

**Record of Decision and  
Approved Resource Management Plan  
Amendments for the Rocky Mountain Region,  
Including the Greater Sage-Grouse Sub-Regions  
of**

**Lewistown  
North Dakota  
Northwest Colorado  
Wyoming**

**and the Approved Resource Management Plans  
for**

**Billings  
Buffalo  
Cody  
HiLine  
Miles City  
Pompeys Pillar National Monument  
South Dakota  
Worland**

Prepared by:  
US Department of the Interior  
Bureau of Land Management  
Washington, DC

September 2015







United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
Washington, D.C. 20240  
<http://www.blm.gov>  
SEP 18 2015



Dear Reader:

Enclosed are the Bureau of Land Management (BLM) Record of Decision (ROD) and associated land use plans for the Rocky Mountain Region Greater Sage-Grouse Conservation Strategy. The associated land use plans include the Approved Resource Management Plan Amendments (RMPAs) for the Rocky Mountain Region Greater Sage-Grouse Sub-Regions of Lewistown, North Dakota, Northwest Colorado, and Wyoming, and the Approved Resource Management Plans (RMPs) for Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument, South Dakota, and Worland.

The documents are the product of an unprecedented effort to respond to the deteriorating health of the sagebrush landscapes of the American West and the declining population of the Greater Sage-Grouse, a ground-dwelling bird that has been under consideration by the U.S. Fish and Wildlife Service (FWS) for protection under the Endangered Species Act. Based on the best available science and with extensive participation from the public, partners, and stakeholders, these documents, and those published today for the Great Basin, serve as the cornerstone of the broader, landscape-level National Greater Sage-Grouse Conservation Strategy (Strategy).

This Strategy responds to the threats identified in the FWS's 2010 "warranted, but precluded" finding and was guided by over a decade of research, analyses, and recommendations for Greater Sage-Grouse conservation, including the FWS Conservation Objectives Team Report and the BLM National Technical Team Report. These underlying Reports were developed through a collaboration of state, Federal, and research scientists with extensive experience in sage-grouse management and research.

The BLM's actions are guided by the Federal Land Policy and Management Act, which requires that RMPs for managing public lands be developed and maintained, and the National Environmental Policy Act, which requires that an environmental impact statement (EIS) be prepared for major Federal actions significantly affecting the quality of the human environment. In fulfillment of these requirements, the BLM prepared 15 EISs for the associated Draft RMPs and RMPAs, which were published in 2012 and 2013.<sup>1</sup> Each document incorporated analyses and input from the public; Native American tribes; cooperating agencies and other local, state, and Federal agencies and organizations; and BLM resource specialists.

The public had 90 days to comment following publication of the Draft RMPs, RMPAs and EISs. The BLM received 45,200 unique letters with more than 10,300 substantive comments on all the Rocky Mountain Region Draft documents. The BLM and the U.S. Forest Service reviewed, summarized, and took into consideration these comments when preparing the Proposed RMPAs/Final EISs and Proposed RMPs/Final EISs, which were published May 29, 2015, for a 60-day Governor's consistency review and a 30-day public protest period.

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<sup>1</sup> The BLM published one of the 15 Draft EISs – that associated with the Lander RMP Revision – in 2011.

The BLM received consistency review letters from the Governors of Colorado, Montana, North Dakota, South Dakota, and Wyoming and has worked closely with these States to address their concerns. Across all of the Proposed RMPAs, Proposed RMPs, and their associated EISs in the Rocky Mountain Region, government entities, private citizens, non-governmental organizations, and other stakeholders submitted 149 protest letters. Of those, 120 letters contained valid protest issues, in accordance with 43 Code of Federal Regulations 1610.5-2. The BLM addressed these issues in the Director's Protest Resolution Reports. These Reports are available on the Internet at: [http://www.blm.gov/wo/st/en/prog/planning/planning\\_overview/protest\\_resolution/protestreports.html](http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html).

The Assistant Secretary for Land and Minerals Management of the U.S. Department of the Interior and I have signed the attached ROD, approving the RMPAs and RMPs. These plans will guide future land and resource management on BLM-administered land in this region to benefit Greater Sage-Grouse and more than 350 other species of wildlife that depend on healthy sagebrush-steppe landscapes, while maintaining multiple uses, including grazing and recreation.

This ROD applies to the BLM plans for the Rocky Mountain Region and applies only to BLM-managed lands and subsurface mineral estate. However, the complete Strategy on BLM- and U.S. Forest Service-administered lands consists of this ROD, the BLM ROD for the Great Basin Region, the BLM ROD for the Lander RMP,<sup>2</sup> and the two Forest Service RODs for each of these regions. Together these five RODs and the underlying plans implement the Strategy across the remaining range of the species.

Copies of the ROD, RMPAs, and RMPs can be obtained from the BLM's National Greater Sage-Grouse website at: <http://www.blm.gov/wo/st/en/prog/more/sagegrouse.html>.

The BLM extends its sincere appreciation to the public; Native American tribal representatives; local, state, and other Federal agencies; and the cooperating agencies, all of whom contributed significantly to the completion of these plans. Your participation informed and improved the land use plans presented here. Together with our partners, we have taken action that ensures a bright future for wildlife, the sagebrush sea, and a thriving economy in the American West. We look forward to working with you to implement the Strategy.

Sincerely,



Neil Kornze  
Director

Enclosure:

1. Record of Decision and Approved Resource Management Plan Amendments and Approved Resource Management Plans

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<sup>2</sup> The BLM signed the ROD approving the Lander RMP in June 2014.

## SUMMARY

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This Record of Decision (ROD) is the culmination of an unprecedented effort to conserve Greater Sage-Grouse (GRSG) habitat on public lands administered by the Bureau of Land Management (BLM). It is consistent with the BLM's multiple-use and sustained yield mission and the joint objective established by Federal and State leadership through the GRSG Task Force to conserve GRSG habitat on Federal, State, and private land such that additional protections under the Endangered Species Act may be avoided.

In response to a [2010 determination](#) by the US Fish and Wildlife Service (FWS) that the listing of the GRSG under the Endangered Species Act was “warranted, but precluded” by other priorities, the BLM, in coordination with the US Department of Agriculture Forest Service, developed a landscape-level management strategy, based on the best available science, that was targeted, multi-tiered, coordinated, and collaborative. This strategy offers the highest level of protection for GRSG in the most important habitat areas. It addresses the specific threats identified in the 2010 FWS “warranted, but precluded” decision and the [FWS 2013 Conservation Objectives Team \(COT\) Report](#).

This ROD and Approved Resource Management Plan Amendments (ARMPAs) are for the Rocky Mountain Region Greater Sage-Grouse Sub-Regions of Lewistown, North Dakota, Northwest Colorado, and Wyoming; and Approved Resource Management Plans (ARMPs) for the Billings Field Office, Buffalo Field Office, Cody Field Office, HiLine District, Miles City Field Office, Pompeys Pillar National Monument, South Dakota Field Office, and Worland Field Office. The ARMPAs and ARMPs include GRSG habitat management direction that avoids and minimizes additional disturbance in GRSG habitat management areas. Moreover, they target restoration of and improvements to the most important areas of habitat. Management under the ARMPs and ARMPAs is directed through land use allocations that apply to GRSG habitat. These allocations accomplish the following:

- Eliminate most new surface disturbance in the most highly valued sagebrush ecosystem areas identified as Sagebrush Focal Areas
- Avoid or limit new surface disturbance in Priority Habitat Management Areas, of which Sagebrush Focal Areas are a subset
- Minimize surface disturbance in General Habitat Management Areas

In addition to protective land use allocations in habitat management areas, the ARMPs and ARMPAs include a suite of management actions, such as establishing disturbance limits, GRS habitat objectives, mitigation requirements, monitoring protocols, and adaptive management triggers and responses. They also include other conservation measures that apply throughout designated habitat management areas.

The cumulative effect of these measures is to conserve, enhance, and restore GRS habitat across the species' remaining range in the Rocky Mountain Region and to provide greater certainty that BLM resource management plan decisions in GRS habitat in the Rocky Mountain Region can lead to conservation of the GRS and other sagebrush-steppe-associated species in the region. The targeted resource management plan protections in this ROD and the ARMPs and ARMPAs apply not only to the GRS and its habitat but also to over 350 wildlife species associated with the sagebrush-steppe ecosystem; this is widely recognized as one of the most imperiled ecosystems in North America. In addition to protecting habitat, reversing the slow degradation of this valuable ecosystem will also benefit local rural economies and a variety of rangeland uses, including recreation and grazing. This also will safeguard the long-term sustainability, diversity, and productivity of these important and iconic landscapes.

This conservation strategy has been developed in conjunction with the 10 states in which the ARMPs and ARMPAs apply, including those ARMPAs for the four sub-regions in the BLM's Great Basin Region ROD. In combination with additional State and Federal actions underway and in development, this strategy represents an unprecedented coordinated collaboration among Federal land management agencies and the States to manage an entire ecosystem and associated flora and fauna. The goal is to achieve the COT Report objective of "conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future." [[Dan Ashe, Director, FWS. Transmittal letter to COT Report. 2013](#)]

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**ATTACHMENTS**

1	Lewistown Field Office Greater Sage-Grouse Approved Resource Management Plan Amendment
2	North Dakota Greater Sage-Grouse Approved Resource Management Plan Amendment
3	Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment
4	Wyoming Greater Sage-Grouse Approved Resource Management Plan Amendment
5	Billings Field Office Approved Resource Management Plan
6	Buffalo Field Office Approved Resource Management Plan
7	Cody Field Office Approved Resource Management Plan
8	HiLine District Office Approved Resource Management Plan
9	Miles City Field Office Approved Resource Management Plan
10	Pompeys Pillar National Monument Approved Resource Management Plan
11	South Dakota Approved Resource Management Plan
12	Worland Field Office Approved Resource Management Plan

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## ACRONYMS AND ABBREVIATIONS

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Full Phrase

ACEC	area of critical environmental concern
AML	appropriate management level
ARMP	Approved Resource Management Plan
ARMPA	Approved Resource Management Plan Amendment
BLM	Bureau of Land Management
BMP	best management practice
BSU	biologically significant unit
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COT	Conservation Objectives Team
CSU	controlled surface use
DDCT	Density and Disturbance Calculation Tool
EIS	environmental impact statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
Forest Service	US Department of Agriculture Forest Service
FR	Federal Register
FWS	US Department of the Interior Fish and Wildlife Service
GHMA <sub>s</sub>	general habitat management areas
GRSG	Greater Sage-Grouse
IM	instruction memorandum
LCHMA <sub>s</sub>	Linkage and Connectivity Habitat Management Area(s)
MOU	memorandum of understanding
MZ	management zone
NEPA	National Environmental Policy Act
NOA	notice of availability
NRCS	Natural Resources Conservation Service
NSO	no surface occupancy
NTT	National Technical Team
OHV	off-highway vehicle
PAC <sub>s</sub>	priority areas for conservation
PGH	preliminary general habitat
PHMA <sub>s</sub>	priority habitat management areas
PPH	preliminary priority habitat
RDF	required design feature
RHMA <sub>s</sub>	restoration habitat management area(s)
RMP	resource management plan
RMPA	resource management plan amendment
ROD	record of decision
ROW	right-of-way
SFA <sub>s</sub>	sagebrush focal areas
SHPO	State Historic Preservation Officer
TL	timing limitation
USC	United States Code

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**ACRONYMS AND ABBREVIATIONS** *(continued)*

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Full Phrase

USGS	US Geological Survey
VRM	visual resource management
WAFWA	Western Association of Fish and Wildlife Agencies
WHB	wild horse(s) and burro(s)
WSA	wilderness study area

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# CHAPTER I

## INTRODUCTION

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This Record of Decision (ROD) approves the US Department of the Interior Bureau of Land Management's (BLM's) attached Resource Management Plan Amendments (RMPAs) for the Rocky Mountain Region Greater Sage-Grouse (GRSG) Sub-Regions of Lewistown, North Dakota, Northwest Colorado, and Wyoming and the Resource Management Plans (RMPs) for the Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument (PPNM), South Dakota, and Worland. The ROD and the attached Approved RMPAs (ARMPAs) and GRSG habitat management decisions in the attached Approved RMPs (ARMPs) provide a set of management decisions focused on specific GRSG conservation measures across the Rocky Mountain Region on BLM-administered lands. The ARMPs also provide overall resource management plan direction for managing all resources on BLM-administered land in their respective Planning Areas.

The BLM prepared the ARMPAs and ARMPs under the authority of the Federal Land Policy and Management Act (FLPMA; 43 United States Code [USC], Section 1701 et seq.), BLM planning regulations (43 Code of Federal Regulations [CFR] Part 1600), and other applicable laws. The BLM prepared environmental impact statements (EISs) in compliance with the National Environmental Policy Act, as amended (NEPA; 42 USC, Sections 4321-4347), and the Council on Environmental Quality's (CEQ) and the US Department of the Interior's regulations for implementing the procedural provisions of NEPA (40 CFR 1500.1 et seq., and 43 CFR 46.01 et seq., respectively).

Throughout the GRSG planning process, the US Department of Agriculture Forest Service (Forest Service) has been a cooperating agency on the Wyoming and Northwest Colorado ARPMA's. The Draft RMPs/EISs and Proposed RMPAs/Final EISs for the Rocky Mountain sub-regions included proposed GRSG management direction for National Forest System lands. The Forest Service has completed two separate RODs with associated Land and Resource Management Plan Amendments under its planning authority; these are available at <http://www.fs.usda.gov/r4/>.

This ROD, in conjunction with the ARMPAs approved through the Great Basin ROD, constitutes resource management planning decisions of the BLM to conserve the GRSG and its habitats throughout that portion of its remaining range administered by the BLM under the authority of FLPMA. The BLM, in coordination with the Forest Service on National Forest System lands within the remaining range of the

species, has a coordinated strategy for conserving the GRSG and the sagebrush-steppe ecosystem on most of the Federal lands on which the species depends. These decisions complement those implemented by Federal agencies through [An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior](#) (US Department of the Interior 2015) and the Sage-Grouse Initiative, as well as those implemented by state and local governments, private landowners, and other partners.

This ROD also approves the decisions in the non-GRSG habitat management decisions in the ARMPs for Billings, Buffalo, Cody (portion of the Bighorn Basin Planning Area), HiLine, Miles City, PPNM, South Dakota, and Worland (portion of the Bighorn Basin Planning Area); these are full-scale resource management plan revisions for managing all BLM-administered lands for all BLM program areas (not limited to GRSG habitat management) in BLM-administered Planning Areas.

## I.1 ROCKY MOUNTAIN REGION PLANNING AREA

The Rocky Mountain Planning Area is composed of the following eleven sub-regional Planning Areas (see **Figure I-1**, Rocky Mountain Region Greater Sage-Grouse Sub-Regions):

- Bighorn Basin (which includes the Cody and Worland Field Offices)
- Billings and the Pompeys Pillar National Monument
- Buffalo
- HiLine
- Lewistown
- Miles City
- North Dakota
- Northwest Colorado
- South Dakota
- Wyoming

Each sub-region prepared its own separate EIS and conducted its own planning, with input from local cooperators, stakeholders, and members of the public. The sub-regional boundaries were constructed to align with BLM administrative offices, state boundaries, and areas that shared common threats to GRSG and their habitat. The boundaries for these sub-regions largely coincide with zones III, IV, and V identified by the [Western Association of Fish and Wildlife Agencies \(WAFWA\) Greater Sage-Grouse Comprehensive Conservation Strategy](#) (Stiver et al. 2006) to delineate management zones (MZs) with similar ecological and biological issues.

The Rocky Mountain Region Planning Area boundaries are all lands regardless of jurisdiction (see **Figure I-2**, Rocky Mountain Region Planning Area). **Tables I-1a** and **I-1b** outline the number of surface acres that are administered by specific Federal agencies, States, local governments, and privately owned lands in the 11 sub-regional Planning Areas that make up the Rocky Mountain Region; 10 of these Planning Areas are addressed in this ROD. The ROD approving the Lander RMP was signed in June 2014.

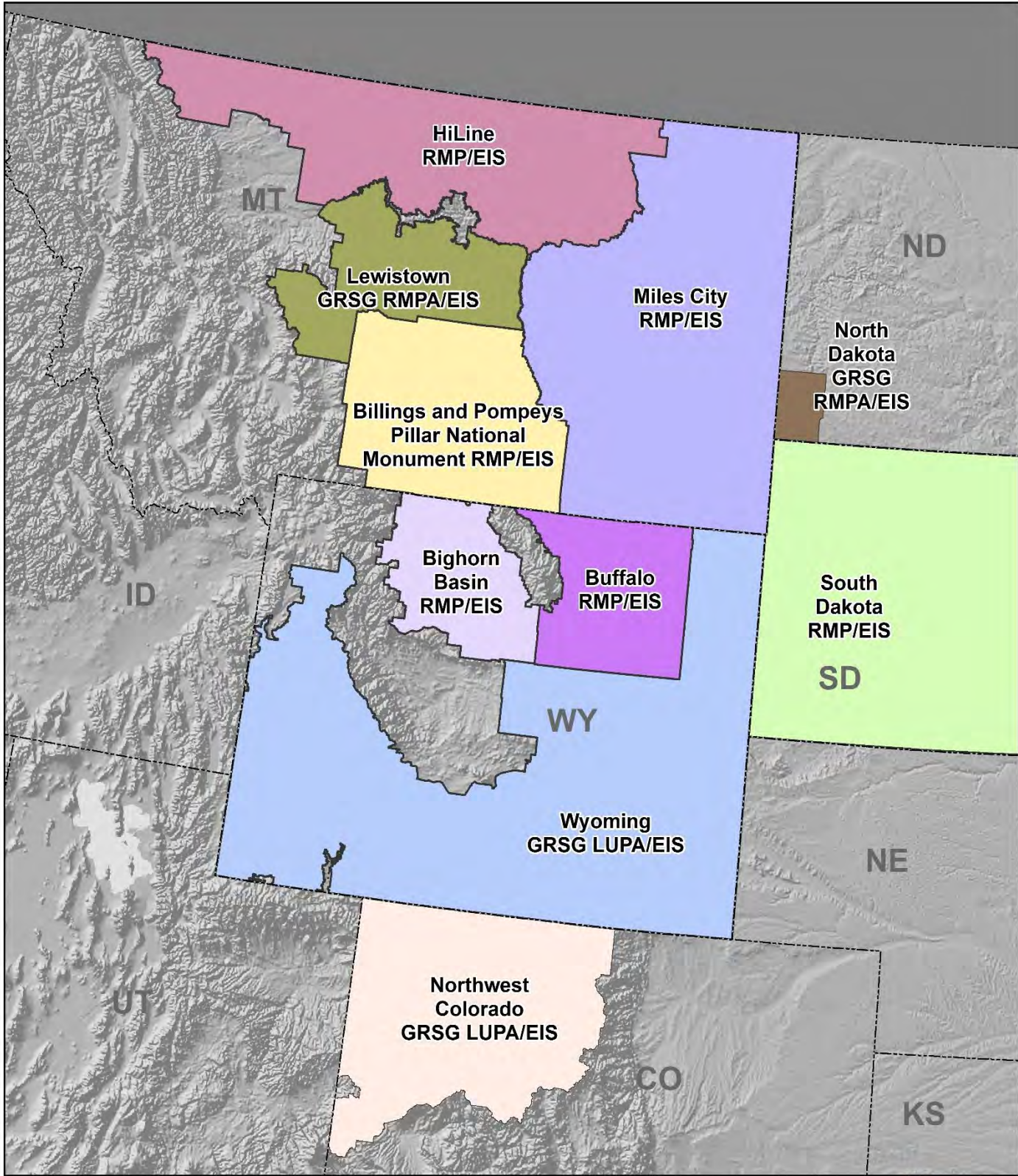
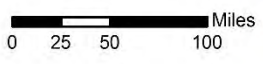
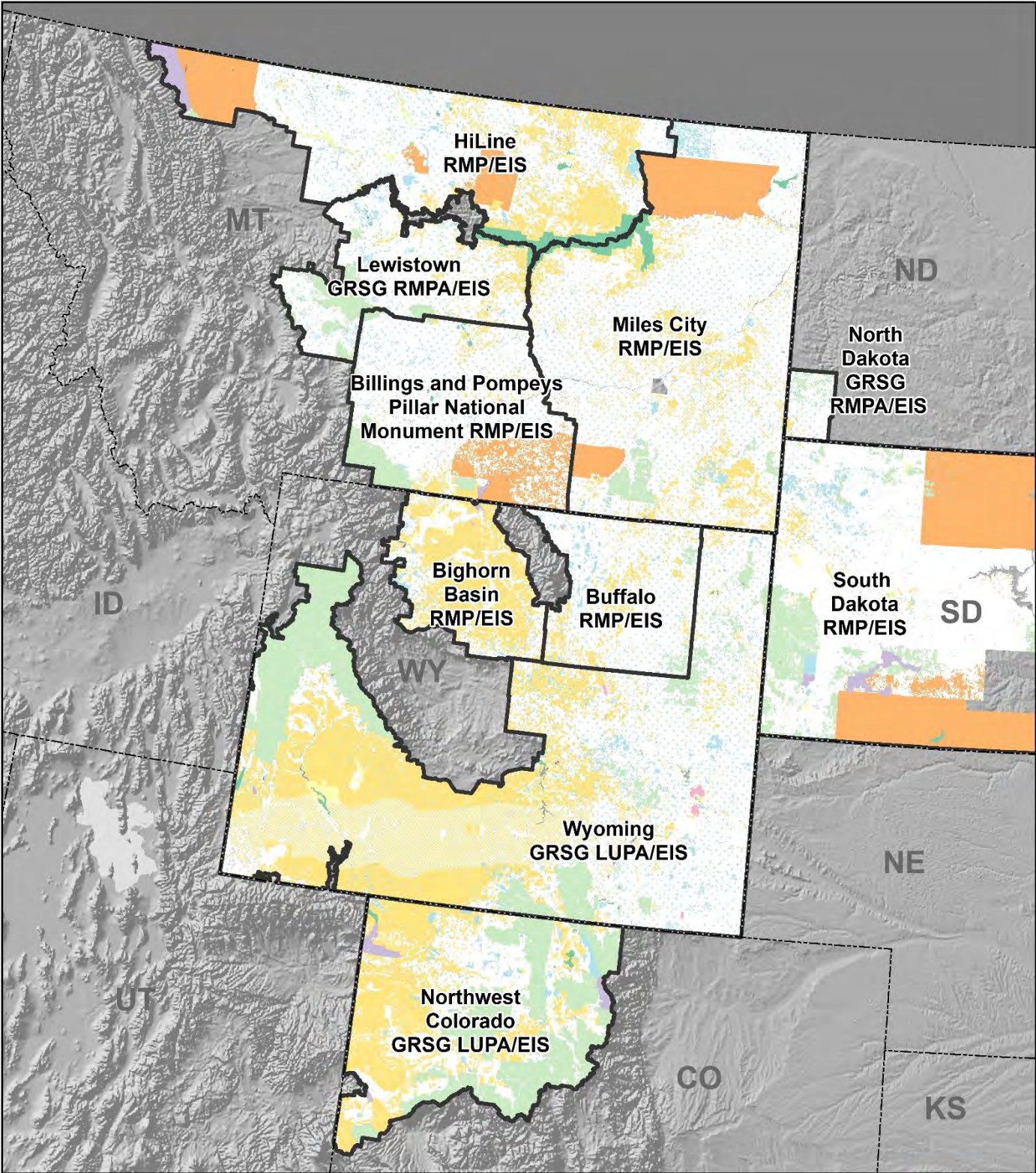


Figure 1-1: Rocky Mountain Region Greater Sage-Grouse Sub-Regions

September 2015



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 1-2: Rocky Mountain Region Planning Area**

**Legend**

- |                                       |                             |
|---------------------------------------|-----------------------------|
| Bureau of Land Management (BLM)       | Department of Defense (DOD) |
| U.S. Forest Service (USFS)            | Other Federal               |
| National Park Service (NPS)           | State/Local                 |
| U.S. Fish and Wildlife Service (USFW) | Private/Other               |
| Indian Reservation (BIA)              | Planning Area Boundary      |
| Bureau of Reclamation (BOR)           | State Boundary              |

0 25 50 100 Miles  
September 2015





**Table I-1a**  
**Land Management in the Rocky Mountain ARMPA Planning Areas (in Acres)**

<b>Surface Land Management</b>	<b>Lewistown</b>	<b>North Dakota</b>	<b>Northwest Colorado</b>	<b>Wyoming</b>
BLM	594,510	33,030	4,900,000	11,133,600
Forest Service	896,302	140,432	4,606,000	5,223,200*
Private	5,168,725	741,607	4,836,000	19,286,800
Indian reservation	0	0	0	0
FWS	114,194	638	38,000	46,200
Other	12,178	6,416	360	168,500
State	526,605	40,894	352,000	2,522,200
National Park Service	0	0	272,000	10,800
Other Federal	1	0	0	11,800
Bureau of Reclamation	0	0	6300	244,800
Local government	0	0	193,000	9,200
Department of Defense	8	0	200	57,800
<b>Total acres</b>	<b>7,312,522</b>	<b>963,017</b>	<b>15,203,860</b>	<b>38,564,400</b>

Source: BLM GIS 2015

\*This figure includes National Grasslands and Bankhead Jones lands that are administered by the Forest Service.

**Table I-1b**  
**Land Management in the Rocky Mountain ARMP Planning Areas (Surface Acres)**

<b>Surface Land Management</b>	<b>Billings and PPNM<sup>1</sup></b>	<b>Buffalo</b>	<b>Cody</b>	<b>HiLine</b>	<b>Miles City</b>	<b>South Dakota</b>	<b>Worland</b>
BLM	434,154 <sup>2</sup>	782,102	1,086,935	2,437,570	2,751,530	274,329	2,100,879
Forest Service	884,459	862,087	0	28,954	524,909	2,017,435	0
Private	7,007,233	5,167,265	875,400	9,128,526	17,740,896	40,759,436	1,023,600
Indian reservation	1,915,781	0	0	2,125,972	2,569,756	5,351,497	0
FWS	15,674	0	0	489,008	426,963	205,128	0
Other	52,840	2,148	20,800	0	12,012	0	4,600
State	459,683	538,606	182,800	1,151,465	1,720,994	760,442	250,900
National Park Service	29,670	0	20,800	363,124	43	128,045	0
Other Federal	0	0	0	5,212	56,752	571,527	0
Bureau of Reclamation	837	0	79,900	131,373	1,400	43,607	1,500
Local government	4,217	0	0	10,186	11,392	1,196	0
Department of Defense	0	4,166	3,500	179	69	371,067	0
<b>Total acres</b>	<b>10,370,394</b>	<b>7,356,374</b>	<b>2,270,135</b>	<b>15,871,569</b>	<b>25,816,716</b>	<b>50,483,709</b>	<b>3,381,479</b>

Source: BLM GIS 2015

<sup>1</sup>Pompeys Pillar National Monument<sup>2</sup>This acre figure includes 4,298 acres in Wyoming managed by the Billing Field Office as part of the Pryor Mountain Wild Horse Range (PMWHR) and 51 acres for the Pompeys Pillar National Monument (PPNM).

The Planning Area also includes other BLM-administered lands that are not identified as habitat management areas for GRSG. The ARMPAs for these lands (Lewistown, North Dakota, Northwest Colorado, and Wyoming) generally do not establish any additional management outside of GRSG habitat management areas, and they will continue to be managed according to the existing BLM resource management plans for these Planning Areas. However, the ARMPs for Billings, Buffalo, Cody (portion of the Bighorn Basin Planning Area), HiLine, Miles City, Pompeys Pillar National Monument, South Dakota, and Worland (portion of the Bighorn Basin Planning Area) are full-scale resource management plan revisions for all BLM-administered lands and all BLM program areas within their Planning Areas; that is, they are not limited to GRSG habitat management.

The decision area for GRSG habitat management in the Rocky Mountain Region ARMPs and ARMPAs is BLM-administered lands, including split-estate, where the BLM has subsurface mineral rights in GRSG habitat management areas (see **Figure I-3**, Rocky Mountain Region Decision Area, Greater Sage-Grouse Habitat Management Areas). For a description of habitat management areas, refer to **Section I.5**.

The decision areas for the ARMPAs and ARMPs are the surface acres identified in **Tables I-1a** and **I-1b** that the BLM manages. The decision areas also include subsurface mineral estate that the BLM administers within the ARMPAs and ARMPs Planning Area boundaries.

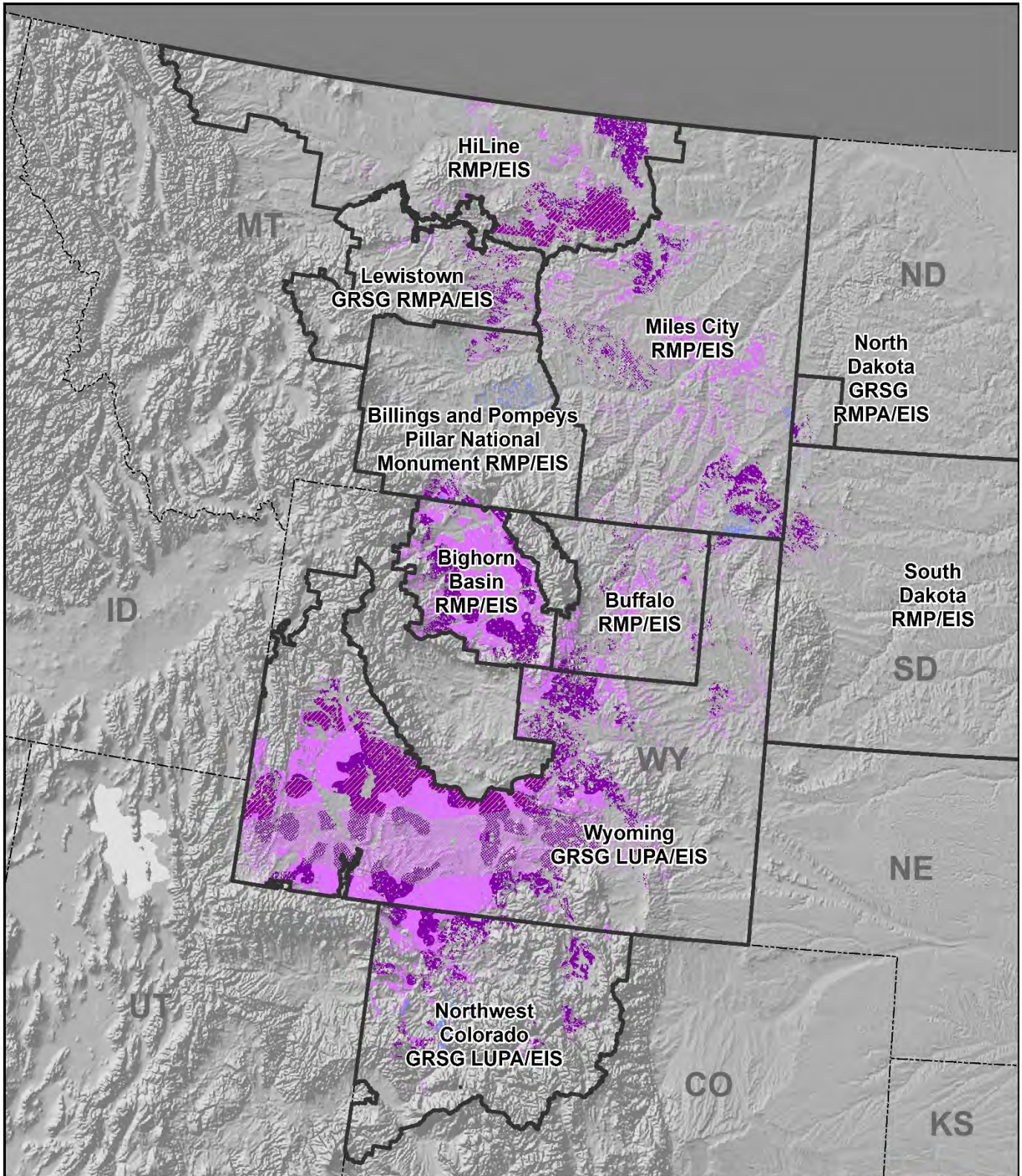
## **I.2 EARLY GRSG CONSERVATION EFFORTS**

Currently, GRSG occupy an estimated 56 percent of its historically occupied range. The BLM manages most of the GRSG habitat on Federal lands (i.e., the range of GRSG that does not include the Columbia Basin or Bi-State populations). The BLM and other wildlife conservation agencies and organizations have been trying to conserve GRSG habitat for many years; this has provided an important foundation for the GRSG conservation strategy that guides these plans.

