts. To the extent BLM still considers removing the compensatory mitigation requirement and will rely on voluntary actions by operators and enforcing state requirements, the agency must consider the impacts of that change. Removing the compensatory mitigation requirement is a textbook example of a significant change that necessitates supplemental NEPA. 40 C.F.R. § 1502.9(c). Despite BLM's attempts to ignore the likely consequences, the loss of required mitigation that is enforced by BLM means that there is no consistent assurance mitigation will occur. The resulting loss of habitat must be analyzed, especially in light of the loss of population and habitat described above and in Exhibit 4 that

will compound these effects. BLM must consider alternatives that will address these increased threats to sage-grouse, such as increasing reliable protections from activities that damage habitat through measures like increasing protections for lands open to leasing. See, 40 C.F.R. §1502.14. BLM must conduct compliant supplemental NEPA to address the major effects of no longer requiring compensatory mitigation.

The State will work with the BLM to recommend, when appropriate, compensatory mitigation actions that create, restore, and/or protect functional habitat or habitat corridors to offset the impacts of unavoidable permanent disturbance to sage-grouse habitat. Generally, the State will recommend for every one acre of functional sage-grouse habitat permanently disturbed by project proponents, four acres of functional habitats or corridors created, restored, and/or preserved, as identified in the amended Utah Administrative Rule R634-3. Utah's compensatory mitigation ratio accounts for direct and indirect impacts that may result from permanent disturbance, differences in habitat quality, and uncertainty related to mitigation success. This ratio reduces project costs by simplifying the analysis of these factors, while also ensuring effective conservation outcomes.

The compensatory mitigation strategy contained in the Draft SEIS and the proposal to work with the State, the BLM, and the project proponents to analyze applicant-proposed or state-imposed compensatory mitigation to offset residual impacts is the best way to balance development and conservation in alignment with the State management plan.

I feel that compensatory mitigation is inadequate to mitigate for loss of Greater Sage-Grouse. You cannot compensate for the potential loss of a species like the Greater sage-Grouse monetarily. The new plan could significantly reduce the GRSG's chances of survival, and this is a tragic loss for all of us and future generations of Americans. I believe that the BLM has a Public Trust obligation to protect the Greater Sage-Grouse for all of us.

Supplemental Draft EISs should have been issued as required by NEPA when the BLM decided to eliminate mandatory compensatory mitigation. We are opposed to the elimination of mandatory compensatory mitigation, as mandatory compensatory mitigation is a cornerstone component contributing to the 2015 FWS determination that the GRSG is "not warranted" for listing under the ESA. An attempt to offer compensatory mitigation to development proponents as voluntary and regulated only under relevant State authorities both undermines the monumental collaborative conservation effort that resulted in the 2015 FWS determination and is likely to impose disadvantageous range wide impacts to GRSG. Further, the 2020 DSEIS does not appear to provide any substantive justification for eliminating mandatory compensatory mitigation.

Elimination of mandatory compensatory mitigation is likely to impose disadvantageous range wide impacts to GRSG by transferring compensatory mitigation authority to the State level. Consistent with the myriad of issues associated with the range wide cumulative impact analysis, "the states have no legal authority to dictate how federal lands are to be managed or to impose conditions like compensatory mitigation on federal land users" (DSEIS, C-172). Further pointing out the need for Federal involvement with regards to compensatory mitigation. GRSG occupy a geographic range composed of several states and they rely on habitat connectivity to persist. Imposing a state-led and therefore piecemeal compensatory mitigation policy is sure to result in range wide fragmentation of conservation efforts because compensatory mitigation policies are variable in degree of protection between states and also subject to change over time as political factors shift and economic reality varies. The 2020 DSEIS failed

to consider this concept and as a result, includes no substantive impact analysis or conclusionary justification regarding the potential benefits or detriments that such a policy modification may impose on GRSG across its range.

In addition, Section 4.13 Page 5-54 of the 2020 DSEIS presents language that suggests that there is not yet enough data regarding compensatory mitigation to provide a science-based assessment of compensatory mitigation "effectiveness or degree of benefit": "While the BLM has more than 90 RMPs, 9 strategies, and 45 agreements in active use that contain or address compensatory mitigation, the BLM has identified only limited implementation of compensatory mitigation consistent with the 2015 Greater Sage-Grouse Plans. Using data gathered in 2017, the BLM identified 13 Greater Sage-Grouse projects across 5 BLM states with a mandatory compensatory mitigation component or net gain standard implemented between October 2008 and June 2017.

In many cases, it is still too soon in the implementation of these compensatory mitigation actions to measure the effectiveness or degree of benefit each action provides." As the BLM acknowledges that the best available science shows that more information is required to provide a defensible conclusion regarding compensatory mitigation actions, it would be both irresponsible and unethical to modify the current compensatory mitigation policy until sufficient data has been collected to inform a formal NEPA analysis of the matter.

We maintain that BLM's position that it cannot require compensatory mitigation is unlawful. BLM's analysis is inaccurate and BLM has ample authority to require compensatory mitigation under FLPMA. First, IM 2019-018 relies on a Solicitor Memorandum M-37046, "Withdrawal of M-37039, "The Bureau of Land Management's Authority to Address Impacts of its Land Use Authorizations Through Mitigation." (June 30, 2017). Solicitor Memorandum M-37046 withdraws a previous Solicitor Opinion that confirmed BLM's authority to address land use authorizations through mitigation but did not conclude BLM did not have the subject authority; rather, it "attempted to answer an abstract question." In actuality, the direction in both IM 2019- 018 and the 2019 Amendments are arbitrary and capricious, and in violation of law.

To the extent BLM still considers removing the compensatory mitigation requirement and will rely on voluntary actions by operators and enforcing state requirements, the agency must consider the impacts of that change. Removing the compensatory mitigation requirement is a textbook example of a significant change that necessitates supplemental NEPA. 40 C.F.R. § 1502.9(c). Despite BLM's attempts to ignore the likely consequences, the loss of required mitigation that is enforced by BLM means that there is no consistent assurance mitigation will occur. The resulting loss of habitat must be analyzed, especially in light of the loss of population and habitat described above and in Exhibit 4 that will compound these effects. BLM must consider alternatives that will address these increased threats to sage-grouse, such as increasing reliable protections from activities that damage habitat through measures like increasing protections for lands open to leasing. See, 40 C.F.R. §1502.14. BLM must conduct compliant supplemental NEPA to address the major effects of no longer requiring compensatory mitigation. Recommendations: If BLM intends to proceed with a Supplemental EIS process, then BLM must address the flaws in the NEPA analysis connected with the 2019 Amendments, including the failures to fully assess the impacts of the changes to the 2015 Sage-grouse Plans and to consider an actual range of alternatives.

The revisions to the compensatory mitigation guidelines will likely prove to limit maintenance and/or restoration of habitat for sage-grouse. The new guidelines rely on existing policies to “fill in the blanks” when the BLM can’t. Reliance on mitigation banking may be the most economical solution for “achieving reparations”, but it is certainly not the most effective environmentally. Mitigation banking improves areas outside the area of concern, leaving the management area degraded. The no net loss concept embedded in conservation banking has proven to be, at best, modestly successful (Bull, J.W., Suttle, K.B., Gordon, A., Sing, N.J., Milner-Gulland, E.J., 2013). The implementation of a biodiversity offset by conservation banking walks a fine line between conservation and economic growth. Mitigation banking cannot be exchanged like currency to compensate for damages to the environment. Greater sage-grouse already suffer habitat loss due to climate change, suffering habitat loss due to anthropogenic, permitted events cannot be corrected indirectly by a mitigation banking system. Mitigation strategies concerning greater sage-grouse habitat areas should primarily be focused on ecological outcomes that directly correspond with greater sage-grouse populations. The mitigation banking strategy proposed by this plan is not sufficient in promoting the longevity of the species. The purpose of this EIS is to promote the conservation of sagebrush habitat for the greater sage-grouse species and to prevent the extinction of said species. The threshold of efficacy that conservation banking would have on a species bordering extinction is too small

Because priority habitat management areas (PHMAs) are discrete areas located throughout the range of sage-grouse, large-scale conservation strategies being pursued by BLM depend not only on maintaining suitable habitats within each priority area, but also in large part on maintaining the range-wide connectivity of populations among these priority areas. The loss of connectivity among sage-grouse population strongholds due to human-related or naturally occurring disturbance is a strong predictor of long-term population declines. BLM has a critical role in managing connectivity and other broad-scale issues. Yet, the agency's recent push towards project-specific evaluations and the elimination of its avoidance options (e.g., prioritization of oil and gas leasing outside of important sage-grouse habitats has been discontinued in practice by BLM [Instructional Memorandum 2018-026]) suggest that the BLM has no viable landscape-scale approach to managing impacts to sage-grouse or its habitats. Furthermore, the BLM currently is not requiring compensatory mitigation and has deferred to state plans. While deference to state authority and mitigation programs may work, we remain skeptical as to not only compliance but also effectiveness for achieving a no-net-loss standard. In other words, the lack of a broad perspective on management, restoration and mitigation will likely lead to continued degradation and loss of sage-grouse habitats as development in these habitats proceeds. The SEISs offer no analyses related to mitigation or restoration, which represents a fatal flaw in BLM's analysis of new information and circumstances.

IM No. 2018-093, however, does authorize voluntary compensatory mitigation by a project proponent. To ensure that compensatory mitigation is voluntary, the IM cautions that BLM must not explicitly or implicitly suggest that a project approval is contingent upon proposing a "voluntary" compensatory mitigation component, or that doing so would reverse or avoid an adverse finding. Importantly, the IM notes that "[e]ven if FLPMA authorizes the use of compensatory mitigation, it does not require project proponents to implement compensatory mitigation."²¹ Accordingly, the IM concludes that BLM will not mandate compensatory mitigation as a condition of project authorizations unless required by law. As such, compensatory mitigation, the foundation for the "net conservation gain" standard applied across the 2015 plans adopted across the range of BLM GRS planning area, has been renounced. Similarly, On July 30, 2018 FWS formally withdrew two significant mitigation policies of the previous Administration.

The first policy, issued on Nov. 6, 2017, related to ESA compensatory mitigation policy, was withdrawn by the Endangered and Threatened Wildlife and Plants; Endangered Species Act Compensatory Mitigation Policy.¹⁹ The second, a Nov. 2016 policy, guided the Service on recommendations to mitigate impacts of activity of land and water developments on fish, wildlife, plants, and their habitats, was withdrawn by the FWS Mitigation Policy. The withdrawn policies were eleventh hour pronouncements by the previous Administration that imposed a net conservation gain standard as applied to matters particularly focused under the ESA, in addition to throughout FWS-related activities.

As justification for the policy revocation, FWS acknowledged serious concern that requiring mitigation for impacts unrelated to a project proponent's actions as potentially implicating federal constitutional concerns related to the Fifth amendment prohibition on takings.²⁰ Additionally, according to FWS, "[t]he ESA requires neither 'net conservation benefit' nor 'no net loss,' and [FWS] has not previously required a 'net benefit' nor 'no net loss' while implementing the ESA.²¹ FWS recognized that, threaded between Sections 7 and 10 of ESA, "the applicant may do something less than fully minimize and mitigate the impacts of the take where to do more would not be practicable," while still advancing Section 7(a)(2) obligation to ensure that any federal activity is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of habitat.²² Accordingly, there is no legal basis to impose a "net conservation gain" standard in any way in the land use planning process. The Idaho District Court ignored BLM's IM and its well-founded interpretation of the law that FLMPA does not support mandatory compensatory mitigation and the Service's withdrawal of the policies on which net conservation gain was based. It is inappropriate to conclude that the rescission of unauthorized standards can serve as a degradation in species protection under the law. By extension, it is also inappropriate to conclude that the BLM violated NEPA by failing to analyze the impacts of not implementing standards it was not authorize to implement in the first place, and which had since been rescinded.

Another difference between past and current oil and gas development, particularly in the Pinedale Planning Area, has been the implementation of extensive mitigation measures designed to reduce overall impacts to sage grouse and enhance their habitat. Mitigation measures became notable with development of the Pinedale Anticline starting in 2000 (BLM 2000, 2008a) followed by the Jonah Drilling Infill Project (BLM 2006b) and culminating in the Pinedale Resource Management Plan Record of Decision (BLM 2008b). These measures have resulted in 183,608 ha of sage grouse habitat in the Pinedale Planning Area set aside by the BLM as unavailable to oil and gas development (BLM 2008b)

The DSEIS fails to include a fresh hard look at the removal of compensatory mitigation requirements from the 2019 plans. In order to properly assess the effects of this change from the 2015 plans, the BLM must first disclose an estimated amount of money set aside for compensatory mitigation over the life of the plan, then make educated estimates of how that money might be used to improve habitats (types of projects, acreage estimates), and then take a hard look at the population increases that such projects might be expected to generate, based on monitoring data from past compensatory mitigation projects. Please provide the information on projects funded, type of compensatory mitigation project funded, acres treated, and sage-grouse population gains (or losses) that occurred subsequent to compensatory mitigation projects in which BLM is a participating, funding, or observing member. Rangewide figures for acres treated and dollars spent in the past do not inform a "hard look" at the magnitude of the impacts of making compensatory mitigation optional (or leaving it up to the state, which amounts to the same thing since federal agencies cannot compel state agencies to require compensatory mitigation). BLM

asserts again in the DSEIS that vegetation treatments will offset the loss of federally-mandated compensatory mitigation, without acknowledging the past failures of such treatments or BLM's own acknowledgement that sage-grouse "did not benefit from, or were negatively affected by, prescribed fire and mechanical sagebrush removal." Oregon FEIS at 3-4. BLM also falsely claims that state mitigation programs will offset the loss of federal requirements. However, most states do not require compensatory mitigation at the same standard as the previous federal requirements. Many state programs are voluntary, narrow the circumstances in which the requirement applies, or reduce the standard by which habitat loss must be mitigated. Indeed, not all states even have their plans finalized yet. The BLM fails to disclose the potential implementation of these state mitigation plans but simultaneously fails to safeguard public lands by creating its own.

BLM also failed to acknowledge that it simultaneously amended its plans to allow operators to waive other restrictions-such as lek buffers and disturbance caps-if they "offset" impacts through state compensatory mitigation programs. See, e.g., UT 56 (MA-SSS-3B); CO 174-75 (NSO-2); ID 031; NVCA 215. As a result of these related changes, compensatory mitigation may actually facilitate habitat destruction under the 2019 Plan Amendments.

Instead of analyzing the impacts of compensatory mitigation removal, BLM punts analysis of effects to sage grouse habitats and populations in favor of vague assertions that "mitigation would continue." See, e.g. Idaho DSEIS at 4-28, Northwest Colorado DSEIS at 4-45. The closest the agency comes to a 'hard look' at mitigation effectiveness is the following: Anecdotally, the existing conservation credit systems, banks, and exchanges designed to offset impacts to Greater Sage-Grouse or its habitat have had mixed success. The BLM is aware of three mitigation banks (one commercial bank agreement in Wyoming and two single-user bank agreements with mining companies in Nevada) and one exchange system in Colorado specific to Greater Sage-Grouse currently in operation. However, the BLM does not have access to data or information that would further assess the relative benefit provided by these systems.

Furthermore, "it is speculative to assume the impacts from voluntary compensatory mitigation at the planning level without knowing the frequency with which project proponents would offer voluntary actions. The applicability and overall effectiveness of voluntary actions cannot be fully assessed until the project level when the specific location, design and impacts are known." See, e.g. Idaho DSEIS at 4-31; Wyoming DSEIS at 4-99; Northwest Colorado DSEIS at 4-47. Thus, instead of taking the legally required hard look at impacts of changing compensatory mitigation requirements, the best the BLM can muster is an admission that they have no idea. NEPA requires at least an informed estimate.

The BLM jettisoned the compensatory mitigation promised in the 2015 plans under the policy that BLM would only consider compensatory mitigation as a component of compliance with state mitigation plans, programs or authority, or when offered voluntarily. See, e.g. Idaho DSEIS at 2-3, Colorado DSEIS at 2-9. But nowhere do the plans take a comprehensive look at what the states' plans, programs or authorities are, nor the likelihood of voluntary mitigation by developers. Without this information, it is impossible to assess the overall mitigation in sage- grouse range, underscoring how destructive and uncertain these plans are.

The Idaho and Wyoming DSEISs do admit that the difference between "Net Conservation Gain" to "No Net Loss" has not been defined by BLM. Idaho DSEIS at 4-27; Wyoming DSEIS at 4-100. This is a very basic requirement of NEPA. See, e.g. *Or. Natural Desert Ass'n v. Rose*, 921 F.3d 1185, 1189-90 (9th Cir. 2019) (Interior Board of Land Appeals acted arbitrarily and capriciously where it changed the definition

of a "route" in a travel plan, but failed to explain "what led it to alter its earlier decision or why the new approach was more consistent with the text of the Steens Act"). Moreover, BLM's DSEISs are asserting that this change is not significant: "The BLM is not proposing any action that would preclude proponents from offering compensatory mitigation; it is clarifying the BLM's reliance on voluntary compensatory mitigation consistent with federal law." But there is a significant difference between requiring "net gain" and making any gains voluntary in terms of the "adequacy" of a regulatory mechanism. See, e.g., Idaho DSEIS at 4-34; Wyoming DSEIS at 4-102. One ensures that there is offset for habitat impacts and the other doesn't. The difference is greater than or equal to every developed/degraded acre. The forthcoming SEISs must admit and analyze this truth.