The WAFWA 2004 [\*Range-Wide Conservation Assessment for Greater Sage-Grouse and Sagebrush Habitats\*](#) (Connelly et al. 2004) was the first range-wide assessment of GRSG using the vast amount of population data collected over the previous 60 years, habitat information spanning the previous 100 years, and literature dating back 200 years. The goal of the assessment, which includes contributions from the BLM, was to present an unbiased and scientific assessment of dominant issues and their effects on GRSG populations and sagebrush habitats.







In November 2004, the BLM released its [\*National Sage-Grouse Habitat Conservation Strategy\*](#), which encouraged GRSG habitat conservation through consultation, cooperation, and communication with WAFWA, the US Fish and Wildlife Service (FWS), the Forest Service, the US Geological Survey (USGS), State wildlife agencies, local GRSG working groups, and various other public and private partners.

In 2006, WAFWA completed a [\*Greater Sage-Grouse Comprehensive Conservation Strategy\*](#) (Stiver et al. 2006), with the assistance of the BLM, the Forest Service, and other contributors. The overall goal of the strategy is to maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain those populations. The strategy outlined the critical need to develop the associations among local, State, provincial, tribal, and Federal agencies, nongovernmental organizations, and individuals to design and implement cooperative actions to support



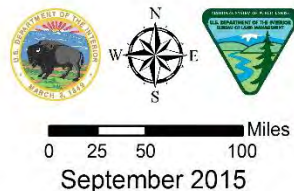
**Figure 1-3: Rocky Mountain Region Decision Area, Greater Sage-Grouse Habitat Management Areas (BLM Administered Lands\*)**

**Legend**

-  Sagebrush Focal Areas (SFAs)
-  Priority Habitat Management Areas (PHMAs)
-  General Habitat Management Areas (GHMAs)
-  Additional Habitat Management Categorizations
-  Planning Area Boundary
-  State Boundary

\*For Subsurface information see the ARMPA

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robust populations of GRSG and the landscapes and habitats they depend on. The catalyst for this was widespread concern for declining populations and reduced distribution of GRSG.

In 2008, the BLM created two national teams to investigate possible BLM management options for GRSG conservation and to summarize the BLM's ongoing conservation efforts. A product of this investigation was one of the first range-wide maps of GRSG priority habitat, referred to as "key habitat." At the time, the primary purpose for the key habitat map was to inform and help prioritize fire suppression in GRSG habitat on BLM-administered lands.

An additional outcome of this team's work was signing a [memorandum of understanding](#) (MOU) among the WAFWA, the BLM, FWS, and USGS (in the US Department of the Interior) and the Forest Service and Natural Resources Conservation Service (NRCS; in the US Department of Agriculture). The MOU's purpose was to provide for cooperation among the participating State and Federal land managers and wildlife management and science agencies to conserve and manage GRSG sagebrush habitats and other sagebrush-dependent wildlife throughout the western US.

In 2010, the BLM commissioned the [mapping and modeling of breeding GRSG densities](#) across the West. It convened a conference with State wildlife agencies to coordinate the lek survey data needed for this project. Through an agreement with the FWS, this modeling project mapped known active leks across the West, which served as a starting point for all States to identify priority habitat for the species.

In March 2010, the FWS published its [12-Month Finding for Petitions to List the Greater Sage-Grouse \(\*Centrocercus urophasianus\*\) as Threatened or Endangered](#) (75 FR 13910, March 23, 2010). In that finding, the FWS concluded that GRSG was "warranted, but precluded" under the Endangered Species Act (ESA). This finding indicates that, although the species meets the criteria for listing, the immediate publication of a proposed rule to list the species is precluded by higher-priority listing proposals; that is, the species should be listed based on the available science, but listing other species takes priority because they are more in need of protection.

As part of its 2010 finding, the FWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the ESA. The FWS determined that Factor A, "the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG," and Factor D, "the inadequacy of existing regulatory mechanisms," posed "a significant threat to the GRSG now and in the foreseeable future" (75 FR 13910, March 23, 2010).

In addition, the FWS found that existing local, State, and Federal regulatory mechanisms were not sufficient to address threats to the habitat. The FWS identified the BLM's RMPs as the primary regulatory mechanisms. The BLM manages approximately 67 million acres of the remaining GRSG habitat (see **Figure I-3**).

### **I.3 THREATS TO GRSG IN THE ROCKY MOUNTAIN REGION**

In its 2010 finding, the FWS identified a number of specific threats to GRSG in the Rocky Mountain Region. The primary threats are the widespread human disturbances from energy development, mining, and infrastructure. Other threats, some of which are more localized, are habitat fragmentation due to recreation, urbanization, and sagebrush elimination, and impacts on habitat associated with free-roaming equids (horses and burros) and improper livestock grazing.

In 2011, the BLM established the GRSG National Technical Team (NTT), comprised of BLM, USGS, NRCS, and State specialists. The NTT's charge was to identify science-based conservation measures for the GRSG to promote sustainable populations. These measures would be focused on the threats identified in the FWS listing determination (75 FR 13910) in each of the regional WAFWA GRSG management zones (MZs) (**Figure I-4**). The NTT produced [A Report on National Greater Sage-Grouse Conservation Measures](#) (NTT Report; NTT 2011), in which it proposed conservation measures based on habitat and other life history requirements for GRSG. The NTT Report described the scientific basis for the conservation measures proposed for each program area. It also emphasized the importance of standardizing monitoring across the WAFWA GRSG MZs.

In 2012, the FWS, with the support of the Western Governors Association Sage Grouse Task Force, convened the Conservation Objectives Team (COT), composed of State and Federal representatives. One of the team's tasks was to produce a peer-reviewed report identifying the principal threats to GRSG survival. Another task was to determine the degree to which these threats need to be reduced or ameliorated. The goal was to conserve GRSG so that they would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future.

The [COT Report](#), released in 2013, also identified priority areas for conservation (PACs) and emphasized that "Maintenance of the integrity of PACs...is the essential foundation for sage-grouse conservation" (FWS 2013). Finally, the COT Report identified present and widespread, as well as localized threats by GRSG population across the West (**Table I-2**). The BLM also identified and explained additional threats in the Final EISs, which were published with proposed plans on May 29, 2015. **Figure I-4** identifies the PACs, GRSG populations (and their names), and WAFWA MZs across the West.

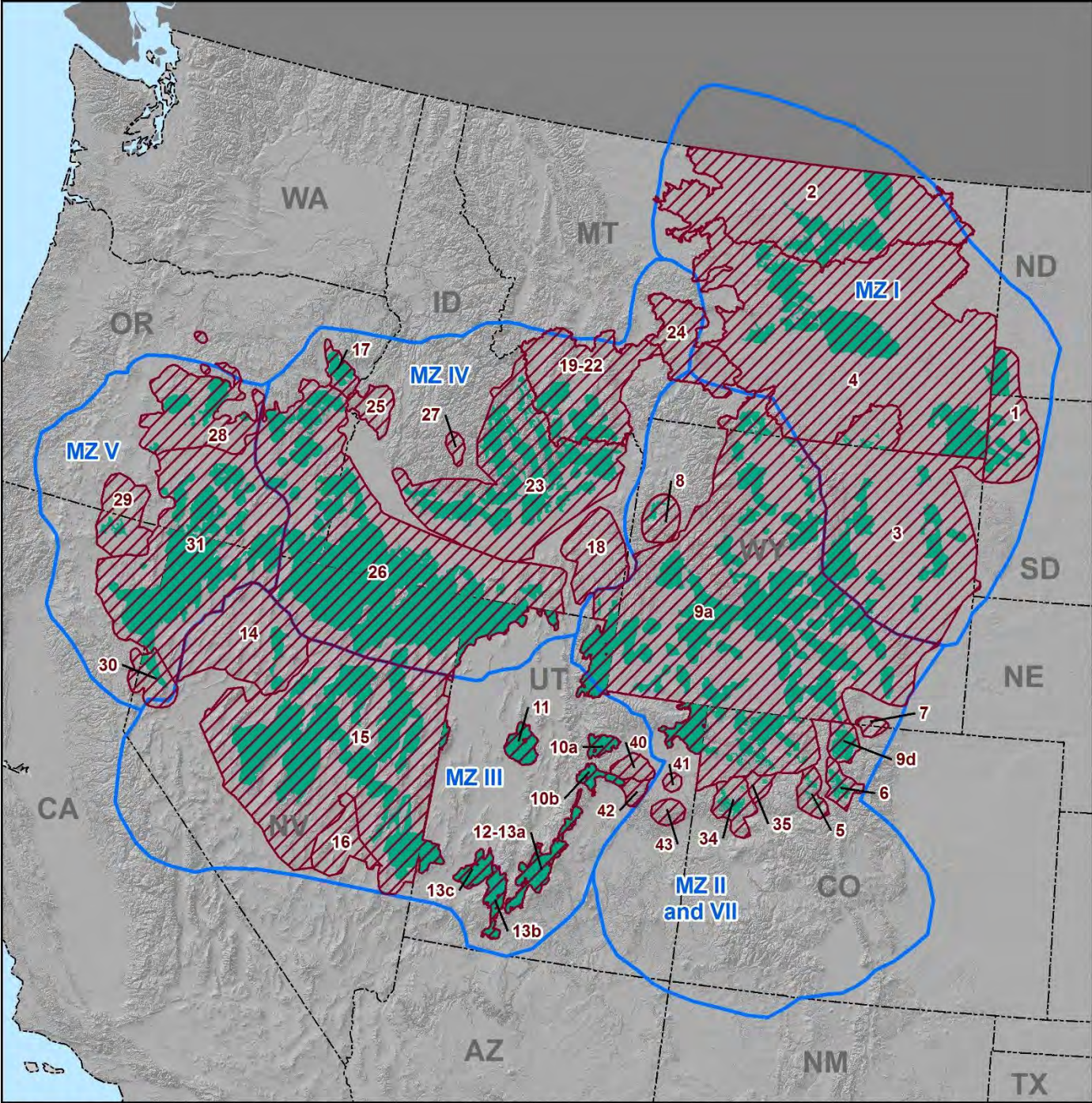
**Table I-2** is a summary of the nature and extent of threats identified in the COT Report for each remaining identified population of GRSG in the Rocky Mountain Region, as highlighted in the 2013 COT Report.

#### **I.4 NATIONAL GRSG CONSERVATION STRATEGY**

The BLM recognized the need to incorporate explicit objectives and concrete conservation measures into RMPs<sup>1</sup> to conserve GRSG habitat and provide robust regulatory mechanisms. This was based on the identified threats to the GRSG, especially inadequate regulatory mechanisms, and the FWS's timeline for making a decision on whether to propose this species for listing. In August 2011, the BLM came up with a plan to revise and amend existing RMPs throughout the range of the GRSG. These revised and amended RMPs would incorporate management actions intended to conserve, enhance, and restore GRSG habitat. Separate planning began to address the conservation needs of the Bi-State GRSG populations in California and Nevada and the Washington State distinct population segment.

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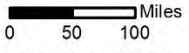
<sup>1</sup> BLM land use plans prepared under the present regulations (see 43 CFR 1601.0-5(n)) are generally known as resource management plans. Some BLM land use plans, including ones predating the present regulations, are referred to by different names, including management framework plans. For purposes of this ROD, the BLM land use plan and resource management plan interchangeably to refer to all BLM-administered land use plans.



**Figure 1-4: Greater Sage-Grouse Priority Areas for Conservation, Populations and WAFWA Management Zones**

**Legend**

- WAFWA Sage-grouse Management Zones
- Greater Sage-grouse Priority Areas for Conservation (PAC)
- WAFWA Revised Sage-Grouse Populations 2015



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1 Dakotas	10a Strawberry Valley	18 E-Central ID	30 Warm Springs Valley NV
2 Northern Montana	10b Carbon	19-22 SW Montana	31 Western Great Basin
3 Powder River Basin	11 Sheeprack Mountains	23 Snake, Salmon, & Beaverhead	34 Parachute Piceance Roan
4 Yellowstone Watershed	12-13a Parker Mountain-Emery	24 Belt Mountains MT	35 Meeker - White River
5 Eagle/S Routt CO	13b Panguitch	25 Weiser ID	40 Anthro Mountain
6 Middle Park CO	13c Bald Hills	26 Northern Great Basin	41 S White River
7 Laramie WY	14 NW-Interior NV	27 Sawtooth ID	42 W Tavaputs
8 Jackson Hole WY	15 Southern Great Basin	28 Central OR	43 E Tavaputs Plateau
9a Wyoming Basin	16 Quinn Canyon Range NV	29 Klamath OR/CA	
9d North Park	17 Baker OR		

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**Table I-2  
Threats to GRSG in the Rocky Mountain Region as identified by the  
Conservation Objectives Team**

Population	Population Number	Isolated Small Size	Sagebrush Elimination	Agriculture Conversion	Fire	Conifers	Weeds/Annual Grasses	Energy	Mining	Infrastructure	Improper Grazing	Free-Roaming Equids	Recreation	Urbanization	EIS/Plan(s)
Northern Montana	2		L	L	L		L	Y		Y	Y		L		HiLine
North Dakota, South Dakota, and Montana	1	Y	L	L	Y	U	L	Y	Y	Y	L				North Dakota, South Dakota, and Miles City
Yellowstone Watershed (Montana)	4		L	Y	L	L	Y	Y		Y	Y		L		Lewistown, Miles City, and Billings
Powder River Basin (Montana and Wyoming)	3		L		L	L	Y	Y	Y	Y	Y		Y	L	Miles City, Buffalo, Worland, and Wyoming Amendments
Wyoming Basin (Montana and Wyoming)	9a		L		L	L	L	Y	L	Y	Y	L	Y	L	Billings, Worland, Cody, Lander, and Wyoming Amendments
Jackson Hole (Wyoming)	8	Y	L		L	L	Y						Y	L	Wyoming
Laramie (Wyoming, and Colorado)	7	Y			Y	Y	Y	Y	U	Y	Y		Y	Y	Wyoming and Northwest Colorado
Eagle-South Routt (Colorado)	5	Y	L	Y	L	L	Y	Y		Y	Y		L	Y	Northwest Colorado
Middle Park (Colorado)	6	Y	Y	Y	Y		Y	Y	Y	Y	Y		Y	Y	Northwest Colorado
North Park (Colorado)	9d		Y	Y	Y		Y	Y	Y	Y	Y		Y	Y	Northwest Colorado
Northwest Colorado	9e		L	Y	Y	L	Y	Y	Y	Y	Y	L	Y	L	Northwest Colorado
Parachute-Piceance-Roan Basin (Colorado)	34	Y	L		Y	Y	L	Y	Y	Y	Y	Y			Northwest Colorado
Meeker-White River (Colorado)	35	Y	Y	Y	Y		L	Y	Y	Y	Y			Y	Northwest Colorado

Source: FWS 2013

Threats are characterized as Y = threat is present and widespread, L = threat present but localized, and U = unknown.

The BLM found that additional management direction and specific conservation measures on Federal public lands would be necessary to address the present and anticipated threats to GRSG habitat and to restore habitat where possible. This finding was in light of the 2010 “warranted” determination by the FWS, the recommendations of the NTT, and specific threats summarized in the COT Report. The BLM proposed to incorporate the management direction and conservation measures into its RMPs. The goal was to conserve, enhance, and restore GRSG and its habitat and to provide sufficient regulatory certainty such that the need for listing the species under the ESA could be avoided.

In December 2011, the BLM published a [Notice of Intent](#) to prepare EISs and a supplemental EIS to incorporate GRSG conservation measures into land use plans across the species’ range.

The planning associated with the National GRSG Conservation Strategy has been coordinated under two administrative planning regions: the Rocky Mountain Region and the Great Basin Region. The regions were drawn roughly to correspond with the threats that the FWS identified in its 2010 listing decision, along with the WAFWA MZs framework (Stiver et al. 2006). Due to differences in the ecological characteristics of sagebrush across the range of the GRSG, the WAFWA delineated MZs I through VII, based primarily on floristic provinces. Vegetation found in an MZ is similar, and GRSG and their habitats in these areas are likely to respond similarly to environmental factors and management actions.

The Rocky Mountain Region is composed of BLM planning in Montana, North Dakota, South Dakota, Wyoming, Colorado, and portions of Utah. (This includes plan revisions and plan amendments.) This region falls within WAFWA MZs I (Great Plains), II (Wyoming Basin), and a portion of VII (Colorado Plateau). The Great Basin Region is composed of plan amendments in California, Nevada, Oregon, Idaho, and portions of Utah and Montana. That region falls in WAFWA MZs III (Southern Great Basin), IV (Snake River Plain), and V (Northern Great Basin).

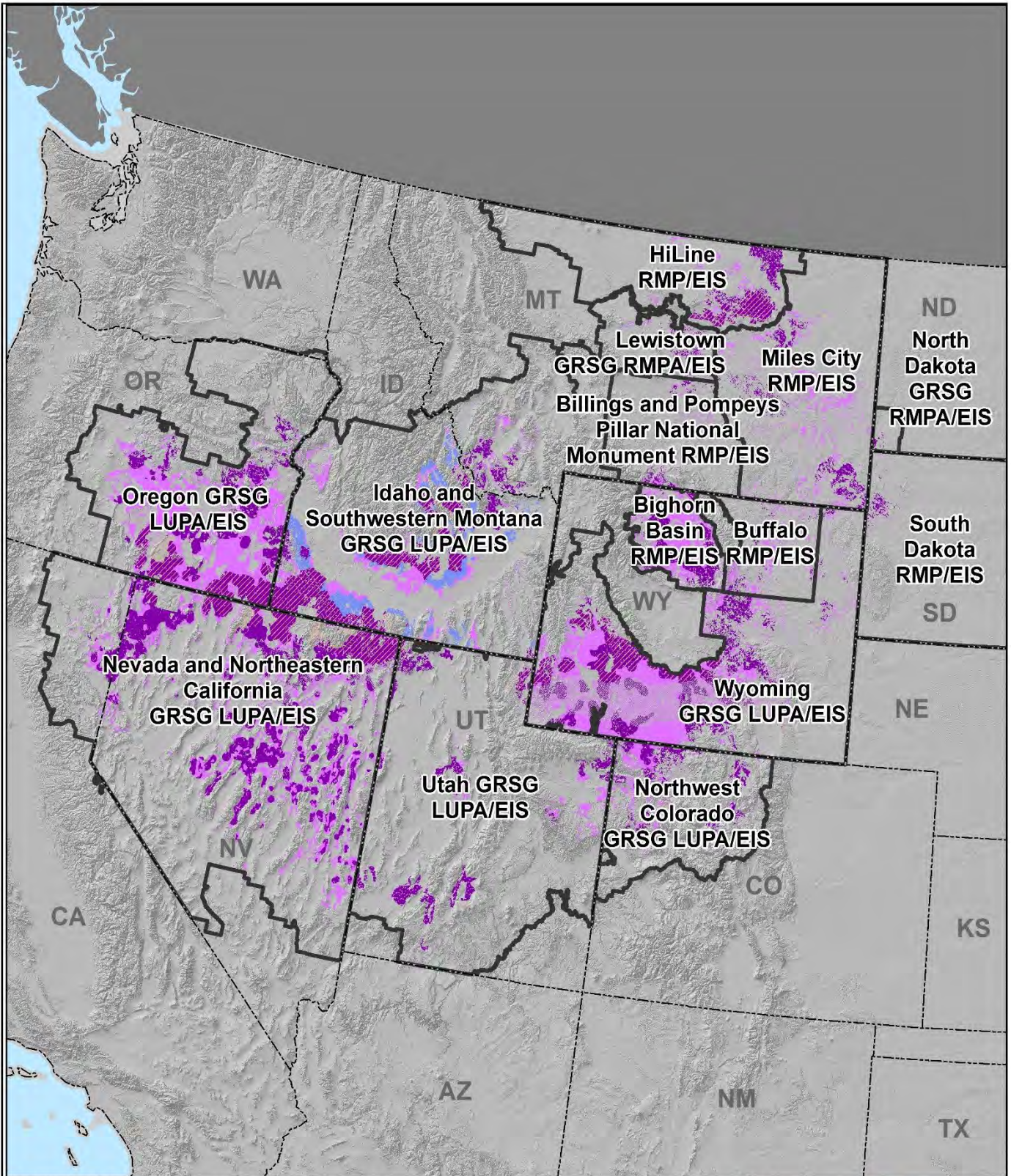
Both the Rocky Mountain and Great Basin Regions are further divided into sub-regions. The BLM initiated 15 sub-regional planning efforts and associated EISs to analyze the alternatives developed for each of the Draft and Final RMPAs and ARMPs across the range of the species.<sup>2</sup> These sub-regions are based on the identified threats to the GRSG and the WAFWA MZs from the FWS 2010 listing decision, with additional detail on threats to individual populations and sub-regions from the COT Report. In the Rocky Mountain Region, some sub-regions correspond to BLM field or district office boundaries, specifically for planning that incorporates GRSG conservation measures through plan revisions that were begun before the start of the National GRSG Conservation Strategy (December 2011). **Figure 1-5** illustrates the regional and sub-regional Planning Area boundaries across the western US.

The BLM used the best available science, including additional review and analysis from the USGS on specific issues that arose, in developing the ARMPs and ARMPAs. Additionally, the BLM considered State GRSG conservation strategies where they existed, as well as State recommendations for measures to conserve GRSG on BLM-administered lands, where relevant, in its planning. These are reflected in the

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<sup>2</sup> The National GRSG Conservation Strategy consisted of 15 separate EISs. For ease of implementation, the Bighorn Basin RMP has been split between the two field offices that make up the Bighorn Basin Planning Area, the Cody Field Office ARMP and the Worland Field Office ARMP. The Billings and Pompeys Pillar National Monument RMP has also been split between the Billings Field Office ARMP and Pompeys Pillar National Monument ARMP. This results in a total of 17 ARMPs and ARMPAs.





**Figure 1-5: Regional and Sub-Regional Boundaries with Greater Sage-Grouse Habitat Management Areas (BLM Administered Lands)**

**Legend**

-  Sagebrush Focal Areas (SFAs)
-  Priority Habitat Management Areas (PHMAs)
-  General Habitat Management Areas (GHMAs)
-  Additional Habitat Management Categorizations
-  Planning Area Boundary
-  State Boundary

\*For Subsurface information see the ARMPA

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approved plans to the extent compatible with GRSG objectives to conserve, enhance, and restore GRSG habitat to address the threats identified in the FWS 2010 listing determination and the 2013 COT Report.

## **I.5 HOW THE ARMPs AND ARMPAs ADDRESS THE IDENTIFIED THREATS TO GRSG CONSERVATION**

The 2006 WAFWA [Greater Sage-Grouse Comprehensive Conservation Strategy](#) stated goal for GRSG management was to “maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain these populations” (Stiver et al. 2006). The NTT Report also endorsed this goal “as a guiding philosophy against which management actions and policies of BLM should be weighed” (NTT 2011).

In establishing the COT, with the backing of the Sage-Grouse Task Force, the FWS Director affirmed the commitment to the goal for GRSG conservation originally articulated in the 2006 WAFWA report—reversing negative population trends and achieving a neutral or positive population trend—and emphasized the following:

The Service interprets this recommendation to mean that actions and measures should be put in place now that will eventually arrest what has been a continuing declining trend. Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels. (Stiver et al. 2006)

The COT Report emphasized the need to avoid or minimize additional disturbance in GRSG habitat. Specifically, it stated “[m]aintenance of the integrity of PACs...is the essential foundation for sage-grouse conservation” (FWS 2013). To achieve this, the COT Report recommended “targeted habitat management and restoration” to be achieved by “eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal” (FWS 2013). The COT Report emphasized an “avoidance first strategy” and stressed those threats in GRSG habitat “must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy” (FWS 2013).

The plans were developed to address specific identified threats to the species in order to conserve GRSG, such that the need to list it under the ESA may be avoided. Across ten western states, the Great Basin and Rocky Mountain Region ARMPs and ARMPAs contain land use plan direction on approximately 67 million acres of the GRSG’s remaining habitat on BLM-administered lands (see **Figure I-5**). These plans are the product of extensive coordination between the BLM and the Forest Service and the active engagement of the FWS which informed the BLM and Forest Service land allocation and related management decisions. The plans also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, priorities, and approaches in each.

In order to protect the most important GRSG habitat areas, the planning began with mapping areas of important habitat across the range of the GRSG. In collaboration with State fish and wildlife agencies, the BLM identified areas as preliminary priority habitat (PPH) and preliminary general habitat (PGH). The Draft RMPs and RMPAs/EISs used PPH and PGH to analyze the impacts of the decisions the BLM was proposing in the plans. PPH and PGH were identified as Priority Habitat Management Areas (PHMAs)

and General Habitat Management Areas (GHMAs) in the Proposed RMPs/Final EISs and Proposed RMPAs/Final EISs to identify the management decisions that apply to those areas. The designated GRSG habitat management areas on BLM-administered lands in the decision area as follows:

- PHMAs, which largely coincide with PACs in the COT Report (see **Figure I-4**)
- GHMAs
- Restoration Habitat Management Areas (RHMA, applicable only to Billings and Miles City)
- Linkage and Connectivity Habitat Management Areas (LCHMAs), applicable only to Northwest Colorado

**Table I-3a** identifies surface acres of PHMAs, GHMAs, RHMAs, and LCHMAs in the decision area for the Rocky Mountain Region.

Habitat maps were based initially on state key habitat maps, which identified areas necessary for GRSG conservation. These areas were derived from breeding bird density maps and lek counts, nesting areas, sightings, and habitat distribution data. These data included occupied suitable seasonal habitats, nesting and brood-rearing areas, and connectivity areas or corridors. The BLM used this information to develop PPH and PGH maps and, subsequently, to identify PHMAs and GHMAs, respectively.

The COT Report also used state key habitat maps as a basis for identifying PACs. The COT Report notes that there is substantial overlap between PACs and BLM PPH areas (FWS 2013, p. 13). **Figure I-5** illustrates the regional and sub-regional Planning Area boundaries, along with BLM-administered PHMAs and GHMAs across the western US.

PHMAs, GHMAs, RHMAs, and LCHMAs are defined below; the BLM-administered surface and Federal mineral estate of each designation (in acres) in the decision area for the Rocky Mountain Region are shown in **Tables I-3a** and **I-3b**.

- **PHMAs**—BLM-administered lands identified as having highest habitat value for maintaining sustainable GRSG populations. The boundaries and management strategies for PHMAs are derived from and generally follow the PPH boundaries. PHMAs largely coincide with areas identified as PACs in the COT Report.
- **GHMAs**—BLM-administered GRSG habitat that is occupied seasonally or year-round and is outside of PHMAs, where some special management would apply to sustain GRSG populations. The boundaries and management strategies for GHMAs are derived from and generally follow the PGH boundaries.
- **RHMA (Billings and Miles City only)**—BLM-administered lands where maintaining populations is a priority, a balance between ongoing and future resource use so that enough quality habitat is maintained to allow some residual population in impacted areas to persist and that emphasizes the restoration of habitat to reestablish or restore sustainable populations.
- **LCHMAs (Northwest Colorado only)**—BLM-administered lands that have been identified as broader regions of connectivity important to facilitate the movement of GRSG and maintain ecological processes.

**Table I-3a**  
**Surface Acres of PHMAs, GHMAs, RHMAs, and LCHMAs in the Decision Area for the Rocky Mountain Region**

<b>BLM-Administered Surface Acres</b>	<b>PHMAs</b>	<b>GHMAs</b>	<b>RHMAs</b>	<b>LCHMAs</b>
Lewistown	233,219	112,341	-	-
North Dakota	32,900	80	-	-
Northwest Colorado	921,500	728,000	-	81,900
Wyoming	4,895,100	6,032,500	-	-
Billings	158,926	176,734	78,927	-
Buffalo	137,451	627,824	-	-
Cody	317,307	740,797	-	-
HiLine	1,432,689	289,756	-	-
Miles City	817,000	1,395,000	87,000	-
Pompeys Pillar NM	-	-	-	-
South Dakota	127,735	23,684	-	-
Worland	799,391	1,290,562	-	-
<b>Total Acres</b>	<b>9,873,218</b>	<b>11,417,278</b>	<b>165,927</b>	<b>81,900</b>

Source: BLM GIS 2015

**Table I-3b**  
**BLM-Administered Federal Mineral Estate of PHMAs, GHMAs, RHMAs, and LCHMAs in the Decision Area for the Rocky Mountain Region**

<b>BLM-Administered Federal Mineral Estate</b>	<b>PHMAs</b>	<b>GHMAs</b>	<b>RHMAs</b>	<b>LCHMAs</b>
Lewistown	294,935	195,168	-	-
North Dakota	167,291	109,905	-	-
Northwest Colorado	1,241,700	896,000	-	81,900
Wyoming	6,929,000	13,416,700	-	-
Billings	205,254	299,166	88,642	-
Buffalo	674,923	2,613,535	-	-
Cody	437,045	1,012,335	-	-
HiLine	1,615,876	537,304	-	-
Miles City	1,395,000	4,647,000	216,389	-
Pompeys Pillar NM	-	-	-	-
South Dakota	412,822	247,771	-	-
Worland	1,021,583	1,632,171	-	-
<b>Total Acres</b>	<b>14,395,429</b>	<b>25,607,055</b>	<b>305,031</b>	<b>81,900</b>

Source: BLM GIS 2015

The ARMPs and ARMPAs also identify Sagebrush Focal Areas (SFAs) on a portion of the landscape. SFAs are a subset of PHMAs (see **Figure I-3**) and are found only in the Lewistown, HiLine, and Wyoming ARMPA sub-regional Planning Areas. Across the Rocky Mountain Region, there are 2,911,000 acres of BLM-administered SFAs. They correspond to the [areas identified by the 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” (FWS 2014a).

SFAs are areas of highest habitat value for GRSG and are managed to avoid new surface disturbance for the following reasons:

- They contain high-quality sagebrush habitat and the highest breeding bird densities
- They have been identified as essential to conservation and persistence of the species
- They represent a preponderance of current Federal ownership
- In some cases, they are next to protected areas that serve to anchor the conservation importance of the landscape

SFAs management is consistent with the recommendations provided by the FWS that these are the areas “where it is most important that the BLM and Forest Service institutionalize the highest degree of protection to help promote persistence of the species” (FWS 2014a).

Remaining habitat in GHMAs, RHMAs (applicable only to Billings and Miles City), and LCHMAs (applicable only in Northwest Colorado) would be managed consistent with the COT Report recommendation to recognize “that important habitats outside of PACs be conserved to the extent possible” (FWS 2013). Thus, land allocations in GHMAs, RHMAs, and LCHMAs provide for more flexibility for land use activities, while minimizing impacts on GRSG leks.

This tiered habitat management area framework is associated with the land use plan allocation decisions (explained more fully in **Section 1.6**) in the ARMPs and ARMPAs. It provides a high degree of certainty that the integrity of PHMAs can be maintained through management decisions to avoid or minimize additional surface disturbance. At the same time, it recognizes the potential importance of areas outside of PHMAs for maintaining connectivity between highly important habitats and their potential for addressing seasonal habitat needs (e.g., winter habitat areas not fully incorporated in PHMAs).<sup>3</sup>

In November 2010, the FWS notified the State of Wyoming that the GRSG Core Area Strategy (Executive Order 2010-4) “if implemented by all landowners via regulatory mechanism, would provide adequate protection for sage-grouse and their habitats in the state.” As a result, the BLM’s Wyoming ARMPA and Cody, Worland, and Buffalo ARMPs are largely consistent with the measures outlined in the State of Wyoming’s Core Area Strategy.

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<sup>3</sup> Recently completed analysis by Crist et al. (2015) highlights the importance of certain key “priority areas” across the species range as well as the importance of connectivity between priority areas as a component of successful GRSG conservation. Generally, these priority areas coincide with PHMAs across the landscape. It is important to note that BLM-administered SFAs also coincide with a number of the areas identified by Crist et al. (2015) as important for maintaining connectivity between the network of conservation areas that are of greatest importance to the integrity of the conservation strategy. To maintain connectivity between PHMAs across the remaining range, requirements were incorporated into the majority of the ARMPs and ARMPAs for applying lek buffers (consistent with guidance provided by the USGS), mitigation to a net conservation gain; and required design features for projects in GHMAs, as described later in this document. These measures are specifically intended to benefit GHMAs by maintaining connectivity and added habitat protection consistent with the Crist et al. (2015) findings.

**Table I-4** summarizes the major components of the attached ARMPs and ARMPAs that address the specific threats to GRSG and its habitat, as identified in the FWS 2010 listing decision and 2013 COT Report (many of which were also identified by the BLM's 2011 NTT Report).

**Table I-4**  
**Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs that Address the COT Report Threats**

<b>Threats to GRSG and Its Habitat (from COT Report)</b>	<b>Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs</b>
All threats	<ul style="list-style-type: none"> <li>• Implement adaptive management strategies to address declines in GRSG populations and habitat.</li> <li>• Monitor implementation and effectiveness of conservation measures in GRSG habitats in a consistent manner.</li> </ul>
All development threats, including mining, infrastructure, and energy development	<ul style="list-style-type: none"> <li>• PHMAs (except in Wyoming)—Implement a human disturbance cap of 3 percent within the biologically significant unit (BSU) and proposed project analysis areas in PHMAs.</li> <li>• PHMAs (only in Wyoming)—Implement a human disturbance cap of 5 percent at the project-area scale.</li> <li>• PHMAs (only in Wyoming)—Surface occupancy and surface-disturbing activities would be prohibited on or within 0.6 mile of the perimeter of an occupied lek.</li> <li>• GHMAs (only in Wyoming)—Surface occupancy and surface-disturbing activities would be prohibited on or within 0.25 mile of the perimeter of an occupied lek.</li> <li>• PHMAs—Apply a disturbance density cap of 1 energy or mining facility per 640 acres.</li> <li>• Apply buffers based on project type and location to address impacts on leks when authorizing actions in GRSG habitat.</li> <li>• Apply required design features (RDFs) when authorizing actions in GRSG habitat.</li> <li>• Minimize the effects of infrastructure projects, including siting, using the best available science, updated as monitoring information on current infrastructure projects becomes available.</li> <li>• Consider the potential for developing valid existing rights when authorizing new projects in PHMAs.</li> <li>• Require and ensure mitigation that provides a net conservation gain to the species, when authorizing third-party actions that result in habitat loss and degradation.</li> </ul>
Energy development—fluid minerals, including geothermal resources	<ul style="list-style-type: none"> <li>• PHMAs (except in Wyoming)—Open to fluid mineral leasing subject to a no surface occupancy (NSO) stipulation, without waiver or modification and with limited exceptions.</li> <li>• SFAs (in Lewistown and HiLine only)—Apply NSOs without waiver, modification, or exception.</li> <li>• PHMAs (only in Wyoming)—Open to fluid mineral leasing, subject to NSO stipulation within 0.6 mile of an occupied lek and a timing limitation (TL) stipulation from March 15 to June 30.</li> </ul>

**Table I-4**  
**Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs**  
**that Address the COT Report Threats**

<b>Threats to GRSG and Its Habitat (from COT Report)</b>	<b>Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs</b>
	<ul style="list-style-type: none"> <li>• PHMAs and GHMAs (in Colorado only)—Closed to fluid mineral leasing within 1 mile of active leks.</li> <li>• PHMAs (Colorado)—Open to fluid mineral leasing beyond one mile of active lek subject to NSO.</li> <li>• GHMAs (only in Colorado)—Open to fluid minerals, subject to NSO, within 2 miles of an active lek.</li> <li>• GHMAs (only in Montana)—Open to fluid mineral leasing, subject to NSO within 0.6 mile of a lek and controlled surface use (CSU) within 2 miles of an active lek.</li> <li>• RHMAs (Billings)—Open to fluid mineral leasing, subject to NSO within 0.6 mile of an active lek and CSU and TL.</li> <li>• RHMAs (Miles City)—Open to fluid mineral leasing, subject to an NSO stipulation, without waiver or modification and with limited exceptions (West Decker and South Carter); open to fluid mineral leasing subject to CSU (Cedar Creek).</li> <li>• GHMAs (only in Wyoming)—Open to fluid mineral leasing, subject to NSO within 0.25 mile of an occupied lek and TL stipulations.</li> <li>• Prioritize the leasing and development of fluid mineral resources outside GRSG habitat.</li> </ul>
Energy development—wind energy	<ul style="list-style-type: none"> <li>• PHMAs (except in Wyoming)—Exclusion area (not available for wind energy development under any conditions).</li> <li>• PHMAs (only in Wyoming)—Avoidance area (may be available for wind energy development with special stipulations).</li> <li>• GHMAs (except in Wyoming)—Avoidance area (may be available for wind energy development with special stipulations).</li> <li>• RHMAs—Exclusion or avoidance areas.</li> </ul>
Energy development—solar energy	<ul style="list-style-type: none"> <li>• PHMAs and RHMAs (except in Wyoming)—Exclusion area (not available for solar energy development under any conditions).</li> <li>• GHMAs—Avoidance area (may be available for solar energy development with special stipulations).</li> <li>• RHMAs—Exclusion or avoidance areas.</li> </ul>
Infrastructure—major rights-of-ways (ROWs)	<ul style="list-style-type: none"> <li>• PHMAs and RHMAs—Avoidance area (may be available for major ROWs with special stipulations).</li> <li>• GHMAs (except in Wyoming)—Avoidance area (may be available for major ROWs with special stipulations).</li> </ul>
Infrastructure—minor ROWs	<ul style="list-style-type: none"> <li>• PHMAs and RHMAs— Avoidance area (may be available for minor ROWs with special stipulations).</li> <li>• GHMAs (only in Colorado)—Avoidance area (may be available for minor ROWs with special stipulations).</li> </ul>
Mining—locatable minerals	<ul style="list-style-type: none"> <li>• SFAs (in Lewistown, HiLine, and Wyoming ARMPA)—Recommend withdrawal from the Mining Law of 1872.</li> </ul>

**Table I-4  
Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs  
that Address the COT Report Threats**

<b>Threats to GRSG and Its Habitat (from COT Report)</b>	<b>Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs</b>
Mining—nonenergy leasable minerals	<ul style="list-style-type: none"> <li>• PHMAs (except in Wyoming)—Closed area (not available for nonenergy leasable minerals, but expansion of existing operations could be considered if the disturbance were within the cap and subject to compensatory mitigation).</li> </ul>
Mining—salable minerals	<ul style="list-style-type: none"> <li>• PHMAs (except in Wyoming)—Closed area (not available for salable minerals), with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met).</li> </ul>
Improper livestock grazing	<ul style="list-style-type: none"> <li>• Prioritize the review and processing of grazing permits and leases in SFAs (only in Lewistown, HiLine, and Wyoming ARMPAs), followed by PHMAs.</li> <li>• The NEPA analysis for renewals and modifications of grazing permits and leases will include specific management thresholds, based on the GRSG habitat objectives table, land health standards, and ecological site potential, to allow adjustments to grazing that have already undergone NEPA analysis.</li> <li>• Prioritize field checks in SFAs (only present in Lewistown, HiLine, and Wyoming) followed by PHMAs to ensure compliance with the terms and conditions of grazing permits.</li> </ul>
Free-roaming equid (wild horses and burros) management	<ul style="list-style-type: none"> <li>• In the Wyoming ARMPA, prioritize gathers in SFAs, followed by other PHMAs.</li> <li>• Except in Wyoming, manage herd management areas in GRSG habitat within established appropriate management level (AML) ranges to achieve and maintain GRSG habitat objectives.</li> <li>• Except in Wyoming, prioritize rangeland health assessment, gathers, and population growth suppression techniques, monitoring, and review and adjustment of AMLs and preparation of HMA plans in GRSG habitat.</li> <li>• Only in Wyoming, review and consider amending BLM HMA plans to incorporate GRSG habitat objectives and management considerations for all BLM HMAs.</li> </ul>
Range management structures	<ul style="list-style-type: none"> <li>• Allow range improvements that do not impact GRSG or that provide a conservation benefit to GRSG, such as fences for protecting important seasonal habitats.</li> <li>• Remove livestock ponds built in perennial channels that are negatively impacting riparian habitats. Do not permit new ones to be built in these areas.</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• PHMAs—Do not construct new recreation facilities unless required for health and safety purposes or if the construction would result in a net conservation gain to the species.</li> <li>• In Colorado, Lewistown, North Dakota, and South Dakota only, allow special recreation permits only if their effects on GRSG and their habitat are neutral or result in a net conservation gain.</li> <li>• PHMAs—Off-highway vehicle (OHV) use limited to existing routes (routes to be designated through future travel management planning).</li> </ul>



**Table I-4  
Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs  
that Address the COT Report Threats**

<b>Threats to GRSG and Its Habitat (from COT Report)</b>	<b>Key Management Responses from the Rocky Mountain Region GRSG ARMPs and ARMPAs</b>
	<ul style="list-style-type: none"> <li>• GHMAs (except in Colorado)—OHV use limited to existing routes (routes to be designated through future travel management planning).</li> </ul>
Fire	<ul style="list-style-type: none"> <li>• Restrict the use of prescribed fire for fuel treatments.</li> <li>• Prioritize post-fire treatments in SFAs (only found in Lewistown, HiLine, and Wyoming ARMPA), other PHMAs, and GHMAs.</li> </ul>
Nonnative, invasive plant species	<ul style="list-style-type: none"> <li>• Improve GRSG habitat by treating annual grasses.</li> <li>• Treat sites in PHMAs, RHMAs, and GHMAs that contain invasive species infestations through an integrated pest management approach.</li> </ul>
Sagebrush removal	<ul style="list-style-type: none"> <li>• PHMAs—Maintain all lands capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions.</li> <li>• Ensure that all BLM use authorizations contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG.</li> </ul>
Pinyon and juniper expansion	<ul style="list-style-type: none"> <li>• Remove conifers encroaching into sagebrush habitats, prioritizing occupied GRSG habitat, in a manner that considers tribal cultural values.</li> </ul>
Agricultural conversion and exurban development	<ul style="list-style-type: none"> <li>• Retain most GRSG habitat Federal management unless disposal (including exchanges) would provide a net conservation gain to the GRSG or disposal (including exchanges) would have no direct or indirect adverse impact on GRSG conservation.</li> </ul>

## **I.6 KEY COMPONENTS OF THE BLM GRSG CONSERVATION STRATEGY**

The ARMPs and ARMPAs were developed to meet the purpose and need to conserve, enhance, and restore GRSG habitat by eliminating or minimizing threats to their habitat identified in the 2010 listing decision and highlighted in the Background and Purpose Section of the COT Report (FWS 2013). Consequently, consistent with guidance in the COT and NTT Reports, four essential components of the GRSG conservation strategy were identified, as follows:

- Avoiding or minimizing new and additional surface disturbances
- Improving habitat conditions
- Reducing threats of rangeland fire to GRSG and sagebrush habitat in the Great Basin
- Monitoring and evaluating the effectiveness of conservation measures and implementing adaptive management, as needed

The land allocations and management actions included in the ARMPs and ARMPAs incorporate these components and are summarized below.

### **I.6.1 Avoid and Minimize Surface Disturbance**

#### ***Land Use Allocations and Management Actions in SFAs, PHMAs, and GHMAs***

The Rocky Mountain ARMPs and ARMPAs build on the designated habitat management areas described in **Section 1.5** by applying management actions to these areas to avoid and minimize disturbance associated with proposed projects as described below and shown in **Table I-4**. Land use plan allocations specify locations within the Planning Area that are available or unavailable for certain uses and also prioritize conservation and restoration management actions applied to habitat management areas.

The COT Report states that “maintenance of the integrity of PACs...is the essential foundation for sage-grouse conservation” (FWS 2013, p. 36). Areas of PHMAs largely coincide with areas identified as PACs in the COT Report. Surface disturbance associated with energy development and infrastructure was identified as the primary threat to GRS and GRS habitat in the Rocky Mountain Region. To address this threat, allocations include requirements to avoid and minimize disturbance in PHMAs. The ARMPs and ARMPAs provide a layered management approach that offers the highest level of protection for GRS in the most valuable habitat. Accordingly, the ARMPs and ARMPAs apply allocations that are most restrictive in SFAs, that limit or eliminate new surface disturbance in PHMAs, and that minimize disturbance in GHMAs.

*SFAs*—The most restrictive allocations are applied to SFAs, which are a subset of lands within PHMAs, with the highest habitat value for GRS. Surface disturbance from fluid mineral development is avoided in SFAs in Montana by NSO without waiver, modification, or exception, and in Wyoming, consistent with the core area strategy. In addition, SFAs include additional protection from new surface disturbance by recommending those areas for withdrawal from mineral entry under the Mining Law of 1872, subject to valid existing rights. SFAs will also be prioritized for vegetation management and conservation actions in these areas, including land health assessments, wild horse and burro (WHB) management actions, livestock grazing permit and lease review, and habitat restoration. In Wyoming, a portion of SFAs are recommended for withdrawal, while in other areas SFAs are not recommended for withdrawal but are still subject to other protective measures. The State of Wyoming has permitting authority for locatable mining operations and has committed to use its authority to ensure that operations proceed in accordance with the core area strategy and a successful record of using this authority in the past. The area recommended for withdrawal in Wyoming SFAs covers an area where the potential for development has been identified and provides connectivity between the recommended withdrawal in the Lander Planning Area and existing withdrawals. There are no SFAs in Colorado.

*PHMAs*—In the rest of PHMAs, new fluid mineral leasing would be subject to NSO with no waivers or modifications. Exceptions would be granted only if the proposed action would not have direct, indirect, or cumulative effects on GRS or its habitat or if the action were proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel and would provide a clear conservation gain to GRS. This is fully consistent with guidance in the NTT Report which states “Do not allow new surface occupancy on Federal lands within priority habitats” (NTT 2011, p. 23). In Wyoming, new fluid mineral leasing on all lands would be subject to NSO within a 0.6-mile radius around occupied leks. Additionally, PHMAs (except in Wyoming) would be closed to nonenergy leasable and salable mineral development, with limited exceptions. New wind and solar projects would be excluded from PHMAs,

except for Wyoming, where wind and solar projects are to be avoided but may be permitted with special stipulations.

In addition to the energy and mining land use allocations and management actions described above, the ARMPs and ARMPAs include restrictions on ROWs which are designed to avoid disturbance in PHMAs. These restrictions (**Table I-4**) ensure that activities in PHMAs are permitted only if the resultant effect is a net conservation gain to the GRSG or its habitat.

High voltage transmission lines would be generally avoided in PHMAs. A limited number of priority transmission lines, such as Transwest Express and portions of Gateway South that are collocated with Transwest Express, have been proposed to expand access to renewable sources of energy and to improve the reliability of the western grid. These projects have been underway for several years and are currently being analyzed under NEPA. As part of the decision-making process for those projects, conservation measures for GRSG are being analyzed in the project-specific NEPA processes, which should achieve a net conservation benefit for GRSG.

Additionally, new recreation facilities would not be authorized in PHMAs, unless the development would result in a net conservation gain to the GRSG or its habitat or unless required for health and safety purposes. For the Wyoming ARMPA and ARMPs, construction of recreation facilities within PHMAs must conform with the avoidance and minimization measures of the plan. If the BLM were to determine that these management measures are inadequate for the conservation of GRSG, it would require and ensure compensatory mitigation that provides a net conservation gain to the species. OHV use is limited to existing routes in PHMAs (routes to be designated through future travel management planning).

A 3 percent human disturbance cap in PHMAs has been established in accordance with the recommendations contained in the NTT Report (except in Wyoming, where, consistent with the Core Area Strategy, the Wyoming BLM plans implement a 5 percent all lands/all disturbance approach). Outside of Wyoming, disturbance will be calculated at two scales: first at a BSU scale, determined in coordination with the state, and second for the proposed project area. BSUs are geographic units of PHMAs that contain relevant and important GRSG habitat. In the Rocky Mountain Region, BSUs are synonymous with PACs. If a 3 percent human disturbance is exceeded on lands (regardless of landownership) within PHMAs in any given BSU, no further discrete human disturbances (subject to valid existing rights) would be permitted on BLM-administered lands within PHMAs in that BSU until restoration of disturbed lands brings the BSU below the cap. If the 3 percent human disturbance cap were exceeded on all lands (regardless of landownership) within a proposed project analysis area in a PHMAs, then the BLM would permit no further human disturbance until disturbance in the proposed project analysis area had been reduced to maintain the area under the cap.

The Lewistown ARMPA and Billings, HiLine, and Miles City ARMPs will limit disturbance in PHMAs to 3 percent until the State of Montana's Sage Grouse Plan's disturbance calculation method is in effect, at which time disturbance would be permitted up to a 5 percent cap. This is to recognize, as with the Wyoming Core Area Strategy, the importance of the all lands/all disturbances strategy that Montana will institute for GRSG conservation under Montana Executive Order No. 12-2015.

The Cody, Worland, and Buffalo ARMPs and the Wyoming ARMPA include a 5 percent disturbance cap in PHMAs, consistent with the State of Wyoming's [Core Area Strategy](#), which applies to both public and private lands at the project scale and considers all disturbance (including fire) using the Density and

Disturbance Calculation Tool (DDCT). As noted above, outside of Wyoming, disturbance will be calculated at both the BSU and at the project scale.

Additional information about the method for calculating human disturbance can be found in Appendix E of each of the attached Montana and Colorado ARMPs and ARMPAs. For the Cody, Worland, and Buffalo ARMPs and the Wyoming ARMPA, refer to **Appendix D** for information on how the DDCT is applied.

For those ARMPs and ARMPAs, except Wyoming, that have existing utility corridors within their Planning Areas, an exception to the disturbance cap is provided in designated utility corridors to achieve a net conservation gain to the species. This exception is limited to projects that fulfill the use for which the corridors were designated (e.g., transmission lines and pipelines) within the designated width of a corridor. This requirement will concentrate future ROW surface disturbance in areas of existing disturbance and will avoid new development of utility infrastructure in PHMAs, consistent with guidance in the COT Report.

The ARMPs and ARMPAs also incorporate a limit on the density of energy and mining facilities to encourage collocating structures to reduce habitat fragmentation in PHMAs. The limit is an average of one facility per 640 acres in PHMAs in a project authorization area, as recommended in the NTT Report. If the disturbance density in the PHMAs in a proposed project area is on average less than 1 facility per 640 acres, the project can proceed; if the disturbance density in the proposed project area is greater than an average of 1 facility per 640 acres, the proposed project would either be deferred until the density of energy and mining facilities is less than the cap or would be redesigned so facilities are collocated into an existing disturbed area, subject to applicable laws and regulations, such as the 1872 Mining Law and valid existing rights.

*GHMAs*—While restrictions on future development in PHMAs are intended to avoid or minimize additional surface disturbance, restrictions on development in GHMAs are intended to allow disturbance but minimize any its adverse effects. There would be restrictions on development to ensure compatibility with GRSG habitat needs; in addition, mitigation to avoid, minimize, and compensate for unavoidable impacts would be required for proposed projects in GHMAs and RDFs would be applied, as discussed below.

Disturbance associated with oil and gas development, for example, is subject to CSU and TL stipulations and NSO around leks. GHMAs are also an avoidance area for major ROWs (except in Wyoming). Avoidance areas are available only for ROW locations subject to special stipulations. Any disturbance is subject to mitigation, with the objective of first avoiding and minimizing potential impacts then compensating for unavoidable impacts on GRSG or its habitat, to a net conservation gain standard for the species, subject to valid existing rights. This is consistent with the COT Report, which states “[c]onservation of habitats outside of PACs should include minimization of impacts on sage-grouse and healthy native plant communities. If minimization is not possible due to valid existing rights, mitigation for impacted habitats should occur. ...If development or vegetation manipulation activities outside of PACs are proposed, the project proponent should work with Federal, state or local agencies and interested stakeholders to ensure consistency with sage-grouse habitat needs” (FWS 2013).

These conservation measures are intended to ensure that areas of GHMAs are protected. GHMAs provide connectivity between PHMAs; may be important seasonal habitats not identified or

incorporated into previously mapped areas of PHMAs; or can provide important habitat to replace areas of important habitat lost to fire or human disturbance. This strategy is particularly important given the recent USGS report by Crist et al. (2015), [Range-Wide Network of Priority Areas for Greater Sage-Grouse—A Design for Conserving Connected Distributions or Isolating Individual Zoos?](#) In Wyoming, new fluid mineral leasing on all lands would be subject to NSO within a 0.25-mile radius around occupied leks. See **Table I-4** for more details on GHMAs management decisions.

RHMAs and LCHMAs are designations unique to Montana and Colorado, respectively. Fluid mineral development in RHMAs are NSO within 0.6 mile of an active lek in the Billings Field Office and is either NSO (West Decker and South Carter areas) or CSU (Cedar Creek area) in the Miles City Field Office. RHMAs are also a ROW exclusion or avoidance area for solar and wind ROWs, depending on location, and a ROW avoidance area for all other types of ROWs. The Northwest Colorado ARMPA establishes management that would be applied to all designated habitat in Colorado, which includes LCHMAs.

### ***Habitat Protection and Surface Disturbance Measures in PHMAs and GHMAs***

The following measures related to habitat protect and surface disturbance will be applied in both PHMAs and GHMAs.

*Prioritization Objective*—In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPs and ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs. This is to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and as such protect important habitat and reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation.

*Grazing*—While improper livestock grazing can be a threat to GRSG habitat, grazing is not considered a discrete surface-disturbing activity for the purposes of monitoring and calculating disturbance. The ARMPs and ARMPAs address grazing management for the conservation of GRSG and its habitat and is further described in **Section 1.6.2**.

*Lek Buffers*—In addition to any other relevant information determined to be appropriate, the BLM will further assess impacts from certain activities using the lek buffer distances, as identified in the USGS report, [Conservation Buffer Distance Estimates for GRSG—A Review](#) (Manier et al. 2014). Lek buffer distances will be applied at the project-specific level as required conservation measures to address the impacts on leks as identified in the NEPA analysis. The lek buffer distances vary by type of disturbance (such as road, energy development, and infrastructure), and justifiable departures may be appropriate, as fully described in Appendix B of the ARMPAs. In both PHMAs and GHMAs, impacts should be avoided, first by locating the action outside of the applicable lek buffer-distances, as defined in the ARMPs and ARMPAs. In PHMAs, the BLM will ensure that any impacts within the buffer distance from a lek are fully addressed; in GHMAs, the BLM will minimize and compensate for any unavoidable impacts to the extent possible. This approach to determining relevant lek buffer distances is consistent with the COT Report recommendation that “conservation plans should be based on the best available science and use local data on threats and ecological conditions” (FWS 2013).

The FWS has found that “the [State of Wyoming’s] core area strategy, if implemented by all landowners via regulatory mechanism, would provide adequate protection for sage-grouse and their habitats in the state” (personal correspondence from Scott Hicks to Ryan Lance on November 10, 2010); therefore, the Cody, Worland, and Buffalo ARMPs and the Wyoming ARMPA do not apply the lek buffers outlined in the USGS Report but instead are consistent with those buffers specified in the State of Wyoming’s Core Area Strategy.

*Required Design Features*—Additionally, RDFs are required for certain activities in GRSG habitat, including oil and gas development, infrastructure, and other surface-disturbing activities and are fully described in Appendix C of the attached ARMPs and ARMPAs. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts on GRSG and its habitat from threats (such as those posed by standing water that can facilitate West Nile virus or tall structures that can serve as perches for predators). The applicability and overall effectiveness of each RDF, however, cannot be fully assessed until the project level, project location, and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects, such as when a resource is not present on a given site or may require slight variations (e.g., a larger or smaller protective area).

In summary, all forms of new development in PHMAs and GHMAs would be closed, excluded, avoided, or developed only if the resultant effect were a net conservation gain to the GRSG or its habitat, ensuring that existing habitat would be protected or restored through compensatory mitigation.

### **1.6.2 Improving Habitat Condition**

In addition to prescribing land use allocations and managing resource uses in order to minimize and avoid surface disturbance, the ARMPs and ARMPAs identify management actions to restore and improve GRSG habitat.

*Habitat Management*—The ARMPs and ARMPAs contain an overall habitat management objective that “[i]n all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions.” To move toward this goal, the ARMPs and ARMPAs specify GRSG habitat objectives to be incorporated into land management programs, including VHBs, livestock grazing, and habitat restoration. These habitat objectives were developed for each of the GRSG’s life history stages within each ARMP and ARMPA’s Planning Area. These objectives will be used to meet the applicable land health standard in GRSG habitats.

*Livestock Grazing*—The BLM recognizes that improper grazing can be a threat to GRSG and its habitat. Because grazing is the most widespread use of the sagebrush steppe ecosystem, the ARMPAs address improper grazing. The COT Report recommendation for grazing says to “[c]onduct grazing management for all ungulates 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)” (FWS 2013). To ensure that grazing continues in a manner consistent with the objective of conserving the GRSG and its habitat, the Rocky Mountain ARMPs and ARMPAs include requirements for incorporating terms and conditions informed by GRSG habitat objectives into grazing permits, consistent with the ecological site potential of the local areas, prioritize the review and processing of authorizations and field checks of grazing permits,

and take numerous actions to avoid and minimize the impacts of range management structures (see **Table I-4**).

The BLM will prioritize its review and processing of grazing authorizations, as well as field checks of grazing permits, in the habitat that is most important to GRSG populations: first in SFAs, then PHMAs, followed by GHMAs, focusing first on riparian areas and wet meadows. The decision to prioritize in this way does not indicate that grazing is more of a threat or is an incompatible use in any given area; rather it reflects a decision to prioritize resources to ensure permittees and the BLM manage grazing properly in those areas most important to GRSG. If the BLM were to find that relevant habitat objectives were not being met due to improper grazing, it would work with the permittee to ensure progress toward meeting habitat objectives.

*Wild Horses and Burros*—To address the localized threat due to negative influences of grazing by free-roaming WHB in Wyoming and Colorado, the BLM will focus on maintaining WHB HMAs in GRSG habitat within established AML ranges. This will be to achieve and maintain GRSG habitat objectives, including completing rangeland health assessments, prioritizing gathers and population growth suppression techniques, and developing or amending herd management area plans to consider incorporating GRSG habitat objectives and management considerations. The BLM will prioritize WHB management first in SFAs, then the remainder of PHMAs, and then GHMAs. In SFAs and PHMAs, the BLM will assess and adjust AMLs through the NEPA process within herd management areas when WHBs are identified as a significant factor in not meeting land health standards, even if current AML is not being exceeded.

*Mitigation and Net Conservation Gain*—During the implementation of the ARMPs and ARMPAs, and, subject to valid existing rights and consistent with applicable law, when authorizing third-party actions that result in GRSG habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain (the actual benefit or gain above baseline conditions) to the species. This would include accounting for any uncertainty associated with the effectiveness of such mitigation in PHMAs and GHMAs (except for the Wyoming ARMPs and ARMPAs, where this requirement only applies in PHMAs). It would do this by avoiding, minimizing, and compensating for unavoidable impacts and by applying beneficial conservation actions to offset remaining impacts associated with the action. This standard is consistent with the recommendation included in the [Greater Sage-Grouse Range-Wide Mitigation Framework: Version 1.0](#), published by the FWS in September 2014. This document states that mitigation “should be strategically designed to result in net overall positive outcomes for sage-grouse” (FWS 2014b). Mitigation would follow the NEPA regulatory requirements (40 CFR 1508.20; e.g., it would avoid, minimize, and compensate) and would be implemented on BLM-managed lands in a manner consistent with guidance for landscape mitigation, in accordance with [Secretarial Order 3330](#). If impacts from BLM management actions and authorized third-party actions were to result in habitat loss and degradation that remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects would be used to provide a net conservation gain to the species. Any compensatory mitigation would be durable and timely and would be in addition to what would have resulted without the compensatory mitigation.