4.3.20 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals

Removing waivers, modifications, and exceptions from habitat protection standards, so that they will be rigorously and dependably applied;

4.3.21 Prioritization of Mineral Leasing

Finally, BLM has not evaluated the impacts of its increased leasing and permitting in sage- grouse habitat. Since 2017 and this administration's abandonment of prioritizing leasing and development outside habitat, there has been a radical increase in leasing and permitting in sage- grouse habitat. See, Oil and Gas Development on Federal Lands and Sage-Grouse Habitats October 2015 to March 2019.⁵ Since the beginning of this administration, more than 4 million acres of grouse habitat have been put up for lease and approximately 2.5 million acres have sold. As the court noted, "there is no indication" that the administration will proceed at any slower pace. *WWP v. Schneider*, 417 F.Supp.3d at 1334. Given this trend, BLM can and should evaluate the impact of ongoing leasing and permitting in habitat. ⁵ available at https://www.audubon.org/sites/default/files/greater_sage-grouse_habitat_reportfinal_20190725.pdf

If the hard look at the impacts of eliminating mandatory compensatory mitigation was lacking in the FEIS, the impacts analysis on the impact of prioritizing oil and gas leasing and development outside sage grouse PHMA was completely absent. The DSEISs repeat these mistakes. Under the Obama administration, approximately 5 million acres of oil and gas leases nominated by the industry inside PHMA were pulled from the auction block under this provision. How many acres of PHMA would be abandoned as a result of leasing inside PHMA over the life of the plan amendment? To what degree would sage-grouse populations decrease as a result of leasing inside PHMA? The FEIS and the DSEIS are silent. Furthermore, BLM does not even attempt to address the elimination of prioritizing project-level development outside PHMA, which is required under the 2015 ARMPAs but eliminated under the 2018/2020 EISs.

4.3.22 Greater Sage-Grouse

Analysis of GRSG population impacts from predation and hunting must be included and considered in the development of the final land use plans. The Counties urge BLM to coordinate with local governments and the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service on these issues. In addition, any land use plans must recognize that GRSG populations respond to changes in weather. Wet or dry years are the biggest influence on populations apart from predation and hunting.

Support the development of recovery plans within 18 months of listing that includes clear objectives to reach for delisting to occur; for species already listed support the development of a recovery plan within 18 months of this document.

Require the petition of the immediate delisting of a species when population or recovery plan objectives have been met.

Support the development of local solutions (e.g., habitat management plans, conservation plans or conservation plans with assurances) to keep a species from being listed under ESA or as species of concern/species of special concern.

Include consideration of management activities on federal lands as part of the local solutions to keep a species from being listed under ESA or as a species of concern/species of special concern.

Additionally, BLM has just completed a Programmatic EIS for Fuel Breaks in the Great Basin that will guide BLM to "construct and maintain a system of up to 11,000 miles of strategically placed fuel breaks to control wildfires within a 223 million-acre area in portions of California, Idaho, Nevada, Oregon, Utah and Washington."4 As discussed in Exhibit 4, in the opinion of sage-grouse experts, this approach will require destruction of sage-grouse habitat and could result in substantial loss and/or degradation of sagebrush habitat. BLM must consider this new information when evaluating likely impacts to sage-grouse from the 2019 Amendments. 4 <https://www.blm.gov/press-release/interior-improves-strategies-combat-wildfires-across-223-million-acres-great-basin>

3.D. Mineral Withdrawal Simplot supports the continued exclusion of SFAs as stated in the DSEIS and the prior withdrawal of the application to designate approximately 10 million acres of public and National Forest system lands located within Idaho, Montana, Nevada, Oregon, Utah, and Wyoming as SFAs. In its 2010 finding, the FWS identified a number of specific threats to GRS in the Great Basin Region; including the widespread present and potential impacts of wildfire, the loss of native habitat to invasive species, and conifer encroachment. Mining was not identified as a primary threat. This is further supported in the DSEIS at page ES-1: "The BLM determined that the proposal to withdraw these areas was unreasonable in light of the data that showed that mining affected less than 0.1 percent of Greater Sage-Grouse across its occupied range." The DSEIS further clarifies at page 4-76 that: "In its 2016 SFA Withdrawal EIS, the BLM quantified the possible adverse effects from locatable mineral exploration and mining on the approximately 10 million acres of SFAs proposed for withdrawal, finding that they would be limited to approximately 9,000 acres rangewide of surface disturbance over 20 years, with approximately 0.58 percent of Greater Sage-Grouse male birds possibly affected per year. The other action alternatives evaluated in the 2016 SFA Withdrawal Draft EIS similarly demonstrated negligible benefit of the proposed withdrawal to Greater Sage-Grouse and its habitat."

Because the initial purpose behind the entire BLM Sage-Grouse RMP amendment process was conditioned upon the principal goal "to avoid a potential listing" under the Endangered Species Act (ESA), the 2020 Final SEIS needs to cure the failure of the 2015 and 2019 NEPA processes by evaluating the environmental impacts of the alternatives with respect to Sage-Grouse population status and trends. The Final SEIS needs to evaluate current population status and trends and needs to disclose how the various alternatives would impact future population trends which directly affect the purported risk that Greater Sage-Grouse may face "potential listing" under the ESA.

Sage-grouse population declines and habitat loss represent significant new environmental information that bears on the management actions established in the 2015 and 2019 sage-grouse RMP amendments. BLM must address these circumstances through supplements to the EISs used to inform those RMPs as prescribed in 40 CFR 1502.9(c)(1)(ii) of the National Environmental Policy Act (NEPA). Specifically, the regulations require agencies to: "prepare supplements to either draft or final environmental impact statements if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." The Draft SEISs released February 11, 2020 do not reflect the reality of these new circumstances and provide no scientific justification for the majority of BLM management decisions given the current situation. Accordingly, BLM must expand the scope of these SEISs to address this new information and set of circumstances facing sage-grouse and sagebrush habitat.

The documents do present treatment and restoration acres, which are important, but there is essentially no mention of acres lost and how treated/restored acres might have offset that loss. Empirical metrics for habitat loss and acres of habitat that were mitigated and those that were not are fundamental to any meaningful "hard look" at environmental consequences. It is impossible to know exactly how much habitat has been gained or lost and what the trajectory for habitat and sage-grouse populations are without the full suite of metrics.

Furthermore, there is no mention as to whether habitat treatments and restoration were effective and, critically important, when or even if sage -grouse will ever occupy them, let alone successfully reproduce effectively in the future - the true metric of successful restoration. The temporal lag in treatment effectiveness should be accounted for in analyses and discussed in detail.

Idaho DSEIS at ES-1, Wyoming DSEIS at I-1; Northwest Colorado DSEIS at ES-1. It is also informative to note that during the course of this period of state management of sage-grouse, the once-commonplace large flocks were eliminated and the birds became so rare, and their habitats so badly impacted by human activities, that the U.S. Fish and Wildlife Service found the species 'warranted, but precluded' for listing under the Endangered Species Act. And population declines have continued, as noted elsewhere in these comments.

BLM did not consider these increased habitat protections in the 2019 plan amendments, which this SEIS incorporates by reference without significant changes. See, e.g., Idaho DSEIS at 2-17; Northwest Colorado DSEIS at ES-3. This SEIS does nothing to remedy the failure of BLM to make needed improvements in sage-grouse habitat protections,

Dr Braun is understandably alarmed; he has been concerned about the population trajectory of sage-grouse for decades. His analysis of recent trends merits a hard look and some real consideration. In his professional opinion: These recent trends add urgency...to ensure that remaining sage-grouse populations and their habitats are protected from further degradation and fragmentation, to the maximum extent possible. Natural events - including drought and wildfires - are largely beyond federal land managers' control, but will continue and likely be exacerbated by climate change into the foreseeable future. It is thus essential that human actions - over which we do have control - not be allowed to contribute further to sage-grouse declines. Braun Declaration at 12, Attachment M. Dr. Braun's insights here and in the rest of his declaration (attached at M) should be part of BLM's hard look at the proposed action and incorporated in future iterations of the SEISs.

BLM's various arguments that NTT should not apply because it does not factor in other policy considerations or BLM guidance is nothing more than a list of excuses. For instance, the existence of other BLM authorities governing designation of areas as unsuitable for coal mining does not preclude BLM from adopting NTT's suggestion that PHMAs should be designated as unsuitable, it only provides a process for doing so. *Id.* at F-3; See also 43 U.S.C. § 1712(a) ("Land use plans shall be developed for the public lands regardless of whether such lands previously have been classified, withdrawn, set aside, or otherwise designated for one or more uses."). And, BLM's emphasis on applying the "least restrictive constraints" on oil and gas leasing to achieve the resource protection objective ignores that constraints in State plans like Wyoming's and others are not achieving the resource protection objective of preserving sage-grouse, which is why stronger protections are necessary to prevent further population declines. *Id.* BLM's suggestion in responding to the NTT Report that policy considerations should dictate which sage-grouse protections are applied - not science - is the overarching reason why BLM's land-use plans are failing to adopt adequate protections for the sage-grouse.

4.3.23 Non-Greater-Sage-Grouse

Global climate change has been caused largely by emissions from burning fossil fuels, so a public agency like the BLM can be on the forefront of reducing production of fossil fuels by denying oil and gas drilling leases. Livestock production also makes a major contribution to greenhouse gas emissions, with cattle being the largest portion (GAO 2006), so there is another opportunity to reduce GHG emissions. With climate's current unpredictability, all sage grouse habitat should be managed in a manner that addresses the possibility of a drought. Another example of the interconnection of all these factors is that climate change is causing wildfires to be hotter, windier, drier, and larger (Neary, 2019). BLM must include these stresses when considering the protection of public lands for its native biota.

Grazing Author: Smith et al. Year: 2018 Title: Effects of livestock grazing on nesting sage-grouse in central Montana: *Journal of Wildlife Management*, v. 82, no. 7, p. 1503-1515. Implications: Modified from USGS Annotated Bibliographies (2018, 2019) or from each paper: Female sage grouse selected nest sites based on sagebrush cover and distance from roads, and nest failure was driven by precipitation. Data regarding livestock was inconclusive. The authors suggest that conservation of shrub cover and preventing additional habitat fragmentation by roads would benefit GRSG nesting habitat and nest success. Issue: Roads; livestock grazing Significance: Seasonal effects of weather on nest success; roads fragment habitat

The Utah DSEIS similarly relies mainly on the 2015 plan for its environmental baseline (UT DSEIS at 3-4 to 3-5), and provides only the same information on sage-grouse seasonal habitat and anthropogenic disturbance as the 2018 FEIS. UT DSEIS at 3-8 to 3-10. Wyoming's DSEIS relies on 2015 conditions as a baseline for most impacts, but updates fire through 2017. Wyoming DSEIS at 3-6. This lack of information overlooks the changes on the ground in the interim and fails to provide the requisite hard look at the impacts of the proposed action; each of the forthcoming SEISs should update the baseline against which they compare the impacts of the various alternatives.

Dr. Jack Connelly provided this assessment of sagebrush and vegetation manipulations efforts in 2019: 1. Further, sagebrush and vegetation manipulation efforts - including mechanized methods using aerator with seeding, harrow or chain with seeding, drill seeding, hand planting plugs, and aerial seeding - are generally harmful to sage-grouse populations, with only weak evidence (at best) suggesting some treatments might be helpful. 2. Despite this scientific information, the 2019 Idaho and Wyoming Plan

Amendments permit prescribed burns and other sagebrush treatments as acceptable vegetation management practices in sage-grouse habitat. The 2019 Idaho Plan Amendments specifically allows these sagebrush manipulation and eradication methods, noting "[w]here desirable perennial bunchgrasses or forbs are deficient in existing sagebrush stands, use appropriate mechanical, aerial, or other techniques to reestablish them (e.g., a Lawson aerator with seeding, harrow or chain with seeding, drill seeding, hand planting plugs, aerial seeding, or other appropriate techniques)." 3. BLM approved these vegetation treatment methods despite the fact that little evidence demonstrates benefits of mechanical treatments of sagebrush for sage-grouse. In my expert judgment, these practices will only continue to destroy or degrade sage-grouse habitat, with limited or no benefit to sage-grouse populations and habitat. 4. The adverse impacts flowing from BLM's vegetation treatment projects will be further exacerbated by BLM's plans for fuels management activities. According to the 2019 Idaho and Wyoming Plan Amendments, fuels management activities - including construction of firebreaks; prescribed fire; and mechanical, chemical and biological fuels management - are specifically exempted from any disturbance limitations in sage-grouse habitat. In fact, these fuels management treatments may occur within the lek buffers in key sage grouse habitat. 5. BLM's fuels treatment activities are inconsistent with the best available scientific information on sage-grouse habitat and populations, and BLM provides no sound scientific support for its actions. Instead, BLM outright misrepresents leading research on this topic... in an apparent effort to manufacture a scintilla of scientific evidence supporting its activities. For example, in the 2019 Wyoming Plan Amendments, BLM justifies a robust vegetation treatment regime by claiming that a desired condition for sage-grouse breeding and nesting habitat includes 5-25% sagebrush canopy cover... 6. Absent these gross mischaracterizations, BLM lacks any scientific evidence supporting its decision allowing 5% sagebrush cover as a "desired condition," and compelling evidence indicates 5% canopy coverage is far too low for sage-grouse nesting habitat. In my judgment, managing sagebrush landscapes for a 5% sagebrush cover will harm sage- grouse populations and habitat, under the guise of restoring or improving both. 7. Finally, in the 2019 Idaho Plan Amendments BLM reasonably limited mechanized anthropogenic disturbance in nesting habitat during the nesting season and in wintering habitat during the winter season. But BLM then emasculates the importance of this reasonable and necessary conservation measure by exempting fuels and vegetation treatments "specifically designed to improve or protect Greater Sage-Grouse habitat." BLM cites no scientific authority supporting this exemption, and in my experience any activity that disturbs nesting hens is likely to result in nest abandonment and/or increased nest predation. Thus, BLM must prohibit all mechanized anthropogenic disturbance in breeding and winter habitat during the breeding and winter season. (Internal citations omitted, entire declaration provided in Attachment N). Dr. Connelly's expert opinion on the matter should be heeded, and the forthcoming iterations of the SEIS should explain why BLM believes that its use of scientifically inadequate protections in sage-grouse habitat is sufficient.

4.3.24 Fluid Minerals

The Center for Biological Diversity's Michael Saul also provided a revealing declaration in the preliminary injunction briefings. Attachment P. For example, Mr. Saul reviewed impacts in sage-grouse habitat that occurred between the 2019 Plan Amendments (in March) and his declaration (in June). He determined that BLM approved at least 5 oil and gas projects with 51 Applications to Drill (APDs) in Utah, 21 projects and 44 APDs in Wyoming, 1 project with 31 wells for oil and gas development in Colorado, and mining and destructive infrastructure projects in Idaho and Nevada. These were just some of the known impacts in designated sage-grouse habitat of the 2019 DSEISs prior to their injunction. The BLM must analyze and disclose the effects of these projects as the current environmental baseline and take a hard look at their impacts on sage-grouse habitat. The SEISs must discuss these and

the remaining data in Mr. Saul's declaration in forthcoming iterations in order to redress their failings under NEPA.

In 2019, a new report (Gardner, et al. 2019) analyzed oil and gas development on federal lands and sage-grouse habitats from the implementation of the 2015 plans through March 2019. This research demonstrated that drilling in designated sage-grouse habitat increased by 2.98 times between February 2017 and March 2019 compared with the October 2015 to January 2017 time frame. This was a rate higher than drilling on all public lands across all states during the same periods. This demonstrates that oil and gas development has shifted towards PHMA in all states since January 2017, following the removal of SFA restrictions and prioritizations due to BLM's abrupt cancellation of SFA designations. The data from Gardner, et al., should be analyzed and disclosed in any forthcoming environmental analyses completed pursuant to the BLM's plans.

BLM continues to omit numerous large-scale oil and gas developments in key sage-grouse habitat from its DSEIS analyses. These activities are occurring throughout the range of sage-grouse, including lands beyond those covered by the 2019 plan revisions. This includes all the states where sage-grouse presently occur or could recover, and across the land tenure. The failure to consider the current conditions and likely foreseeable future actions on Forest Service lands, state lands, and private lands is a serious omission. As discussed above, these impacts are significant, merit a hard look, and a discussion of each plan's impacts should include the cumulative effects of all the activities in the range.

The Nevada/CA and Wyoming DSEISs do not specify dates in their oil and gas Past leasing sections but do include a June 2018 lease sale in their Future Pending sections, so their leasing acreages are nearly two years out of date.²⁶ BLM in both states routinely offers thousands of acres of designated sage-grouse habitat management areas during oil and gas lease auctions. The NW Colorado DSEIS provides no oil and gas leasing acreage information in its cumulative effects summary at all, nor did BLM include this information in the NW Colorado 2018 FEIS. See NW Colorado DSEIS at App-2-1 to App-2-2, 2018 FEIS at App-2-1 to App-2-2. BLM did not even provide oil and gas leasing acreage in the 2015 NW Colorado FEIS, instead merely stating: "The BLM routinely offers land parcels for competitive oil and gas leasing to allow exploration and development of oil and gas resources for public sale. Continued leasing is necessary for oil and gas companies to seek new areas for oil and gas production or to develop previously inaccessible/uneconomical reserves." NW Colorado 2015 FEIS at 5-5. The continued omission of oil and gas leasing acreages demonstrates that BLM has never considered the actual quantity and physical location of oil and gas leasing in Colorado sage-grouse habitat as part of the cumulative effects NEPA analysis the agency was required to conduct for the NW Colorado grouse plans. ²⁶ See Wyoming DSEIS at D-14

4.3.25 Fire and Fuels

Wildland fires also continue to be an immediate and pervasive threat to sage-grouse, especially throughout western portions of the species' range. As discussed in our protest and in the attached sage-grouse scientists' letter, data indicates that fires on BLM lands are increasing, with 3 million acres burned in Idaho, Nevada and Utah. Once again, BLM should take into account the substantial losses of habitat and likely continued losses due to fire in evaluating the impacts of proposed changes. Additionally, BLM has just completed a Programmatic EIS for Fuel Breaks in the Great Basin that will guide BLM to "construct and maintain a system of up to 11,000 miles of strategically placed fuel breaks to control wildfires within a 223 million-acre area in portions of California, Idaho, Nevada, Oregon, Utah and

Washington."4 As discussed in Exhibit 4, in the opinion of sage-grouse experts, this approach will require destruction of sage-grouse habitat and could result in substantial loss and/or degradation of sagebrush habitat. BLM must consider this new information when evaluating likely impacts to sage-grouse from the 2019 Amendments. 4 <https://www.blm.gov/press-release/interior-improves-strategies-combat-wildfires-across-223-million-acres-great-basin>

Mitigation-Wildfire Author: Stenvoorden et al. Year: 2019 Title: The potential importance of unburned islands as refugia for the persistence of wildlife species in fire-prone ecosystems: Ecology and Evolution, DOI: 10.1002/ece3.5432. Implications: Population dynamics of leks located within fire perimeters are negatively impacted. Unburned islands play an important role as refugia, and maintaining unburned vegetation may be vital for the success of GRSG populations after a wildfire event. The recovery of natural vegetation postfire may also benefit GRSG populations. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; fire suppression Significance: Prioritization of fire suppression to maintain unburned refugia and enhance post-wild fire restoration

Mitigation-Wildfire Author: Shinneman et al. Year: 2019 Title: The ecological uncertainty of wildfire fuel breaks: examples from the sagebrush steppe: Frontiers in Ecology and Environment, v. 17, no. 5, p. 279-289. Implications: To produce a robust cost-benefit analysis regarding fuel break effectiveness and ecological impacts, more research is needed. The authors suggest several specific research questions that could provide useful information to policy and decision-makers "to disentangle their ecological costs and benefits." Supersedes NTT: Yes Supersedes COT: Yes Issue: wildfire; fuel breaks Significance: Ecological cost benefit analysis of fuel breaks Comments: Ecological cost benefit analysis of fuel breaks

Mitigation-Wildfire Author: Foster et al. Year: 2019 Title: Greater sage-grouse vital rates after wildfire: Journal of Wildlife Management, v. 83, no. 1, p. 121-134. Implications: GRSG continued to use areas within the wildlife perimeter, but had lower nest and adult survival rates compared to other reported values for GRSG in the Great Basin. Apparent decreased nest site fidelity within the fire perimeter may relate to increased habitat fragmentation. Increased nest survival in the second year may relate to increased vegetation in the burned area. Findings suggest that fire suppression activities to maintain intact habitat patches may be a critical tool for managers of GRSG populations and habitat in landscapes prone to fire. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; mitigation strategy Significance: Improved Wildfire firefighting strategy to benefit GRSG.