To help achieve the mitigation goal of net conservation gain across the range, the BLM will establish GRSG Conservation Teams, based on WAFWA MZs, including members from the respective states, Forest Service, FWS, and NRCS. These Conservation Teams will facilitate cross-state issues, such as

regional mitigation and adaptive management monitoring and response. The teams will convene and respond to issues at the appropriate scale and will use existing coordination and management structures to the extent possible.

*Climate Change*—With regard to the threat of climate change, the ARMPs and ARMPAs set goals and objectives and describe actions intended to build resilience in the sagebrush steppe landscape to reduce the impacts of climate change through habitat conservation and restoration measures. Limiting or eliminating human surface disturbance, especially in SFAs, ensuring the integrity of PHMAs, and restoring habitat through fuels management, post-fire restoration, and mitigation, sagebrush habitat connectivity and availability would increase. This would help to increased sagebrush resilience.

As identified by the FWS 2010 listing decision and the COT Report, climate change can impact efforts to conserve GRSG and its habitat in a number of ways. While several ARMPAs acknowledge the potential impact of climate change on GRSG habitat and conservation, specific strategies to address the impacts of climate change are limited. The BLM and Forest Service, in coordination with the FWS, will continue to assess the potential impacts of climate change on GRSG and its habitat and will develop strategies to mitigate the anticipated effects on GRSG conservation, as necessary and appropriate. Changes to management decisions will require a plan revision or amendment, recognizing the need to ensure that future management direction improves the resilience of habitat areas essential to species conservation.

The ARMPs and ARMPAs also include specific decisions to improve habitat conditions and meet the habitat objectives by treating invasive annual grasses, removing encroaching conifers in SFAs, PHMAs, and GHMAs, and restoring degraded landscapes, including those impacted by fire (See **Section 1.6.3**).

### **1.6.3 Reducing Threats of Rangeland Fire to GRSG and Sagebrush Habitat**

Although rangeland fire and invasive annual grasses are found in the Rocky Mountain Region, they are not considered a primary threat. This is due to the higher elevations and generally more mesic conditions of GRSG habitat. This finding was recently confirmed by an analysis by Brooks, et al. (2015) which evaluated fire patterns in the range of the GRSG over the past 30 years. However, goals and objectives are included in the ARMPs and ARMPAs to prevent and limit the spread of invasive annual grasses and fire in PHMAs and GHMAs.

The COT Report emphasized the need to address the “feedback loop between exotic invasive annual grasses and fire frequency” (FWS 2013); for this reason, the ARMPs and ARMPAs seek to fight the spread of cheatgrass and other invasive species, to position wildland fire management resources for more effective rangeland fire response, and to accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush.

Prescribed fire will not be used except under the following conditions: the NEPA analysis for the burn plan provides a clear rationale for why alternative techniques were not selected as a viable option, how GRSG habitat management goals and objectives would be met by its use, and how the COT Report objectives would be met. A risk assessment would be prepared to address how potential threats to GRSG habitat would be minimized.

In addition to and complementing the ARMPs and ARMPAs described in this ROD, [Secretarial Order 3336](#), Rangeland Fire Prevention, Management and Restoration, made clear that “protecting, conserving, and restoring the health of the sagebrush-steppe ecosystem and, in particular, priority GRSG habitat,



while maintaining safe and efficient operations, is a critical fire management priority for the Department.”

#### **1.6.4 Monitoring, Evaluation, and Adaptive Management**

The COT Report noted that “a monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective” (FWS 2013). The NTT further notes that “Monitoring is necessary to provide an objective appraisal of the effects of potentially positive conservation actions, and to assess the relative negative effects of management actions to sage-grouse populations and their habitats” (NTT 2011).

A range-wide monitoring and evaluation framework will be established and implemented, as described in the monitoring framework (Appendix D of each attached ARMP and ARMPA). This monitoring strategy has two parts: implementation monitoring (i.e., are decisions being implemented in a timely manner? are actions taken consistent with the plan decisions?) and effectiveness monitoring (i.e., are the decisions and implementation actions achieving the desired conservation goals?). Through effectiveness monitoring, the BLM can determine how management decisions and actions implemented through the ARMPs and ARMPAs affect GRS habitat. The goal would be to determine if the desired management objectives (e.g., avoiding and minimizing additional surface disturbance in PHMAs) have been achieved. Understanding the effectiveness and validating results of ARMP and ARMPA management decisions is an essential part of the GRS conservation strategy and provides the means for determining if desired outcomes are being achieved.

Monitoring that is applicable for evaluating management effectiveness can also be used to address a number of other critical habitat variables (e.g., location, condition, habitat loss or gain, and size of patches). Ideally, monitoring the attributes of GRS habitat, in coordination with state wildlife agencies and other partners monitoring populations, will allow linking real or potential habitat changes (from both natural events and management actions) to vital rates of GRS populations. This analysis will enable managers to identify indicators associated with population change across large landscapes and to ameliorate negative effects with appropriate conservation actions. The WAFWA Zone GRS Conservation Teams (as described in **Section 1.6.2**) will also advise regional monitoring strategies and data analysis, as described in the plans.

Each ARMP and ARMPA, except North Dakota, includes an overarching adaptive management strategy that includes soft and hard triggers and responses. These triggers are habitat and population thresholds that are based on two key metrics that are being monitored—habitat condition and population numbers. At a minimum, the BLM will assess annually whether hard and soft trigger thresholds have been met when the population or habitat information becomes available, beginning after this ROD is executed.

Soft triggers represent an intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses. If a soft trigger were tripped during the life of the ARMP or ARMPAs, the BLM would implement more conservative or restrictive conservation measures on a project-by-project basis to mitigate for the specific factor in the decline of populations and habitats, with consideration of local knowledge and conditions. In each ARMP and ARMPA, a soft trigger begins a dialogue between the State, FWS, and the BLM to see if the factor can be determined

and what implementation-level activities can be used to reverse any trend. These adjustments will be made to preclude tripping a hard trigger, which signals more severe habitat loss or population declines.

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives set forth in the BLM ARMPs and ARMPAs. In the event that a hard trigger is tripped, the BLM would implement plan-level decisions, such as allocation changes, to immediately institute greater protection for GRSG and its habitat. If a hard trigger were tripped in a PAC that crosses state boundaries, the WAFWA MZ GRSG Conservation Team would convene to discuss causes and identify potential responses.

In the event that new scientific information becomes available, demonstrating that the hard trigger response is insufficient to stop a severe deviation from GRSG conservation objectives set forth in the ARMPs and ARMPAs, the BLM would immediately assess what further actions may be needed to protect GRSG and its habitat and ensure that conservation options are not foreclosed. This could include a formal directive, such as an instruction memorandum (IM) or a plan amendment.

## **1.7 UNIQUE ASPECTS OF THE ROCKY MOUNTAIN REGION'S ARMPs AND ARMPAs**

The ARMPs and ARMPAs and their associated EISs were developed through separate planning efforts across the Rocky Mountain Region (as described in **Section 1.1**). To develop these plans, the BLM used a landscape-scale approach to achieve a common set of management objectives across the range of GRSG, recognizing, in particular, measures to limit human disturbance in important habitats. Within this framework, management actions were developed and incorporated into the plans that are tailored to achieve these objectives and accommodate differences in resource conditions, severity of threats, and state-specific management approaches.

This flexible landscape approach provided the opportunity to incorporate recommendations resulting from collaboration with the states and local cooperators as well as public comments in each Planning Area. The plans and their future implementation are strengthened by the contributions of local partners and their knowledge, expertise, and experience.

Measures incorporated into the plans remain consistent with the range-wide objective of conserving, enhancing, and restoring GRSG habitat. This would be done by reducing, eliminating, or minimizing threats to GRSG habitat, such that the need for additional protections under the ESA may be avoided.

Below is a brief description of the unique aspects of each of the Rocky Mountain Region's ARMPs and ARMPAs.

### **Wyoming**

This ROD approves three RMPs—Buffalo, Cody and Worland—and an amendment to six RMPs (Wyoming RMPA). All of the Wyoming plans are built on the foundation for GRSG management established by and complementary to the Governor's Executive Order 2011-05, Greater Sage-Grouse Core Area Protection (Core Area Strategy; Wyoming Office of the Governor 2011) and updated Executive Order (2015-4), by establishing similar conservation measures and focusing restoration in the same key areas most valuable to GRSG.

Recognizing that the FWS has found “the core area strategy...if implemented by all landowners via regulatory mechanisms, would provide adequate protection for sage-grouse and their habitats in the

state, (personal correspondence from Scott Hicks to Ryan Lance on November 10, 2010)” the BLM plans commit to achieving a net conservation gain for GRSG in PHMAs only, consistent with the Core Area Strategy. This ensures that any impacts not addressed through avoidance and minimization would be addressed through compensation. Fluid minerals in PHMAs are limited to NSO within a 0.6-mile radius around occupied leks in PHMAs and 0.25-mile radius around occupied leks in GHMAs. There are TLs in core areas, as well as density and disturbance caps, consistent with the Wyoming Core Area Strategy approach. Additionally, consistent with the Core Area Strategy, the Wyoming BLM plans implement a 5 percent all-lands/all-disturbances cap and more inclusive formula for calculating disturbance (this DDCT calculation is further explained in Appendix D of the attached Wyoming ARMPA and Buffalo, Cody, and Worland ARMPs).

The BLM’s Wyoming plans also allow for high-voltage transmission lines and major ROWs and wind energy, and leasable mineral and mineral material development in GHMAs with RDFs and best management practices (BMPs). The Wyoming ARMPs and ARMPA also establish screening criteria and conditions for new anthropogenic activities in PHMAs to ensure a net conservation gain for GRSG populations and habitat, consistent with the State of Wyoming Core Area Protection strategy.

SFAs were identified only in the Wyoming ARMPA and not in the other Wyoming Planning Areas. Additional conservation measures for these areas include recommending withdrawing a portion of the area from the General Mining Act of 1872 and prioritizing habitat management actions. The State of Wyoming has permitting authority for locatable mining operations and has committed to use its authority to ensure operations proceed in accordance with the Core Area Strategy. The State has a successful record of using this authority in the past. In addition, nearly 50 percent of the SFAs in the Wyoming Sage-Grouse Amendment Planning Areas had already been withdrawn from locatable mineral entry. For these reasons, after coordinating with the FWS, the BLM found that a recommendation for withdrawing all SFAs was not necessary to address the threat of locatable mineral development. Instead the area recommended for withdrawal has identified potential for development and provides connectivity between the recommended withdrawal in the Lander Planning Area and existing withdrawals.

The BLM Wyoming ARMPs and ARMPAs include changes between proposed and final in this ROD to be consistent with the updated Wyoming Executive Order (July 2015).

### **Northwest Colorado**

This ROD approves one RMPA in Northwest Colorado. The ARMPA adopts key elements of the State of Colorado Greater Sage-Grouse Conservation Plan (Colorado Greater Sage-Grouse Steering Committee 2008). It is complementary to the Governor’s Executive Order (Colorado Office of the Governor 2015) by establishing conservation measures and focusing restoration in the same key areas identified by the BLM as most valuable to the GRSG. The ARMPA includes additional stipulations for fluid mineral development resulting from public comments and discussions with cooperating agencies and state partners. Notably, in both PHMAs and GHMAs, there would be no new fluid mineral leasing for 1 mile around active leks and NSO stipulations for 2 miles around active leks in GHMAs. The remainder of PHMAs would also have an NSO stipulation. No SFAs were identified in Colorado, so there are no management actions for SFAs in the Northwest Colorado ARMPA.

In addition to PHMAs and GHMAs, the Northwest Colorado ARMPA includes a third habitat management area, LCHMAs. Colorado Parks and Wildlife delineates LCHMAs as areas between GRSG populations across the GRSG range in Colorado. The assumption is that habitat linkages will allow for movement between populations and will decrease the probability of species extinction by stabilizing population dynamics. These linkages should be considered only as potential areas for movements between populations.

### **Montana**

This ROD approves four RMPs—HiLine, Miles City, Pompeys Pillar National Monument, and Billings—and one RMPA (Lewistown), all of which are in Montana. The Dillon RMP is amended through the [Idaho and Southwestern Montana ARMPA](#), which is approved through the ROD for the Great Basin Region.

The Montana BLM plans are largely consistent with the objectives of the Montana Sage Grouse Habitat Conservation Program (Montana Office of the Governor Executive Order No. 10-2014) by establishing conservation measures and strategies to minimize disturbance and habitat loss, particularly as a result of surface disturbance from energy exploration and development. The BLM plan will permit the disturbance limit to go from a 3 percent to a 5 percent cap, consistent with the Montana Plan, when their disturbance calculation method is implemented and effective. Additionally, if the State of Montana is implementing an effective GRSG habitat conservation program, the BLM would review their management actions to determine if additional GRSG-related management actions should be adjusted with coordination from the State of Montana and the FWS, to achieve consistent and effective conservation across all lands, regardless of ownership.

Within Montana, SFAs occur only in the HiLine ARMP and Lewistown ARMPA, and thus the management actions for SFAs appear in these plans only. In addition to PHMAs and GHMAs, the Billings and Miles City ARMPs include a third habitat management area category, RHMAs. It is designated to maintain GRSG populations, while providing for future resource uses, so that enough quality habitat is maintained to allow some residual population in impacted areas to persist. It emphasizes the restoration of habitat for reestablishing or restoring sustainable populations.

Also, oil and gas leasing is currently deferred in the Lewistown Field Office, so there are no oil and gas management actions in the Lewistown ARMPA for new leasing. Future fluid mineral management actions are being addressed in an ongoing Lewistown RMP revision, which will incorporate GRSG conservation measures.

### **North Dakota**

This ROD includes an amendment to the RMP for North Dakota. With little undeveloped habitat and a small population of GRSG in the Planning Area, the North Dakota amendment does not include an adaptive management strategy. Instead, the BLM commits to regular reviews of the populations and habitats and appropriate responses to be developed with the FWS and North Dakota Game and Fish Department. There are no SFAs in North Dakota.

### **South Dakota**

This ROD includes GRSG decisions in the South Dakota RMP revision. Similar to North Dakota, there is little BLM-managed GRSG habitat and a small population of GRSG in the Planning Area. However, the

GRSG-conservation decisions in South Dakota are the same as the other states. There are no SFAs in South Dakota.

## I.8 DECISION RATIONALE

The ARMPs and ARMPAs provide a comprehensive, coordinated, and effective conservation strategy for addressing the threats to the GRSG identified by the FWS such that the need for additional protections under the ESA may be avoided. The ARMPs and ARMPAs strive to conserve the GRSG and its habitat on BLM-administered lands across the remaining range of the species. This is consistent with measures identified or recommended in the NTT and COT Reports, recent USGS studies, and other relevant research and analysis.

The BLM and Forest Service land use plans are an essential component of the effort to conserve GRSG and its habitat. This is in combination with the GRSG conservation actions taken by the individual States in the remaining range of the species and initiatives to address the threat of rangeland fire, to curb the spread of nonnative invasive grasses, and to promote conservation measures to benefit GRSG on private lands. Combined, all of the ARMPs and ARMPAs associated with the BLM's National GRSG Conservation Strategy and Forest Service land use plans would affect approximately 67 million acres of the remaining habitat for the species.

The BLM GRSG Conservation Strategy is built on the following key concepts:

- **Landscape level**—The planning effort encompasses the remaining habitat of the GRSG on BLM-administered lands, covering 10 western states in the Great Basin and Rocky Mountain Regions. As such, the strategy provides a coherent framework across the BLM land use plans to implement landscape-level conservation for GRSG; at the same time, it allows for flexibility essential to effectively address threats to the GRSG in the context of the agency's multiple-use and sustained yield mandates under FLPMA. The conservation measures included as part of landscape-level conservation address identified threats to the species. They also recognize local ecological conditions and incorporate existing conservation efforts where they are consistent with the overall objective of conserving GRSG across its remaining range.
- **Best available science**—The ARMPs and ARMPAs are grounded in the best available science, drawn from published literature and input from recognized experts, state agencies, the USGS, the FWS, and other sources. The COT Report provided a blueprint for GRSG conservation by identifying specific threats to each remaining GRSG population and recommending measures to address each category of threat. The NTT Report provided additional guidance for addressing the most significant threats to the GRSG. The concepts set forth in a number of reports prepared by the USGS regarding specific threats to GRSG, habitat connectivity, and related issues are reflected in the land allocation and resource management decisions. Also informing GRSG conservation was a series of reports on how to better reduce the threats of rangeland fire and invasive species, prepared in collaboration with the WAFWA, and a report to the Secretary of the Interior entitled *An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior* (US Department of the Interior 2015).

- **Targeted, multi-tiered approach**—The ARMPs and ARMPAs were designed to incorporate a layered management approach to target habitat protection and restoration to the most important habitat management areas, as determined by State and Federal GRSG experts, largely consistent with the PACs identified in the COT Report, where land allocations and management direction avoid and minimize additional surface disturbance. These areas are designated as PHMAs. Within PHMAs, the ARMPs and ARMPAs provide an added level of protection to eliminate most surface disturbance by delineating SFAs, derived from areas identified by the FWS as strongholds essential for the species' survival. GHMAs recognize the potential value of habitat areas outside of PACs—as recommended by the COT Report—where surface disturbance is minimized, while providing flexibility for other land resource uses.
- **Coordinated**—The ARMPs and ARMPAs were developed through a joint planning process between the BLM and the Forest Service (as a cooperating agency); as a result, BLM- and Forest Service-administered land essential to the conservation of GRSG is managed in a coordinated manner. The FWS provided guidance and input throughout the process to aid land managers in understanding the threats to the GRSG and its habitat. The USGS and NRCS also provided key technical and scientific support.
- **Collaborative**—The ARMPs and ARMPAs reflect extensive input from the public, the States, collaborators, and stakeholders. The ARMPs and ARMPAs were developed with the benefit of input from the States and cooperators, who signed formal agreements with the BLM to provide input into the planning process. The Western Governors Association Sage Grouse Task Force was particularly useful in facilitating this kind of collaborative input. The ARMPs and ARMPAs incorporate State and local conservation measures, where they are consistent with the overall objective of implementing land use plan conservation measures for the GRSG, consistent with the multiple-use and sustained yield mission of the BLM.

The conservation measures in the ARMPs and ARMPAs reflect over a decade of research, analysis, and recommendations for GRSG conservation, including those produced by the WAFWA, the NTT, and the COT. Each of these entities produced a strategy or report that was developed through the collaboration of State and Federal biologists and scientists with extensive experience and expertise in GRSG management and research.

The COT Report—which identified threats to GRSG habitat as well as the most important habitat to protect—provided an important framework for developing the conservation strategy embodied in the sub-regional ARMPs and ARMPAs. The COT consists of State and Federal scientists, wildlife biologists, resource managers, and policy advisers. The Director of the FWS tasked them “with development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future” (FWS 2013).

In addition, the USGS compiled and summarized published scientific studies that evaluate the influence of human activities and infrastructure on GRSG populations, such as [Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review](#) (Manier et al. 2014), and the [Integrated Rangeland Fire Management Strategy: Final report to the Secretary](#) (US Department of the Interior 2015). These sources provided important guidance in developing critical aspects of the ARMPs and ARMPAs and the overall GRSG

landscape-level conservation strategy. Beyond these range-wide reports, each of the sub-regional plans used local science, where available, to tailor plan elements to reflect local ecological conditions, threats, and GRSG management experience, where consistent with the overall GRSG conservation objectives.

The ARMPs and ARMPAs are the product of extensive coordination, including the active engagement of the FWS in helping to inform land allocation and related management decisions by the land management agencies. This is to ensure that they limit or eliminate new surface disturbance and improve habitat condition in the most important habitat areas. The ARMPs and ARMPAs also benefit from strong collaboration with the States and reflect the unique landscapes, habitats, approaches, and priorities in each. While incorporating State-developed conservation measures in each of the ARMPs and ARMPAs has added complexity to the overall conservation strategy, the body of local knowledge of and expertise in conservation measures for the GRSG is extensive, and, ultimately, it strengthened the plans. Incorporating these measures in the plans is also likely to increase the commitment of all partners to the task of implementing the plans on completion.

In his transmittal letter accompanying the final COT Report, the FWS Director reaffirmed his charge, “I asked the team to produce a recommendation regarding the degree to which threats need to be reduced or ameliorated to conserve the greater sage-grouse so that it would no longer be in danger of extinction or likely to become in danger of extinction in the foreseeable future. ... Conservation success will be achieved by removing or reducing threats to the species now, such that population trends will eventually be stable or increasing, even if numbers are not restored to historic levels” (FWS 2013).

The ARMPs and ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination as more fully explained in the COT Report and the NTT Report. As previously noted, the COT Report stated, “Maintenance of the integrity of PACs ... is the essential foundation for sage-grouse conservation” (FWS 2013). Specifically, the COT Report recommended “targeted habitat management and restoration” to be achieved by “eliminating activities known to negatively impact sage-grouse and their habitats, or re-designing these activities to achieve the same goal” (FWS 2013). The COT further recommended an “avoidance first strategy” and stressed that “threats in PACs must be minimized to the extent that population trends meet the objectives of the 2006 WAFWA Conservation Strategy” (FWS 2013).

In order to address the identified threats and meet the recommendations of the COT Report, the plans are based first on identifying important habitat areas for GRSG in which the plans protect remaining habitat and target habitat restoration and improvement actions. Specifically, the plans identify PHMAs, which align closely with PACs identified in the COT Report.

Within PHMAs, the plans identify SFAs, based on the FWS analysis of strongholds for the species; this in turn is based on such factors as population density, habitat integrity, and resilience to climate change. The SFAs serve as a landscape-level anchor for the conservation strategy and are closed or excluded from discretionary surface disturbances. SFAs are also used to prioritize fire protection, habitat restoration, and other habitat management actions (e.g., prioritizing reductions in WHB populations to achieve AML). This approach will allow the BLM to target limited resources to those areas identified by the FWS and reinforced by recent USGS analysis. These resources are those most important to long-term sagebrush ecosystem health and species persistence.

PHMAs and GHMAs boundaries are based on PPH and PGH. Consistent with the BLM's IM 2012-044, PPH and PGH are based on data and maps developed through a collaboration between the BLM and the respective State wildlife agencies. PPH and PGH (PHMAs and GHMAs in the Final EISs and now the ARMPs and ARMPAs) were developed using the best available data. Criteria for delineating PPH included breeding GRSG density (Doherty 2010), GRSG proportionality, lek density, and key seasonal habitats, such as known winter concentration areas. PGH (now GHMAs) are areas of occupied seasonal, connectivity, or year-round habitat outside of PPH.

As discussed in **Section 1.6**, allocations and management actions are targeted to habitat management areas to limit or eliminate surface disturbance. All forms of new development in PHMAs, such as energy development, transmission lines, and recreation facilities, are either excluded or avoided or they are allowed only if the resultant effect is neutral or beneficial to the GRSG. The ARMPs and ARMPAs will also prioritize future oil and gas leasing and development outside of identified GRSG habitat management areas (i.e., SFAs, PHMAs, and GHMAs) to reduce the potential for future conflict with GRSG.

The ARMPs and ARMPAs include additional measures to limit surface disturbance in PHMAs by establishing disturbance caps and density restrictions of, on average, one energy facility per 640 acres, as well as lek buffers. These requirements reflect recommendations contained in the NTT Report and are consistent with certain state strategies that were already in place the BLM began its National GRSG Conservation Strategy.

As described in **Section 1.6.1**, the BLM determined the appropriate lek buffers to analyze based on the USGS report *Conservation Buffer Distance Estimates for GRSG—A Review* (Manier et al, 2014), based on best available science. The Wyoming ARMPA and Buffalo, Cody, and Worland ARMPs do not contain these buffer requirements, consistent with the State's Core Area Strategy.

The plans also include actions to improve habitat conditions in the most important areas for conservation through additional targeted efforts to protect and restore habitat, first in SFAs, then in PHMAs, and finally in GHMAs.

Mitigation for activities adversely impacting GRSG or GRSG habitat in PHMAs will be designed to a net conservation gain standard, consistent with the recommendation included in the September 2014 FWS document, [Greater Sage-Grouse Range-Wide Mitigation Framework Version 1.0](#) (FWS 2014b). According to the authors, the framework was prepared "...to communicate some of the factors the [FWS] is likely to consider in evaluating the efficacy of mitigation practices and programs in reducing threats to GRSG. The recommendations provided here are consistent with the information and conservation objectives provided in the 2013 Conservation Objectives Team (COT) Report for sage-grouse" (FWS 2014b).

Grazing, which is the most widespread use of the sagebrush ecosystem, will continue in a manner consistent with the objective of conserving the GRSG. Land health standards will incorporate GRSG habitat objectives and vegetative management objectives consistent with the ecological potential of the landscape as recommended by the COT to "...conduct grazing management for all ungulates 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 GRSG (e.g., shrub cover, nesting cover)" (FWS 2013).



The ARMPs and ARMPAs also address the adverse impacts of free-roaming WHBs on GRSG habitat by prioritizing gathers and removing WHBs to achieve AMLs in SFAs, PHMAs, and GHMAs (in that order). The BLM has been working with the National Academy of Sciences to conduct new research of methods to reduce WHB reproduction rates. Through a combination of targeted gathers and the development of an effective agent for controlling future free-roaming WHB reproductive rates, over time, this threat to GRSG may be effectively managed.

With regard to the threat of rangeland fire, the Department of the Interior took a series of actions over 2014 and 2015 to develop a more complete and comprehensive strategy for dealing with this threat; this led to [Secretarial Order 3336](#) and the subsequent report, [An Integrated Rangeland Fire Management Strategy: Final Report to the Secretary of the Interior](#) (US Department of the Interior 2015).

In accordance with Secretarial Order 3336 and subsequent rangeland fire management strategy, substantial changes in policy and management direction affect all aspects of the rangeland fire management program have been and will be made to enhance the BLM's ability to manage the threat from rangeland fire, such as the following:

- Better coordination between resource managers and fire management officers
- Identification and prioritization of prevention, suppression, and restoration in SFAs, PHMAs, and GHMAs
- Commitment of additional equipment and crews for rangeland firefighting
- Additional funding and policy direction to improve post-fire restoration
- Completion of an initiative to collect, store, and better use native seed and sagebrush in post-fire restoration of sagebrush steppe ecosystems

This and the initiative to fight the spread of nonnative invasive species that contributes to higher rangeland fire risk (e.g., cheatgrass) discussed below have fundamentally changed how rangeland fire is managed to benefit sagebrush ecosystems and GRSG habitat.

To further supplement these efforts, the Department of the Interior has recently committed \$7.5 million to projects in GRSG habitat to create more resilient landscapes. In addition, the Department of the Interior has approved policy changes to increase the commitment, flexibility, and time frame for use of Emergency Stabilization and Burned Area Restoration (ES & BAR) funding. By adopting a risk-based approach using a rolling average of the acres lost to fire during the previous five fire seasons, ES & BAR funding will be allocated to the BLM to permit an increased focus on restoring priority sagebrush-steppe habitats impacted by fire.

In addition, the Sage Grouse Initiative launched by the NRCS in 2010 also contributes to protecting and restoring important GRSG habitat. In collaboration with the states and private landowners on private lands, as well as with the BLM and the Forest Service on the lands they administer, the NRCS has worked to reduce the encroachment of pinyon-juniper trees and restore rangeland habitat on private and BLM-administered lands.

Consistent with recommendations contained in the 2006 WAFWA *Greater Sage-Grouse Range-Wide Conservation Strategy* (Stiver et al. 2006), the BLM and Forest Service conservation strategy relies heavily

on monitoring and evaluation to assess the success and effectiveness of implementing the management decisions in the ARMPs and ARMPAs. Monitoring plans will be developed in coordination with relevant State and Federal agencies and will incorporate evaluation of GRSG population trends by the States and changes in habitat condition by the Federal land management agencies. As the WAFWA report states, “Monitoring provides the ‘currency’ necessary to evaluate management decisions and to assess progress or problems. Adequate monitoring should be considered an integral and inseparable component of all management actions, and therefore, not optional. Lack of proper monitoring will undoubtedly hinder this large-scale conservation effort” (Stiver et al. 2006).

In addition, the ARMPs and ARMPAs (except that for North Dakota) incorporate an adaptive management framework that provides an early warning system of soft triggers. This is to alert resource managers to the need to evaluate the effectiveness of their management strategies should changes in population levels or habitat conditions occur. If the project-level management responses to soft triggers do not adequately address the causes for population or habitat declines and if hard triggers are reached, the ARMPs and ARMPAs identify measures that will be put in place, including plan-level responses, so as to reverse the declines.

In summary, the ARMPs and ARMPAs emphasize an “avoidance first” strategy, consistent with the recommendations in the COT Report, by limiting new disturbance and maintaining current intact GRSG habitat. This avoidance first strategy is accomplished by identifying important GRSG habitat areas and then applying allocations that exclude or avoid surface-disturbing activities, appropriately managing grazing, and aggressively suppressing fire that could degrade or fragment remaining GRSG habitat.

The plans also include decisions to restore degraded habitat, which although more difficult and requiring a longer time frame, are important to the long-term conservation of GRSG. Restoration decisions include specific habitat objectives and a priority on treating GRSG habitat for invasive species, particularly cheatgrass, and encroaching pinyon and juniper. These decisions are reinforced by Secretarial Order 3336 and the *Integrated Rangeland Fire Management Strategy* (US Department of the Interior 2015) as well as the NRCS’s Sage Grouse Initiative investments in private landowners’ conservation efforts.

The GRSG Conservation Strategy reflects a high level of commitment by Federal partners to conserve GRSG and its habitat. The actions on BLM and National Forest System lands, which constitute nearly half of the GRSG habitat in the Planning Area, will anchor and complement the significant actions being taken by State and local governments and private landowners to conserve the species and its habitat.

The landscape-level strategy consists of new conservation actions that will go into effect through the BLM’s ARMPs and ARMPAs and actions being implemented to conserve the species. They reflect a significant change in management direction and philosophy for the BLM since 2010 and a long-term commitment to assure the conservation of the species by protecting, restoring, and enhancing GRSG habitat consistent with the objectives set in the 2006 WAFWA conservation strategy and embraced by both the NTT and the COT.

This change represents a new paradigm in managing the sagebrush landscape for the BLM and amplifies the need for collaboration among Federal, State, tribal, and private partners to conserve the GRSG, consistent with direction articulated in the NTT report, as follows:

Land uses, habitat treatments, and anthropogenic disturbances will need to be managed below thresholds necessary to conserve not only local sage-grouse populations, but sagebrush communities and landscapes as well. Management priorities will need to be shifted and balanced to maximize benefits to sage grouse habitats and populations in priority habitats. Adequacy of management adjustments will be measured by science-based effectiveness monitoring of the biological response of sagebrush landscapes and populations. Ultimately, success will be measured by the maintenance and enhancement of sage-grouse populations well into the future. (NTT 2011, p. 6-7)

The conservation benefits to the sagebrush ecosystem and GRSg habitats resulting from the ARMPs and ARMPAs provide an essential foundation for conserving the GRSg. This, in conjunction with the amended Forest Service Land and Resource Management Plans (LRMPs), affects approximately 59 percent of the most important GRSg habitat across the remaining range of the species. In conjunction with similar conservation efforts by other Federal and State agencies, private landowners, and local partners, the BLM National GRSg Conservation Strategy constitutes a historic conservation effort that will benefit more than 350 species and the sagebrush ecosystem upon which they depend. It is through these landscape-level, science-based collaborative efforts to conserve the imperiled sagebrush ecosystem that conservation of the GRSg and other sagebrush-obligate species can best be achieved and the listing of the GRSg under the ESA may be avoided.

## **I.9 IMPLEMENTATION**

Future decisions made in conformance with the ARMPs and ARMPAs serve to continuously and actively implement its provisions.

*Immediate Decisions*—These decisions are the land use planning decisions that go into effect when the ROD is signed. These include goals, objectives, allowable uses, and management direction, such as the allocation of lands as open or closed for salable mineral sales, lands open with stipulations for oil and gas leasing, and OHV area designations. These decisions require no additional analysis and guide future land management actions and subsequent site-specific implementation decisions in the Planning Area. Proposals for future actions, such as oil and gas leasing, land adjustments, and other allocation-based actions, will be reviewed against these RMP decisions to determine if the proposal is in conformance with the plan.

*One-Time Future Decisions*—These are the types of decisions that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementing one-time RMP decisions will be based on the following criteria:

- Relative importance of the action to the efficacy of the GRSg conservation strategy
- National BLM management direction regarding plan implementation
- Available resources

*General Implementation Schedule of One-Time Decisions*—Future Decisions discussed in the attached ARMPs and ARMPAs will be implemented over a period of years, depending on budget and staff

availability. After issuing the ROD, the BLM will prepare implementation plans that establish tentative time frames for completing one-time decisions identified in these ARMPs and ARMPAs. These actions require additional site-specific decision-making and analysis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, nondiscretionary workloads, and cooperation by partners and the public. Yearly review of the plan will provide consistent tracking of accomplishments and will provide information that can be used to develop annual budget requests to continue implementation.

### **1.9.1 Additional Implementation Guidance and Considerations**

*Instructional Memoranda*—Additional instruction and management direction will be necessary to implement certain land allocation decisions and management direction included in the ARMPAs and ARMPs. For example, additional guidance will be provided to clarify how the BLM will implement the objective of prioritizing future oil and gas leasing and development outside of GRSG habitat. IMs and related guidance will be completed by the BLM Washington Office. The BLM shall complete IMs for the following management direction and intends to complete these IMs within 90 days of the RODs: oil and gas leasing and development prioritization and livestock grazing. Other IMs, including monitoring and mitigation, will be developed as necessary. Issuance of this national guidance will supersede any related national and field level guidance currently in effect. Additional national, State, and field level guidance will be developed subsequently as necessary to implement the decisions in the plans.

*Map Adjustments, GRSG Seasonal Habitats, and Connectivity*—PHMAs were designed to include breeding bird density, GRSG proportionality, density of leks, and key seasonal habitats, such as known winter concentration areas. GHMAs was designed to include the areas of occupied seasonal, connectivity, or year-round habitat outside of PHMAs. As additional important habitats are identified (e.g., winter habitat and key connectivity areas), the BLM will map and incorporate these habitats for GRSG, consistent with best available science, through subsequent plan maintenance, revision, or amendment, as appropriate. Priority should be given to ensuring that wintering habitat is identified and captured in all changes in habitat maps subsequent to this decision. In the interim, the BLM will use the existing maps included in the ARMPs and ARMPAs for all decisions.

*Continued Commitment to Research and Use of Best Available Science*—Through implementation of this strategy, new management issues and questions are likely to arise that may warrant additional guidance or study by technical experts, scientists, and researchers. The BLM is committed to continue working with individuals and institutions with expertise in relevant fields in order to ensure that land and resource management affecting conservation of the GRSG and the sagebrush ecosystem continues to be guided by sound peer-reviewed research and the best available science.

*Training*—Given the nature and complexity of the management direction in these ARMPs and ARMPAs, the BLM, in collaboration with the Forest Service and the FWS, will develop and implement a schedule of training for key functions, actions, and decisions associated with these plans. In this manner, the BLM will seek to better inform its personnel, partners, cooperators, and stakeholders of the changes in management that will result from this new management paradigm.

# CHAPTER 2

## DECISION

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### 2.1 SUMMARY OF THE APPROVED MANAGEMENT DECISIONS

The decision is hereby made to approve the Rocky Mountain Region GRSG RMPAs for the Rocky Mountain Region GRSG Sub-Regions of Lewistown, North Dakota, Northwest Colorado, and Wyoming (attachments 1 through 4) and the RMPs for Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument, South Dakota, and Worland (attachments 5 through 12). This ROD serves as the final decision establishing the resource management plan decisions outlined in the ARMPAs and ARMPs and is effective on the date it is signed.

The decisions included in this ROD and attached ARMPAs and ARMPs amend and revise the resource management plans described in Sections 1.1 of attachments 1 through 4 and Chapter 1 of attachments 5 through 12.

The RMP decisions include management direction to conserve, enhance, and restore GRSG and their habitat by reducing, eliminating, or minimizing threats to their habitat. RMP decisions are expressed as goals, objectives (desired outcomes), allowable uses, and management decisions anticipated to achieve desired outcomes. Although decisions identified in the ARMPAs and ARMPs are final and effective when this ROD is signed, implementing on-the-ground activities requires additional steps before any of them can begin. The BLM will conduct NEPA analyses, as necessary, for such implementation decisions.

### 2.2 WHAT THE ROD, ARMPAs, AND ARMPs PROVIDE

The ARMPAs and ARMPs include RMP-level management decisions in the form of the following:

- Goals
- Objectives (desired future conditions)
- Land use allocations
- Management decisions and actions

*Goals* are the broad statements of desired outcomes and are usually not quantifiable.

*Objectives* are specific desired conditions, usually quantifiable and measurable, and may have time frames for achievement.

*Land use allocations* specify locations in the Planning Area that are available or unavailable for certain uses and are also used to prioritize conservation and restoration management actions. Examples are decisions on the following:

- What lands are available for livestock grazing, mineral material use, oil and gas leasing, and locatable mineral development
- What lands may be available for disposal via exchange or sale
- What lands are open, closed, or limited to motorized travel

Note that all acreages presented in the ARMPAs and ARMPs are estimations, even when they are presented to the nearest acre.

*Management decisions and actions* are those provisions that help in meeting the established goals and objectives. They are the measures that will be applied to guide day-to-day activities on public lands, including but not limited to, stipulations, guidelines, BMPs, and RDFs.

The management decisions and actions contained in the ARMPAs (attachments 1 through 4) and within Chapter 2 of the ARMPs (attachments 5 through 12) were crafted to incorporate management decisions into RMPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing identified threats to GRSG and their habitats. The management decisions and actions contained in Chapter 3 of the ARMPs provide a single comprehensive RMP to guide management of public lands and minerals administered by the BLM for all resources and resource uses under the BLM's jurisdiction.

The EISs conducted for the Northwest Colorado and Wyoming ARMPAs sufficiently disclose and analyze all environmental issues associated with mineral leasing on National Forest System lands. The analyses would be relevant should the Forest Service consent to a lease or require consultation before it issues a lease. This would comply with applicable mineral leasing and NEPA regulations and would be subject to further site-specific environmental analysis where applicable.

### **2.3 WHAT THE ROD, ARMPAs, AND ARMPs DO NOT PROVIDE**

The attached ARMPAs (attachments 1 through 4) do not contain decisions for public lands outside of GRSG habitat management areas.

The ARMPAs and ARMPs do not violate valid existing rights nor contain decisions for the mineral estates that are not administered by the BLM. ARMPA and ARMP decisions for surface estate apply only to BLM-administered lands. In addition, many decisions are not appropriate at this level of planning and are not included in the ROD. Examples of these types of decisions are the following:

- *Statutory requirements*—The decision will not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- *National policy*—The decision will not change the BLM's obligation to conform to current or future national policy.

- *Funding levels and budget allocations*—These are determined annually at the national level and are beyond the control of the State, District, or Field Offices.

Implementation decisions (or activity-level decisions) are management actions tied to a specific location. They generally constitute the BLM's final approval allowing on-the-ground actions to proceed and require appropriate site-specific planning and NEPA analysis. Such decisions may be incorporated into implementation plans (activity or project plans) or may be stand-alone decisions. These ARMPAs and ARMPs do not contain implementation decisions. Implementation decisions and management actions that require additional site-specific project planning, as funding becomes available, will require further environmental analysis.

## 2.4 MODIFICATIONS AND CLARIFICATIONS

The ARMPs and ARMPAs in the Rocky Mountain Region include minor modifications and clarifications from the Proposed RMPs and Proposed RMPAs. These minor modifications and clarifications were made as a result of internal reviews, response to protests, and recommendations provided to the BLM during the Governors' consistency reviews. These modifications and clarifications are hereby adopted by this ROD.

The following modifications and clarifications were made to all of the ARMPs and ARMPAs in the Rocky Mountain Region, excluding the Pompeys Pillar National Monument ARMP, as there is no GRSG habitat there:

- *ARMP/ARMPA Formatting*—The plans were reformatted between the proposed and approved RMP planning stages for consistency across the Rocky Mountain Region. The order of management actions and the prefixes for the goals, objectives, and management actions were changed in the ARMPs and ARMPAs to provide consistency among the amendments and revisions for GRSG goals and objectives.
- *Forest Service References (applicable only to the Northwest Colorado and Wyoming ARMPAs)*—All references to National Forest System lands in both text and on maps have been removed from the ARMPAs. The Forest Service has completed two separate RODs and land and resource management plan amendments under its own planning authorities.
- *Fire*—Management actions and decisions were modified to stress that protecting human life is the single overriding priority for fire and fuels management activities.
- *Livestock Grazing*—The statement, "This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3," was added to the management action and decision. It reads, "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."
- *Glossary*—Numerous glossary definitions were deleted because they were not used or referenced in the ARMPs and ARMPAs. If not already contained in the Proposed RMP and RMPA glossaries, the following terms and definitions were added for clarification:
  - **Grazing Relinquishment.** The voluntary and permanent surrender by an existing permittee or lessee, (with concurrence of any base property lienholder), of their

priority (preference) to use a livestock forage allocation on public land as well as their permission to use this forage. Relinquishments do not require the BLM's consent or approval. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.

- **Transfer of Grazing Preference.** The BLM's approval of an application to transfer grazing preference from one party to another or from one base property to another or both. Grazing preference means a superior or priority position against others for the purposes of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee.
  - **Valid Existing Right.** Documented legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include, but are not limited to, fee title ownership, mineral rights, ROWs, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.
  - **Mining Claim.** A parcel of land that a miner takes and holds for mining purposes, having acquired the right of possession by complying with the 1872 Mining Law and local laws and rules. A mining claim may contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, mill site, and tunnel site.
  - **Energy or Mining Facility.** Human-constructed assets designed and created to serve a particular function and to afford a particular convenience or service that is affixed to a specific locations, such as oil and gas well pads and associated infrastructure.
- *GRSG Habitat Mapping*—Information was added to the ARMPs and ARMPAs to clarify that when new information becomes available about GRSG habitat, including seasonal habitats, in coordination with the State wildlife agency and the FWS, and based on best available scientific information, the BLM may revise the GRSG habitat management area maps and associated management decisions through plan maintenance or plan amendment or revision, as appropriate.
  - *Adaptive Management (excluding North Dakota)*—The GRSG Adaptive Management Strategy was revised to include a commitment that the hard and soft trigger data will be evaluated as soon as it becomes available after the ROD is signed and then will be analyzed, at a minimum, annually thereafter.
  - *Vegetation*—The desired condition for maintaining a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover in SFAs and PHMAs was modified to read as follows: “In all Sagebrush Focal Areas and Priority Habitat Management Areas, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush canopy cover, consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in *Interpreting Indicators of Rangeland Health*” (BLM Technical Reference 1734-6; Pellant 2005).



- *GRSG Habitat Objectives*—For clarification purposes, in each of the ARMP and ARMPA GRSG habitat objectives tables, native grasses were provided as an example of a perennial grass cover, and residual grasses were added to the perennial grass cover and height objective.
- *Sagebrush Focal Areas (applicable only to the Wyoming and Lewistown ARMPAs and the HiLine ARMP)*—Examples of the types of vegetation and conservation actions that will be prioritized within SFAs were provided for clarity in the management action and decision. These examples were land health assessments and WHB management and habitat restoration actions.
- *Required Design Features*—One of the criteria for demonstrating that a variation to an RDF is warranted was modified to include the following statement, “An alternative RDF, a state-implemented conservation measure, or a plan-level protection is determined to provide equal or better protection for GRSG or its habitat.”
- *Lands and Realty*—The following management actions and decisions and objectives were clarified:
  - Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
  - *Applicable only to the Northwest Colorado ARMPA and the South Dakota ARMP*—Within existing 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 would be achieved. This exception is limited to projects that fulfill the use for which the corridors were designated (e.g., transmission lines and pipelines) and the designated width of a corridor would not be exceeded as a result of any project collocation.
- *Land Tenure*—Management action associated with land disposals was clarified to include land exchanges as a means of disposal.
- *WAFWA GRSG Conservation Team*—Additional clarification was added to the ARMPs and ARMPAs related to the WAFWA GRSG Conservation Teams that were identified in the Proposed RMPs and RMPAs: “WAFWA management zones will be used to facilitate cross-state issues, such as regional mitigation and adaptive management monitoring and response, through WAFWA GRSG Conservation Teams. These teams will convene and respond to issues at the appropriate scale, and will use existing coordination and management structures to the extent possible.”
- *Cheatgrass*—The following management action was included consistent with the purpose and need and objectives of the ARMPs and ARMPAs: “Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species.”
- *Valid Existing Rights*—The following management action was added to the ARMPs and ARMPAs: “Consider the likelihood of developing not-yet-constructed surface-disturbing activities, as defined in Table 2 of the Monitoring Framework, under valid existing rights before authorizing new projects in PHMAs.”

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Additional modifications and clarifications specific to each ARMPA or ARMP are summarized below.

### 2.4.1 Lewistown

#### **General Changes**

- The third bullet point under Section 4.2, Maintaining the Plan, was deleted as the Lewistown Field Office sub-regional ARMPA does not include any decisions on new fluid mineral leases; thus, the statement does not apply.
- Clarification was added on how the ARMPA may be revised (through plan maintenance decisions), based on the effective implementation of the Montana GRSG Habitat Conservation Program.
- The term “Travel and Transportation Management (TTM)” was added and defined in the glossary.

#### **Special Status Species (SSS)**

- The addition of Management Actions SSS-1.6 Implement Adaptive Management Plan (Appendix I)
- The addition of Management Actions SSS-1.7 Implement Regional Mitigation Strategy (Appendix F)

#### **Livestock Grazing**

- The last sentence of Management Action LG-1.5 and LG-1.9 referencing Section 3.14.2 of the final EIS was removed in order to clarify how the processing of grazing permit and lease renewals will be prioritized.

### 2.4.2 North Dakota

#### **General Changes**

- The term “Travel and Transportation Management (TTM)” was added and defined in the glossary.

#### **Appendix G—Oil and Gas Stipulations**

- GHMAs CSU waiver criteria from Appendix C of the Proposed Plan/Final EIS was modified to read “The authorized office may waive this stipulation if no portion of the leasehold is within 2 miles of the perimeter of an active lek.”
- PHMAs NSO stipulation exception criteria from Appendix C of the Proposed Plan/Final EIS was update to reflect the language in Chapter 2. The NSO was changed in the Final EIS to only allow for an exception to the NSO in Chapter 2 but was not updated in Appendix C (this is now Appendix G in the Approved Plan). The correct language from Chapter 2 is as follows:
  - Exception: The BLM Authorized Officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:
    - Will not have direct, indirect, or cumulative effects on GRSG or its habitat;  
or,

- Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and will provide a clear conservation gain to GRSG.
- Exceptions based on conservation gain (ii) may only be considered in (a) PHMAs 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 RMPA. 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.

Any exceptions to this lease stipulation may be approved by the BLM Authorized Officer only with the concurrence of the State Director. The BLM Authorized Officer may not grant an exception unless the applicable state wildlife agency, the FWS, 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 GRSG 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, FWS 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 publically available at least quarterly.

### 2.4.3 Northwest Colorado

#### ***Special Status Species (SSS)***

- Addition of Management Action SSS-1 Implement Adaptive Management Plan (Appendix H)
- Addition of Management Action SSS-2 Implement Analysis of Lek Buffers (Appendix B)
- Addition of Management Action SSS-3 Ensure Mitigation that Provides a Net Conservation Gain

#### ***Vegetation***

- The habitat objectives table (Table 2-2 in the ARMPA) has been corrected, based on the Governor's consistency review, to be consistent with the GRSG habitat objectives in the Colorado Greater Sage-Grouse Conservation Plan (2008). The objectives that were included in the proposed plan were not correct and have been amended in response to the Governor's consistency review. In his Governor's consistency review letter, the Governor of Colorado requested that the objectives be consistent with those in the 2008 Colorado grouse plan.

#### ***Lands and Realty***

- The following statement was added to management decision LR-4: "Conservation measures for GRSG are being analyzed through the projects' NEPA review process, which should achieve a net conservation benefit for the GRSG."

## 2.4.4 Wyoming

### ***Greater Sage-Grouse Seasonal Habitat Desired Conditions (Tables 2-2 and 2-3)***

- The introduction to the table was revised to clarify that all BLM use authorizations will contain terms and conditions to meet or progress toward meeting the habitat objectives.
- Footnote I was revised to allow for date shifts where supported by credible data, as recommended by the Governor during the Governor's consistency review.
- Corrections were made to metric conversions reported incorrectly in the Proposed RMP.
- In order to respond to protests to be more consistent with the Forest Service, the BLM changed the desired condition for the cover attribute perennial grass and forb height indicator to >7".

### ***Recreation***

- Management action 82a was revised to clarify that constructing recreation facilities within GRGS PHMAs must conform to the avoidance and minimization measures or provide a net conservation gain to the species. The revision was recommended by the Governor during the Governor's consistency review.

### ***Special Status Species (Greater Sage-Grouse)***

- Text revisions were made to management actions and fluid mineral lease stipulations to ensure consistency across the Wyoming RMPs and consistency with the most recent Governor's Executive Order (2015-4), as recommended by the Governor during the Governor's consistency review.

### ***Mineral Resources***

- Management Action 79 from the Proposed RMPA, which is now MA MR 12 in the Wyoming ARMPA, was modified to remove 894,060 acres from consideration for recommendation for withdrawal, as recommended by the Governor during the Governor's consistency review.

## 2.4.5 Billings

### ***General Changes***

- Goals, objectives, and management actions specific to the Pompeys Pillar National Monument have been removed. The Pompeys Pillar National Monument will have its own ARMP for ease of implementation.
- Clarification on new information changing existing resource inventories and implementation of the Montana GRSG Habitat Conservation Program has been added to Section 5.3, Changing the Plan.
- Section 2.1 includes a statement linking the GRSG Protection Priority Areas (PPAs) of the Draft RMP to the PHMAs boundaries in the Proposed RMP and ARMP.

- The GRSG Restoration Areas has been changed to RHMAs to follow the naming conventions of the PHMAs and GHMAs, as seen in the Billings and Pompeys Pillar National Monument Proposed RMP/Final EIS.
- The term “Travel and Transportation Management (TTM)” was added and defined in the glossary.
- The Federal mineral estate acreages for the GRSG PHMAs, RHMAs, and GHMAs have changed, as the data used in the ARMP depended on broad lines and polygons, instead of aliquot parts. This modification did not change the impact analysis provided in the Final EIS.

### ***Approved Resource Management Plan for GRSG***

- Table 2-3 (Acres of GRSG Habitat by County in the Decision Area) was added to show the number of acres in PHMAs, RHMAs, and GHMAs GRSG habitat in the Planning Area. Table 2-3 (Threats to GRSG in the Billings Field Office Sub-Region as Identified by the COT) was added to identify the GRSG populations and the threats identified in the COT Report contained within the Billings Field Office Planning Area. Table 2-4 (Key Components of the Billings and Pompeys Pillar National Monument Proposed Plan Addressing COT Report Threats) was added to provide a crosswalk as to how the ARMP for the Billings Field Office Planning Area addresses the threats from the COT Report. Table 2-5 was added to consolidate goals, objectives, and management actions to manage GRSG habitat.

### ***Wildlife Habitat and Special Status Species***

- Management Decision (WLH & SSS-71) has been modified to further address GRSG habitat loss and threats, which contribute to GRSG habitat loss.
- Management Decision (WLH & SSS-73) has been modified to further address sagebrush habitat objectives.
- The following new Management Decisions have been added for clarification purposes to the Wildlife Habitat and Special Status Species – Greater Sage-Grouse section: WLH and SSS-74, WLH and SSS -75, WLH and SSS -76, and WLH and SSS -83.

### ***Appendices***

- Appendix K (Biological Opinion) was added to the ARMP.
- The following statement has been deleted from the Coal Appendix: In 2010, Great Northern Properties (GNP) assumed control of the mine permitting effort.

#### **2.4.6 Buffalo**

##### ***Fluid Minerals***

- Based on internal review, the minimum lease size requirement was removed from SS WL-4023 for consistency among Wyoming RMPs and because it would be extremely difficult to implement within the Buffalo Planning Area, given the complex mineral ownership pattern.
- An exception was added to O&G-2006 to allow for geophysical exploration within PHMAs when designed to minimize habitat fragmentation and in conformance with timing and

distance decisions, except where prohibited or restricted by existing RMP decisions as recommended by the Governor during the Governor's consistency review.

- Based on internal review, the noise stipulation for SS WL-4024 was removed for consistency with the other Wyoming RMPs and it was determined to be adequately covered by other lease stipulations such as the 0.6 mile lek NSO stipulation.

### **Greater Sage-Grouse Seasonal Habitat Desired Conditions**

- Table 2.4 in the Proposed RMP and Table 2.6, Seasonal Habitat Desired Conditions for Greater Sage-Grouse (p. 26), in the ARMP was modified as follows, based on the Governor's consistency review:
  - The introduction to the table was revised to clarify that all BLM use authorizations will contain terms and conditions to meet or make progress toward meeting the habitat objectives.
  - Footnote 1 was revised to allow for date shifts where supported by credible data, as recommended.
- Corrections were made to metric conversions reported incorrectly in the Proposed RMP.
- In order to respond to protests to be more consistent with the Forest Service, the BLM changed the desired condition for the cover attribute perennial grass and forb height indicator to >7".

### **Livestock Grazing**

- Compliance with Wyoming Executive Order 2013-3 was moved from management action SSWL-4010 to Grazing-6017 to consolidate the livestock grazing management actions and for consistency with the other Wyoming RMPs.

### **Lands and Realty**

- Management action L&R-6012 was revised to clarify when public lands could be disposed of within GRSG habitat, as recommended by the Governor during the Governor's consistency review.

### **Other Leasable Minerals**

- Management action OL-2001 was revised to allow nonenergy leasable mineral activities in PHMAs, provided that the activities can be completed in compliance with all occupancy, timing, density, and disturbance restrictions, as recommended by the Governor during the Governor's consistency review.

### **Recreation**

- Management action Rec-6015 was revised to clarify that construction of recreation facilities within GRSG PHMAs must conform with the avoidance and minimization measures or provide a net conservation gain to the species. The revision was recommended by the Governor during the Governor's consistency review.

**Riparian and wetland communities**

- Management action Riparian-4008 was revised to clarify that a site-specific plan would be required prior to authorization of activities within 500 feet of riparian and wetland communities, as recommended by the Governor during the Governor's consistency review.

**Special Status Species (Greater Sage-Grouse)**

- Management actions were revised to consolidate the activity being managed. Power line-related actions were consolidated in SS WL-4022, and vegetation management actions were consolidated in SS WL-4013.
- Text revisions were made to management actions and fluid mineral lease stipulations to ensure consistency across the Wyoming RMPs and consistency with the most recent Governor's Executive Order 2015-4, as recommended by the Governor during the Governor's consistency review.
- Management action SS WL-4022 was revised to replace the requirement for raptor perch deterrents on overhead power lines to constructing power lines in accordance with Avian Power Line Interaction Committee (APLIC) guidance, as perch deterrents have been proven to be ineffective, as recommended during protests and by the Governor during the Governor's consistency review.

**Water**

- The following water management actions were revised, as recommended by the Governor during the Governor's consistency review:
  - Water-1005, a statement on management of Source Water Protection Areas, was added.
  - Water-1010 and Water-1011, identification of the requirement to coordinate with the Wyoming State Engineer's Office, was added.
  - Water-1013 was revised to clarify that a site-specific plan would be required prior to authorization of activities within 500 feet of water resources.

**Wildlife**

- Management action WL-4014 was revised to clarify that power lines will be constructed in accordance with APLIC guidance, as recommended in the protests and by the Governor during the Governor's consistency review.

**2.4.7 Cody****General Changes**

- Goals, objectives, and management actions have been modified to be specific to the Cody Field Office. The Bighorn Basin Proposed RMP Planning Area has been divided into two separate ARMPs at this stage of planning process (one for the Cody Field Office and another for the Worland Field Office) for ease of implementation.

- All referenced record numbers within this section reflect the record number found in the ARMP; see Appendix P, Final Environmental Impact Statement and Record of Decision Crosswalk Tables, for reference to their location in the Final EIS.
- Table 2-6 has been updated to match the management actions in Table 2-3.1 in the ARMP.
- GRSG Habitat Objectives table in the Proposed RMP was Table 2-5 but is Table 2-6 in the ARMP.

#### **Greater Sage-Grouse Seasonal Habitat Objectives (Table 2.6)**

- The introduction to the table was revised to clarify that all BLM use authorizations will contain terms and conditions to meet or progress toward meeting the habitat objectives.
- Footnote 1 was revised to allow for date shifts where supported by credible data, as recommended by the Governor during the Governor's consistency review.
- Corrections were made to metric conversions reported incorrectly in the Proposed RMP.
- Footnote 7 was included, as recommended by the Governor during the Governor's consistency review.
- In order to respond to protests to be more consistent with the Forest Service, the BLM changed the desired condition for the cover attribute perennial grass and forb height indicator to >7".

#### **Mineral Resources**

- Record 2006 has been modified to recognize that the FWS has found "the core area strategy...if implemented by all landowners via regulatory mechanisms, would provide adequate protection for sage-grouse and their habitats in the state" when considering leasing coal in PHMAs under the criteria at 43 CFR 3461.5(o)(1).
- Record 2013 was clarified to ensure that leasing activities in PHMAs comply with GRSG RMP decisions and remain in compliance with laws, regulations, and policy.
- An exception was added to Record 2014 to allow for geophysical exploration within PHMAs when designed to minimize habitat fragmentation and in conformance with timing and distance decisions, except where prohibited or restricted by existing RMP decisions, as recommended by the Governor during the Governor's consistency review.
- Record 2023 was modified to exclude the Oregon Basin Oil and Gas Management Area from expansion of a 2-mile buffer, as recommended by the Governor during the Governor's consistency review.
- Record 2026 was modified to say that nonenergy leasable minerals would be considered in PHMAs, provided they could be completed in compliance with all occupancy, timing, density, and disturbance restrictions.
- Record 2033 allows for CO<sub>2</sub> sequestration projects in consideration of other resource objectives when sequestration is not associated with enhanced oil recovery projects.



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**Fire and Fuels Management**

- Record 3008 was modified to stress that multiple tools for fuels would be considered and analyzed in site-specific NEPA documentation before selecting prescribed fire in PHMAs.

**Vegetation—Grassland and Shrubland Communities**

- Record 4029 has been modified to resolve an editing error.

**Special Status Species (Greater Sage-Grouse)**

- Record 4094 was modified to provide adequate rehabilitation of GRSG habitat.
- Text revisions were made to surface-disturbing and disruptive management actions and fluid mineral lease stipulations to ensure consistency across the Wyoming RMPs and consistency with the most recent Governor's Executive Order 2015-4, as recommended by the Governor during the Governor's consistency review (Records 4107-4112).
- The noise stipulation for Record 4111 was revised for consistency with the other Wyoming RMPs, as recommended by the Governor during the Governor's consistency review.
- The minimum lease size requirement was removed from Record 4107 for consistency among Wyoming RMPs.

**Lands and Realty**

- Record 6016 was revised to clarify when public lands could be disposed of within GRSG habitat, as recommended by the Governor during the Governor's consistency review.
- Management actions were revised to consolidate the activity being managed; ROW-related actions were consolidated in Record 6032.
- Record 6033 was modified to address new ROW actions within PHMAs.

**Recreation**

- Record 6059 was revised to clarify that construction of recreation facilities within GRSG PHMAs must conform with the avoidance and minimization measures or provide a net conservation gain to the species. The revision was recommended by the Governor during the Governor's consistency review.

**Livestock Grazing**

- Compliance with Wyoming Executive Order 2013-3 was moved to Record 6126 to consolidate the livestock grazing management actions and for consistency with the other Wyoming RMPs.

**Special Designations—National Historic Trails and Other Historic Trails**

- Records 7096/7097/7098—Avoid surface-disturbing activities and protect the foreground of Historic Trails (defined in the glossary) up to 2 miles or the visual horizon within contributing portions of the trail, whichever is closer (the SCZ), where setting is an important aspect of the integrity for the trail. The buffer would also apply to areas unevaluated until it is determined if setting is an important aspect of the integrity for the

trail. Use BMPs (Appendix L) to avoid, minimize, or compensate for adverse effects, except within designated utility corridors.

### **Glossary**

- The Core Habitat definition was updated, as recommended by the Governor during the Governor's consistency review.
- The winter concentration area definition was updated, as recommended by the Governor during the Governor's consistency review.

### **Maps**

- Mineral Resources Map—Master Leasing Plans, Absaroka Front Zones, have been included in the map.

### **Appendix B**

- Updates to sage-grouse timing stipulations have been made to resolve the inaccurate dates.
- Records 1041 and 1042 have been added to the appendix, as requested by the EPA.
- Data from the Wyoming Game and Fish have been clarified in all wildlife stipulations.

## **2.4.8 HiLine**

### **General Changes**

- Clarification was added on how the ARMP may be revised (through plan maintenance decisions), based on the effective implementation of the Montana GRSG Habitat Conservation Program.
- The Approved Plan Greater Sage-Grouse Habitat Management Maps have been added to the ARMP and are presented in Appendix A1.
- The remaining Approved Plan Maps have been revised and are presented in Appendix A2.
- Appendix K (FWS Concurrence) was a new appendix added to the ARMP.