Mitigation-Wildfire Author: Shinneman et al. Year: 2018 Title: A conservation paradox in the great basin-altering sagebrush landscapes with fuel breaks to reduce habitat loss from wildfire: US Geological Survey, v. XXX, no. XXX, p. XXX*Open File Report. Implications: The authors conclude that more research is needed to document fuel break effectiveness, effects on plant communities, and effect on wildlife. However, they suggest that installing fuel breaks in an effort to protect intact sagebrush habitat may provide long-term benefits to sagebrush-associated species, even if these benefits come at a cost to some individual species at local scales. Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; fuel breaks Significance: Supports the reality that historical habitat was not a vast sagebrush sea, but rather an ecosystem made up of sagebrush islands. Comments: Suggest additional review due to significance as a mitigation measure.

Mitigation-Wildfire Author: Foster et al. Year: 2018 Title: Potential effects of GPS transmitters on greater sage-grouse survival in a post-fire landscape: Wildlife Biology, v. 2018, no. 1, p. 1-5. Implications: Survival rates measured in this post-fire study were much lower than observed in other studies in the

Great Basin, though they did eventually increase to comparable levels (after the conclusion of this study). If the slightly lower survival rates of birds with GPS versus VHF devices observed in this study are confirmed (5% lower survival), they are of concern because of the increasing use of GPS units and the potential for effects of this magnitude to affect population growth rates. Findings from this study were limited by small sample sizes. Supersedes NTT: Yes Supersedes COT: Yes Issue: Post-fire study; GPS transmitters affect survival Significance: GPS transmitters reduce survival compared to VHF transmitters Comments: Authors appropriately recognize that the GPS may have biased the conclusions. As such, this study better informs future study designs

Mitigation-Wildfire Author: Ellsworth et al. Year: 2016 Title: Ecosystem resilience is evident 17 years after fire in Wyoming big sagebrush ecosystems: *Ecosphere*, v. 7, no. 12, article e01618, 12 p., <https://doi.org/10.1002/ecs2.1618>. Implications: Results demonstrate post-fire resilience of the xeric Wyoming big sagebrush system, possibly because of its high quality and presence of unburned patches within the fire perimeter. The conditions are representative of xeric Wyoming big sagebrush communities prior to the invasion of cheatgrass, where there were islands of sagebrush left after fire which helps the system recover from fire and provide habitat for GRSG. Controlled burning of some xeric sagebrush systems that are in good condition and dominated by natives may have benefits for ecosystem heterogeneity and herbaceous cover. Authors conclude, "Our results illustrate that management of all habitat components, including natural disturbance and a mosaic of successional stages, is important for persistent resilience and that suppression of all fires in the sagebrush steppe may create long-term losses of heterogeneity in good condition Wyoming big sagebrush ecosystems." Supersedes NTT: Yes Supersedes COT: Yes Issue: Wildfire; mitigation strategy Significance: Selective use of prescribed fire

Mitigation-Wildfire Author: Coates et al. Year: 2016 Title: Wildfire, climate, and invasive grass interactions negatively impact an indicator species by reshaping sagebrush ecosystems: *Proceedings of the National Academy of Sciences of the United States of America*, v. 113, no. 45, p. 12745-12750. Implications: The authors describe, "Using three decades of sage-grouse population count, wildfire, and climate data within a modeling framework that allowed for variable postfire recovery of sagebrush, we provide quantitative evidence that links long-term declines of sage-grouse to chronic effects of wildfire. Projected declines may be slowed or halted by targeting fire suppression in remaining areas of intact sagebrush with high densities of breeding sage-grouse." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; targeted wildfire suppression Significance: Prioritization of fire suppression to minimize deleterious effects to GRSG Comments: Important preplanning strategy to reduce threat of wildfire.

Mitigation-Wildfire Author: Davis and Crawford Year: 2015 Title: Case study-Short-term response of greater sage- grouse habitats to wildfire in mountain big sagebrush communities: *Wildlife Society Bulletin*, v. 39, no. 1, p. 129-137. Implications: The authors sought to identify the short-term (<11 year) response of GRSG nesting and brood-rearing habitats to wildfire. In mountain big sagebrush communities where sagebrush is abundant, the understory is composed of adequate native perennial grasses and forbs, and invasive annual grasses are limited, prescribed burning may be a useful tool for improving GRSG nesting and brood-rearing habitat. The application of fire treatments in less mesic sagebrush communities with fewer forbs may not produce the desired results, which emphasizes that management decisions need to be made in light of existing conditions and documented GRSG seasonal habitat needs. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; prescribed fire

Significance: Selective use of prescribed fire to improve GRSG habitat. Comments: Supersedes NTT because fire treatments may benefit higher elevation mountain big sagebrush communities i.e. not a one-size-fits-all strategy.

Indeed, from 2016-2019 fires burned approximately 3 million acres of BLM administered lands in Idaho, Nevada and Utah alone, representing a 43% increase in annual acres burned on BLM lands in these states compared to the previous 4-year period (2012-15; data from the Great Basin Coordination Center). Also, the BLM estimates that more than 2 million acres of designated sage-grouse habitat management areas burned between 2015 and 2017 in Idaho, Nevada, Utah and Wyoming. Importantly, trends generated from 2004-2015 data suggest that wildfire rates are increasing, and the median annual area burned is projected to increase 5-11 times across several states in the range of sage-grouse over the next two decades. These trends coupled with other habitat losses from development (which remain poorly documented) and other perturbations simply cannot be ignored and must be addressed through these supplemental analyses.

Dr. Haak's analysis determined that "core areas in Wyoming, Idaho, and Nevada are particularly at risk, having experienced large wildfires and increasing threats from energy development in just over three years." Haak 2019 at 27, attached. In sum, the analysis found: Since there has been no overlap between lands impacted by wildfire and those now marked for oil and gas development, the impact from these two factors is additive. Range-wide nearly three million hectares (over 7,000,000 acres) of currently occupied habitat, including almost 1.6 million hectares (over 3,800,000 acres) of priority habitat, have had a change of status since adoption of the 2015 Plan. This represents 5% of the priority habitat as defined by the PACs. A significant loss in just three years. Haak at 29, Attachment O. This is exactly the type of analysis that BLM could have undertaken - but didn't - in the 2019 amendments in order to take a hard look at the current conditions and likely effects of its proposed action. The SEISs must discuss these and the remaining data in Dr. Haak's declaration and report on them in forthcoming iterations in order to redress their failings under NEPA.

4.3.26 Vegetation

Improved Habitat Mapping and Assessment Author: Gibson et al. Year: 2016 Title: Evaluating vegetation effects on animal demographics-The role of plant phenology and sampling bias: Ecology and Evolution, v. 6, no. 11, p. 3621-3631. Implications: Statistical artifacts can confound interpretations of the importance of vegetation to GRSG nest survival. Researchers should consider the confounding effects of plant phenology when planning animal demography studies. The authors provide techniques for date corrections between hatching and nest-fate measurement. Supersedes NTT: Yes Issue: Technique refinement; nesting studies

Habitat Improvement Author: Lockyer et al. Year: 2015 Title: Nest-site selection and reproductive success of greater sage-grouse in a fire-affected habitat of northwestern Nevada: Journal of Wildlife Management, v. 79, no. 5, p. 785-797, Implications: Habitat management for all shrub species, rather than just sagebrush, may confer the greatest benefits to GRSG. Reproductive success of GRSG may be improved by maintaining perennial grasses and >40 percent shrub cover within 0.8 ha of nest sites. Cheatgrass control may also improve nest success. GRSG may benefit from postfire restoration that recovers shrubs and perennial grasses. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat management Significance: Prioritization of management

Soil and soil biocrusts are the foundation of the sage steppe, providing many services to the plants which evolved with these crusts (Belnap 1994). The biocrusts are fragile, quickly broken under a cow hoof or tire, but when intact are more likely to exclude cheatgrass. Excluding livestock allows recovery (Zhang 2020, Ponzetti et al. 2007, Root et al. 2019, Reisner et al. 2013, Belnap et al., 1994). Soil disturbance increases cheatgrass which increases wildfire spread which increases cheatgrass. Limiting or removing causes of disturbance will allow soil and plants a chance to recover their original function.

Cheatgrass - All surface-disturbing activities tend to promote the spread of weeds (BLM 2005). In a 2006 Science review of dozens of published studies, the researchers observed that "native herbivores strongly suppressed, whereas exotic herbivores strongly enhanced, the relative abundance of exotic plants" (Parker et al. 2006). Cheatgrass is incompatible with or detrimental to all other renewable uses listed by FLPMA, uses such as "recreation, watershed, wildlife and fish, and natural scenic, scientific and historical values." 43 U.S.C. § 1702 (c). Yet by continuing grazing, drilling leases, treatments and other disturbances, the BLM insists on promoting cheatgrass, degrading sage steppe and habitat for sage grouse.

Since January 2017, BLM leased over 2.4 million acres and issued 3,570 drilling permits in sage-grouse habitat. Over decades, the activity under leases has actively removed and fragmented sage grouse habitat.

Habitat Improvement Author: Baxter et al. Year: 2017 Title: Baxter, J.J., Baxter, R.J., Dahlgren, D.K., and Larsen, R.T., 2017, Resource selection by greater sage-grouse reveals preference for mechanically-altered habitats: *Rangeland Ecology and Management*, v. 70, no. 4, p. 493-503. Implications: Dense patches of sagebrush were mechanically treated annually by using either a chain harrow or brushhog mower in treatment sites. An increase in forb cover after treatment was expected but not observed, potentially because of lower annual precipitation levels after treatment, competition with grasses, or a lag effect of treatment. A significant increase in use of habitat in and near (within 90 meters) treated mountain big sagebrush sites by brooding GRSG suggests that such treatments may be beneficial to GRSG. Issue: Technique refinement Significance: Habitat restoration Comments: Habitat improvement but Survival and recruitment were not assessed

Habitat Improvement Author: Carlisle et al. Year: 2018 Title: Nontarget effects on songbirds from habitat manipulation for greater sage-grouse: implications for the umbrella species concept: *Condor*, v. 120, no. 2, p. 439-455. Implications: The authors suggest that sagebrush mowing treatments intended to benefit GRSG, an ostensive umbrella species at a broad spatial scale, could have negative effects on co-occurring species at more localized scales, especially if mowing treatments are widespread. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management actions; Unintended consequences Comments: The NTT, COT, and LUPs completely fail to take into account other species and can have negative impacts on other species at a local level. The one-size fits all, single species management approach has proven adverse effects to other species.

Other Mitigation Author: Wing and Messmer Year: 2016 Title: Impact of sagebrush nutrients and monoterpenes on greater sage-grouse vital rates: *Human-Wildlife Interactions*, v. 10, no. 2, p. 157-168. Implications: Study results confirmed the importance of black sagebrush as pre-nesting season forage and suggested that any forage selection related to monoterpenes may reflect some aspect of an individual monoterpene rather than the total concentration of all monoterpenes. Study results should be

interpreted cautiously because of the small sample size, single year, and single study site. Supersedes NTT: Yes Supersedes COT: Yes Issue: black sagebrush; GRSG forage

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Davies and Bates Year: 2019 Title: Longer-term evaluation of sagebrush restoration after juniper control and herbaceous vegetation trade-offs: *Rangeland Ecology & Management*, v. 72, no. 2, p. 260-265. Implications: Following juniper control in dense stands that lack sagebrush, mountain big sagebrush re-establishment is likely to be accelerated by seeding, whereas herbaceous vegetation cover may be reduced. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; pinion-juniper removal and sagebrush restoration

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Reinhardt et al. Year: 2017 Title: The authors conclude that the optimization framework and models used in this study illustrate an approach, increasingly available to land managers, which can augment or complement standard expert-based approaches to planning and prioritization. Such approaches could reduce planning and implementation time for landscape-scale conifer removal treatments. Topics: broad-scale habitat characteristics, conifer expansion, new geospatial data, habitat restoration or reclamation Implications: Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; conifer removal Significance: Prioritization of management Comments: Improved methodology

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Prochazka et al. Year: 2017 Title: Encounters with pinyon-juniper influence riskier movements in greater sage-grouse across the Great Basin: *Rangeland Ecology and Management*, v. 70, p. 39-49. Implications: The authors conclude that GRSG are negatively affected by pinyon-juniper encroachment because this habitat type stimulates faster, high-risk movements, such as flight, which likely attract visual predators. Further, the study quantifies age-specific GRSG mortality risk when individuals move through landscapes containing pinyon-juniper stands. Supersedes NTT: Yes Supersedes COT: Yes Issue: Pinion-juniper; predation risk Significance: Pinion-juniper; predation risk Comments: Cause and effect mechanism explaining predation risk

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Coates et al. Year: 2017 Title: Pinyon and juniper encroachment into sagebrush ecosystems impacts distribution and survival of greater sage-grouse: *Rangeland Ecology and Management*, v. 70, no. 1, p. 25-38. Implications: From the authors: "Collectively, these results provide clear evidence that local sage-grouse distributions and demographic rates are influenced by pinyon-juniper, especially in habitats with higher primary productivity but relatively low and seemingly benign tree cover. Such areas may function as ecological traps that convey attractive resources but adversely affect population vital rates. To increase sage-grouse survival, our model predictions support reducing actual pinyon-juniper cover as low as 1.5%, which is lower than the published target of 4.0%." Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; Improved standards for pinyon-juniper removal Significance: New threshold for pinion-juniper removal provided greater benefits to GRSG

Mitigation-Restoration of Habitat - Pinyon-Juniper removal Author: Farzan et al. Year: 2015 Title: Western juniper management-Assessing strategies for improving greater sage-grouse habitat and rangeland productivity: *Environmental Management*, v. 56, no. 3, p. 675-683. Implications: The study showed that juniper removal can benefit both GRSG and cattle forage production, but the benefits depend on site characteristics and how sites were selected. Sites chosen to maximize forage did not substantially benefit GRSG. Sites chosen for GRSG habitat did benefit forage production, but larger

habitat treatments had decreasing returns on investment. The benefits achieved for either goal were altered by agency coordination, budgetary constraints, and wildfire. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; pinyon-juniper removal Significance: Management can be prioritized to benefit GRSG habitat and cattle forage Comments: Management actions can have a dual purpose

Habitat Improvement Author: Ricca et al. Year: 2018 Title: A conservation planning tool for greater sage-grouse using indices of species distribution, resilience, and resistance: *Ecological Applications*, v. 28, no. 4, p. 878-896. Implications: The CPT could help resource managers evaluate potential costs and benefits of treatments in particular locations in order to facilitate restoration prioritization decisions across landscapes used by GRSG. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat restoration Significance: Prioritization of management; new planning tool Comments: An improved planning tool. Also undermines the argument that habitats cannot be restored by recognizing the BLM prioritization process for restoring lands needs improvement. This tool can help with that.

Habitat Improvement Author: Gustafson et al. Year: 2018 Title: Using object-based image analysis to conduct high-resolution conifer extraction at regional spatial scales: *International Journal of Applied Earth Observation and Geoinformation*, v. 73, p. 148 - 155. Implications: The maps produced can help to inform land managers on where to target pinyon-juniper treatment in order to aid sagebrush restoration and GRSG conservation. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement; habitat mapping; Pinion-juniper treatment Significance: Habitat mapping; habitat restoration Comments: Potential technique for offset mitigation

Habitat Improvement Author: Gustafson et al. Year: 2018 Title: Using object-based image analysis to conduct high-resolution conifer extraction at regional spatial scales: *International Journal of Applied Earth Observation and Geoinformation*, v. 73, p. 148 - 155. Implications: The maps produced can help to inform land managers on where to target pinyon-juniper treatment in order to aid sagebrush restoration and GRSG conservation. Supersedes NTT: Yes Supersedes COT: Yes Issue: Technique refinement Significance: Prioritization of management actions; Unintended consequences Comments: The NTT, COT, and LUPs completely fail to take into account other species and can have negative impacts on other species at a local level. The one-size fits all, single species management approach has proven adverse effects to other species

The USFS has been providing the public with a monitoring report regarding the implementation of the 2015 ARMPAs and the extent to which it is affecting designated sage- grouse habitat on forest lands.¹² Table 5 in the 2019 report is particularly illustrative of rangewide conditions, but BLM's DSEISs do not contain any such tabulation of impacts an disturbance¹³(We note too that the Forest Service report offsets habitat destruction with "restoration" projects that are unproven and potentially damaging. See "Vegetation Treatments," below). ¹²

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd695213.pdf ¹³ Surface disturbance is defined according to the RMPA's parameters, which does not include livestock disturbance (i.e. areas of livestock concentration, miles of fencing, water structures, etc.). We disagree with this definition of surface disturbance and recognize that USFS is underestimating the impacts of authorized activities.