### **Approved Resource Management Plan for Greater Sage-Grouse (GRSG)**

- Table 2.1-2 (Acres of GRSG Habitat by County in the Decision Area) was added to show the number of acres in PHMAs, RHMAs, and GHMAs in the Planning Area. Table 2.2-1 (Threats to GRSG in the HiLine Planning Area as Identified by the COT) was added to identify the GRSG populations and the threats identified in the COT Report contained within the HiLine Planning Area. Table 2.2-2 (Key Components of the HiLine ARMP Addressing COT Report Threats) was added to provide a crosswalk as to how the ARMP for the HiLine Planning Area addresses the threats from the COT Report. Table 2.3-1 was added to consolidate goals, objectives, and management actions to manage GRSG habitat.

## 2.4.9 Miles City

### **General Changes**

- Clarification was added on how the ARMP may be revised (through plan maintenance decisions), based on the effective implementation of the Montana GRSG Habitat Conservation Program.
- The term “Travel and Transportation Management (TTM)” was added and defined in the glossary.

### **Approved Resource Management Plan for Greater Sage-Grouse (GRSG)**

- Table 2-2 (Acres of GRSG Habitat by County in the Decision Area) was added to show the number of acres in PHMAs, RHMAs, and GHMAs in the Planning Area. Table 2-3 (Threats to GRSG in the Miles City Planning Area as Identified by the COT) was added to identify the GRSG populations and the threats identified in the COT in the Miles City Planning Area. Table 2-4 (Key Components of the Miles City ARMP Addressing COT Report Threats) was added to provide a crosswalk as to how the ARMP for the Miles City Planning Area addresses the threats from the COT Report. Table 2-5 was added to consolidate goals, objectives, and management actions to manage GRSG habitat.

### **Appendix G Oil and Gas Stipulations**

- Waiver language for the GHMAs NSO stipulation was modified to read “The authorized officer may waive this stipulation if no portion of the leasehold is within 6/10 mile of the perimeter of an active lek.”
- Waiver language for the GHMAs CSU stipulation was also modified to read “The authorized officer may waive this stipulation if no portion of the leasehold is within 2 miles of the perimeter of an active lek.”

### **Appendices**

- The following appendices are not provided in the ARMP but can still be found in the published Proposed RMP/Final EIS:
  - Economics
  - Lands and Realty/Renewable Energy
  - Minerals
  - Public Comment
  - Vegetation
  - Water
- Appendix Q (Biological Opinion) was added to the ARMP.

### 2.4.10 Pompeys Pillar National Monument

#### **General Changes**

- Goals, objectives, and management actions specific to the Pompeys Pillar National Monument are now contained in one ARMP, separate from those applicable to the Billings Field Office.

#### **Appendices**

- Appendix H (Biological Opinion) was added to the ARMP.

### 2.4.11 South Dakota

#### **Approved Resource Management Plan for Greater Sage-Grouse (GRSG)**

- Table 2-2 (Acres of GRSG Habitat by County in the Decision Area) was added to show the number of acres in PHMAs, RHMAs, and GHMAs in the Planning Area. Table 2-3 (Threats to GRSG in the South Dakota Planning Area as Identified by the COT) was added to identify the GRSG populations and the threats identified in the COT Report in the South Dakota Planning Area. Table 2-4 (Key Components of the South Dakota ARMP Addressing COT Report Threats) was added to provide a crosswalk as to how the ARMP for the South Dakota Planning Area addresses the threats from the COT Report. Table 2-5 was added to consolidate goals, objectives, and management actions to manage GRSG habitat.

#### **Paleontology and ROWs Summary in Lands and Realty**

- MD-5 in Special Designations, Fossil Cycad Area of Critical Environmental Concern (ACEC) section. The ACEC was listed as a ROWs exclusion area for general ROWs in the Proposed Plan/Final EIS. In the ARMP, the exclusion restriction for ROWs in Fossil Cycad ACEC was changed to an avoidance area for ROWs associated with construction or maintenance of US Highway 18. This change was made based on concerns expressed during a BLM briefing to the State by the South Dakota State Highway Department. The briefing was part of the Governor's consistency review. During the briefing, the BLM learned of the Highway Department's plans to rebuild the highway bridge that is located in the ACEC. The bridge construction may require use of areas outside of the existing ROW that is held by the Highway Department. Furthermore, future highway maintenance may result in a modification or a new ROW to accommodate repairing the highway or its associated structures. An exclusion area restriction for the highway would not allow any exceptions; this was considered impractical because US Highway 18 is an important transportation route for this area, and an exclusion area restriction may infringe on maintenance of the existing ROW use and potential safety concerns. To protect the ACEC values, other types of ROWs are not allowed. The impacts of an avoidance area ROW restriction was previously evaluated in a separate alternative in the Draft and Proposed RMP.

#### **Greater Sage-Grouse and Oil and Gas Stipulations**

- GHMAs CSU waiver criteria for MA-11 and MA-16 of the Proposed Plan/ Final EIS (which are now MD-11 and MD-16 of the ARMP) was modified to read "The authorized office may waive this stipulation if no portion of the leasehold is within 2 miles of the perimeter of an

active lek.” This change was made to the GRSG Section and Appendix E of the ARMP to provide consistency with other plans.

### **Appendices**

- The Standards for Rangeland Health and Guidelines for Grazing Management Appendix was merged with the BMP Appendix (Appendix J).
- Appendix H (Biological Opinion) is a new appendix added to the ARMP.
- Some appendices were not included in the South Dakota ARMP but can still be found in the published South Dakota Proposed RMP and Final EIS. These appendices are still relevant to the management of public lands in South Dakota but were not included because they provided only background material or because important sections of these appendices are included in the management decision section of the ARMP.

### **2.4.12 Worland**

#### **General Changes**

- Goals, objectives, and management actions have been modified to be specific to the Worland Field Office. The Bighorn Basin Proposed RMP Planning Area has been divided into two separate ARMPs at this stage of the planning process (one for the Cody Field Office and another for the Worland Field Office) for ease of implementation.
- All referenced record numbers within this section reflect the record number found in the ARMP; see Appendix P, Final Environmental Impact Statement and Record of Decision Crosswalk Tables, for reference to their location in the Final EIS.
- Table 2-6 has been updated to match the management actions in Table 2-3.1 in the ARMP.
- The GRSG habitat objectives table in the Proposed RMP was Table 2-5 but is Table 2-6 in the ARMP.

#### **Greater Sage-Grouse Seasonal Habitat Objectives (Table 2.6)**

- The introduction to the table was revised to clarify that all BLM use authorizations will contain terms and conditions to meet or progress toward meeting the habitat objectives.
- Footnote 1 was revised to allow for date shifts where supported by credible data, as recommended by the Governor during the Governor’s consistency review.
- Corrections were made to metric conversions reported incorrectly in the Proposed RMP.
- Footnote 7 was included as a recommended by the Governor during the Governor’s consistency review.
- In order to respond to protests to be more consistent with the Forest Service, the BLM changed the desired condition for the cover attribute perennial grass and forb height indicator to “>7”.

#### **Mineral Resources**

- Record 2005 has been modified to recognize that the FWS has found “the core area strategy...if implemented by all landowners via regulatory mechanisms, would provide

adequate protection for sage-grouse and their habitats in the state” when considering leasing coal in PHMAs under the criteria set for at 43 CFR 3461.5(o)(1).

- Record 2013 was clarified to ensure that leasing activities in PHMAs comply with GRSG RMP decisions and remain in compliance with laws, regulations, and policy.
- An exception was added to Record 2014 to allow for geophysical exploration in PHMAs, when designed to minimize habitat fragmentation and in conformance with timing and distance decisions, except where prohibited or restricted by existing RMP decisions, as recommended by the Governor during the Governor’s consistency review.
- Record 2023 was modified to exclude the Oregon Basin Oil and Gas Management Area from expansion of a 2-mile buffer, to respond to protests and as recommended by the Governor during the Governor’s consistency review.
- Record 2025 was modified to say that nonenergy leasable minerals would be considered in PHMAs, provided they could be completed in compliance with all occupancy, timing, density, and disturbance restrictions.
- Record 2032 allows for CO<sub>2</sub> sequestration projects in consideration of other resource objectives when sequestration is not associated with enhanced oil recovery projects.

#### ***Fire and Fuels Management***

- Record 3008 was modified to stress that multiple tools for fuels would be considered and analyzed in site-specific NEPA documentation before selecting prescribed fire in PHMAs.

#### ***Vegetation—Grassland and Shrubland Communities***

- Record 4029 has been modified to resolve an editing error.

#### ***Special Status Species (Greater Sage-Grouse)***

- Record 4093 was modified to provide adequate rehabilitation of GRSG habitat (Records 4106-4111).
- The noise stipulation for Record 4110 was revised for consistency with the other Wyoming RMPs, as recommended by the Governor during the Governor’s consistency review.
- The minimum lease size requirement was removed from Record 4106 for consistency among Wyoming RMPs.

#### ***Lands and Realty***

- Record 6014 was revised to clarify when public lands could be disposed of within GRSG habitat, as recommended by the Governor during the Governor’s consistency review.
- Management actions were revised to consolidate the activity being managed; ROW-related actions were consolidated in Record 6028.
- Record 6029 was modified to address new ROW actions in PHMAs.

#### ***Recreation***

- Record 6054 was revised to clarify that construction of recreation facilities in GRSG PHMAs must conform with the avoidance and minimization measures or provide a net conservation

gain to the species. The revision was recommended by the Governor during the Governor's consistency review.

### **Livestock Grazing**

- Compliance with Wyoming Executive Order 2013-3 was moved to Record 6198 to consolidate the livestock grazing management actions and for consistency with the other Wyoming RMPs.

### **Special Designations—Regionally Important Prehistoric and Historic Trails**

- Records 7042/7043/7044—Avoid surface-disturbing activities and protect the foreground of Historic Trails (defined in the glossary) up to 2 miles or the visual horizon within contributing portions of the trail, whichever is closer (the Setting Consideration Zone), where setting is an important aspect of the integrity for the trail. The buffer would also apply to areas unevaluated until it is determined if setting is an important aspect of the integrity for the trail. Use BMPs (Appendix L) to avoid, minimize, or compensate for adverse effects, except within designated utility corridors.

### **Glossary**

- The Core Habitat definition was updated, as recommended by the Governor during the Governor's consistency review.
- The winter concentration area definition was updated, as recommended by the Governor during the Governor's consistency review.

### **Maps**

- Mineral Resources Map—Master Leasing Plans, Absaroka Front Zones, have been included in the map.

### **Appendix B**

- Updates to sage-grouse timing stipulations have been made to resolve the inaccurate dates.
- Records 1041 and 1042 have been added to the appendix, as requested by the EPA.
- Data from the Wyoming Game and Fish has been clarified in all wildlife stipulations.

## **2.5 PROTEST RESOLUTION**

The BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by the BLM's planning decisions to protest proposed planning decisions within 30 days of when the notice of availability (NOA) of the Proposed RMP/Final EIS was published in the *Federal Register* (May 29, 2015).

The BLM Director concluded that the BLM had followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed RMPs/Final EISs and Proposed RMPAs/Final EISs. Each protesting party has been notified in writing of the Director's findings and the disposition of their protests. The Director resolved the protests without making significant changes to the Proposed RMPs/Final EISs and Proposed RMPAs/Final EISs, though minor clarifications were made and are summarized in **Section 2.4**. The Director's decisions on the protests

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are summarized in each of the Proposed RMPs/Final EISs and Proposed RMPAs/Final EISs Director's Protest Resolution Reports, which are available on the following BLM website: [http://www.blm.gov/wo/st/en/prog/planning/planning\\_overview/protest\\_resolution/protestreports.html](http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/protestreports.html).

Below are descriptions of the protest resolution process for each of the Rocky Mountain Region's Proposed RMPs/Final EISs and Proposed RMPAs/Final EISs.

### **2.5.1 Lewistown**

For the Lewistown Proposed RMPA/Final EIS, the BLM Director received seven timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed because it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance
- Data and inventory
- Adaptive management
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- ACECs
- Fluid minerals
- Special status species
- Clarifications and clerical errors

### **2.5.2 North Dakota**

For the North Dakota Proposed RMPA/Final EIS, the BLM Director received seven timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed because it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance
- Livestock grazing
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005



- Air quality
- Climate change
- Noise
- ACECs
- Fluid minerals
- Special status species
- Travel and transportation management

### **2.5.3 Northwest Colorado**

For the Northwest Colorado GRSG Proposed RMPA/Final EIS, the BLM Director received 25 timely protest submissions. All of the protesting parties had standing; however, five submissions were dismissed because they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance
- Adaptive management
- Data and inventories
- GRSG habitat objectives
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- ACECs
- Fluid minerals
- Special status species
- Travel and transportation management

### **2.5.4 Wyoming**

For the Wyoming GRSG Proposed RMPA/Final EIS, the BLM Director received 29 timely protest submissions. All of the protesting parties had standing; however, seven submissions were dismissed because they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA

- Density and disturbance
- RDFs
- Data and inventories
- GRSG habitat objectives
- Livestock grazing
- Compliance with the Administrative Procedure Act
- Air quality
- Climate change
- Noise
- ACECs
- Fluid minerals
- Solid and nonenergy leasable minerals
- Special status species
- Lands with wilderness characteristics
- Travel and transportation management
- Clarifications and clerical errors

### **2.5.5 Billings and Pompeys Pillar National Monument**

For the Billings and Pompeys Pillar National Monument Proposed RMP/Final EIS, the BLM Director received 10 timely protest submissions. All of the protesting parties had standing; however, two submissions were dismissed because they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance
- Adaptive management
- Monitoring
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise

- Fluid minerals
- Solid and nonenergy leasable minerals
- Special status species
- Travel and transportation management

### **2.5.6 Bighorn Basin (Cody and Worland Field Offices)**

For the Bighorn Basin Proposed RMP/Final EIS (which includes the Cody and Worland Field Offices), the BLM Director received 23 timely protest submissions. All of the protesting parties had standing; however, five submissions were dismissed because they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance
- RDFs
- Mitigation
- Livestock grazing
- Compliance with the Energy Policy Act of 2005
- Compliance with the Administrative Procedure Act
- ACECs
- Fluid minerals
- Solid and nonenergy leasable minerals
- Lands with wilderness characteristics
- Wild and scenic rivers
- Recreation and visitor services
- Clarifications and clerical errors

### **2.5.7 Buffalo**

For the Buffalo Proposed RMP/Final EIS, the BLM Director received 18 timely protest submissions. All of the protesting parties had standing; however, five submissions were dismissed because they did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance

- RDFs
- GRSG habitat objectives
- Livestock grazing
- Compliance with the Administrative Procedure Act
- Air quality
- Climate change
- Noise
- ACECs
- Fluid minerals
- Special status species
- Lands with wilderness characteristics
- Clarifications and clerical errors

### **2.5.8 HiLine**

For the HiLine Proposed RMP/Final EIS, the BLM Director received 12 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed because it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Adaptive management
- Lands with wilderness characteristics
- Livestock grazing
- Mitigation
- Data and inventories
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise
- Fluid minerals
- Solid and nonenergy leasable minerals
- Special status species
- Cultural resources

- Travel and transportation management
- Environmental justice

### **2.5.9 Miles City**

For the Miles City Proposed RMP/Final EIS, the BLM Director received 13 timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed because it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance
- Adaptive management
- Monitoring
- Livestock grazing
- Mitigation
- Compliance with the Administrative Procedure Act
- Compliance with the Energy Policy Act of 2005
- Air quality
- Climate change
- Noise
- Fluid minerals
- Solid and nonenergy leasable minerals
- Special status species
- Cultural resources
- Lands with wilderness characteristics
- Travel and transportation management

### **2.5.10 South Dakota**

For the South Dakota Proposed RMP/Final EIS, the BLM Director received five timely protest submissions. All of the protesting parties had standing; however, one submission was dismissed because it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid protest issues addressed in the Director's Protest Resolution Report are as follows:

- Compliance with FLPMA
- Compliance with NEPA
- Density and disturbance

- Data and inventories
- Livestock grazing
- Air quality
- Climate change
- Noise
- Special status species
- Travel and transportation management
- Reasonable foreseeable development scenarios

## 2.6 GOVERNOR'S CONSISTENCY REVIEW

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, State and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)).

The general requirement in FLPMA and planning regulations is to coordinate the resource management planning process with plans of other agencies, States, and local governments to the extent consistent with law (see FLPMA Section 202(c)(9) and 43 CFR 1610.3-1(a)) and the respective duties to be consistent with both officially approved or adopted plans (to the extent those plans are consistent with Federal law, or to the maximum extent practical; see 43 CFR 1610.3-2(a)(b)). In accordance with FLPMA, the BLM was aware of and gave consideration to State, local, and tribal land use plans and provided meaningful public involvement throughout the development of the Proposed RMPs/Final EISs and Proposed RMPAs/Final EISs.

The BLM is aware that there are specific State laws and local plans relevant to aspects of public land management that are separate and independent of Federal law. However, the BLM is bound by Federal law; as a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that the BLM's RMPs be consistent with officially approved State and local plans only if those plans are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands.

Where officially approved State and local plans or policies and programs conflict with the purposes, policies, and programs of Federal laws and regulations applicable to public lands, there will be an inconsistency that cannot be resolved. With respect to officially approved State and local policies and programs (as opposed to plans), this consistency provision applies only to the maximum extent practical. While county and Federal planning processes under FLPMA are required to be as integrated and consistent as practical, the Federal agency planning process is not bound by or subject to State or county plans, planning processes, policies, or planning stipulations.

The 60-day Governor's consistency review period ended on July 29, 2015. In the Rocky Mountain Region, the Governors of Colorado, Montana, North Dakota, South Dakota, and Wyoming submitted letters to their respective BLM State Directors, asserting inconsistencies between the BLM's Proposed

RMPs/Final EISs and Proposed RMPAs/Final EISs and their States' or local governments' resource-related plans, policies, and procedures, as well as other concerns that they had with the proposed planning documents.

On August 6, 2015, the BLM State Directors notified the Governors as to whether their recommendations were accepted or rejected. These Governors were then given 30 days to appeal the BLM State Director's decisions to the BLM Director. By September 8, 2015, the BLM Director received appeals from the Governors of North Dakota and South Dakota. The BLM Director reviewed these appeals and responded to them before this ROD was issued. The reasons for the Director's determinations on those appeals will be published in the *Federal Register* after this ROD is issued.

In some instances, modifications to the ARMPs and ARMPAs were addressed based on recommendations submitted to the BLM by the applicable Governors. These modifications were made and are summarized in **Section 2.4**.

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# CHAPTER 3

## ALTERNATIVES

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### 3.1 ALTERNATIVES CONSIDERED

Each of the Rocky Mountain sub-regional planning efforts analyzed in detail a set of alternatives in the draft and final sub-regional EISs. The alternatives were developed to provide direction for resource programs. Their intent was to meet the purpose and need of this effort; namely, to identify and incorporate appropriate management direction in ARMPs and ARMPAs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat.

Each alternative emphasized an altered combination of resource uses, allocations, and restoration measures to address issues and resolve conflicts among uses so that GRSG goals and objectives were met in varying degrees across the alternatives. The action alternatives offered a range of possible management approaches for responding to planning issues and concerns identified through public scoping and to maintain or increase GRSG abundance and distribution in the Planning Area. While the resource management plan goal was the same across alternatives for each sub-region, each alternative contained a discrete set of objectives and management actions constituting a separate RMPA. The goal was met to varying degrees, with the potential for different long-range outcomes and conditions.

In addition to developing alternatives that conserve and enhance GRSG and its habitat, the Draft and Proposed RMPs/Draft and Final EISs for the following BLM offices include alternatives to provide RMP management direction for all BLM program areas: the Bighorn Basin (the RMP revision for the Cody and Worland Field Offices), Billings and Pompeys Pillar National Monument, Buffalo, HiLine, Miles City, and South Dakota.

These documents analyzed the following resources or resource uses:

- Air quality
- Fish and wildlife
- Cultural
- Lands and realty
- Livestock grazing

- Minerals and energy
- Recreation and visitor services
- Soil and water
- Special management area designations (including ACECs)
- Travel and transportation
- Vegetation
- Visual resources
- WHBs
- Land with wilderness characteristics
- Wildland fire management

The relative emphasis given to particular resources and resource uses differed as well, including allowable uses, restoration measures, and specific direction pertaining to individual resource programs. When resources or resource uses are mandated by law, there are typically few or no distinctions between alternatives.

### **3.1.1 Alternatives Considered for the GRSG RMP Amendments**

#### **3.1.1.1 Alternative A—No Action Alternative**

Alternative A meets the CEQ requirement that a no action alternative be considered. This alternative continues current management direction derived from the existing field office and district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities as mineral leasing and development, recreation, utility corridor constructions, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria for identifying site-specific use levels for implementation activities.

This alternative was not selected for the ARMPAs because it did not meet the purpose and need of this plan amendment. Moreover, it did not include necessary changes to existing decisions based on the FWS 2010 listing decision, which identified the inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat. This alternative also did not incorporate the best available science pertaining to GRSG or its habitat.

#### **3.1.1.2 Alternative B— National Technical Team Report Alternative**

Alternative B was based on the conservation measures contained within the NTT Report. The GRSG NTT, comprised of BLM, Forest Service, FWS, USGS, NRCS, and State specialists, completed [A Report on National Greater Sage-Grouse Conservation Measures](#) in December 2011. The charge of the NTT was to identify science-based management considerations for the GRSG (i.e., conservation measures) necessary to promote sustainable GRSG populations, and which focused on the threats (75 FR 13910) in each of

the regional WAFWA MZs. The NTT Report preparers proposed conservation measures based on habitat requirements and other life history aspects of GRSG. It described the scientific basis for the conservation measures proposed within each program area. The report also provided a discussion and emphasized the importance of standardizing monitoring across the WAFWA MZs.

The BLM's Washington Office IM Number 2012-044 directed sub-regional planning to analyze the conservation measures developed by the NTT, as appropriate, through the resource management planning process and NEPA.

Alternative B would exclude ROW development in PHMAs and would avoid development in GHMAs. It would close PHMAs to fluid mineral leasing, mineral material sales, and nonenergy leasable minerals and would recommend withdrawal from locatable mineral entry in all PHMAs. These management actions would reduce surface disturbance in PHMAs and would minimize disturbance in GHMAs, thereby maintaining GRSG habitat.

Management actions for wildfire would focus on suppression in PHMAs and GHMAs, while limiting certain types of fuels treatments. Vegetation management would emphasize sagebrush restoration. Collectively, vegetation and wildfire management would conserve GRSG habitat. Grazing would continue, with similar impacts under Alternative B as under Alternative A. The BMPs proposed in the NTT Report would be included as RDFs as part of Alternative B and are listed in Appendix C, Required Design Features, of each of the attached ARMPAs.

Alternative B was not selected in its entirety for the ARMPAs because most of the conservation measures in the NTT Report, as appropriate and applicable, were applied primarily to PHMAs, and few conservation measures in the report were provided for in GHMAs. As a result, this alternative did not provide adequate conservation in GHMAs.

### **3.1.1.3 Alternative C—Citizen Groups' Recommended Alternative One**

Alternative C was based on an alternative recommended by citizen groups. This alternative emphasizes improving and protecting habitat for GRSG and was applied to all occupied GRSG habitat (PHMAs and GHMAs). Alternative C limited commodity development in areas of occupied GRSG habitat and closed or excluded large portions of the Planning Area to many land uses. This included all PHMAs and GHMAs as being closed to livestock grazing (North Dakota analyzed reduced grazing), recommended for withdrawal from locatable mineral entry, closed to fluid mineral leasing, closed to salable mineral and nonenergy leasable mineral development, and exclusion areas for ROWs.

This alternative was not selected in its entirety for the ARMPAs because it limited the use of public land in PHMAs and GHMAs to such an extent that it did not give adequate accommodation to local needs, customs, and culture. Also, it included proposed actions that are not necessary for GRSG conservation. For example, it closed all allotments to livestock grazing, which, based on best available science, is not required to conserve GRSG and its habitats. Alternative C was also not selected in its entirety because it does not best achieve the mix of multiple uses necessary to fully implement the mandate of FLPMA.

#### **3.1.1.4 Alternative D—Lewistown, North Dakota, and Northwest Colorado’s Preferred Alternative**

Alternative D was identified as the preferred alternative in the Lewiston, North Dakota, and Northwest Colorado Draft EISs. This alternative balanced opportunities to use and develop the Planning Area, as well as conserving, maintaining, and enhancing GRSG and its habitat. Protective measures were applied to GRSG habitat, while allowing for human disturbances with stringent mitigation measures. This alternative represents the mix and variety of management actions, based on the BLM’s analysis and judgment, which best resolve the resource issues and management concerns while meeting laws, regulations, and policies pertaining to BLM management. As a result of public scoping comments, internal review, and cooperating agency coordination on the Draft RMPAs/EISs, this alternative was modified to become the Proposed RMPAs and was analyzed in the Final EISs. The preferred alternatives, with slight variations, became the proposed plans in the Final EISs.

In PHMAs under Alternative D, disturbance in GRSG habitat would be limited by excluding wind and solar energy development, avoiding most ROW development (subject to certain conditions), applying NSO stipulations to fluid mineral development, and closing PHMAs to nonenergy leasable mineral development and mineral material sales. These management actions would protect GRSG habitat, while allowing other activities, subject to conditions. In GHMAs under Alternative D, allocations are less stringent but still aim to protect GRSG habitat (for example, applying moderate constraints and stipulations to fluid minerals in GHMAs).

Under Alternative D, the BLM management would support sagebrush/perennial grass ecosystem restoration, would increase fire suppression in PHMAs and GHMAs, and would manage livestock grazing to maintain or enhance sagebrush and perennial grass ecosystems.

##### *Wyoming’s Alternative D*

Wyoming’s GRSG Proposed RMPA/Final EIS provides opportunities to use and develop the Planning Area while protecting GRSG habitat, based on scoping comments and input from the cooperating agencies involved in the alternatives development process. This alternative would increase the potential for development and resource use, with reduced GRSG habitat protections. Protective measures would be applied to GRSG habitat.

Under this alternative, a surface disturbance cap of 9 percent per 640 acres was considered within GRSG Core Habitat. This alternative was not selected in its entirety as the ARMPAs because the proposed lek buffers were insufficient to provide GRSG undisturbed habitat and prevent habitat fragmentation, although restrictions on density of disturbance could have allowed for some protection of contiguous habitat. Other management could provide protection of GRSG Core Habitat from wind development by reducing habitat loss, fragmentation, and direct impacts from wind turbines and overhead structures.

#### **3.1.1.5 Alternative E**

##### *Wyoming*

The BLM modified the preferred alternative, identified as Alternative E in the Draft RMPA/EIS, and presented as the Proposed RMPAs for managing BLM-administered lands in the Wyoming GRSG Planning Area in the Proposed RMPA/Final EIS. The modifications were based on public comments

received on the Draft RMPA/Draft EIS, internal BLM and Forest Service review, new information and best available science, the need for clarification in the plans, and ongoing coordination with stakeholders across the range of the GRSG. As a result, the Proposed RMPAs provide consistent GRSG habitat management across the range, prioritize development outside of GRSG habitat, and focus on a landscape-scale approach to conserving GRSG habitat.

The Proposed RMPAs provide a layered management approach that offers the highest level of protection for GRSG in the most valuable habitat. Land use allocations in the Proposed RMPAs would limit or eliminate new surface disturbance in PHMAs, while minimizing disturbance in GHMAs. In addition to establishing protective land use allocations, the Proposed RMPAs would implement a suite of management tools, such as disturbance limits, GRSG habitat objectives and monitoring, GRSG habitat desired conditions, mitigation approaches, adaptive management triggers and responses, and lek buffer-distances throughout the range. These overlapping and reinforcing conservation measures will improve GRSG habitat condition and provide clarity and consistency on how the BLM and Forest Service will manage activities in GRSG habitat.

### **3.1.1.6 Environmentally Preferable Alternative**

CEQ regulations require that a ROD state which alternatives were considered to be “environmentally preferable” (40 CFR 1505.2(b)). Question 6A of CEQ’s *40 Most-Asked Questions* regarding CEQ’s NEPA regulations (46 FR 18026) defines that term to ordinarily mean the alternative that best protects, preserves, and enhances historical, cultural, and natural resources.

Under that definition, Alternative C, as presented in each of the sub-regional Proposed RMPAs/Final EISs, is the most environmentally preferable. However, Section 101 of NEPA expresses a continuing policy of the Federal government to “use all practicable means and measures...to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” FLPMA Section 302 requires the BLM to manage public lands for multiple-use and sustained yield, and Section 102(12) of FLPMA declares a policy of the United States that “the public lands be managed in a manner which recognizes the Nation’s need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 USC 21a) as it pertains to the public lands.” For these reasons, Alternative C was not selected (in its entirety) as the sub-regional ARMPAs.

## **3.1.2 Alternatives Considered for the RMP Revisions**

### **3.1.2.1 Alternative A—No Action Alternative**

#### *All RMP Revisions*

Alternative A meets the CEQ requirement that a no action alternative be considered. This alternative continues current management direction derived from the existing field and district office RMPs, as amended. Goals and objectives for resources and resource uses are based on the most recent RMP decisions, along with associated amendments and other management decision documents. Laws, regulations, and BLM policies that supersede RMP decisions would apply.

Goals and objectives for BLM-administered lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities as mineral leasing and development,

recreation, construction of utility corridors, and livestock grazing would also remain the same. The BLM would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation.

This alternative was not selected for the ARMPs because it did not meet the purpose and need of the RMPs. It was not selected in its entirety because the Planning Areas would continue to be managed under outdated RMPs and would not apply the resource protections for all resources deemed necessary to meet the long-term goals and objectives of the RMP; specifically it would not meet those needed to be made to the existing decisions based on the FWS 2010 listing petition decision, which identified the inadequacy of regulatory mechanisms as a significant threat to GRSG and its habitat.

### **3.1.2.2 Alternative B**

#### *Bighorn Basin (which includes the Cody and Worland Field Offices)*

Alternative B emphasizes conserving physical, biological, heritage, and visual resources and lands with wilderness characteristics with constraints on resource uses. This alternative emphasizes improving and protecting habitat for GRSG and defines different restrictions for PHMAs and GHMAs. Alternative B would limit commodity development in areas of occupied GRSG habitat and would close or designate portions of the Planning Area to some land uses. Alternative B conserves large areas of land for physical, biological, and heritage resources, designates 17 ACECs, and places a number of restrictions on motorized vehicle use and mineral development.

Under Alternative B, 3,888,990 acres are available and 314,223 acres are withdrawn or would be recommended for withdrawal or extension of an existing withdrawal from locatable mineral entry. In addition, approximately 2,464,745 acres of Federal mineral estate are closed to oil and gas leasing; the remaining Federal mineral estate is open to oil and gas leasing subject to the following constraints: 405,620 acres are subject to the standard lease form, 335,109 acres are subject to moderate constraints, and 932,551 acres are subject to major constraints. Alternative B does not delineate oil and gas management areas. It makes 1,612,993 acres available for mineral materials disposal, while 2,590,220 acres are closed to mineral materials disposal.

Under Alternative B, a large portion of the Planning Area is closed to livestock grazing (1,984,211 acres), as a result of such factors as crucial winter range for elk and bighorn sheep and GRSG key habitat areas. The remainder of the Planning Area is open to grazing where it does not conflict with other resource uses.

Alternative B was not selected as the ARMP for the Cody and Worland Field Offices because it did not achieve a balance between managing resources and resource uses. It also was not selected as the ARMP because it limited the use of public land in PHMAs and GHMAs to such an extent that it did not give adequate accommodation to local needs, customs, and culture.

#### *Billings and Pompeys Pillar National Monument*

Alternative B, the conservation alternative, emphasizes the conservation of physical, biological, and cultural resources over commodity production, mineral extraction, and motorized recreation. Relative to all alternatives, Alternative B conserves the most land area for physical, biological, and cultural resources. It is the most restrictive to mineral leasing and the most restrictive to renewable energy

development. Alternative B would establish GRSG PHMAs, GHMAs, and RHMAs. Under this alternative only, GRSG PHMAs (BLM-administered surface; 154,500 acres) would be administered as an ACEC.

Compared to the other alternatives, Alternative B would place the greatest emphasis on conserving physical, biological (including GRSG habitat), heritage, and visual resources (56,700 acres of Visual Resource Management [VRM] Class I and 14,377 acres of VRM Class II). Thirteen tracts would be managed for lands with wilderness characteristics (27,507 acres), while placing the most constraints on resource uses. Alternative B would conserve larger areas of land for physical, biological, and heritage resources, would emphasize natural processes for wild horse management, would retain nine ACECs, and would designate three new ACECs (181,175 acres), including one for GRSG habitat.

It also would place additional restrictions on resource uses, such as ROWs (exclusion areas 211,384 acres) and mineral development (39 percent of the Federal mineral estate closed to mineral materials sales and development, 33 percent would be recommended for withdrawal from mineral entry, 33 percent would be closed to coal leasing, and 34 percent would not be available for fluid mineral leasing).

Only 50 acres would be identified for disposal under Alternative B, and one ROW utility corridor would be identified. Renewable energy development would be closed on 80 percent of BLM-administered surface. Livestock grazing would be permitted on 386,092 acres (38,373 acres closed to livestock grazing).

Six special recreation management areas (SRMAs) and five extensive recreation management areas (ERMAs) would be designated, and 34,109 acres would be closed to target shooting for safety and resource concerns. Eleven travel management areas (TMAs) would be established under this alternative; OHV use would be limited to existing roads and trails, except in the 11 TMAs where OHV use is limited to designated routes. The Pryor Mountain Wild Horse Range Herd Management Area would be the smallest under Alternative B 931,153 acres; all surface ownerships). All 14.08 miles of the seven eligible river segments would be recommended as suitable for inclusion in the National Wild and Scenic River System. This would be to protect their outstandingly remarkable values, free-flowing nature, and tentative classification.

While Alternative B represented an approach to land management that addressed most issues, management concerns, and the purpose and need, it was not selected because it did not sufficiently address GRSG habitat concerns and did not quite achieve a balance between managing resources and resource uses. Alternative B also was not selected because it does not best achieve the mix of multiple uses.

### *Buffalo*

Alternative B emphasizes the conservation of physical, biological, heritage, and visual resources and areas with wilderness characteristics with constraints on resource uses. Relative to all alternatives, Alternative B conserves the most land area for physical, biological, and heritage resources; it designates the highest number of ACECs and is the most restrictive to motorized vehicle use and mineral development. Resource uses were restricted or prohibited within 4.0 mile of GRSG leks and winter concentration areas (NSO for fluid minerals).

Mineral resource uses are subject to more extensive constraints under Alternative B than under the other alternatives. The BLM would recommend withdrawals to locatable mineral entry on 618,256 acres (2,686,776 acres open to locatable mineral entry, should these withdrawals occur).

Approximately 2,612,920 acres of Federal fluid mineral estate are closed to fluid mineral leasing. The remaining Federal mineral estate is open for leasing, subject to the following constraints:

- 1,225 acres are subject to standard stipulations only
- 5,685 acres are subject to minor constraints,
- 124,467 acres are subject to moderate constraints
- 642,232 acres are subject to major constraints (Map 14)

Approximately 1,239,723 acres are open to leasing of other minerals, such as phosphates and sodium. Alternative B would open 129,431 acres to salable mineral exploration and development and would close or restrict 3,218,690 acres from salable mineral exploration and development.

Transportation management designations under Alternative B include 625,854 acres closed to motorized vehicle use and 137,126 acres limited to designated roads and trails for motorized vehicle use. In addition, Alternative B seasonally closes 18,259 acres to motorized vehicle use within big game crucial winter range.

Alternative B limits or prohibits livestock grazing where it has been determined to be incompatible with other uses, including areas within 4 miles of the perimeter of occupied or undetermined GRSG leks and winter concentration areas (467,897 acres), as proposed under this alternative.

This alternative was not selected in the ARMP because it does not best achieve the mix of multiple uses. Alternative B did not adequately balance resource protections with resource uses; resource protections were emphasized over sustainable uses.

#### *HiLine*

Compared to the other alternatives, Alternative B would place the greatest emphasis on conserving physical, biological (including GRSG habitat), heritage, and visual resources and lands with wilderness characteristics, while placing the most constraints on resource uses. Compared to the other alternatives, Alternative B would conserve larger areas of land for physical, biological, and heritage resources; it would designate two ACECs for GRSG conservation and would place some additional restrictions on resource uses, such as ROW and mineral development.

Alternative B would exclude wind energy ROWs on 90 percent of the Planning Area, would encourage the use of designated corridors for new ROWs, would close more than 90 percent of Federal minerals to leasing, and would recommend nine new mineral withdrawals. The BLM would not designate any ERMA or SRMA under Alternative B and would manage 2,390,000 as open to livestock grazing. This alternative would maintain contiguous blocks of vegetation and habitat on BLM-administered lands.

Alternative B was not selected because it does not best achieve the mix of multiple uses. Its emphasis was too focused on protecting resources over the multiple use/sustainability approach provided by the other alternatives.



*Miles City*

Compared to the other alternatives, Alternative B would focus on allowing resource uses (e.g., energy and mineral development and other commodity uses), while providing moderate protection to sensitive resources, including GRSG habitat and lands with wilderness characteristics. Alternative B would exclude wind and solar energy from 36 percent of the lands, would close 2 percent of the mineral estate to fluid mineral leasing, and would prescribe an NSO stipulation to 5 percent of the mineral estate that is available for leasing. This alternative would not recommend any areas for locatable mineral estate for withdrawal; it make less than 1 percent unavailable for livestock grazing and would exclude ROWs from 24 percent of the lands.

While offering some protection of sensitive resources, Alternative B was not selected because it did not provide for management of multiple uses in a manner to ensure the sustainability of the natural resources (including GRSG habitat) into the future.

*South Dakota*

Alternative B emphasizes commercial resource development and use while providing adequate levels of resource protection. Alternative B would propose a land transfer for the Fort Meade ACEC, which would reduce its size. This alternative would maintain contiguous blocks of vegetation and habitat on BLM-administered lands. Restrictions on surface-disturbing and disruptive activities in sensitive wildlife habitats would generally be more prohibitive under Alternative B than Alternative A, and the size of protective buffers (e.g., for ROWs) would increase around areas of specific management concern, such as occupied GRSG leks, big game/GRSG wintering areas, and sharp-tailed grouse leks.

Stipulations would be at the minimal level to protect resources. Under Alternative B, 267,445 surface acres (approximately 98 percent) would be available for locatable mineral entry, and only 6,900 surface acres would be recommended for withdrawal from locatable mineral entry. Approximately 1,708,777 acres (99 percent) of BLM-administered mineral estate (subsurface estate) would be available for locatable mineral entry.

The Fort Meade Recreation Area ACEC (6,574 acres) and Fossil Cycad ACEC (320 acres) and subsurface estate (minerals) under Bear Butte (410 acres) would be recommended for withdrawal from locatable mineral entry. Under Alternative B, approximately 30,246 surface acres (11 percent) and 282,296 mineral acres (16 percent) would be open without BLM restrictions, other than standard terms and conditions. The Fort Meade Recreation Area ACEC (6,574 acres) would be closed to exploration and development of leasable minerals. The Fossil Cycad ACEC (320 acres) would be closed to oil and gas leasing.

Alternative B was not selected because it did not provide adequate protections for GRSG. South Dakota Game, Fish, and Parks did not develop Core Areas for GRSG until December 2014. The BLM reviewed these Core Areas and determined that the PHMAs in Alternative B were not adequate. In addition, Alternative B provided limited protection of other resources by leaving more acres open to renewable energy development and general ROWs. Alternative B provides less protection of special status species and less intensive management of recreation than Alternative D. For these reasons Alternative B was not selected.

### 3.1.2.3 Alternative C

#### *Bighorn Basin (which includes the Cody and Worland Field Offices)*

Alternative C emphasizes resource development and use and development and resource extraction, while placing fewer restrictions on protecting habitat for GRSG; it defines different restrictions for PHMAs and GHMAs. Alternative C emphasizes resource uses and reduces constraints on resource uses to protect physical, biological, heritage, and visual resources. Compared to the other alternatives, Alternative C conserves the least land area for physical, biological, and heritage resources, designates the fewest ACECs and SRMAs, and is the least restrictive to motorized vehicle use and energy and mineral development. It was not selected for the ARMP because it does not adequately protect resource values.

Under Alternative C, 4,155,119 acres are available for locatable mineral entry and 48,095 acres are withdrawn or would be recommended for withdrawal or extension of an existing withdrawal. Existing withdrawals and segregations not carried forward are allowed to expire. In addition, approximately 145,836 acres of Federal mineral estate are closed to oil and gas leasing in the Planning Area. The remaining Federal mineral estate in the Planning Area is open to oil and gas leasing, subject to the following constraints: 2,565,742 acres are subject to the standard lease form, 1,334,491 acres are subject to moderate constraints, and 91,956 acres are subject to major constraints. Alternative C delineates oil and gas management areas around intensively developed existing fields; the BLM manages these areas primarily for oil and gas exploration and development, with all other surface uses considered secondary. Alternative C makes 3,859,251 acres available for mineral materials disposal, while 343,962 acres are closed to mineral materials disposal.

Under this alternative, the BLM manages none of the 20 eligible wild and scenic river waterways as suitable for inclusion in the National Wild and Scenic River System and releases these areas for other uses. Alternative C limits motorized vehicle use to designated roads and trails in the 10 wilderness study areas (WSAs).

Under Alternative C, the BLM generally manages physical resources similar to Alternative A but with fewer management requirements and more allowance for the case-by-case application of management actions.

Alternative C did not adequately balance resource protections with resource uses; resource protections were determined to be inadequate for most resources, including GRSG.

#### *Billings and Pompeys Pillar National Monument*

Alternative C emphasizes commodity production, such as forage and minerals, as well as motorized recreation access and services. Under this alternative, constraints on commodity production for protecting sensitive resources would be the least restrictive possible within the limits defined by law, regulation, and BLM policy; this includes the ESA, cultural resource protection laws, and wetland preservation. Under this alternative, constraints to protect sensitive resources would tend to be implemented in specified geographic areas rather than across the entire Planning Area. Generally, the impacts on GRSG would be greater than those described under Alternatives B and D, with less protection to wildlife resources due to smaller buffers and fewer avoidance areas for ROWs and other potential development.

Compared to the other alternatives, Alternative C would have the fewest restraints on commodity production and recreation access. Only 29,714 acres would be managed for VRM Class I and 26,569 acres for VRM Class II. Four tracts (3,379 acres) surrounded by WSA would be managed for lands with wilderness characteristics. Alternative C would conserve the smallest amount of land for physical, biological, and heritage resources; nine ACECs would be retained and two new ACECs would be designated, (67,079 acres); there would be some restrictions on resource uses such as ROWs (exclusion areas 39,491 acres) and mineral development (29 percent of the Federal mineral estate would be closed to mineral materials sales and development, 5 percent would be recommended for withdrawal from mineral entry, 30 percent would be closed to coal leasing, and 7 percent would not be available for fluid mineral leasing).

Under Alternative C, 4,223 acres would be identified for disposal, and two ROW utility corridors would be identified. Renewable energy development would be closed on 19 percent of the BLM-administered surface. Livestock grazing would be permitted on 386,822 acres (28,622 acres closed to livestock grazing). Eleven SRMAs would be designated and 24,049 acres would be closed to target shooting for safety and resource concerns.

Eleven TMAs would be established under Alternative C, and OHV use would be limited to existing roads and trails, except in the 11 TMAs where OHV use would be limited to designated routes. The Pryor Mountain Wild Horse Range Herd Management Area would be the largest under this alternative—44,855 acres, or all surface ownerships. None of the 14.08 miles of eligible river segments would be recommended as suitable for inclusion in the National Wild and Scenic River System, and none would be managed to protect their outstandingly remarkable values, free-flowing nature, and tentative classification.

While Alternative C represented an approach to land management that addressed many of issues, management concerns, and purpose and need, it was not selected because it did not sufficiently address GRSG habitat concerns and did not quite achieve a balance between managing resources and resource uses. Alternative C was also not selected as the ARMP because it does not best achieve the mix of multiple uses.

### *Buffalo*

Similar to the Bighorn Basin, Alternative C for Buffalo also emphasizes resource uses by limiting conservation measures afforded to physical, biological, heritage, and visual resources. Relative to all other alternatives, Alternative C conserves the least land area for physical, biological, and heritage resources and is the least restrictive to motorized vehicle use and mineral development. It is not based on PHMAs and GHMAs; it represents historic GRSG management with a 0.25-mile permanent protective zone around leks (NSO for fluid minerals) and a 2-mile seasonally restricted zone around leks during the breeding and nesting seasons.

Alternative C allows additional recreation facilities in areas where they are supported by recreational use and are consistent with other resource values. Generally, Alternative C does not apply specific limitations on surface disturbance or mineral development and manages recreational areas consistent with other resource values.

Under Alternative C, mineral resource uses are subject to fewer constraints than under the other alternatives. No withdrawals from locatable mineral entry are recommended under Alternative C; all 3,319,535 acres currently open would remain open to locatable mineral entry within the Planning Area. Under Alternative C, the BLM would open all coal lands to exploration and leasing, resulting in zero acres closed to coal exploration and leasing and 4,775,136 acres open to coal exploration and leasing.

The entire Federal fluid mineral estate is open for leasing, subject to the following constraints:

539,499 acres are subject to standard stipulations only, 40,437 acres are subject to minor constraints, 2,472,472 acres are subject to moderate constraints, and 303,601 acres are subject to major constraints. Approximately 4,707,436 acres are open to leasing of other minerals, such as phosphates and sodium. Alternative C would also open 3,290,908 acres to salable mineral exploration and development and would close or restrict 57,213 acres to salable mineral exploration and development.

Livestock grazing under Alternative C is limited or prohibited only in those areas where it is currently prohibited under Alternative A. Livestock grazing is generally managed with less emphasis on providing for other resource values than the other alternatives. For example, Alternative C authorizes permanent increases in forage allocations to livestock grazing as the first priority and wildlife habitat and watershed protection as the second priority.

Alternative C does not designate any ACECs. Lands with wilderness characteristics are managed to follow the management within the surrounding areas and not to emphasize primitive recreational opportunities and natural values.

This alternative was not selected in the ARMP because it does not best achieve the mix of multiple uses. Alternative C did not adequately balance resource protections with resource uses; resource protections were determined to be inadequate for most resources, including GRSG.

#### *HiLine*

Alternative C would place fewer constraints on resource uses than Alternative B but more than Alternative A. Alternative C places moderate protections on land area for physical, biological, and heritage resources, while placing moderate restrictions on ROW and mineral development. Under this alternative, 37 percent of the Planning Area would be open to fluid mineral leasing with NSO stipulations, and 48 percent would be open with conditions on surface use and TLs. The total acres managed as RMAs would decrease, compared to Alternative A. Grazing use allocations would be the same as Alternative A. Alternative C would designate three new ACECs.

Alternative C would not designate SFAs and does not include the additional protections for GRSG habitat that are in Alternative E. This alternative offers a somewhat balanced approach to resource development and the protection of sensitive resources in the Planning Area. However, it does not include the recommendations of cooperating agencies and BLM specialists who provided knowledgeable information to enhance the proposed management actions; therefore, Alternative C was not selected for the ARMP.

#### *Miles City*

Compared to the other alternatives, Alternative C would focus on allowing resource uses (e.g., energy and mineral development and other commodity uses), while providing moderate protection to sensitive

resources (including GRSG habitat and lands with wilderness characteristics). Alternative C would exclude wind and solar energy from 36 percent of the lands. It would close 2 percent of the mineral estate to fluid mineral leasing and would prescribe an NSO stipulation to 5 percent of the mineral estate that is available for leasing. Alternative C would not recommend any areas for locatable mineral estate for withdrawal, would make less than 1 percent unavailable for livestock grazing, and would exclude ROWs from 24 percent of the lands.

While offering some protection of sensitive resources, Alternative C was not selected because it did not provide for management of multiple uses to ensure the sustainability of the natural resources (including GRSG habitat) into the future.

#### *South Dakota*

Alternative C would provide the highest level of resource protection and would place the most constraints on resource uses. While Alternative C would provide the greatest degree of protection of GRSG by closing leasable minerals and recommending a withdrawal of locatable minerals, it protects fewer acres of GRSG habitat because the PHMAs are smaller than Alternative D's PHMAs.

Under Alternative C, 173,663 surface acres (approximately 63 percent) would be available for locatable mineral entry; 100,576 acres (37 percent) would be recommended for withdrawal or extension of an existing withdrawal from locatable mineral entry. Areas recommended for withdrawal would include GRSG PHMAs, Fort Meade and Fossil Cycad ACECs, and Federal minerals under Bear Butte. In contrast to the other alternatives, Alternative C would manage all GRSG PHMAs as an ACEC and would close PHMAs to oil and gas development and exploration. Approximately 100,576 mineral acres (6 percent) would be recommended to be withdrawn from locatable mineral entry, and 1,615,101 acres of mineral estate would be available for locatable mineral entry (94 percent). Under Alternative C, only 26,674 surface acres (10 percent) and 258,650 mineral acres (15 percent) would be open to mineral leasing without BLM restrictions, other than standard terms and conditions.

Alternative C would provide for larger GRSG PHMAs than Alternative B but would provide smaller PHMAs than Alternative D (Alternative A would create no PHMAs). Total PHMAs acres would include 93,266 BLM-administered surface acres (34 percent) and 289,563 acres of Federal minerals subsurface estate (17 percent).

Alternative C was not selected as the ARMP because information from South Dakota Game, Fish, and Parks revealed that larger PHMAs were needed to effectively manage GRSG habitat in a manner consistent with the GRSG Core Areas that were developed by South Dakota Game, Fish and Parks. In addition, various restrictions under Alternative C were beyond the minimum needed to adequately protect resources. These restrictions would have been difficult to implement on landscape with a highly intermingled landownership pattern. Alternative C would have created the highest adverse economic impacts of the alternatives.

#### **3.1.2.4 Alternative D**

##### *Bighorn Basin (includes the Cody and Worland Field Offices)*

Alternative D (the preferred alternative, proposed plan, and now the ARMP) generally increases conservation of physical, biological, heritage, and visual resources compared to current management. Alternative D also emphasizes moderate constraints on resource uses, while applying specific

reclamation and mitigation requirements to reduce impacts on resource values. For example, Alternative D delineates oil and gas management areas to be managed primarily for oil and gas exploration and development, while vegetation resources are managed to maintain contiguous blocks of native plant communities.

Under Alternative D, approximately 292,353 acres of Federal mineral estate are closed to oil and gas leasing in the Planning Area; the rest is open to oil and gas leasing subject to the following constraints: 911,814 acres are subject to the standard lease form, 1,714,685 acres are subject to moderate constraints, and 1,221,142 acres are subject to major constraints. Alternative D delineates oil and gas management areas to be managed primarily for oil and gas exploration and development. Alternative D refines stipulations for protecting big game, geologic features, recreation, and limited reclamation potential soils for oil and gas-related surface disturbances within the Absaroka Front (130,872 acres), Fifteenmile (180,186 acres), and Big Horn Front (379,308 acres) master leasing plan analysis areas.

Alternative D designates more recreation management areas than Alternative A, including SRMAs, recreation management zones, and ERMAs. Other resource uses, such as minerals development, are typically allowed in these areas if the adverse impacts can be mitigated. Under Alternative D, the BLM closes the same acreage in the Planning Area to livestock grazing as Alternative A (5,009 acres). However, unlike Alternative A, grazing is allowed in closed areas as a tool to maintain or improve resource conditions. Alternative D includes 12 ACECs: the nine existing areas and three new ACECs.

Compared to current management (Alternative A), Alternative D generally applies greater restrictions on surface disturbance and disruptive activities to protect sensitive wildlife habitats, including occupied GRSG leks. Alternative D implements the State of Wyoming's Core Area Strategy. For GRSG, constraints on resource uses are greater in PHMAs than outside it. For example, the BLM would apply an NSO stipulation within 0.6 mile of GRSG leks in PHMAs and within 0.25 mile of occupied GRSG leks outside of PHMAs.

Alternative D was selected as the ARMP for the Cody and Worland Field Offices because it best achieves the mix of multiple uses. It balances resource protections, including GRSG, with resource uses to protect resources while achieving sustainable resource development.

Alternative D balances the use and conservation of Planning Area resources. This alternative allows resource use if the activity can be conducted in a manner that protects physical, biological, heritage, and visual resources. Alternative D emphasizes moderate constraints on resource uses (for example, mineral development) and reclamation and mitigation requirements to protect resource values.

In reviewing the alternatives, incorporating current knowledge on existing and reasonably foreseeable development opportunities, and comparing them to the existing decisions (Alternative A), the BLM determined that Alternative D, the Proposed Plan, provided the most balanced management direction. Issues brought forth during scoping coupled with the analysis conducted in the Draft EIS and Final EIS ultimately formed the basis of the ARMP. It achieves a balanced approach of key issues raised during the RMP process so that some areas are emphasized for resource development and others for resource protections.

### *Billings and Pompeys Pillar National Monument*

Alternative D incorporates elements from each of the alternatives to strike a balance between long-term conservation of public land and resources in the Planning Area with commodity production, recreational access, and services. Alternative D also identifies resource management actions in accordance with the multiple-use and sustained yield mandates of FLPMA. The total acreage for the ACECs strikes a balance between the acreages of Alternative B and Alternative C; in some cases the management activities allowed in the ACECs is as restrictive as Alternative B. Alternative D provides a consistent framework for managing GRSG and its habitat on BLM-administered lands. It also provides a layered management approach that offers the highest level of protection for GRSG in the most valuable habitat.

Alternative D would strike a balance between long-term conservation of public land and resources with commodity production, recreation access, and services. Under Alternative D, 29,714 acres would be managed as VRM Class I and 55,883 acres as VRM Class II. Nine tracts in and next to WSAs would be managed for lands with wilderness characteristics (13,653 acres).

Alternative D strikes a balance in conservation of land for physical, biological, and heritage resources; nine ACECs would be retained and two new ACECs would be designated (38,786 acres). Some additional restrictions would be placed on resource uses, such as ROWs (exclusion areas 48,258 acres) and mineral development; 32 percent of the Federal mineral estate would be closed to mineral materials sales and development, 7 percent would be recommended for withdrawal from mineral entry, 25 percent would be closed to coal leasing, and 7 percent would not be available for fluid mineral leasing.

Alternative D would identify 264 acres for disposal and two ROW utility corridors would be identified. Renewable energy development would be closed on 53 percent of the BLM-administered surface. Livestock grazing would be permitted on 386,057 acres (28,387 acres closed to livestock grazing). Nine SRMAs and two ERMAs would be designated, and 31,586 acres would be closed to target shooting for safety and resource concerns. Eleven TMAs would be established under this alternative, and OHV use is limited to existing roads and trails except in the 11 TMAs where OHV use is limited to designated routes. The Pryor Mountain Wild Horse Range Herd Management Area would be 39,944 acres (all surface ownerships).

Two river segments would be managed for and recommended as eligible river segments (3.15 miles) for inclusion in the National Wild and Scenic River System to protect their outstandingly remarkable values, free-flowing nature, and tentative classification.

Alternative D was selected as the ARMP because it represents an approach to land management that addresses the issues, management concerns, and purpose and need, while balancing resources and resource uses. The multitude of resources within the Planning Area, coupled with the requirement to manage for multiple uses and sustained yield, requires developing alternatives across a continuous spectrum from resource conservation to resource development.

### *Buffalo*

Alternative D (the preferred alternative, proposed plan, and now the ARMP) generally allows for resource use if the activity could be conducted to conserve physical, biological, heritage, and visual resources. Under Alternative D, mineral resource uses are subject to less extensive constraints than

under Alternative B but more than either Alternatives A or C. Alternative D would designate the second most lands as SRMAs and ACECs, while emphasizing moderate constraints on resource uses to reduce impacts on resource values. Alternative D places few universal constraints on resource uses and instead allows activities if they meet certain requirements designed to mitigate impacts on resource values. Alternative D would emphasize the use of designated corridors and would manage fewer acres as ROW exclusion for renewable energy development, compared with Alternative B. Lands with wilderness characteristics would be managed to protect wilderness characteristics and emphasize ecosystem health, natural values, and primitive recreation opportunities.

Compared to current management (Alternative A), Alternative D generally applies greater restrictions on surface disturbance and disruptive activities to protect sensitive wildlife habitats, including occupied GRSG leks. Alternative D implements the State of Wyoming's Core Area Strategy. For GRSG, constraints on resource uses are greater in PHMAs than outside it. For example, the BLM would apply an NSO stipulation within 0.6 mile of GRSG leks in PHMAs and within 0.25 mile of occupied GRSG leks outside of PHMAs.

In reviewing the alternatives, incorporating current knowledge on existing and reasonably foreseeable development opportunities, and comparing it to Alternative A, the BLM determined that Alternative D, the Proposed Plan, provided the most balanced management direction. Issues brought forth during scoping, coupled with the analysis conducted in the Draft EIS and Final EIS, ultimately formed the basis of the ARMP. It achieves a balanced approach of key issues raised during the RMP process so that some areas are emphasized for resource development and others for resource protections.

This alternative was selected as the ARMP because it best achieves the mix of multiple uses. Alternative D balances resource protections, including GRSG, with resource uses to protect resources while achieving sustainable resource development.

#### *HiLine*

Compared to Alternatives B, C, and E, Alternative D emphasizes resource uses and reduces constraints on resource uses to protect physical, biological, heritage, and visual resources. Compared to other alternatives, Alternative D conserves the least land area for physical, biological, and heritage resources and is the least restrictive to ROW and mineral development. The BLM would manage slightly fewer acres as open to salable and leasable minerals compared to Alternative A. Alternative D would result in no designated utility corridors, 2 exclusion areas, and 13 avoidance areas. It would have fewer acres managed as open for wind energy ROWs but would also have the least amount of wind energy ROW exclusion area of any alternative (except Alternative A). Alternative D limits motorized vehicle use to designated roads and trails; it would designate 12 areas (97,100 acres) as SRMAs and 2 areas (200 acres) as ERMAs. Grazing use allocations would be the same as Alternative A. The BLM would manage ACECs and lands with wilderness characteristics consistent with other resource objectives. Three new ACECs would be established under this alternative.

This alternative was not selected as the ARMP because it provided too few protections for sensitive resources and sustainability of BLM lands in the Planning Area; therefore, it does not provide an appropriate balance of multiple uses.



### *Miles City*

Compared to the other alternatives, Alternative D provides for the widest range of uses and emphasizes these commodity uses over the protection of sensitive resources (include GRSG habitat and lands with wilderness characteristics). Alternative D would result in the following:

- Exclude wind and solar energy from 4 percent of the lands
- Close 2 percent of the mineral estate to fluid mineral leasing
- Prescribe an NSO stipulation to 2 percent of the mineral estate that is available for leasing
- Not recommend any areas for locatable mineral estate for withdrawal
- Make less than 1 percent unavailable for livestock grazing
- Exclude ROWs from 4 percent of the lands

This alternative was also not selected as the ARMP for the Miles City Field Office because it provided too few protections for sensitive resources and sustainability of BLM-managed lands in the Planning Area; therefore, it does not provide an appropriate balance of multiple uses.

### *South Dakota*

Alternative D (the preferred alternative, proposed plan, and now the ARMP), would provide an intermediate degree of restriction compared to Alternatives B and C, while providing more specific direction to protect resources and manage resource uses. It would emphasize moderate constraints on resource uses, including NSO stipulations on fluid minerals and ROW avoidance areas (e.g., in PHMAs and GHMAs) for major ROWs, with more restrictive exclusion areas in ACECs. Renewable energy ROW exclusion areas would apply in PHMAs and other sensitive habitat areas.

In general, the stipulations under Alternative D would provide an intermediate degree of restriction, compared to Alternatives B and C. Alternative D would provide more specific direction to protect resources and manage resource uses than Alternative A. Under Alternatives B, C, and D, stipulations would not be limited to oil and gas production; they may be applied to other resource uses when needed to protect or manage resources and resource uses.

Under Alternative D, 267,035 surface acres (97 percent) would be available for locatable mineral entry and 7,310 acres (3 percent) would be recommended for withdrawal. Areas recommended for withdrawal include the Fort Meade and Fossil Cycad ACECs and Federal minerals under Bear Butte. Approximately 1,708,367 acres of mineral estate would be available for locatable mineral entry. Under Alternative D, 62,236 surface acres (22 percent) and 500,399 mineral acres (29 percent) would be open to fluid mineral leasing without BLM restrictions other than standard terms and conditions.

Alternative D was selected as the ARMP because the PHMAs in Alternative D would include the same areas as South Dakota Game, Fish, and Parks GRSG Core Areas. South Dakota Game, Fish, and Parks did not develop GRSG Core Areas until late in the RMP planning process, and after reviewing its data, the BLM changed the areas that were included in PHMAs under Alternative D. This would allow more consistent management of GRSG and would protect more habitat. This alternative would apply specific management for all resources and resource uses, while balancing the long-term demand for resource uses throughout the Planning Area. It provides additional protection of special status species throughout

the Planning Area. Overall, this alternative provides the best balance of management actions to meet the long-term demand for resource use while conserving resources.