In terms of taking a hard look at the impacts of vegetation treatment, the DSEIS adds basically no new analysis to the analyses underlying the 2015 ARMPAs. See Idaho DSEIS at 4-28; NV/CA DSEIS at 4-3 to 4-10; 4-40 to 4-46; Wyoming DSEIS at 4-92; UT DSEIS at 4-41 to 4-67;

Having tallied these acreage figures, the BLM has shown that it has identified areas "treated in recent years," theoretically for sage-grouse habitat enhancement. But where is the hard look at the results of these treatments? Did viable sagebrush habitats meeting minimum sage-grouse habitat requirements result, and if so over how many acres? Did disturbed areas with little or no habitat value for sage-grouse result, and if so, where, and over how many acres? Did cheatgrass infestations increase on lands "treated" for habitat enhancement (or other) purposes, and if so, over how many acres? How many of these vegetation projects have also been designed to create supplementary forage for livestock? The DSEIS is silent on these questions, but the BLM is obligated to analyze and disclose this information to the public.

For example, we are concerned that juniper-removal projects in sage-grouse habitat may result in expansion of cheatgrass (Evans and Young 1985, Bates et al. 2005). This is particularly concerning where such projects involve mature juniper woodlands with little sagebrush understory. BLM has failed to adequately analyze the differences in impacts of invasive species resulting from juniper removal in stands of different densities and ages. Based on our review of the science, juniper removal (using hand-cutting and jackpot burning) in areas where junipers are sparse and young and sagebrush-grass understory is healthy (without a large component of cheatgrass) does not result in severe cheatgrass expansion when the area is protected from livestock grazing for two-plus years post-treatment, whereas projects that do not meet these criteria pose major cheatgrass risks and are likely to result in the further degradation, rather than restoration, of sage-grouse habitats.

BLM is also developing new categorical exclusions for pinyon-juniper treatments in sage-grouse habitat, one of which will allow for the clearcutting of pinyon and juniper trees over large areas up to 10,000 acres. Because these projects will be conducted under a categorical exclusion, there is likely to be very little analysis of long-term impacts to sage-grouse as a result of the associated disturbance to such large landscapes, increased human presence, and the potential increase in invasive plants such as cheatgrass. The BLM must analyze the potentially large increase in the number of projects that will be conducted and consider the cumulative impacts of the expected number of projects across such a substantial portion of sage-grouse habitat. The analysis must include a hard look at the potential negative side effects of these projects (e.g. increased fire occurrence through the spread of cheatgrass; See Fusco et. al. 2019b) and how they will impact sage-grouse habitat and populations in the longer term.

4.3.27 Guidance and Policy

Local governments are charged with protecting the health, safety and welfare of their citizens and serve as custodians of vital information including the cultural, social, economic and historical data necessary to fully evaluate the effects of any proposed actions which must be considered in order to compile an accurate NEPA review. The Counties were therefore dismayed that the BLM did not involve said Counties in the development of this SEIS. As cooperating agencies, the Counties should be involved throughout the NEPA process, including the preparation of this SEIS which was made necessary thanks to the Winmill Decision. See 40 CFR § 1501.6 (regarding the involvement of cooperating agencies). BLM must thoroughly consider these plans and alternatives and coordinate with the Counties on the final land use plans.

All decisions to permanently close an area needs to be done only after a thorough public outreach process that includes engagement of all local government agencies affected. The same outreach and engagement should be required for the closure of any road or trail, primitive or otherwise, that has not been through a comprehensive travel management plan process.

Placing these multiple-use, foundation-level plans at the mercy of a single-policy agenda destroys their utility. Single purpose initiatives, such as sage-grouse conservation, should be pursued within the framework of existing resource management plans, rather than becoming the reason for their constant revision. In other words, policy initiatives should be subordinate to multiple-use management plans, rather than the plans existing at the mercy of each new policy initiative. The 2019 land use plans revisions sought to restore the planning process consistent with the multiple-use mandate, and discontinue the single-purpose planning model that defined the 2015 plans.

In addition to other resource values, FLPMA specifically directs BLM to manage public lands "in a manner that recognizes the Nation's need for domestic sources of minerals..." FLMPA Sec. 102(a)(12). Unfortunately, the multiple-use management objective and FLMPA's directive to manage lands in a manner that recognizes the Nation's need for minerals became an afterthought in the development of the 2015 land use plans as FWS continued to dictate management objectives for the stated purpose of Greater Sage Grouse conservation above all other land uses covered by the plans.

The failure to revise the plan amendments toward true conservation does not follow BLM's internal policies that mandate species protection. BLM Manual 6840 "provide[s] policy and guidance for the conservation of BLM special status species and the ecosystems upon which they depend on BLM-administered lands."³ Its objective for species that are not currently listed under the Endangered Species Act (ESA) is to "initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA." *Id.* The BLM's State Director (the signatory of this Amendment) has the additional responsibility of "[e]nsuring that when BLM engages in the planning process, land use plans and subsequent implementation-level plans identify appropriate outcomes, strategies, restoration opportunities, use restrictions, and management actions necessary to conserve and/or recover listed species, as well as provisions for the conservation of Bureau sensitive species," and "[e]nsuring that land use and implementation plans fully address appropriate conservation of BLM special status species." The BLM SSP requires the agency to take action to prevent listing. ³
https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmpolicymanual6840.pdf

4.3.28 Statutes and Regulations

NEPA requires that agencies "prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement unless alternative procedures are approved by the Council." 40 CFR § 1502.9(c)(4). Although the Draft EISs that supported the 2019 Amendments were issued for a 90-day comment period, BLM only issued this Draft SEIS for 45 days. While BLM extended the comment period for an additional 45 days on the date that the original comment period expired, this last minute action does not evidence good faith compliance with NEPA's requirements. We also note that BLM failed to conduct scoping as part of this supplemental NEPA process. Although scoping is not absolutely required when completing supplemental analysis, a scoping period is commonly offered during supplemental NEPA, especially when such supplemental analysis was in response to a court order. See, 40 CFR § 1502.9(c)(4); Notice of Availability of the Draft Amendment to the Approved

Resource Management Plan for the Miles City Field Office, Montana, and the Associated Supplemental Draft Environmental Impact Statement, 84 Fed. Reg. 22,516 (May 17, 2019); Notice of Availability for the Draft Supplemental Environmental Impact Statement and Potential Amendment for the Approved Resource Management Plan for the Buffalo Field Office, Wyoming, 84 Fed. Reg. 22,515 (May 17, 2019). The intent of scoping is to focus the analysis on significant issues and reasonable alternatives, to eliminate extraneous discussion, and to reduce the length of the EIS. By skipping this opportunity to solicit public input and influence the scope of supplemental analysis, BLM has further undermined this process.

The breadth of proposed regulatory changes currently being contemplated and finalized by the BLM demonstrate the absolute uncertainty of implementation of any aspect of the plans that is deferred to site-specific or future actions. Where BLM provides for management flexibility in implementation at the permitting or site-specific level, the SEISs must admit that the decision-making may be done outside of current levels and expectations of public participation and without in depth environmental analyses. The agency can't have it both ways: the ARMPAs can't rely on subsequent decision-making to implement the science and simultaneously be cutting the science out of subsequent decision-making.

No Notice and Comment on Eleventh-Hour Changes to the 2015 Plans In the last 60-90 days of the NEPA process on the 2015 Plans, DOI significantly altered their preferred alternative to include new regulatory measures relative to: GRSG "strongholds" or "focal areas"; the involvement of the USFWS and state wildlife agencies in granting waivers, modifications or exceptions to no surface occupancy areas ("NSOs"); so-called hard or soft triggers; and overall, a switch from managing lands to management of a species above all other considerations. The public, including the Counties, did not have an opportunity to review or comment on these significant eleventh-hour changes. Despite these significant flaws and issues, the agencies failed to revise the NW CO DEIS or the Reports. Given the importance federal law ascribes to the public's input with regard to rulemaking processes (see also 5 U.S.C. § 553, 40 C.F.R. § 1506.6, 40 C.F.R. § 1502.9(b); 40 CFR § 1503.1),¹⁸ it is clear that the agency's failure not only to obtain public comments on the "eleventh hour" changes introduced in the 2015 BLM FEIS, but also to incorporate local guidance and input received throughout the 2015 Plans' NEPA process, has resulted in regulation and land management which both omits and overrides the public's input in violation of federal law. ¹⁸ See also, *Perez v. Mortg. Bankers Ass'n*, 135 S.Ct. 1199, 1203 (2015) ("An agency must consider and respond to significant comments received during the period for public comment.")

Caerus believes that any plan should recognize the Bureau of Land Management's ("BLM") statutory mandate to manage public lands to accomplish multiple-use and sustained yield and should also explicitly recognize the valid existing rights of leases acquired before the 2015 Plan was finalized.

Mentioned within the DEIS regarding FLPMA, Congress provided BLM with "discretion" and "authority" to manage public lands for multiple use and sustained yield. These terms need to be explained in detail further to define their purpose and state which direct authorities are able to be utilized in the multiple-use goal. Along with definitions, BLM contains "broad" responsibilities to manage public lands & resources similar to the Department of Interior (DOI) which has broad responsibilities to manage federal lands and resources.

Within ES.2, "By implementing these land use plan conservation measures and continuing to exercise its discretion to approve future project proposals under appropriate terms and conditions or deny them

where appropriate, the BLM can adequately protect Greater Sage-Grouse and its habitat while meeting its general obligation under FLPMA to manage public lands under principles of multiple use and sustained yield". Again, the terms of discretion and using words such as general does not portray the urgency and specific determination behind the BLM's missions and goals.

FLPMA specifically directs BLM to manage public lands "in a manner that recognizes the Nation's need for domestic sources of minerals..." FLPMA Sec. 102(a)(12). Unfortunately, the multiple-use management objective and FLPMA's directive to manage lands in a manner that recognizes the Nation's need for minerals became an afterthought in the development of the 2015 land use plans as FWS continued to dictate management objectives for the stated purpose of Greater Sage Grouse conservation above all other land uses covered by the plans. Placing these multiple-use, foundation-level plans at the mercy of a single-policy agenda destroys their utility. Single purpose initiatives, such as sage-grouse conservation, should be pursued within the framework of existing resource management plans, rather than becoming the reason for their constant revision. In other words, policy initiatives should be subordinate to multiple-use management plans, rather than the plans existing at the mercy of each new policy initiative. The 2019 land use plans revisions sought to restore the planning process consistent with the multiple-use mandate, and discontinue the single-purpose planning model that defined the 2015 plans.

the Idaho District Court found that discarding the "net conservation gain" standard and mandatory compensatory mitigation used in the 2015 plans, and which was central to FWS's not warranted decisions, eliminated protections without justification.¹⁸ Despite this opinion, it has been well established that the net conservation gain standard and compelling mandatory compensatory mitigation is beyond the authority of the BLM under FLPMA. On July 24, 2018, BLM provided specific policy direction on the issue of compensatory mitigation through issuance of Instruction Memorandum (IM) No. 2018-093. Specifically, BLM directed that compensatory mitigation cannot be required as a condition for the use of public lands nor can BLM accept any monetary payment to mitigate the impacts of any proposed action. In all instances, BLM must refrain from authorizing any activity that causes unnecessary or undue degradation (UUD), pursuant to Section 302 of FLPMA. ¹⁸ *Western Watersheds Project et al v. Schneider et al*. Case No. CV-00083-BLM, 2019, at 12, 24. (D. Idaho Oct. 16, 2019).

FWS recognized that, threaded between Sections 7 and 10 of ESA, "the applicant may do something less than fully minimize and mitigate the impacts of the take where to do more would not be practicable," while still advancing Section 7(a)(2) obligation to ensure that any federal activity is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of habitat.²² Accordingly, there is no legal basis to impose a "net conservation gain" standard in any way in the land use planning process. ²² See *National Wildlife Federation v. Norton*, 306 F. Supp. 2d 920, 928 (E.D. Cal. 2004).

1. FLPMA has an over-arching non-degradation mandate.

<https://www.blm.gov/or/regulations/files/FLPMA.pdf> 2. Neither FLPMA nor the Taylor Grazing Act mandates any particular level or frequency of livestock grazing or even that any particular lands be used for livestock. 43 U.S.C. § 315-315(r)(2000) 3. FLPMA expressly authorizes the BLM to "totally eliminate" any of the enumerated "principal uses" 43 U.S.C. § 1712 (e) and, specifically, to discontinue grazing to devote public lands to a "public purpose." 43 U.S.C. § 1752 (b)(2),(g) 4. FLPMA's definition of multiple use calls for management that "takes into account the long term needs of future generations for

renewable and nonrenewable resources, to meet the present and future needs of the American people. 43 U.S.C. § 1702 (c) 5. FLPMA defines sustained yield as "the achievement and maintenance in perpetuity (my emphasis) of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use. 43 U.S.C. § 1702(h) 6. In its planning directives, FLPMA requires the BLM to give priority to the designation and protection of areas of critical environmental concern. 43 U.S.C. § 1702 (c). The ACECs should be based in science. 7. FLPMA requires "consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." 43 U.S.C. § 1702 (c). For instance, only 1.9% of US beef comes from BLM public lands (Kuhn 2020), and BLM public lands grazing accounts for only 0.41% of U.S. livestock receipts (Department of Interior Fiscal Year 2012 Economic Report).

The Multiple-Use Sustained-Yield Act lists standards and guidelines for management of public lands: 16 U.S.C. § 1604(g) (2000) * Suitability * Inventory of renewable resources, including soil and water * Consideration of economic and environmental aspects * Providing for diversity of plants and animal communities based on the suitability of the specific area How has BLM management incorporated these standards and guidelines? Loss of sagebrush and its many dependent species is a major environmental concern, yet there is little evidence the BLM is serious about the conservation of this habitat, even with its many documents concerning sage grouse habitat. The BLM should insure evaluation of the effects of each management system so that it will not result in substantial and permanent impairment of the productivity of the land. The maintenance of viable ecosystems is essential to providing a sustained yield of all federal land uses. Multiple use and sustained yield cannot be separated.

Multiple use, as incorporated in existing law, is not synonymous with commodity extraction, but rather requires a balancing of commodity uses, noncommodity uses, and environmental protection (Hardt 1994). The purpose of this balancing exercise, according to the Interior Board of Land Appeals court, is to ensure that "all BLM decisions are in the public interest (National Wildlife Federation v. BLM Management. 140 IBLA 85. 101 1997). Maintaining sage grouse is in the public interest and is a noncommodity value on public land. Note: The Executive Summary for this DSEIS emphasizes the role of state agencies in the responsibility for sage grouse, but state agencies have little or no jurisdiction over the management of the ground, ie. habitat, which is the whole point of federal public land management documents like this one.

The BLM 2018 Public Land Statistics Report (online), reporting on the condition of a sample of 2665 riparian areas under its jurisdiction in Nevada, found: Proper Functional Condition - 33% Functional at Risk - 49% Non-functional - 17% Twenty years ago the BLM warned that a "large part of the Great Basin lies on the brink of ecological collapse," and the BLM attributed the "downward spiral of ecological conditions" on 75 million acres of public lands in the Great Basin to invasive plant species (primarily cheatgrass) and fire, and it related both fire and vegetative conditions to livestock grazing. (BLM 2000). Why does the BLM now ignore this causative relationship and the science supporting it?

We are in the midst of a national emergency around COVID-19, which is making it exceptionally difficult for people to participate in comment processes. Proceeding with lease sales would violate the public participation requirements of the Federal Land Policy and Management Act (FLPMA) and National Environmental Policy Act. In particular, FLPMA requires that BLM conduct land use planning processes "with public notice" and must provide "the public adequate notice and an opportunity to comment upon the formulation of standards and criteria for, and to participate in, the preparation and execution of

plans and programs for, and the management of, the public lands." 43 U.S.C. §§ 1712(a), 1739(e). NEPA requires that "environmental information is available to public officials and citizens before decisions are made and before actions are taken" and reiterates that "public scrutiny is essential to implementing NEPA." 40 C.F.R. § 1500.1(b). Further, NEPA obligates the BLM to "[m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures." 40 C.F.R. § 1506.6(a).

Moving forward with comment periods and decisions when the public is unable to properly participate violates the requirements of NEPA and FLPMA. BLM's public rooms are closed (making it difficult to conduct research), and state and local orders are encouraging people to stay at home and limiting travel. Notably, Oregon ranks 34th for broadband for internet access,¹ compounding the challenges with participating in this process. Broadband internet is particularly problematic in rural areas of the state, exacerbating the challenges of participation in areas likely to be affected by leasing and other activities authorized by the proposed amendments. ¹ Ranking is based on the % of the population with access to +25 mbps wired broadband (see <https://broadbandnow.com/Colorado>).

Members of Congress, attorneys general, and state and local governments have submitted requests that the federal government pause or extend public comment periods for rulemaking efforts and other processes during the novel coronavirus pandemic.² Administrative actions and public comment periods for other federal agency actions are being suspended or extended for "to be determined" amounts of time due to the national emergency.³ BLM should heed these many indications that it is not responsible to move forward with this process. ² See, e.g., letter from fourteen House of Representatives Committee Chairs to Office of Management and Budget, Acting Director Russell Vought, submitted April 1, 2020: https://www.eenews.net/assets/2020/04/02/document_gw_08.pdf; letter from Senators Wyden, Merkley, and Udall to Secretary Bernhardt requesting a pause on comment periods, submitted April 3, 2020: <https://www.wyden.senate.gov/imo/media/doc/040320%20Letter%20on%20DOI%20comment%20periods.pdf>; letter from state attorney generals to Office of Management and Budget, Acting Director Russell Vought, submitted March 31, 2020: https://portal.ct.gov/-/media/AG/Press_Releases/2019/COVID-19-Rule-Delay-Letter---Final.pdf?la=en; Letter from various state and local government organizations requesting a pause on all public comment and rulemaking processes, submitted March 20, 2020: <https://www.nga.org/letters-nga/state-and-local-government-organizations-seek-pause-on-public-comments-on-rulemaking-processes/> ³ For example, DOI's Interior Board of Land Appeals extended all filing deadlines by 60 days in response to COVID-19; the Daniel Boone National Forest Supervisor suspended the public objection period for its planning effort in light of COVID-19; and the U.S. Forest Service extended a public comment period for the Nantahala and Pisgah forest plan revision with the length of time to be determined (available at: <https://www.fs.usda.gov/detail/nfsnc/home/?cid=stelprdb5397660>).

Although the Draft EISs that supported the 2019 Amendments were issued for a 90-day comment period, BLM only issued this Draft SEIS for 45 days. While BLM extended the comment period for an additional 45 days on the date that the original comment period expired, this last minute action does not evidence good faith compliance with NEPA's requirements.

We also note that BLM failed to conduct scoping as part of this supplemental NEPA process. Although scoping is not absolutely required when completing supplemental analysis, a scoping period is commonly offered during supplemental NEPA, especially when such supplemental analysis was in response to a

court order. See, 40 CFR § 1502.9(c)(4); Notice of Availability of the Draft Amendment to the Approved Resource Management Plan for the Miles City Field Office, Montana, and the Associated Supplemental Draft Environmental Impact Statement, 84 Fed. Reg. 22,516 (May 17, 2019); Notice of Availability for the Draft Supplemental Environmental Impact Statement and Potential Amendment for the Approved Resource Management Plan for the Buffalo Field Office, Wyoming, 84 Fed. Reg. 22,515 (May 17, 2019). The intent of scoping is to focus the analysis on significant issues and reasonable alternatives, to eliminate extraneous discussion, and to reduce the length of the EIS. By skipping this opportunity to solicit public input and influence the scope of supplemental analysis, BLM has further undermined this process.

The Richardson court clarified that providing members of the public with an opportunity to comment, does not fulfill the purposes of NEPA if further analysis was not provided, stating: "[a] public comment period is beneficial only to the extent the public has meaningful information on which to comment." 565 F.3d at 708. Commenters on the 2019 Plan Amendments raised concerns with BLM's reliance on previous analysis and incorporation by reference. BLM did not change its approach in the 2019 Amendments and did not do so in the Draft Supplemental EISs. Instead, as noted above, BLM states that it will determine after the comment period on the Draft Supplemental EISs if it should conduct any new analysis of alternatives or information. Recommendation: If BLM intends to proceed with a Supplemental EIS process, then BLM must provide sufficient opportunities for meaningful public engagement, including a 90-day comment period on a Draft Supplemental EIS.

As summarized above and by the BLM, the *WWP v. Schneider* court identified four significant failings in the BLM's NEPA analysis in the 2010 Plan Amendment. BLM failed to remedy these violations and still needs to do so. Since BLM did not address these flaws, which we raised repeatedly in our comments and protest on the 2019 Amendments, we incorporate those by reference and have attached our protest and overarching comments on the Draft Amendments for easy reference as Exhibits 1 and 2.

BLM must take a "hard look" at the environmental consequences of a proposed action, and the requisite environmental analysis "must be appropriate to the action in question." *Metcalf v. Daley*, 214 F.3d 1135, 1151 (9th Cir. 2000); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989). The court found that BLM did not take the requisite hard look, noting its failure to respond to FWS and EPA concerns and finding "when the BLM substantially reduces protections for sage grouse contrary to the best science and the concerns of other agencies, there must be some analysis and justification - a hard look - in the NEPA documents." *WWP v. Schneider*, 417 F.Supp.3d at 1332. However, BLM did not conduct a new analysis to remedy this failure. Instead, BLM claims the "DSEIS also clarifies how the BLM considered comments, including those of other federal agencies and experts (including EPA), when developing its 2019 planning decisions." Oregon Draft SEIS, p. ES-3. Instead of addressing the need for an actual response in this Draft Supplemental EIS, BLM just notes that it "responded to each of EPA's comments and made corrections and/or changes in the 2018 FEISs" and states those responses "can be found in the administrative record." *Id.*

BLM removed the requirement for compensatory mitigation through the 2019 Amendments without providing an opportunity for public comment. As we have repeatedly pointed out and the court noted, "FWS relied on the mandatory compensatory mitigation provisions of the 2015 Plans to make its finding that an ESA listing was not warranted." *WWP v. Schneider*, 417 F.Supp.3d at 1333. The court found that "BLM's elimination of mandatory compensatory mitigation through the Final EISs appears to constitute

both a "substantial changes" to its proposed action and "significant new circumstances" under 40 C.F.R. § 1502.9(c), requiring that BLM have issued a supplemental draft EIS for public review and comment before finalizing changes." *WWP v. Schneider*, 417 F.Supp.3d at 1333. By refusing to disclose its Proposed Action until after all opportunity for comment has passed, an agency insulates its decision-making process from public scrutiny. Such a result renders NEPA's procedures meaningless." *State of Cal. v. Block*, 690 F.2d 753, 771 (9th Cir. 1982). Yet in the Draft Supplemental EIS, BLM implies that it would not consider the comments received or complete supplemental analysis on this topic, stating: This clarification simply aligns the 2018 Proposed Plan Amendment with BLM policy and the scope of compensatory mitigation authority expressly provided by FLPMA. Any analysis of compensatory mitigation relating to future projects is speculative at this level of land use planning; therefore, analysis of compensatory mitigation is more appropriate for future project-specific NEPA. Nevada Draft SEIS, p. 4-43 - 4-44.

In considering the argument that a net conservation gain standard for compensatory mitigation violated FLPMA, the court stated: The FEIS states that if actions by third parties result in habitat loss and degradation, even after applying avoidance and minimization measures, then compensatory mitigation projects will be used to provide a net conservation gain to the sage-grouse. The Agencies' goals to enhance, conserve, and restore sage-grouse habitat and to increase the abundance and distribution of the species, they argue, is best met by the net conservation gain strategy because it permits disturbances so long as habitat loss is both mitigated and counteracted through restorative projects. If anything, this strategy demonstrates that the Agencies allow some degradation to public land to occur for multiple use purposes, but that degradation caused to sage-grouse habitat on that land be counteracted. The Court fails to see how BLM's decision to implement this standard is arbitrary and capricious. Moreover, the Court cannot find that BLM did not consider all relevant factors in choosing this strategy... *Western Exploration, LLC v. U.S. Department of the Interior*, at 747. BLM's conclusions in IM 2019-018, cannot be supported by applicable law, as reviewed in Solicitor's Opinion M-37039 (Dec. 21, 2016) (attached and incorporated by reference as Exhibit 5). As detailed in M-37039, FLPMA and other applicable laws allow BLM to require compensatory mitigation. Taking the opposite approach based on a misreading of the law is both arbitrary and capricious and contrary to law, and moreover may violate FLPMA's requirement to avoid unnecessary or undue degradation. Abandoning compensatory mitigation as a tool to prevent habitat degradation would violate this requirement. As noted above, the unnecessary and undue degradation standard prohibits degradation beyond that which is avoidable through appropriate mitigation and reasonably available techniques. *TRCP*, 661 F.3d at 76-77; *Colo. Env. Coal*, 165 IBLA at 229. Offsite compensatory mitigation is a well-established, reasonable and appropriate tool that has long been used to limit damage to public lands. Refusing to use that tool fails to meet FLPMA's requirement that BLM avoid unnecessary or undue degradation.

Based on the weakened protections in the 2019 Amendments and the increased harm to sagebrush habitat related to wildfires and oil and gas development, the changes from the 2015 Sage-grouse Plans will affect numerous other plants and wildlife species, including those that are listed as threatened or endangered under the ESA. Since these are new risks of harm, arising out of BLM's changes in policy and amendments to the 2015 Plans, BLM cannot rely on findings from the 2015 ESA consultations. The ESA requires that BLM again undertake consultation with FWS under the ESA. Recommendation: If BLM intends to proceed with a Supplemental EIS process, then BLM must address the failure to consult under the ESA.

While issuing six Draft Supplemental EISs for comment, BLM has not actually undertaken a supplemental NEPA process. The agency has failed to provide a sufficient timeframe or structure for meaningful public input. Further, the environmental documents generally re-state (and often exactly re-state) the conclusions from the 2019 Amendments without conducting any additional analysis or taking into account new information and changed circumstances. BLM must thoroughly evaluate the real environmental effects of the 2019 Amendments. Because the 2019 Amendments undermine the key components of the 2015 Sage-grouse Plans that FWS relied on to justify finding the sage-grouse no longer warranted under the ESA, BLM must evaluate alternatives that will not jeopardize the survival of the species. In addition, BLM must consult with FWS regarding the impacts of the changes to the 2015 Sage-grouse Plans on species listed under the ESA.

Although the court in *WWP v. Schneider* held that BLM must consider impacts from the changes proposed in the 2019 Amendments, BLM glosses over these impacts in the Draft Supplemental EISs. For example, the Utah Draft Supplemental EIS states: At most, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable of analyzing all the nominated parcels. Because the mineral leasing prioritization objective provides no certain or durable protection to PHMA, its removal would not increase threats, since the no surface occupancy stipulation is still in effect. Utah Draft SEIS, p. 4-52. Similarly, in the Northwest Colorado Draft Supplemental EIS, BLM acknowledges that the Management Alignment Alternative makes approximately 224,200 acres available for fluid mineral leasing that are closed under the No-Action Alternative. The Draft Supplemental EIS also acknowledges that "criteria for waivers, exceptions, and modifications in PHMA beyond 1 mile from active leks to allow for surface occupancy in cases where specific mitigation standards are met in consultation with CPW and/or it can be demonstrated that, due to topography, no impact on Greater Sage-Grouse or Greater Sage-Grouse habitat would occur," affecting these same acres. Northwest Colorado Draft SEIS, pp. 4-41 - 4-42. Nonetheless, BLM simply concludes, again: "Although the additional acres would be available to leasing, their impact on Greater Sage-Grouse would be similar to the No-Action Alternative" because "surface disturbance, fragmentation, and indirect habitat loss would not be expected to increase due to restrictions on surface disturbance." Northwest Colorado Draft SEIS, p. 4-42. In both situations, BLM concluded that there would be no increase in threats, although the new approaches are qualitatively different. The agency's conclusory statements eliminate the opportunity for rational decision-making; the decision is stated without explanation and does not allow for BLM or the public to be fully informed.

FLPMA unquestionably provides BLM with ample support for requiring compensatory mitigation, including its direction to manage public lands in a manner to ensure the protection of ecological and environmental values, preservation and protection of certain public lands in their natural condition, and provision of food and habitat for wildlife;⁶ and to "manage the public lands under principles of multiple use and sustained yield".⁷ The principles of multiple use and sustained yield pervade and underpin each of BLM's authorities under FLPMA, including the policies governing the Act,⁸ the development of land use plans,⁹ the authorization of specific projects,¹⁰ and the granting of rights of way.¹¹ While FLPMA does not elevate certain uses over others, it does delegate discretion to the BLM to determine whether and how to develop or conserve resources, including whether to require enhancement of resources and values through means such as compensatory mitigation.¹² In sum, these statutory policies encompass the protection of environmental and ecological values on the public lands and the provision of food and habitat for fish and wildlife and are furthered by the implementation of the mitigation hierarchy, including

compensatory mitigation, to protect and preserve habitat for the sage grouse. 6 43 U.S.C. § 1701(a)(8). Among other things, public resources should be managed to "protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values" and "provide food and habitat for fish and wildlife". 7 43 U.S.C. § 1732(a). 8 43 U.S.C. § 1701(a)(7). 9 43 U.S.C. § 1712(c)(1). 10 43 U.S.C. § 1732(a). 11 43 U.S.C. § 1765(a)(i). 12 P. L. 94-579 (Oct. 21, 1976) (stating an intent "[t]o establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes." (emphasis added)). Additional authority also exists for the use of the mitigation hierarchy in issuing project-specific authorizations. For example, project-specific authorizations must be "in accordance with the land use plans,"¹³ so if the land use plans adopt the mitigation hierarchy or other mitigation principles for the sage grouse under the various authorities described above, the project authorization must follow those principles. Moreover, in issuing project-specific authorizations, BLM may attach "such terms and conditions" as are consistent with FLPMA and other applicable law.¹⁴ This general authority also confers broad discretion on BLM to impose mitigation requirements on project applicants, including compensatory mitigation in appropriate circumstances.¹⁵ 13 43 U.S.C. 1732(a). 14 43 U.S.C. § 1732(b). 15 BLM also has authority and/or obligations to ensure that all its operations protect natural resources and environmental quality, through statutes such as the Mineral Leasing Act of 1920, 30 U.S.C. 181 et seq.; see also *Independent Petroleum Assn. of America v. DeWitt*, 279 F.3d 1036 (D.C. Cir. 2002) (Act grants "rather sweeping authority" to BLM, or NEPA, 42 U.S.C. 4321; see also 40 C.F.R. § 1505.2(c), which requires consideration of mitigation alternatives where appropriate. In addition, BLM's authority under FLPMA is broader than that exercised by purely land use or regulatory agencies such as EPA or zoning boards, because BLM [has authority] to act as both a regulatory and as a proprietor. Accordingly, BLM can take action using all the tools provided by FLPMA for managing the public lands, including issuing regulations, developing land use plans, implementing land use plans or in permitting decisions. 43 U.S.C. §§ 1712(a), 1732(a), 1732(b). Finally, as a distinct authority, BLM also has the obligation to ensure that project-specific authorizations do not result in "undue or unnecessary degradation." FLPMA states that BLM "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."¹⁶ A number of cases have found that BLM met its obligation to prevent unnecessary or undue degradation based, in part, on its imposition of compensatory mitigation. See e.g., *Theodore Roosevelt Conservation Partnership v. Salazar* ("TRCP"), 616 F.3d 497, 518 (D.C. Cir. 2010) (BLM decision to authorize up to 4,399 natural gas wells from 600 drilling pads did not result in "unnecessary or undue degradation" in light of substantial mitigation required from permittees, including prohibition of new development outside core area until comparable acreage in the core was restored to functional habitat, and a monitoring and mitigation fund of up to \$36 million); see also *Gardner v. United States Bureau of Land Management*, 638 F.3d 1217, 1222 (9th Cir. 2011) (FLPMA provides BLM "with a great deal of discretion in deciding how to achieve the objectives" of preventing "unnecessary or undue degradation of public lands.") 16 43 USC § 1732(b).

The FLPMA requires that BLM conduct land management based on multiple use and sustained yield so that their various resource values are utilized in the combination that will best meet the present and future needs of the American people and that balances diverse resource uses. 8 FLPMA's multiple use directive informs Secretarial Order (SO) 3349, issued on March 29, 2017, ordering agencies to reexamine practices "to better balance conservation strategies and policies with the equally legitimate need of creating jobs for hard-working American families." On June 7, 2017, the Secretary issued Secretarial Order 3353 which aimed to enhance cooperation among eleven western states and the BLM in managing Sage-grouse, created the Sage-grouse Technical Review team, and generated the six plan

amendments. The County worked with NACO and provided scoping comments, participated in multiple cooperating agency meetings and phone calls, commented on the Preliminary Draft EISs and Draft EIS, and participated in the Protest Process prior to the March 2019 signing of the Record of Decision.⁹

The Idaho District court granting the motion to preliminarily enjoin the 2019 plans relies in large part on the assumption that the 2015 plans were based on the sound science, specifically the findings and suggestions contained in the 2011 National Technical Team (NTT) and 2013 Conservation Technical Team (COT) Reports.¹¹ The Idaho District Court incorrectly assumed in its decision that the NTT and COT reports represent the best available science, and therefore, any deviation from these reports amounts to an unjustified reduction in protection for the Sage Grouse.¹² This reliance on the NTT and COT Reports is misplaced. ¹¹ See *Western Watersheds Project et al v. Schneider et al*. Case No. CV-00083-BLM, 2019, at 11, 17. (D. Idaho Oct. 16, 2019). ¹² *Id.* The 2011 NTT Report and the 2013 COT Report did not receive adequate peer review and suffered from a number of substantive flaws including: ignoring substantial threats such to the Greater Sage Grouse such as predation in favor of unsupported conjectures regarding human impact; failure to account for natural population fluctuations due to weather patterns; not using the best available science, and were policy rather than science driven. These flawed reports suggested the adoption of equally flawed measures that became central to the 2015 planning effort including the designation of Sage Brush Focal Areas (SFAs) and the establishment of lek buffers.

The Idaho District Court ignored BLM's IM and its well-founded interpretation of the law that FLPMA does not support mandatory compensatory mitigation and the Service's withdrawal of the policies on which net conservation gain was based. It is inappropriate to conclude that the rescission of unauthorized standards can serve as a degradation in species protection under the law. By extension, it is also inappropriate to conclude that the BLM violated NEPA by failing to analyze the impacts of not implementing standards it was not authorize to implement in the first place, and which had since been rescinded.

Single-Purpose Land Use Plans Violate FLPMA and NFMA Multiple Use Mandate BLM and USFS are charged with managing lands under their jurisdiction for multiple use and sustained yield under the guiding principles of FLPMA and NFMA. BLM's multiple-use management objective states that: "The objective of resource management planning by the Bureau of Land Management is to maximize resource values for the public through a rational, consistently applied set of regulations and procedures which promote the concept of multiple use management and ensure participation by the public, state and local governments, Indian tribes and appropriate Federal agencies. Resource management plans are designed to guide and control future management actions and the development of subsequent, more detailed and limited scope plans for resources and uses." 43 CFR § 1601.0-2.

Statements in the DSEISs are revelatory in their admission that BLM hasn't actually changed anything from the 2018 FEIS, but the agency instead seeks to provide exculpatory evidence to overturn the court's decision. For example, the DSEIS's "Introduction to Chapter 4, Environmental Consequences," (Idaho at 4-1) states, "The purpose of this chapter is to describe to the decision-maker and the public the differences between the entire range of alternatives considered in 2018, including the 2018 Draft Plan (Management Alignment Alternative), the 2018 Proposed Plan Amendment, as well as the range of alternatives incorporated by reference from the 2015 plan amendments. It is meant to clarify that Greater Sage-Grouse management was comprehensively analyzed in 2018 through multiple NEPA and

planning processes." This assumes that the court's injunction simply missed something that was already in the 2018 plans rather than that the Court accurately identified the BLM's failure to properly analyze and disclose the effects of a range of alternatives in the 2018 plans. Simply, the DSEIS reads more like an excuse for the 2018 FEIS's inadequacies than any real attempt to remedy the inadequacies the litigation identified. This is not the purpose of NEPA.

FLPMA mandates that the Secretary of Interior "shall" take any action necessary to prevent "unnecessary or undue degradation" of public lands. Id. § 1732(b). FLPMA further provides that BLM public lands "shall" be managed "for multiple use and sustained yield." Id. § 1732(a). The definition of "multiple use" calls for "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." Id. § 1702(c) (emphasis added). Both the "non-impairment" and "unnecessary and undue degradation" provisions constrain BLM's discretion in adopting or revising its land use plans. This prohibition on permanent impairment of the environment in FLPMA's definition of multiple-use is unique and purposeful. Instead of using the definition of multiple-use from the Multiple-Use Sustained-Yield Act, as it did in enacting NFMA, Congress chose to weave this environmental protection mandate into FLPMA's multiple-use provisions. See H. R. Rep. No. 94-583, 94th Cong. 1st Sess. (Dec. 18, 1975). BLM's 2019 amendments violate these mandates by allowing unnecessary/undue degradation and permanent impairment of greater sage-grouse habitat and populations. As we explain in more detail below, recent population data and triggers demonstrate that the 2015 protections are not having the desired effect of recovering sage-grouse populations and habitats. In the face of this data demonstrating that the existing regulatory mechanisms are insufficient to sustain the sage-grouse species, it is clear that further weakening the plans will only hasten this species' decline toward extinction and permanently impair BLM's ability, should ESA listing be necessary, to later recover the species.

Under FLPMA, the BLM must "use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences;" "consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values;" and "weigh long-term benefits to the public against short-term benefits." 43 U.S.C. § 1712. The DSEISs do none of these things and instead seek to justify decisions to open public lands and sage-grouse habitat to more industrial and extractive uses, contrary to the science, and contrary to the broad interest in conserving the Sagebrush Sea and the numerous sensitive, imperiled, and rare species found there.

The current plans do not comport with the COT Report recommendations-which were themselves weakened due to political influence-instead representing the very minimum that is necessary for the agency to do. Since these proposed actions are inconsistent with the COT's recommendations, the 2019 plans fail to comply with FLPMA's overarching mandate.

For these and other reasons already outlined in the protests of 2019 and the comments of 2018, the BLM's DSEISs fail to reconcile the proposed actions with the mandates of FLPMA.

In *Western Watersheds Project v. Schneider*, 1:16-cv-083-BLM (D. Idaho), the court specifically addressed the fact that BLM issued six separate EISs in 2019 rather than provide one cumulative effects

analysis covering the broad, multi-state range of the sage-grouse. See Attachment A. The BLM persists in this error by issuing now six separate DSEISs.

As examples, reasonably foreseeable future actions that should be analyzed in the SEIS are the revisions underway to the CEQ NEPA rules and the BLM's grazing regulations. To the extent that any of the ARMPA provisions rely on future NEPA processes, the agency must admit the extent to which those NEPA processes may no longer be required. For example, the ARMPAs rely on assessments of habitat conditions and impacts of livestock grazing at the time of permit renewal and land health evaluation, but BLM is proposing to revise the processes of permit renewal and the spatial and temporal extent of land health evaluations.³⁷ Though BLM's plans here are not entirely clear, it is clear that changing the underlying management of grazing - the most widespread extractive use in sage-grouse habitat - will affect the authority and enforceability of the ARMPAs. ³⁷ <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projec tId=1500093>

The Council on Environmental Quality's proposed NEPA regulations could also reduce the level of environmental analysis performed for oil and gas lease sales, exploration, and development through encouraging greater use of Categorical Exclusions, as well as elimination of NEPA analysis for actions deemed to be "non-discretionary." The proposed regulations could also reduce the NEPA analysis that mining exploration and development currently undergoes, again related to elimination of NEPA analysis for "non-discretionary" actions. As a result, oil and gas and mining impacts to greater sage-grouse could occur without the level of NEPA scrutiny they currently require, which BLM must address in these SEISs

It is likely that there are additional regulatory changes with impacts to sage-grouse that BLM has not considered in these extremely brief and conclusory DSEISs. In taking the required hard look at the impacts of the Plans, BLM must fully consider all anticipated regulatory changes that could apply to sage-grouse habitats.

Also demonstrating the political purpose of the Plan revision process, BLM seems to argue that its plan to craft management of federal lands around state plans is required to comply with FLPMA. The EISs quote selectively (and incompletely) from FLPMA, claiming that FLPMA directs "BLM to develop its land use plans to 'be consistent with State and local plans to the maximum extent'" and to "resolve, 'to the extent practical, inconsistencies between Federal and non-Federal government plans.'" ID DSEIS at S-1-2 to S-1-3 (quoting 43 U.S.C. § 1712(c)(9)); and see Northwest Colorado DSEIS at App-3-2. These partial quotes mischaracterize BLM's responsibilities under FLPMA, which directs: In implementing this directive, the Secretary shall, to the extent he finds practical, keep apprised of State, local, and tribal land use plans; assure that consideration is given to those State, local, and tribal plans that are germane in the development of land use plans for public lands; assist in resolving, to the extent practical, inconsistencies between Federal and non-Federal Government plans...Land use plans of the Secretary under this section shall be consistent with State and local plans to the maximum extent he finds consistent with Federal law and the purposes of this Act.

BLM must only develop its land use plans to be consistent with State plans "to the extent...consistent with Federal law and the purposes of [FLPMA]" and must only resolve inconsistencies between Federal and non-Federal Government plans "to the extent practical." *Id.* As we have explained, repeatedly, in previous comments and Court filings, aligning BLM's approach with the States' is not "practical" or "consistent with Federal Law and the purposes of" FLPMA because it departs drastically from what the

best available science shows is necessary to protect sage-grouse. In 2015, both BLM and FWS determined that the alternatives favored by certain states did "not incorporate adequate regulatory mechanisms . . . to conserve, enhance, and restore [greater sage-grouse] and its habitat." BLM has provided no rational explanation for why it now believes that these weaker plans are suddenly adequate to conserve sage-grouse populations, nor has it consulted with the USFWS on this point. If the purpose of the sage-grouse plan amendments is to provide adequate habitat protections on Federal lands to prevent sage-grouse from needing protection under the ESA, BLM must implement the measures that science shows are required. Indeed, that State plans fail to require or implement those measures is exactly why federal action is necessary.

NEPA requires EISs to "[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." 40 CFR§ 1505.2. BLM has again violated this requirement. It is clear that many other means of protecting sage-grouse are available. BLM has a duty under NEPA to disclose these measures and its rationales for rejecting them.

The BLM has failed to consult with the Fish and Wildlife Service about the impacts of the proposed plan. The ESA requires that an agency must consult whenever an action "may affect" a listed species or its critical habitat. See 50 C.F.R. § 402.14(a). The sage-grouse plan revisions will affect millions of acres and hundreds of species' habitats, but the BLM failed to consult with FWS over the effects of the plan on any listed or proposed-to-be-listed endangered or threatened species. This violates Section 7 of the ESA and must be remedied before a new decision on the SEISs is issued. See also Pidot (2018) for an assessment of the 2015 and 2019 plans with regard to their adequacy under the ESA and Timmer et al. (2019) for a discussion of sage-grouse as an umbrella species for sagebrush songbirds.

4.4 UTAH-SPECIFIC COMMENT EXCERPTS

4.4.1 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals Determinations

Opening an additional 2 million acres of priority sage-grouse habitat to oil and gas leasing and allowing additional waivers, exemptions, and modifications to lease stipulations will have a negative impact on key sagebrush habitat and sage-grouse populations through increased noise disturbance from vehicles and drill rigs, road construction near leks, water and air pollution from developed well sites, and lack of mitigation requirements for habitat disturbance.

The FWS's 2015 finding that listing of the GrSG was not warranted at that time identifies the importance of regulatory certainty, including by allowing either no or very limited exceptions, waivers or modifications to NSO lease stipulations. The Draft SEIS states that in the Proposed Plan Amendment, the allocation exception process would be updated to simplify the various exemptions contained in the 2015 Final EIS. Table 2-3, Detailed Comparison of Alternatives Specific to the 2018 Final EIS, includes how the exceptions, modifications and waivers in the Proposed Plan Amendment differ from those in the 2015 Plan Amendment. It states "within PHMA the BLM may grant an exception to a fluid mineral lease NSO stipulation where the proposed action: * Occurs in non-habitat that does not provide important connectivity between habitat areas and the development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document; or * Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on GrSG or its

habitat than on the nearby parcel; this exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts." We recommend the Final SEIS include a discussion of how BLM will evaluate the factors listed in the first bullet, including if there is a plan or procedure for this evaluation and whether it will be made publicly available. We also recommend BLM explain what is meant by "proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel." We recommend the Final SEIS clarify the meaning of this exception and provide examples of the types of situations or scenarios to which it might apply. We also recommend evaluating how commonly these scenarios arise, and so, how limited this exception may be. Such an evaluation will help in understanding the certainty that the NSO stipulation will be applied to leases in designated GrSG habitat, and therefore, the impact of this change.

4.4.2 Sagebrush Focal Area (SFA) Designations

The expiration of the SFA withdrawal: (1) was entirely lawful and demonstrates that the SFA withdrawal was unnecessary to protect sage-grouse as proven by the 2016 SFA DEIS; and (2) any "withdrawal" language must be removed from the final plan.

The BLM must explain that Sagebrush Focal Areas ("SFA") were previously identified, in some states, as Priority Areas of Conservation ("PAC") in the 2013 Conservation Objectives Report. Currently, the DSEIS states that SFAs were not mentioned in the COT Report.

Elimination of sagebrush focal areas, the highest priority sagebrush habitat, in this and other plans (Idaho, Nevada and Wyoming), reduces the amount of protection for key sagebrush habitat needed to support Greater sage-grouse populations by allowing increased development within these areas including both oil and gas leasing with allowances for exemptions, modifications and waivers to stipulations designed to protect this habitat, and hard-rock mineral entries.

Our review identified two apparent internal inconsistencies in the Draft SEIS regarding mining in SFA that we recommend be resolved. Table 4-2 (p.4-15), Summary of Environmental Consequences, it states the SFA would be withdrawn from locatable mineral entry. Since the Proposed Plan Amendment no longer proposes to withdraw SFAs from location and entry under the General Mining Act of 1872 this does not appear to be accurate. We recommend addressing this apparent discrepancy in the Final SEIS. We also recommend further assessing, in the cumulative context, the effects to GrSG habitat and conservation of not withdrawing SFAs from locatable mineral development.

In the second example, the Draft SEIS states that the conservation benefits of a future withdrawal would be "negligible" as documented in the 2016 SFA Withdrawal Draft EIS; however, that Draft EIS stated that the benefits would be "minor to moderate," although direct impacts at future mineral development sites could be major. Since the 2016 SFA Withdrawal EIS looked at the percent of habitat impacted over the entire GrSG SFA range, we recommend that the Final SEIS look at the mining-specific Reasonable Foreseeable Development (RFD) for Utah to estimate the percent of SFAs in Utah that could be impacted by removing withdrawal from the Proposed Plan Amendment to determine, in consultation with FWVS, whether the effects in Utah would be minor or moderate. As part of this analysis, we recommend the Final SEIS consider the impacts associated with eliminating the requirement for setbacks from GrSG habitat or other conservation measures by mining operations.

4.4.3 Disturbance and Density Caps

The DSEIS continues to incorporate disturbance and density caps. Simplot inherently disagrees that a 3% limit on surface disturbance at both the project level and BSU level (Disturbance Cap) and an average density of one energy and mining facility per 640 acres (Density Cap) are warranted range-wide. As stated previously, Simplot supports the recommendations presented in the Idaho Greater Sage-Grouse Draft Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS) under the Management Alignment Alternative to remove the density cap at a project level and only apply the disturbance criteria at the BSU level in PHMA. Removal of the disturbance criteria at the project level would allow the BLM to intentionally cluster developments within areas already degraded by discrete anthropogenic disturbance while maintaining the overall BSU disturbance below 3%. Furthermore, as noted by the State of Idaho, the current disturbance cap has the potential to spread or "encourage" development into undeveloped areas of Greater Sage-Grouse habitat just to avoid reaching the 3% project scale disturbance cap in already fragmented areas.

3.A. Disturbance and Density Cap The DSEIS continues to incorporate disturbance and density caps. Simplot inherently disagrees that a 3% limit on surface disturbance at both the project level and BSU level (Disturbance Cap) and an average density of one energy and mining facility per 640 acres (Density Cap) are warranted range-wide. As stated previously, Simplot supports the recommendations presented in the Idaho Greater Sage-Grouse Draft Resource Management Plan Amendment/Environmental Impact Statement (RMPA/EIS) under the Management Alignment Alternative to remove the density cap at a project level and only apply the disturbance criteria at the BSU level in PHMA. Removal of the disturbance criteria at the project level would allow the BLM to intentionally cluster developments within areas already degraded by discrete anthropogenic disturbance while maintaining the overall BSU disturbance below 3%. Furthermore, as noted by the State of Idaho, the current disturbance cap has the potential to spread or "encourage" development into undeveloped areas of Greater Sage-Grouse habitat just to avoid reaching the 3% project scale disturbance cap in already fragmented areas. In the DSEIS under the Management Alignment Alternative exceedances of the disturbance and density cap (at both the Biologically Significant Unit (BSU) and project analysis area) in PHMA can be allowed if site specific sage-grouse habitat and population information combined with project design elements (siting minimization measures and compensatory mitigation) indicate a project will "improve" habitat within the proposed project analysis area or within the PHMA in the population area where the project is located. This additional guidance recognizes that there is non-habitat in PHMA and provides flexibility to address situations where disturbance will actually improve habitat which is a positive step. Utah is an excellent example of where these clarifications are relevant. As stated at page 22 in the Utah Plan: "Conifer encroachment threatens much of Utah's sage-grouse habitat and will continue to threaten the available habitat." The Utah Plan goes on to explain at page 22: "Range-wide, pinyon pine and juniper (conifer) cover expands into sagebrush habitat by approximately 200,000 acres each year (Stiver et al. 2006). Within the 7.4 million acres that comprise Utah's SGMAs, approximately 3.1 million acres had greater than 4% conifer cover as of 2011 (Falkowski et al. 2014, Falkowski et al.2017). Examples include areas where pinyon pine, Utah juniper, deciduous shrubs or other plant species have encroached upon sagebrush habitat, rendering it unsuitable for sage-grouse." The Utah Plan also explains that: "Therefore, the best-available science suggests that sage-grouse populations in Utah are limited by the amount of habitat that is available to them (i.e., "space-limited.") In those areas where conifers are the dominant vegetative community and negatively impacting sage-grouse habitat, mining along with concurrent reclamation is one example of an action that has the potential to reduce conifer cover and subsequently create more "usable space" consistent with the Plan. As previously mentioned in our comments, this

change recognizes, site specific opportunities to improve habitat (such as reducing tree cover) that may not exist within a project analysis area, but could exist in a wider population area (such as a BSU), Although, as stated above the additional flexibility helps to mitigate concerns associated with non-habitat currently being included in PHMA; Simplot does not agree with the inclusion of non-habitat in the denominator of the formula identified in Appendix E used to calculate disturbance thresholds which currently states in part: "Areas that are not GRSG seasonal habitats,...are not excluded from the acres of PHMA in the denominator of the formula." This direction is inconsistent with the BLM's rationale to exclude areas of non-habitat identified in the states sage-grouse management areas (SGMA's) from PHMA based on concerns stated in part on page 2-3 of the DEIS that: "PHMA management prescriptions would apply to these non-habitat areas" Or additional clarification provided in the DEIS at page 2-3 that including non-habitat areas are: "inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1 - Land Use Planning Handbook, Appendix C, page 24)." Additionally, in regard to density criteria it rightfully recognizes that non-habitat does not apply: "However, the density cap may be exceeded if a project is located in non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA)"

Simplot does not support the "blanket" exclusion of energy development and other large scale disturbances from priority GRSG habitats as currently recommended in the DSEIS. Decisions should be based on the scope of the proposed actions and its impact to GRSG habitat and populations at the larger BSU. Although additional flexibility outlined in the DSEIS allows for mitigation at the larger population area to be considered in project decisions; Simplot is still concerned that the 3% disturbance cap is being applied at the project analysis area and not the larger BSU level. As stated in previous comments, mineral resources can only be mined where they exist.

We also recommend the Final SEIS include the trends since 2015 in development and disturbances in GrSG habitat. Whether or not annual data are available for all years, assessing the status of each of these indicators over time to the extent possible can serve as a basis for evaluating the losses and fragmentation of habitat that may occur in the future under the Proposed Plan Amendment. Useful indicators of the effectiveness of the management decisions in BLM's 2015 Plan Amendment would include the following metrics since 2015 for PHMA, GHMA and any other additional habitat management areas: number of leases issued per year, the associated acreage, the rate of leasing in acres per month, and the rate of Applications for Permit to Drill (APD) in APDs per month.

The 2015 Plan Amendment applied the lek buffer distances from the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse - A Review. The Proposed Plan Amendment changes the application of a specific lek buffers for development to an action where BLM would assess and address any impacts of development within the USGS buffer distance. The 2015 "not warranted" finding identified the measures in the 2015 Plans that required disturbance caps, surface occupancy restrictions, seasonal restrictions, and lek buffers to effectively reduce habitat loss, habitat fragmentation and disturbance to GrSG from nonrenewable energy development. The Draft SEIS states it made these changes to align with Utah's management approach and that buffer distances would be adjusted based on local scientific data. It also noted that because this approach was analyzed in the 2015 EIS, no further analysis is needed in the current NEPA process. We were unable to locate the analysis for this change in the 2015 EIS. We recommend in the Final SEIS including the section and page numbers in the 2015 EIS where the analysis can be located.

In the DSEIS under the Management Alignment Alternative exceedances of the disturbance and density cap (at both the Biologically Significant Unit (BSU) and project analysis area) in PHMA can be allowed if site specific sage-grouse habitat and population information combined with project design elements (siting minimization measures and compensatory mitigation) indicate a project will "improve" habitat within the proposed project analysis area or within the PHMA in the population area where the project is located. This additional guidance recognizes that there is non-habitat in PHMA and provides flexibility to address situations where disturbance will actually improve habitat which is a positive step. Utah is an excellent example of where these clarifications are relevant. As stated at page 22 in the Utah Plan: "Conifer encroachment threatens much of Utah's sage-grouse habitat and will continue to threaten the available habitat." The Utah Plan goes on to explain at page 22: "Range-wide, pinyon pine and juniper (conifer) cover expands into sagebrush habitat by approximately 200,000 acres each year (Stiver et al. 2006). Within the 7.4 million acres that comprise Utah's SGMAs, approximately 3.1 million acres had greater than 4% conifer cover as of 2011 (Falkowski et al. 2014, Falkowski et al.2017). Examples include areas where pinyon pine, Utah juniper, deciduous shrubs or other plant species have encroached upon sagebrush habitat, rendering it unsuitable for sage-grouse." The Utah Plan also explains that: "Therefore, the best-available science suggests that sage-grouse populations in Utah are limited by the amount of habitat that is available to them (i.e., "space-limited.")" In those areas where conifers are the dominant vegetative community and negatively impacting sage-grouse habitat, mining along with concurrent reclamation is one example of an action that has the potential to reduce conifer cover and subsequently create more "usable space" consistent with the Plan. As previously mentioned in our comments, this change recognizes, site specific opportunities to improve habitat (such as reducing tree cover) that may not exist within a project analysis area, but could exist in a wider population area (such as a BSU), Although, as stated above the additional flexibility helps to mitigate concerns associated with non-habitat currently being included in PHMA; Simplot does not agree with the inclusion of non-habitat in the denominator of the formula identified in Appendix E used to calculate disturbance thresholds which currently states in part: "Areas that are not GRSG seasonal habitats,....are not excluded from the acres of PHMA in the denominator of the formula." This direction is inconsistent with the BLM's rationale to exclude areas of non-habitat identified in the states sage-grouse management areas (SGMA's) from PHMA based on concerns stated in part on page 2-3 of the DEIS that: "PHMA management prescriptions would apply to these non-habitat areas" Or additional clarification provided in the DEIS at page 2-3 that including non-habitat areas are: "inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1 - Land Use Planning Handbook, Appendix C, page 24)." Additionally, in regard to density criteria it rightfully recognizes that non-habitat does not apply: "However, the density cap may be exceeded if a project is located in non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA)"

3.C. Application of BLM Habitat Designations and Management Actions to Private Land As Simplot noted in previous comments to the RMPA/EIS, the DSEIS continues to fail to disclose the basis by which private lands can be considered in a federal land management planning document. This seems to suggest a de-facto critical habitat designation without a listed species. While Section 4 of the ESA can take into consideration conservation efforts on state and private lands to avoid a listing, BLM has no authority under FLPMA to apply land use plan restrictions on private land. The RMPA/EIS applies BLM sage-grouse habitat management area definitions, designated through the BLM planning process specifically for BLM administered land to private land; including population areas, PHMA, and BSU's. As previously stated, the definition of "Planning Areas" in the 2015 Utah ARMPA glossary further supports the assumption that

population areas were established for "all lands" within the planning area including private land. The wording "regardless of jurisdiction" which was added to the definition of Planning Area in the RMPA/EIS Glossary and carried forward in the DSEIS clearly supports this assumption: "geographical area for which resource management plans are developed and maintained regardless of jurisdiction." As currently defined in the DSEIS glossary, in Utah, BSUs are synonymous with PHMA within a geographic area identified as a population area. Because the disturbance criteria and density cap would count all applicable disturbances within PHMA in any given BSU, including those on non-federal land, it appears to impart that the Plan intends to manage uses of non-federal land under the Management Alignment Alternative. This assumption is further supported by language in the DSEIS at page 2-18 and 2-19 which states: "If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap." "Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis are.", Additionally, language in the DSEIS at page 2-5 is implicit in identifying that the intent is to "manage" all PHMA (including private) which accounts for over 95% of Greater Sage-Grouse populations in Utah: "The Management Alignment Alternative focuses management on PHMA to protect the habitats that support over 95 percent of Greater Sage-Grouse populations in Utah." The glossary definition for PHMA in the DSEIS clearly identifies that PHMA is specific to "BLM administered Lands": "Areas prioritized for managing Greater Sage-Grouse populations (management is only applicable to actions on BLM-administered lands)." Applying the PHMA habitat designation to lands "regardless of ownership" is not consistent with this direction.

4.4.4 Habitat Objectives

The Draft SEIS reduces habitat objectives for Greater sage-grouse, including a reduction in required sagebrush cover and height, perennial grass height, and perennial forb cover without providing a biological justification for these changes.

In Utah, over 85% of permits in PHMA and SFA were in allotments that have not been evaluated for compliance with the Land Health Standards (LHS) in 10 years. Our review identified a number of measures from the 2015 Plan Amendment that would no longer be required. The Proposed Plan would eliminate: * Required terms and conditions in grazing permits regarding the actions needed to meet GrSG habitat objectives. * Prioritization of field checks in PHMA, especially PHMA with riparian areas and wet meadows, to ensure compliance with permit terms and conditions, including evaluating existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and GrSG habitat. * Evaluation and modification of existing structural range improvements in GHMA. * Evaluation of the specific risk to GrSG and its habitat posed by existing structural range improvements in PHMA. * Eliminating requirements to limit water developments in GrSG habitat and that new surface water diversions maintain riparian and wet meadow vegetation hydrology to meet the needs of GrSG in summer brood-rearing season. * Eliminating restrictions such as emergency measures during drought, consideration of permit retirements, and restrictions on new livestock infrastructure.

In addition, the Proposed Plan Amendment states that when an area is not meeting or making progress towards achievable habitat objectives and LHS, and where the causal factor is improper livestock grazing, that BLM will implement changes in grazing management through grazing authorization modifications or allotment management plan implementation. We recommend the Final SEIS describe the actions available to BLM to address allotment areas that are not meeting habitat objectives or LHS since a number of typical mechanisms for addressing such failures have been removed from the Proposed Plan Amendment (see bulleted list above). We also recommend the language be revised from "the causal factor" to "a causal factor" because livestock grazing may be one of multiple but equally important causal factors. Additionally, we recommend the language be revised from "improper livestock grazing" to "livestock management practices are determined to not be compatible with meeting or making progress towards habitat objectives."

The Utah DSEIS shows that by 2019, two populations had met population triggers: a hard trigger for Sheeprocks, and a soft trigger for Parker. UT DSEIS at 3-8. By 2019, three of the twelve Utah sage-grouse populations had met soft habitat triggers: Box Elder, Strawberry, and Bald Hills. UT DSEIS at 3-8.

4.4.5 Adaptive Management

In the cumulative impacts analysis (p. 4-80), it states the Proposed Plan Amendments in Utah include a revision to Adaptive Management at the implementation level to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met). This provision is difficult to understand because returning to previous management would normally result in a return of the causal factor. We recommend either explaining why reversing adaptive management actions once adverse effects are resolved would not result in a return of the causal factor and its impacts or removing this provision from the Proposed Plan Amendment. We recommend BLM in the Final SEIS revise the language for MA-SSS- 7 to include this revision. We also recommend Chapter 4 in the Final SEIS include an assessment of potential for impacts from the proposed adaptive management changes including the longer timeframe for management to respond to a trigger and for the new qualifications on when corrective strategies must be implemented.

4.4.6 General Habitat Management Areas

The Proposed Plan Amendment states that "the BLM's commitment to replace habitat in PHMA as compensation for development in former GHMA will meet the goal of 'maintaining and/or increasing Greater Sage-Grouse abundance' because PHMA growth trends are more than 11 times higher than GHMA." We recommend the Final SEIS include the steps BLM will take to accomplish PHMA habitat replacement in lieu of requiring compensatory mitigation.

In Utah, BLM repeats the same analysis of impacts to sage-grouse and other resources from changes to Habitat Management Area designations that it relied on in the 2018 FEIS. UT DSEIS at 4-45 to 4-68. The DSEIS repeats the 2018 FEIS flaw of not maintaining the protections of GHMA in Utah, and not sufficiently analyzing the effects of this change. DSEIS at 2-7. The GHMA were designated in the 2015 plans and described as BLM-administered lands where some special management will apply to sustain GRSG populations. The 2019 UT ROD eliminated them completely, and thus removed any of the protections that would have applied in GHMA. This is a significant change that was not adequately discussed.

3.E. Removing GMHA Simplot agrees with the recommendation in the DSEIS under the Management Alignment Alternative to remove 618,100 acres (BLM administered surface and BLM administered mineral estate) of designated GHMA along with associated requirements of lek buffers, required design features, habitat objectives, and leasing prioritization. As stated in the DSEIS at page 2-5: "The Proposed Plan Amendment focuses management on PHMA to protect the seasonal habitats that support over 95 percent of Greater Sage-Grouse populations in Utah, while removing the designation and management of GHMA. Additionally, PHMA management would be adjusted to maintain avoidance protections while allowing site-specific adjustments to account for the unique nature of habitat types and distribution throughout Utah."

4.4.7 Prioritization of Mineral Leasing

The Draft SEIS no longer requires prioritizing mineral leasing outside of Priority and General Habitat Management Areas, increasing the potential for negative impacts to Greater sage-grouse from these activities, including associated road building and noise disturbance.

We recommend the Final SEIS analyze to what extent the BLM's previously determined areas of low, medium and high mineral potential overlap with SFA, PHMA, GHMA, winter concentration areas, and remaining linkage areas. Along with this, we recommend calculating what percent of each habitat area has already been leased, and whether the remaining unleased areas have low, medium, or high mineral potential. Quantifying, and if possible, mapping this information would lead to a better understanding of the present and future risks to GrSG and where additional mitigation measures or management actions may be needed.

4.4.8 Burial of Transmission Lines

The Draft SEIS no longer require burial of transmission lines within Greater sage-grouse habitat management areas, increasing the potential for predation from raptors who use utility poles for perches.

4.4.9 Habitat Management Area Boundaries

The Draft SEIS allows disposal of public land within Priority Habitat Management Areas, leading to the potential of increased disturbance from private land activities within these priority areas.

The Draft SEIS allows development within Priority Habitat Management Areas, increasing potential disturbance to breeding and brood-rearing birds.

The Proposed Plan Amendment removes the management of GHMAs including all the of the protections to GrSG in those areas. For instance, the removal of the GHMAs will allow off-highway vehicle (OHV) use in over 14,000 acres of GrSG habitat; this area includes habitat for the Sheeprocks GrSG population. The Draft SEIS discussed the GrSG population areas that met the hard and soft action triggers as part of its Adaptive Management Plan. It noted the Sheeprocks area met a hard and soft trigger in 2016 and that it reflects a long-term population decline in the Sheeprocks. It predicts that re-opening this area to OHV use could result in habitat loss for the Sheeprocks population. It also notes that due to the long-term use in the Sheeprocks area prior to 2015, it has likely already experienced habitat losses, so this change is not anticipated to result in impacts on GrSG or its habitat. In the Final SEIS, please clarify the language in the italics and please address how BLM determined there will be no impact the GrSG or its habitat because it has already experienced losses. We also recommend the Final SEIS discuss whether there have been any further investigations to verify that this habitat is indeed

unoccupied. Additionally, we recommend BLM discuss measures it can implement to address the recovery and resiliency of the Sheeprocks population.

4.4.10 Mitigation

Working with the State to implement the proper mitigation strategy will ensure that sage-grouse habitat is conserved, in accordance with the State's policies and priorities. The State will work with the BLM to recommend, when appropriate, compensatory mitigation actions that create, restore, and/or protect functional habitat or habitat corridors to offset the impacts of unavoidable permanent disturbance to sage-grouse habitat. Generally, the State will recommend for every one acre of functional sage-grouse habitat permanently disturbed by project proponents, four acres of functional habitats or corridors created, restored, and/or preserved, as identified in the amended Utah Administrative Rule R634-3. Utah's compensatory mitigation ratio accounts for direct and indirect impacts that may result from permanent disturbance, differences in habitat quality, and uncertainty related to mitigation success. This ratio reduces project costs by simplifying the analysis of these factors, while also ensuring effective conservation outcomes.

We recommend the Final SEIS specify any anticipated limits of federal law, regulation, and policy on BLM's ability to fully adopt the Utah GrSG Plan. For example, the Draft SEIS identifies that BLM is operating under a recent policy position that it will not require compensatory mitigation unless such mitigation is legally mandated. It seems important to clarify whether this policy would limit application of the requirements in the Utah GrSG Plan on BLM lands. We also recommend clarifying whether the Utah GrSG Plan would apply to BLM actions that do not require a state permit. If the Utah GrSG Plan does not apply when a state permit is not required, we recommend the Final SEIS disclose what types of actions on BLM lands do not require a state permit and how prevalent those actions are.

The compensatory mitigation process is now in-line with FLPMA. The proposed compensatory mitigation methods will allow the BLM to continue to conserve sage-grouse by ensuring that key steps occur, in close coordination with the State, to offset impacts to sage-grouse habitat. The step-by-step process for identifying how to mitigate, including close coordination with the State, was a key process that was blatantly missing in the 2015 ROD. Coordination with the State, aligns BLM's policies and practices with the recognition that the State ultimately manages wildlife, regardless of land ownership. Further, the State supports BLM's recognition that compensatory mitigation should happen at a state level (as opposed to a WAFWA Management Zone or regional level).

The counties agree and urge that compensatory mitigation activities should be voluntary, not compulsory, and should uphold and not violate valid and existing rights. Any voluntary compensatory mitigation that may occur should be under the supervision and management of State authorities, not BLM or Forest Service authorities according to the strategy and principles set forth in the Utah State conservation plan and strategies for the Greater Sage Grouse. Further, the counties agree that The BLM shall not deny a proposed authorization in Greater Sage-Grouse habitat solely on the grounds that the project proponent has not proposed or agreed to undertake voluntary compensatory mitigation.

We recommend the Final SEIS describe how the Utah GrSG Plan would be applied to BLM decisions and on BLM administered lands. The Proposed Plan Amendment states that the BLM, consistent with valid existing rights and applicable law, will consider compensatory mitigation actions only as a component of compliance with the Utah GrSG Plan or when offered voluntarily by a project proponent.

The Proposed Plan Amendment states that "the BLM's commitment to replace habitat in PHMA as compensation for development in former GHMA will meet the goal of 'maintaining and/or increasing Greater Sage-Grouse abundance' because PHMA growth trends are more than 11 times higher than GHMA." We recommend the Final SEIS include the steps BLM will take to accomplish PHMA habitat replacement in lieu of requiring compensatory mitigation.

The Draft SEIS states that BLM will cooperate with the State of Utah to analyze applicant-proffered or state-imposed compensatory mitigation to offset residual impacts, though it appears the Utah GrSG Plan does not require a net conservation gain for all actions that do not avoid GrSG impacts in PHMA and associated habitats. The Utah GrSG Plan states, "After minimization actions are implemented, then compensatory mitigation should be voluntarily used to offset unavoidable impacts". Furthermore, the Utah GrSG Plan indicates that if a proponent decides provide compensatory mitigation, the State's mitigation ratio is only a recommendation and it appears it could result in less applied mitigation than the net gain standard discussed in the U.S. Fish & Wildlife Service's (FWS) 2014 Range-Wide Mitigation Framework for GrSG (Mitigation Framework). The FWS states that mitigation "[p]rograms that are structured with a goal of only no net loss ... are unlikely to positively influence the conservation status of the species" and that "a mitigation program for sage-grouse should address how impacts will be avoided and how a net conservation gain will be achieved by compensatory mitigation for unavoidable impacts to sage-grouse across all habitats." We recommend BLM, in consultation with FWS, determine how the Utah GrSG Plan provides the regulatory certainty needed to support the conclusion that GrSG listing will remain 'not warranted' under the Endangered Species Act" (p. ES-4) and including that evaluation in the Final SEIS. If there is more recent science to support a conclusion that a no-net-loss mitigation goal will be sufficient to avoid listing, we recommend summarizing and referencing those studies in the Final SEIS.

Additionally, aligning the BLM mitigation program with the Utah Plan which requires a 4:1 ratio in all Sage-Grouse Management Areas (SGMA's) including non-habitat, in many instances will result in a much higher mitigation ratio than 4:1 and is inconsistent with current PHMA designations in the DSEIS. As identified at page 2-3 in the DSEIS aligning PHMA with SGMA's in Utah was considered as an alternative but eliminated from further detailed analysis based on the following rationale: "PHMA was developed to align with areas mapped as habitat in the 2013 SGMA to the greatest extent possible. If the BLM were to adopt an alternative with identical PHMA and SGMA boundaries, an unintended consequence would be that PHMA would include a significant amount of areas the State plan identified as non-habitat or opportunity areas; consequently, PHMA management prescriptions would apply to these non-habitat and opportunity areas, which would increase inconsistencies in management, compared with the State's plan. It would also be inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1-Land Use Planning Handbook, Appendix C, page 24). This alternative was eliminated from detailed analysis for reasons similar to those discussed in Section 2.2.1 above." Simplot previously commented that mitigation discussions need to consider a wide variety of opportunities including preservation (such as establishing conservation easements on private land), the establishment of mitigation banks, public-private partnerships, conservation plans, habitat restoration, noxious weed control, fence marking/removal, riparian restoration projects, prescribed fire (where appropriate), fuel breaks, green strips and payment in lieu. The definition of mitigation in the DSEIS is specific to the mitigation hierarchy described in both 40 CFR 1508.20 and IM 2019-018. Mitigate, Mitigation: Mitigation includes (a) avoiding the impact altogether by not taking a certain action or parts of an action, (b) minimizing impacts by

limiting the degree or magnitude of the action and its implementation, (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and (e) compensating for the impact by replacing or providing substitute resources or environments. The definition of mitigation in the DSEIS continues to support a wide range of mitigation actions that would allow the requirements of the mitigation hierarchy to be met which are not included in the Utah Rule or Plan. Specific examples of BLM mitigation identified as restoration accomplishments are included in the DSEIS at page ES-2 as follows: "Also, in Fiscal Year 2017 the BLM treated approximately 480,000 acres, for an increase of almost 100,000 acres over 2016 accomplishments. The Fiscal Year 2017 treatments included 185,000 acres of conifer removal; 65,000 acres of fuel breaks; 125,000 acres with invasive species treatments; 10,000 acres of habitat protection; and restored habitat on 94,000 acres of uplands and another 600 acres of riparian habitat. In 2018 and 2019, Utah conducted 95,466 and 88,788 acres, respectively, of habitat treatments." Currently fuel breaks, invasive species treatments and riparian improvements are not include as actions under the Rule that will count towards the 4:1 compensatory mitigation ratio. The primary function of the compensatory mitigation program in Utah is to increase "space", with acres of habitat lost and created as the measure used to evaluate compensatory mitigation. Protection is only considered through the establishment of conservation banks. Improvement (emphasis added) of the quality of habitat is not considered in the program. This is clearly identified in the "Rule" at R634-3-1. Authority and Purpose: "This compensatory mitigation program will be used to increase space (i.e., habitat) for greater sage-grouse, connect disjointed habitat by creating corridors, and protect occupied habitat. Acres of habitat lost and created will be the measure used to guide the implementation and track the success of the program in Utah. Other programs in Utah, including the Watershed Restoration Initiative, Sage-grouse Initiative and the Grazing Improvement Program, conduct projects to improve the quality of the habitat. The lessons learned from those programs will guide the implementation of this rule." Therefore, Simplot's previous concerns are still valid as the Rule and Utah Plan are very limited in the definition of what types of projects count towards mitigation and are not consistent with the definition of mitigation in the DSEIS nor the types of projects that are being counted by the BLM as habitat restoration projects for GRSG as improvements. It remains unclear as to how as stated above, FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of BLM-administered lands, unless it is required by other applicable law, including state authority as identified in the DSEIS at page 2-34: "The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law other than FLPMA, while recognizing that State compensatory Mitigation, July 24, 2018)." This language is particularly concerning where there is no specific authority, including the absence of a NEPA process to identify the effects of implementing state requirements on federal lands, and where state requirements may be inconsistent with federal guidance or definitions. As stated at page ES-4 in the DSEIS: "FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife." "Requiring" consistency with state law on federal lands is an example of enlarging the authority of states on federal lands. This also a relevant concern as the disturbance and density criteria can potentially be exceeded based on "improvement" of sage-grouse habitat however, there is currently no direction on the amount of improvement required or how that is defined in relation to the concerns noted above regarding state compensatory mitigation "requirements".

3.B. Compensatory Mitigation The DSEIS at page ES-3 specifically asks for additional comment from the public on compensatory mitigation. Simplot supports the language added in the DSEIS clarifying that

compensatory mitigation is voluntary and that it will be coordinated with individual states based on state specific guidance and considered (emphasis added) on a project by project basis for projects proposed on federal land. The DSEIS rightfully recognizes the states as sovereign entities that have the lead role in managing game species "populations", including Greater sage-grouse. The DSEIS supports the determination made by the BLM that the Federal Land Policy and Management Act of 1976 (FLPMA) does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of BLM-administered lands. Furthermore, the DSEIS is now consistent with Department of Interior (DOI) Instruction Memorandum (IM) 2019-08 Compensatory Mitigation. Simplot supports the application of voluntary (emphasis added), compensatory mitigation in Priority Habitat Management Area (PHMA) which can be used in the NEPA analysis to address the specific impacts of a proposed action. However, Simplot does not support the incorporation of an arbitrary 4:1 mitigation ratio on federal land as required by the Rule. Simplot supports the development of a Habitat Quantification Tool (HQT) or equivalent that accounts for all habitat characteristics or attributes that influence sage-grouse habitat selection across multiple scales to produce a habitat unit, generally functional acre, to be used to calculate debits associated with disturbances or credits associated with conservation. Where mitigation is driven by compensating for habitat debits (one habitat debit is equal to one habitat credit). The HQT provides for a quantitative tool that is based on best available science, rather than relying on arbitrary mitigation ratios. The Rule incorporates the mitigation requirement of providing four acres of functional, protected habitat or corridors for every one acre of permanent disturbance in sage-grouse habitat. This approach does not incorporate methods to quantitatively assess habitat function/quality as an alternative mitigation option. As outlined in Simplot's previous comments to the State of Utah in regard to the Proposed Compensatory Mitigation Rule, a simple 4:1 ratio is arbitrary, has no proportionate nexus to the impact, and ignores functional tools developed by other states to provide a scientifically defensible approach towards mitigation. Moreover, for valid existing rights such as afforded by a federal mineral lease, imposing this mitigation ratio may raise Constitutional takings issues.

4.4.11 Lek Buffers

The 2015 Plan Amendment applied the lek buffer distances from the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse - A Review. The Proposed Plan Amendment changes the application of a specific lek buffers for development to an action where BLM would assess and address any impacts of development within the USGS buffer distance. The 2015 "not warranted" finding identified the measures in the 2015 Plans that required disturbance caps, surface occupancy restrictions, seasonal restrictions, and lek buffers to effectively reduce habitat loss, habitat fragmentation and disturbance to GrSG from nonrenewable energy development. The Draft SEIS states it made these changes to align with Utah's management approach and that buffer distances would be adjusted based on local scientific data. It also noted that because this approach was analyzed in the 2015 EIS, no further analysis is needed in the current NEPA process. We were unable to locate the analysis for this change in the 2015 EIS. We recommend in the Final SEIS including the section and page numbers in the 2015 EIS where the analysis can be located.

3.H Lek Buffers As previously stated, Simplot appreciates the clarification in the RMPA/EIS on page 2-7 that buffers were not established to "not allow activities" but to "assess and address" impacts to maintain lek persistence. It is additionally understood that lek buffers can be adjusted based on local scientific data (including landscape features). These concepts are identified further and supported in Appendix B of the DSEIS. Simplot supports the application of the USGS minimum lek buffers in PHMA.

4.4.12 Surface Coal Mining

Table 4-2, Summary of Environmental Consequences, notes measures to protect GrSG and its habitat include net conservation gain requirements for impacts due to coal mining. If BLM is no longer requiring compensatory mitigation, and the State's mitigation program is only voluntary, please explain in the Final SEIS how BLM will require a net conservation gain for impacts due to coal mining.

4.4.13 Range of Alternatives

The Draft SEIS analyzes an inadequate range of alternatives.

The BLM must add a new section to Chapter I that identifies where the 2018 DEIS and FEIS explicitly stated that all alternatives from the 2015 FEIS were being considered - not merely conclusory statements that "all alternatives were considered." Without detailing the language that connects the 2018 FEIS and the 2015 DEIS and FEIS, the range of alternatives is limited to those identified in 2018 which does not conform to NEPA.

4.4.14 Sage-Grouse

There is an inadequate analysis of the potential impacts to sage-grouse and sagebrush habitat from the proposed management changes which allow increased mineral leasing, increased exemptions, waivers and modifications to leasing stipulations, reduced mitigation and increased grazing levels. The conclusion made in the DSEIS that these changes will have minimal additional impact to sage grouse habitat or populations is not supported by an analysis of potential direct or cumulative effects.

Using the trends analysis recommended above, we recommend the Final SEIS evaluate whether the conservation measures in the Proposed Plan Amendment would be expected to reduce or eliminate the declines in GrSG and its habitat. For many proposed changes in the Proposed Plan Amendment, the Draft SEIS relies on findings of only localized impacts in determining that conservation of the GrSG will not be affected. We recommend evaluating those conclusions in light of information from the scientific literature on the role of isolated, peripheral and local populations in the overall conservation of the species. We also recommend BLM consult with FWS to evaluate whether the additive effects of the proposed changes have any potential to modify the conclusion that conservation will not be affected and include that evaluation in the Final SEIS.

4.4.15 Livestock Grazing

The Utah DSEIS includes only the same four sentences on livestock grazing that the 2018 FEIS provided, stating that "in general, the existing conditions of livestock grazing in Utah remain the same as described in the 2015 Final EIS." UT DSEIS at 3-19. This is hardly sufficient to supplement the deficiencies of the earlier FEIS. In Utah, our analysis indicates a large percentage of grazing allotments are not undergoing environmental analysis when the permits are renewed and therefore no changes to livestock grazing are being made even if the allotments are not meeting sage-grouse habitat standards or even minimum rangeland health standards. As of March 2020, 59.6% of allotments and 63% of permitted AUMs in Utah are being renewed under Section 402(c)(2) of FLPMA under the same terms and conditions as the existing grazing permit.

4.4.16 Fluid Minerals

In the report Oil and Gas Development on Federal Lands and Sage-Grouse Habitat October 2015 to March 2019, it indicates between October 2015 and January 2017 there were 46 acres within the PHMA

leased per month compared to 678 acres/month between February 2017 and March 2019; and within the GHMA, it was 6.90 acres/month and 1,512 acres/month, respectively. Additionally, the Draft SEIS states in the cumulative impacts section "it is anticipated that 2,968 oil and gas wells will be drilled within occupied GrSG habitat within the population areas, of which 2,289 wells are anticipated to be producing wells. Exploration wells expected in all populations." It is unclear if these estimates include the current and upcoming BLM lease sales in June and September 2020. According to the BLM's Utah lease sale website the June lease sale encompasses approximately 4,376 acres and the September lease sale 150,000 acres. We recommend the cumulative impacts discussion in the Final SEIS include the number of acres currently leased and have the potential to be leased in the future. To support the conclusion that restrictions included in the Proposed Plan Amendment would allow for conservation of the species by reversing the ongoing declines in GrSG, it may also be helpful in the Final SEIS to identify instances where oil and gas development with controls similar to those required in the Proposed Amendment have had no or negligible effect on nearby populations of GrSG in Utah or other states.

4.4.17 Solid Minerals

3.F. Valid Existing Rights Apply to Existing Leases and Fringe Leases As Simplot previously stated, phosphate is an important mineral in regards to food and national security. Appendix A provides additional information on the importance of phosphate in Utah in regards to national food security. The Proposed LUPA/Final EIS was finalized in June of 2015. At the time of its release, Simplot had three leases that were assigned in 2008 and another fringe lease application that had been accepted by the BLM in the area covered by the DSEIS. Additionally, a draft Environmental Assessment (EA) had been completed for a fringe lease application during the analysis period of the LUPA/FEIS. The BLM issued a letter February 18, 2014 to Simplot Phosphates, LLC deferring a decision on the EA until the sage-grouse land use plan amendments were completed. In 2018 an additional EA was completed to analyze the impacts associated with the fringe lease, consistent with the 2015 ARMPA. The EA was posted for comment and finalized in November of 2018. One public comment was received. On December 6, 2018 Simplot received notification once again that the EA, including any associated decision, was being placed on hold pending the release of the Utah Greater Sage-Grouse Proposed RMPA/Final EIS on December 7, 2018. No additional analysis was completed in the RMPA/EIS or the DSEIS to quantify the impacts to leasable minerals from implementing the Management Alignment Alternative; despite the fact that there are at least three existing phosphate leases and a fringe lease E.A. completed for public lands within the planning area. Simplot operations in the Vernal and Rock Springs area provide approximately 300 direct jobs, with annual payroll of approximately \$40 million. Almost \$60 million is spent for a variety of goods and services. Almost \$2 million is paid in local taxes. The quantities of phosphate in the Vernal area are significant, and could provide good paying jobs for many decades, including other mineral developments. In addition, it alleviates the nation's reliance upon international mineral resources. Simplot appreciates the clarification provided in the DSEIS regarding the status of fringe leases and the valid existing rights associated with them. The DSEIS recognizes the previous deficiencies in the Final EIS and corrects this at page 3-24 in the DSEIS. : "Page 3-208 of the 2015 Final EIS defines a fringe acreage lease, but the language stops short of noting the regulatory rights the holder of existing federal leases or mineral rights on adjacent private lands has to obtain the rights to such lands via a fringe acreage lease or a lease modification (43 CFR 3510.11)." Additional clarification is provided in the SDEIS at page 4-64: "For the purpose of clarifying impact analysis in this document, the status of a fringe acreage lease in relation to the 2015 ARMPA allocations is addressed here. While the PHMA land use allocation for nonenergy minerals remains closed, there is a consideration that leases could be considered next to existing operations (see 2015 ROD/ARMPA MA-MR-15). Though PHMA is noted as closed, unmined nonenergy

mineral leases, including phosphate leases, have valid existing rights to which this allocation does not apply."

4.4.18 Cumulative Impacts

The Draft SEIS no longer requires that projects produce a net conservation gain for Greater sage-grouse, allowing incremental reduction of sage-grouse habitat. The cumulative effects of these incremental impacts will be detrimental to sage-grouse survival.

The BLM must respond to comments provided by the Environmental Protection Agency ("EPA") that WWP weaponized in *WWP v. BLM*. The response must be detailed, explicit to EPA's comments, and developed in Appendix E. Currently, no changes to the analysis have been made from the 2018 FEIS to discuss EPA's comments. Response to EPA's comments from 2018 (and this DSEIS) can be used to respond and address to larger umbrella issues including, among other things, cumulative effects of the unique components of the 2019 ARMPA instead of a recitation of impacts created by the 2015 ARMAP. Attach. 3, Coalition Comments 2015-2020.

The DSEIS at Chapter 4, Section 4.70 provides in part: The BLM analyzed cumulative effects at two levels in the 2019 planning process. Each state analyzed cumulative effects across the Greater Sage-Grouse range by considering, across each state, reasonably foreseeable future actions and their effects in every WAFWA management zone (excluding WAFWA Zone VI). Each state further analyzed cumulative effects at the WAFWA management zone level for their state. See Section 4.7.1 and Table I in Appendix I for the range-wide analysis, which addresses the cumulative effects from reasonably foreseeable future actions across all WAFWA management zones, including those that do not connect directly to Utah. See Utah's WAFWA management zone analysis in Sections 4.7.3, 4.7.4, 4.7.5, and 4.7.6 below. Both analyses use WAFWA Management Zones. Utah's WAFWA Zone analysis included Zones II/VII, III, and IV that include all or portions of Wyoming, Colorado, Montana, California, Nevada, Oregon, and Idaho (Figure 4-1). DSEIS at 4-71 (Emphasis added). The DSEIS at Chapter 4, Section 4.71 provides in part: Conditions on BLM-administered lands have changed little since the 2015 Final EIS, and to the extent that there have been new actions or developments, the impacts associated with those actions or developments are in line with the projections in the 2015 Final EIS regarding reasonably foreseeable future actions and effects. DSEIS at 4-71. The Counties' comments on whether and how the BLM has Provided an updated Reasonably Foreseeable Future Actions. The above cited references to the phrase "reasonably foreseeable future actions" are all that exist in the DSEIS except for the scattered use of the phrase in Appendix 2, comments and responses. Accordingly the counties submit that the DSEIS has not provided a clear and understandable updated description of "reasonably foreseeable future actions." At least as not as the counties have been able to ascertain.

We also recommend using maps of GrSG habitat (PHMA, GHMA and SFA) overlain with land management decision data layers as this would be extremely helpful in understanding the cumulative effects of land management decisions on GrSG and their habitats. For instance, Appendix 3 contains maps of GrSG habitat overlain with oil and gas development layers. It would be helpful if the Final SEIS had similar maps for other activities such as the ones that are listed in Appendix I, Table I. It would be useful to see GrSG habitat overlain with layers such as: prescribed and wildland fires, habitat improvement treatments, invasive species treatments, land use and realty decisions, grazing parcels, and leasable minerals other than oil and gas. Assessing the stressors and benefits to GrSG since the 2015 Plan Amendment was put in place can help determine if the measures in those plans were sufficient to

start avoiding further declines in GrSG populations and habitat and thus whether the reduced protections in the Proposed Plan Amendment may have greater impacts than currently considered. We recommend displaying these analyses at the state-wide scale for direct and indirect impacts and the range-wide scale for indirect and cumulative impacts.

The Utah DSEIS does not include new analysis of cumulative impacts since the 2018 FEIS either. UT DSEIS at 4-68 to 4-88. Appendix I, the supporting information for the cumulative impacts assessment, also excludes significant actions, including extensive removal of juniper and pinyon forests since 2018.

Appendix I of the Draft SEIS, Cumulative Effects Supporting Information, shows that in Management Zones II and VII, the Proposed Plan Amendment changed the amount of GHMA excluded from solar energy development from 29% to 4% (the remaining 25% changed to avoidance areas). We did not locate any analysis regarding the effects of this change; therefore, if any portion of the changed status applies to GrSG habitat in Utah, we recommend the Final SEIS disclose where those changes would occur and describe what type of habitat would be affected (lek, breeding, connectivity, etc.) and how.

4.4.19 Editorial Comments

Chapter 5, Consultation and Coordination, does not indicate any coordination or consultation with other Federal (USFWS, USGS) or state agencies, who maintain scientific expertise on both sage-grouse and sagebrush habitat. Without consultation with these scientific experts, the conclusions of this document on potential impacts to the Greater sage-grouse lack scientific credibility.

Table 2-4, found on pages 2-40 through 2-109 of the Draft SEIS, is not necessary to include because the BLM already incorporated the 2015 alternatives by reference, as authorized by 40 CFR §1502. 21.

4.4.20 Sage-Grouse

The Draft SEIS does not take into account the significant decline in Greater sage-grouse populations over the past three years across the range of the species.

4.5 FEDERAL AGENCY COMMENTS

Comments from the EPA are summarized and responded to in Sections 5.2.1, 5.2.3, 5.2.4, 5.2.5, 5.2.8, 5.2.9, 5.2.10, 5.2.12, 5.2.13, 5.2.14, 5.2.16, 5.2.17, 5.2.19

This page intentionally left blank.