### **3.1.2.5 Alternative E**

*Bighorn Basin (which includes the Cody and Worland Field Offices)*

Management under Alternative E is the same as under Alternative B, except that it designates GRSG Key Habitat Areas (PHMAs) as an ACEC (1,232,583 acres) for the conservation of GRSG priority habitat. Alternative E manages disturbances (e.g., roads, oil and gas wells, and pipelines) in the GRSG Key Habitat Areas ACEC to not exceed 1 disturbance per 640 acres and to cover less than 3 percent of the total GRSG habitat. It also requires beneficial reclamation and rehabilitation activities that prioritize reestablishment of native vegetation communities in sagebrush steppe communities.

Due to additional management actions associated with the GRSG Key Habitat Areas ACEC, Alternative E exceeds the other alternatives in the amount of land conserved for physical, biological, heritage, and visual resources, the number of designated ACECs (18), and restrictions on minerals, ROWs, and renewable energy development.

Under Alternative E, 2,433,901 acres are available and 1,759,312 acres are recommended for withdrawal or extension of an existing withdrawal from locatable mineral entry. Alternative E does not delineate oil and gas management areas and manages leasable minerals the same as Alternative B. Alternative E makes 1,059,062 acres available for mineral materials disposal, while 3,144,151 acres are closed to mineral materials disposal. Under Alternative E, travel management designations, including areas open to motorized vehicle use and over snow travel, are the same as Alternative B; however, Alternative E prohibits new road construction within 4 miles of active GRSG leks and requires the development of travel management plans that minimize impacts on their habitat. In addition, routes within GRSG Key Habitat Areas would be managed under a seasonal closure restricting motorized use from March 15 through June 30. The scale of this additional ACEC and the limitations on surface disturbances and road development, as well as withdrawal of locatable minerals, closure to mineral materials disposal, ROW development, and renewable energy development it includes result in greater overall resource protection under Alternative E than under the other alternatives.

Alternative E was not selected as the ARMP for the Cody and Worland Field Offices because it did not achieve a balance between managing resources and resource uses. Moreover, it limited the use of public land in PHMAs and GHMAs to such an extent that it did not give adequate accommodation to local needs, customs, and culture.

*HiLine*

Alternative E is similar to Alternative C but also considers the recommendations of cooperating agencies and BLM specialists. Under this alternative, six existing ACECs would be continued and four new ACECs would be designated. About 63 percent of the Planning Area would be exclusion areas for wind energy ROWs. Four existing mineral withdrawals would also be continued (20,058 acres). Alternative E also includes specific protections for GRSG habitat and designates PHMAs, GHMAs, and SFAs. Alternative E would provide a balanced approach to the amount of land conserved for physical, biological, heritage, and visual resources, while placing major constraints on minerals, ROWs, and wind energy development.

This alternative was selected as the ARMP because it provided the most balanced approach to multiple-use and sustainability of BLM-administered lands, while offering a high degree of resource protection in specific areas.

#### *Miles City*

Compared to other alternatives, Alternative E would allow resource uses (e.g., energy and mineral development and other commodity uses) while providing protection to sensitive resources, including GRSG habitat. It contains management actions that provide for the protection of an area for lands with wilderness characteristics. Additional management actions for four areas of lands with wilderness characteristics are designed to benefit and limit impacts by limiting surface disturbance and the intrusion of human presence.

Key components of Alternative E would exclude wind and solar energy from 33 percent of the lands; it would close 2 percent of the mineral estate to fluid mineral leasing and would prescribe an NSO stipulation to 39 percent of the mineral estate that is available for leasing. It would not recommend any areas for locatable mineral estate for withdrawal and would make less than 1 percent unavailable for livestock grazing. It would exclude ROWs from 3 percent of the lands.

Alternative E was selected as the ARMP because it provided the most balanced approach to multiple-use and sustainability of BLM-administered lands while offering a high degree of resource protection in sensitive areas.

#### **3.1.2.6 Alternative F**

##### *Bighorn Basin (which includes the Cody and Worland Field Offices)*

Management under Alternative F is the same as under Alternative D, except that Alternative F designates GRSG Core Areas (PHMAs) as an ACEC for the conservation of GRSG priority habitat. Additionally, Alternative F manages nine areas to maintain their wilderness characteristics; the remaining lands with wilderness characteristics under Alternative F would not be specifically managed to maintain their wilderness characteristics. Management for livestock grazing under Alternative F would be the same as Alternative D, except within the GRSG PHMAs ACEC, where additional restrictions on livestock grazing would incorporate GRSG habitat management objectives. Here, the BLM manages the density of disturbance to not exceed an average of 1 disruptive activity location per 640 acres and cover less than 3 percent of the total GRSG PHMAs. Alternative F delineates the same oil and gas management areas as Alternative D but applies additional restrictions for protecting GRSG where these areas overlap the GRSG PHMAs ACEC.

This alternative was not selected as the ARMP because it limited the use of public land in PHMAs and GHMAs to such an extent that it did not give adequate accommodation to local needs, customs, and culture and therefore did not provide an appropriate balance of multiple uses.

#### **3.1.2.7 Environmentally Preferable Alternative**

CEQ regulations require that a ROD state which alternatives were considered to be “environmentally preferable” (40 CFR 1505.2(b)). Question 6A of CEQ’s 40 Most-Asked Questions regarding NEPA regulations defines that term to mean the alternative that best protects, preserves, and enhances

historic, cultural, and natural resources. Under that definition, the following alternatives, as presented in Proposed RMPs/Final EISs, are the most environmentally preferable:

- Bighorn Basin—Alternative B
- Billings and Pompeys Pillar National Monument—Alternative B
- Buffalo—Alternative B
- HiLine—Alternative B
- Miles City—Alternative B
- South Dakota—Alternative C

NEPA expresses a continuing policy of the Federal government to “use all practicable means and measures...to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans” (Section 101 of NEPA). FLPMA Section 302 requires the BLM to manage the public lands for multiple-use and sustained yield. Section 102(12) of FLPMA declares a policy of the United States that “the public lands be managed in a manner which recognizes the Nation’s need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 USC, Section 21a) as it pertains to the public lands.” For these reasons, the alternatives described as being environmentally preferable were not selected in their entirety as the ARMPs.

### **3.2 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL**

The alternatives listed below by sub-region were considered but were not carried forward for detailed analysis because of one or more of the following reasons:

- They would not meet the requirements of FLPMA or other existing laws and regulations
- They did not meet the purpose and need
- The alternative was already captured within the range of alternative analyzed in the EIS
- They were already part of an existing plan, policy, or administrative function
- They did not fall within the limits of the planning criteria

For additional rationale as to why each of the alternatives listed below by sub-region were not carried forward for detailed analysis, refer to Chapter 2 of each of the sub-regional Proposed RMPs and RMPAs/Final EISs.

#### **Lewistown**

- NTT conservation measures not applicable to the Lewistown Field Office
- Elimination of livestock grazing from all BLM-administered lands

#### **North Dakota**

- NTT conservation measures not applicable to North Dakota

- Elimination of livestock grazing from BLM-administered lands

#### **Northwest Colorado**

- ACEC proposal applied to all GRSG designated habitat
- Garfield County Alternative

#### **Wyoming**

- Alternatives that include stipulations for protection of GRSG habitat from oil shale resources
- Closure of GRSG habitat to OHV use
- FWS listing with associated conservation measures
- Designation of all GRSG general habitat as ACECs or Forest Service special interest areas

#### **Bighorn Basin**

- Recommend mineral withdrawals across the Planning Area
- Suspend or eliminate all existing Federal minerals leasing
- Require directional drilling
- Remove all stipulations and restrictions from oil and gas leases
- Phased oil and gas development
- Phased oil and gas leasing
- No new oil and gas leasing
- Require reinjection of all produced water
- Emphasize the protection of resources by removing human uses
- Manage herd areas for wild horses within the original herd area boundaries
- Designate a wild horse or burro range
- Prohibit or exclude wind energy development, oil and gas leasing, OHV use, and livestock grazing
- Provide no net gain in BLM-administered public lands
- Limit travel to only existing roads and trails
- Permit no livestock grazing
- Allow no net loss of grazing animal unit months
- Close all big game crucial winter range to livestock grazing
- Open OHV “play” areas
- Remove existing ACECs
- Recommend withdrawals for WSAs

**Billings and Pompeys Pillar National Monument**

- Eliminating livestock grazing from BLM-administered lands
- OHV rock crawl area proposed in Petroglyph Canyon ACEC
- Steamboat Butte and Sykes Ridge ACEC proposals
- Conservation groups alternative

**Buffalo**

- Preserve minimum instream flows
- Recommend mineral withdrawal across the Planning Area
- Suspend or eliminate all existing Federal fluid mineral leasing
- Close to fluid mineral leasing
- Phase fluid mineral development
- Prohibit surface water disposal of produced water
- Require produced water to be returned to aquifers
- Require produced water to be put to beneficial use
- Emphasize the protection of resources by removing human uses
- Apply the NTT conservation measures to priority habitat
- Permit no development within occupied GRSG habitat
- Clearly mark the boundaries of public lands
- Close all public lands to motorized vehicles or limit travel to existing roads and trails only
- Permit no livestock grazing
- Permit no net loss of grazing animal unit months
- Allow new WSAs

**HiLine**

- Conservation groups alternative
- Master leasing plan
- No bison grazing
- No livestock grazing/reduced grazing
- Use a backcountry conservation area designation

**Miles City**

- Reevaluate WSA recommendations
- Consider alternative management for nonenergy leasable minerals
- Consider alternative management for geothermal resources

- Designate major transportation and energy corridors
- Theodore Roosevelt Partnership Sportsmen Area Alternative
- No livestock grazing alternative
- Conservation groups alternative

***South Dakota***

- Conservation groups alternative
- Develop a CSU for GRSG PHMAs
- Western Heritage alternative
- Eliminate or reduce livestock grazing

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# CHAPTER 4

## MANAGEMENT CONSIDERATIONS—RATIONALE FOR ARMPs (PLAN REVISIONS)

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**Section 1.8** of this ROD has a discussion of management considerations (rationale for approving the RMP decisions) for the ARMPAs and the GRSG habitat management decisions in the ARMPs (plan revisions).

As mentioned previously, this ROD is also approving RMP decisions for several other BLM resources and resource uses, aside from GRSG habitat management for the RMP revisions (the Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument, South Dakota, and Worland ARMPs). **Table 4-1** is a summary of the major resources and resource uses management decisions contained in the ARMPs as compared to prior RMP management decisions.

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the ARMPs Compared to Prior RMP Management Decisions**

Resource or Resource Use	Management Decisions Prior to the ARMP	Management Decisions Contained in the ARMP
<b>Bighorn Basin (Cody and Worland Field Offices)</b>		
Air	Analyze activities with expected impacts on air resources. Modeling may be performed on a case-by-case basis.	The ARMP would provide additional air emission control measures and strategies within the BLM’s regulatory authority and in consultation with stakeholders if proposed or committed measures are insufficient to achieve air quality goals and objectives. Quantitative air quality analyses (i.e., modeling) for project-specific developments may be required on a case-by-case basis in consultation with state, Federal, and tribal entities to determine the potential

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

Resource or Resource Use	Management Decisions Prior to the ARMP	Management Decisions Contained in the ARMP
		impacts of proposed air emissions. Modeling may be performed to determine the effectiveness of mitigation strategies.
Cultural Resources	Surface disturbance is restricted on or near cultural sites on a case-by-case basis.	CSU up to 3 miles where setting is an important aspect of the integrity for the cultural site.
Fire Ecology and Management	Use wildland fires (wildfires managed for resource benefit and prescribed fires) to restore fire-adapted ecosystems and reduce hazardous fuels. Use mechanical, chemical, and biological treatments across the landscape as needed to restore vegetative diversity and reduce the risk of unnatural fire within those ecosystems.	Use wildland fires (wildfires managed for resource benefit and prescribed fires) and other vegetation treatments to restore fire-adapted ecosystems, reduce hazardous fuels, and accomplish resource management objectives. Using wildland fire for these purposes will comply with the restrictions associated with GRSG habitat management.
Fish and Wildlife	Apply restrictions to sensitive, special status, and threatened and endangered species habitat. See resources uses for applicable allocation decisions that protect these areas.	The ARMP would provide more specific direction to protect resources and manage resource uses than prior management. Under the ARMP, stipulations would not be limited to oil and gas production; they may be applied to other resource uses as applicable and when needed to protect or manage resources and resource uses. Some discretionary seasonal restrictions would be relaxed for big game species in Oil and Gas Management Areas. Management in master leasing plan analysis areas would protect wildlife habitat.
Fluid Minerals	1,354,593 acres open with standard lease terms; 889,435 acres open with major constraints 1,633,204 acres open with moderate constraints. Fluid minerals are closed for leasing on 260,792 acres	911,814 acres open with standard lease terms; 1,221,142 acres open with major constraints; 1,714,685 acres open with moderate constraints. Fluid minerals closed for leasing on 292,353 acres; 348,617 acres open where some discretionary seasonal restrictions would be relaxed for big game species
Forest and Woodland Products	Allow pre-commercial thinning in overstocked areas and regenerated timber sale areas when trees in those areas reach the 20- to 30-year age class.	Allow pre-commercial thinning when trees reach the 10- to 20-year age class or when the regenerated trees are 5- to 15-feet tall.

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
	In important seasonal wildlife habitat areas, generally restrict clear cuts to no more than 300 yards in any direction, unless a long-term benefit to wildlife habitat would result.	In important seasonal wildlife habitat areas, generally restrict clear cuts to no more than 300 yards in any direction, unless a long-term benefit to wildlife habitat would result. In addition, generally restrict clear cuts to no more than 100 acres unless salvaging dead or dying timber.
Lands and Realty	115,905 acres are available for disposal; 3,071,909 will be retained under Federal ownership; 940,943 acres would be managed as ROW avoidance areas; 61,147 acres would be managed as ROW exclusion areas. Existing ROW corridors are identified	66,363 acres are available for disposal; 3,071,909 will be retained under Federal ownership; 2,408,662 acres would be managed as ROW avoidance areas; 40,802 acres would be managed as ROW exclusion areas. No new ROW corridors are designated. New authorizations in existing corridors would be subject to management consistent with other resource objectives
Livestock Grazing	The BLM allows livestock grazing on all but 5,009 acres of the Planning Area.	Same as prior management direction.
Mineral Materials	228,649 acres are closed to mineral material sales.	374,894 acres are closed to mineral material sales.
Recreation	Seven areas managed as SRMAs and two areas managed as ERMAs.	Thirteen areas managed as SRMAs and five areas managed as ERMAs.
Renewable Energy	Renewable energy ROWs would be authorized on a case-by-case basis.	Renewable energy ROWs would be avoided on 1,500,395 acres and excluded on 372,110 acres.
Soils and Water	<p>Soils—Apply guidelines and appropriate measures to all management actions (including reclamation) affecting soil health to decrease erosion and sedimentation, to achieve and maintain stability, and to support the hydrologic cycle by providing for water capture, storage, and release.</p> <p>Water—Prohibit surface-disturbing activities within 500 feet of surface water and riparian/wetland areas, except when such activities are necessary and when their impacts can be mitigated.</p>	<p>Soils—Same as prior management direction except require reclamation plans for all authorized surface-disturbing activities.</p> <p>Water—In addition to prohibiting surface-disturbing activities within 500 feet of surface water and riparian/wetland areas, the ARMP would also avoid surface-disturbing activities within ¼ mile of any waters rated by the Wyoming Game and Fish Department as Blue Ribbon or Red Ribbon (trout streams of national or statewide importance), and would avoid activities</p>

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

Resource or Resource Use	Management Decisions Prior to the ARMP	Management Decisions Contained in the ARMP
		that could negatively affect water resources within a ¼ mile around public water supply wells, and ¼ mile on both sides of a river or stream, for 10 miles upstream of the public water supply intake.
Solid Minerals	72,861 acres recommended for locatable mineral withdrawal.  Coal—Consider interest in exploration for, or leasing of, any Federal coal on a case-by-case basis. If an application for a Federal coal lease is received, conduct an appropriate land use and environmental analysis, including the coal screening process, to determine whether the area proposed for leasing is acceptable for coal development and leasing (43 CFR 3425). If public lands are determined to be acceptable for further consideration for coal leasing, amend the RMP as necessary.	83,321 acres recommended for locatable mineral withdrawal.  Coal— At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
Special Designations	Manage 1,638 acres as the Nez Perce National Historic Trail Management Corridor and 27,317 acres eligible for Wild and Scenic River under National Wild and Scenic River System. Retain nine ACECs.	Manage 15,816 acres as the Nez Perce National Historic Trail Management Corridor and no acres eligible for Wild and Scenic River under the National Wild and Scenic Rivers System. Retain nine ACECs and designate three additional ACECs, for a total of twelve in the Planning Area.
Travel and Transportation Management	1,311 acres managed as open to OHV use; 3,112,973 acres managed as limited to OHV use (limited to existing and designated roads and trails); 68,115 acres managed as closed to OHV use.	5,885 acres managed as open to OHV use; 3,115,500 acres managed as limited to OHV use (limited to existing and designated roads and trails); 61,010 acres managed as closed to OHV use.
Vegetation	Manage 23,957 acres of riparian/wetlands towards proper functioning conditions.	Same as prior management direction.
Visual Resources Management	7141,127 acres managed as VRM Class I; 340,784 acres managed as VRM Class II; 890,482 acres managed as VRM Class III; 1,815,043 acres managed as VRM Class IV.	141,127 acres managed as VRM Class I; 731,812 acres managed as VRM Class II; 738,531 acres managed as VRM Class III; 1,580,470 acres managed as VRM Class IV.

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Wild Horse and Burro Management	Manage the Fifteenmile Herd Management Area for an initial AML of 70 to 160 wild horses, not counting foals, in an attempt to maintain a population of 100 adult wild horses adjusted as necessary based upon monitoring. Manage the McCullough Peaks Herd Management Area for an initial AML of 70 to 140 wild horses, not counting foals, in an attempt to maintain a population of 100 adult wild horses adjusted as necessary based upon monitoring.	Same as prior management direction.
Wilderness Characteristics	0 acres managed for lands with wilderness characteristics.	Same as prior management direction.
<b>Billings and Pompeys Pillar National Monument</b>		
Air	The BLM-authorized activities would stipulate requirements to reduce fugitive dust emissions from construction and sites with surface disturbance and from travel on high-traffic unpaved roads. Engine and stationary source emission control requirements would need to ensure compliance with NAAQS, MAAQS, WAAQS, and the Montana SIP.	Same as prior management decisions.
Cultural Resources	Surface disturbance is restricted on 4,847 acres on or near cultural sites.	Surface disturbance is restricted on 14,988 acres on or near cultural sites.
Fire Ecology and Management	Prescribed and non-prescribed fire fuels treatments would treat 6,280 acres over a 10-year period. Over the 20-year life of this plan, approximately 20,806 acres of forest and woodlands would be available for potential treatment, with an estimated 840 acres available for the sale of wood products, 160 acres of crested wheatgrass in rangelands would be treated, and 366 to 5,548 acres of invasive species and noxious weeds would be treated per year.	Prescribed and non-prescribed fire fuels treatments would treat 21,700 acres over a 10-year period. Over the 20-year life of this plan, approximately 18,375 acres of forest and woodlands would be available for potential treatment, with an estimated 1,780 acres available for the sale of wood products, and 12,000 acres of crested wheatgrass would be treated; 400 to 2,000 acres of invasive species and noxious weeds would be treated per year.
Fish and Wildlife	Apply restrictions to sensitive, special status, and threatened and endangered species habitat. See resources uses for applicable allocation decisions that protect these areas.	The ARMP would provide more specific direction to protect resources and manage resource uses than prior management. Under the ARMP, additional protections would not be

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
		limited to oil and gas production; they may be applied to other resource uses when needed to protect or manage resources and resource uses. Also, the ARMP provides more NSO/CSU restrictions for the protection of fish and wildlife habitats.
Fluid Minerals	237,336 acres open with standard lease terms; 369,048 acres open with major and moderate constraints. Fluid minerals are not available for leasing on 61,100 acres.	44,142 acres open with standard lease terms; 835,720 acres open with major and moderate constraints. Fluid minerals are not available for leasing on 60,359 acres.
Lands and Realty	7,463 acres available for disposal, with an additional 2,088 acres identified for further study. ROW exclusion and avoidance areas encompass 68,217 acres of the BLM-administered surface (ROW exclusion 44,014 acres; ROW avoidance 24,203 acres). One designated ROW corridor.	264 acres available for disposal; ROW exclusion and avoidance areas encompass 397,616 acres of the BLM-administered surface (ROW exclusion 48,258 acres, ROW avoidance 378,958 acres). There are two designated ROW corridors.
Livestock Grazing	Livestock grazing would be permitted on 387,057 acres, and 37,408 acres would be closed to livestock grazing.	Livestock grazing would be permitted on 387,057 acres, and 28,387 acres would be closed to livestock grazing.
Locatable Minerals	1,855 acres are withdrawn from mineral entry, and an additional 39,709 acres are recommended for closure to the mining laws.	1,855 acres are withdrawn from mineral entry, and an additional 52,906 acres are recommended for closure to the mining laws.
Mineral Materials	44,583 acres are closed to mineral material sales.	281,597 acres are closed to mineral material sales.
Recreation	Two areas managed as SRMAs and seven areas managed as ERMAs.	Nine areas managed as SRMAs and two areas managed as ERMAs.
Renewable Energy	The BLM responds to proposals for renewable wind energy ROWs within the decision area on a case-by-case basis. The area of the BLM-administered surface closed to renewable wind energy ROWs is 47,496 acres.	BLM-administered surface open to renewable wind energy ROWs, but still subject to terms and conditions identified during the ROW application process, is 1,512 acres. The area of BLM-administered surface closed to renewable wind energy ROWs is 231,775 acres.
Soil and Water	Surface disturbance is restricted on 33,908 acres of highly erosive soils and surface disturbance is restricted on 10,114 acres in riparian areas and floodplains.	Surface disturbance is restricted on 169,719 acres of sensitive soils and rock outcrops, 7,563 acres in riparian areas and floodplains, and 2,068 acres in fishery habitats.

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Solid Minerals	Coal is closed to leasing on 26,131 acres.	At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).  Coal is closed to leasing on 225,655 acres.
Special Designations	Nine ACECs would be retained, totaling 37,896 acres. Special designations also include the Pryor Mountain Wild Horse Range (37,494 acres) and the Lewis and Clark and Nez Perce National Historic Trails. Under Alternative A, the seven eligible river segments (14.08 miles) would be managed to protect their outstandingly remarkable values and free-flowing nature.	Nine ACECs would be retained and two new ACECs would be designated, totaling 38,786 acres. Special designations also include the Pryor Mountain Wild Horse Range (39,944 acres), four WSAs (28,703 acres), and the Lewis and Clark and Nez Perce National Historic Trails. Two river segments (3.15 miles) are recommended as suitable for inclusion in the National Wild and Scenic River System.
Travel Management	TMAs are not delineated in the decision area. OHV use would be limited to existing roads and trails in the Planning Area; however, motorized travel in Pryors, Acton, Shepherd Ah-Nei, and Horsethief would be restricted to designated routes. South Hills would be designated open for motorcycle use only.	TMAs are delineated in the decision area. OHV use is limited to existing roads and trails, except in the 11 TMAs where OHV use is limited to designated routes. South Hills would be designated open for motorcycle use only.
Vegetation	Some restrictions for certain activities in sensitive vegetation areas (e.g., riparian and wetlands).	The ARMP would increase the amount of restrictions on uses within sensitive vegetation areas (e.g., riparian and wetlands). Priority areas for vegetation treatments (e.g., weeds and conifer removal) are identified.
Visual Resources Management	56,700 acres of VRM Class I; 13,507 acres of VRM Class II; 391,113 acres of VRM Class III; and 816 acres of VRM Class IV.	29,714 acres of VRM Class I; 55,883 acres of VRM Class II; 349,441 acres of VRM Class III; and 0 acres of VRM Class IV.

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**Summary of Major Resources and Resource Uses Management Decisions Contained in the ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Wild Horse and Burro Management	Herd Management Areas consists of 24,595 acres of the BLM-administered surface.	Herd Management Areas consists of 27,094 acres of the BLM-administered surface.
Wilderness Characteristics	0 acres would be managed for wilderness characteristics.	13,653 acres would be managed for wilderness characteristics.
<b>Buffalo</b>		
Air	Analyze activities with expected impacts on air resources. Modeling may be performed on a case-by-case basis.	Requires quantitative modeling of industrial activities expected to result in emissions that may approach or exceed ambient air quality standards, in consultation with the Wyoming DEQ, to determine the potential impacts of proposed emission sources and potential mitigation strategies.
Cultural Resources	NSO on 19,971 acres on or near cultural sites to protect their setting and integrity.	CSU on 179,189 acres and NSO on 7,289 acres on or near cultural sites to protect their setting and integrity.
Fire Ecology and Management	14,000 acres available for planned ignitions.	Same as prior management decisions.
Fish and Wildlife	Provides sufficient habitat for fish and wildlife.	Alternative D emphasizes protection of fish and wildlife resources by applying moderate resource constraints and defining resource objectives.
Fluid Minerals	146,126 acres open with standard lease terms; 782,501 acres open with moderate constraints; 85,548 acres open with major constraints. Fluid minerals are closed for leasing on 2,346,307 acres.	135,909 acres open with standard lease terms; 2,516,826 acres open with moderate constraints; 556,592 acres open with major constraints. Fluid minerals are closed for leasing on 72,276 acres.
Forest and Woodland Products	Balances forest and woodland health with other resource uses, such as commercial timber production. Offers 9 million board feet of saw timber and 1 million board feet of minor green forest products from BLM-administered forestlands over a 10-year period and limits individual clear-cuts to less than 20 acres.	Offers commodity production while managing for long-term ecological health of forestland. Managed to remain within ecologically sustainable limits while maximizing economic return. The designing/shaping of forest management areas is conducted in accordance with other resource values and within the limits of the Wyoming Forestry BMPs.
Lands and Realty	Acres avoided and excluded from ROWs—Not applicable under prior management direction; 351,133 acres would be designated as utility corridors;	321,149 acres would be managed as ROW avoidance areas; 79,777 acres would be managed as ROW exclusion areas; 29,126 acres would be designated



**Table 4-1**  
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**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
	108,243 acres available for disposal and 673,859 acres identified for retention.	as major utility corridors; 120,722 acres available for disposal and 661,380 acres identified for retention.
Livestock Grazing	772,102 acres are available for livestock grazing; 10,000 acres are incompatible for livestock grazing.	772,102 acres are available for livestock grazing; 9,992 acres are incompatible for livestock grazing.
Mineral Materials	3,319,248 acres open to mineral material development. Mineral material sales prohibited within the three WSAs' 28,931 acres.	2,725,060 acres open to mineral material development; 623,061 acres closed to mineral material development.
Recreation	No areas designated as SRMAs or ERMAs. Planning area generally managed as one ERMA, with specific areas of recreation emphasis.	Seven areas managed as SRMAs, totaling 54,160 acres. Eight areas managed as ERMAs, totaling 446,301 acres.
Renewable Energy	Acres avoided and excluded from renewable energy ROWs—Not applicable under prior management direction.	Renewable energy ROWs would be avoided on 374,518 acres and excluded on 352,068 acres.
Soils and Water	Limits surface-disturbing activities for the conservation of soil and water resources.	Land use activities to be considered where soil and water resource objectives can be met.
Solid Minerals	No areas recommended for locatable mineral withdrawal; 1,685,947 acres acceptable for further consideration of coal leasing.	82,691 acres recommended for locatable mineral withdrawal; 1,685,947 acres acceptable for further consideration of coal leasing. For any new coal lease application, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods, pursuant to 43 CFR 3461.5. Priority habitat (core population areas and core population connectivity corridors) is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
Special Designations	No ACECs, byways, or wild and scenic rivers; three WSAs, totaling 28,931 acres; one eligible wild and scenic river, totaling 262,664 acres.	Two ACECs, totaling 2,847 acres; no byways or wild and scenic rivers; three WSAs, totaling 28,931 acres; one eligible wild and scenic river, totaling 262,664 acres.
Travel and Transportation Management	3,650 acres closed to OHV use; 37,646 acres seasonally closed to OHV use; 737,166 acres limited to designated roads and trails.	37,389 acres closed to OHV use; 81,948 acres seasonally closed to OHV use; 661,726 acres limited to designated roads and trails.

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Vegetation	Vegetation treatments are designed to meet overall resource management objectives, consistent with the policy to protect or improve biodiversity and water quality.	Allows for resource uses where activities can be conducted that conserve vegetation and other resource values to meet Healthy Rangeland Standards and resource objectives.
Visual Resources Management	0 acres managed as VRM Class I; 127,594 acres managed as VRM Class II; 65,583 acres managed as VRM Class III; 559,674 acres managed as VRM Class IV.	0 acres managed as VRM Class I; 112,329 acres managed as VRM Class II; 379,429 acres managed as VRM Class III; 260,238 acres managed as VRM Class IV.
Wild Horse and Burro Management	Resource not present.	Resource not present.
Wilderness Characteristics	0 acres managed for lands with wilderness characteristics.	One area of 6,864 acres would be managed for lands with wilderness characteristics.
<b>HiLine</b>		
Air	Actions authorized on BLM-administered land would comply with the Clean Air Act requirements, including the State of Montana Air Quality Implementation Plan, through the use of BMPs and the Air Resource Management Plan. Prescribed burns would be managed to comply with Montana DEQ smoke management rules and regulations.	Same as prior management decisions.
Cultural Resources	The Little Rocky Mountain Traditional Cultural Property (30,648 acres) is open to most resource uses. The Sweet Grass Hills Traditional Cultural Property (7,718 acres) is open to most resources uses but is withdrawn from locatable mineral entry and is open to oil and gas leasing, subject to NSO.	The Little Rocky Mountain Traditional Cultural Property (30,648 acres) is open to oil and gas leasing, subject to NSO (5,936 acres), and closed (32,166 acres) avoidance to ROWs, exclusion to wind energy ROWs, and closed (32,058 acre) to leasable and salable minerals. The Sweet Grass Hills Traditional Cultural Property (7,718 acres) is closed to oil and gas leasing, avoidance to ROWs, exclusion to wind energy ROWs, closed to leasable and salable mineral development, and recommended for withdrawal.
Fish and Wildlife	Apply restrictions to sensitive, special status, and threatened and endangered species habitat. See resource uses for applicable allocation decisions that protect	Species-specific direction to protect resources and manage resource uses is provided. Additional protections would not be limited to oil and gas production;

**Table 4-1**  
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**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
	these areas.	they may be applied to other resource uses when needed to protect or manage resources. Additional NSO/CSU restrictions to protect fish and wildlife habitats are applied across ACECs and will provide additional protections for fish and wildlife habitat.
Fire Ecology and Management	2,244,429 acres managed to meet Category B objectives; 193,046 acres managed to meet Category C objectives.	1,390,208 acres managed to meet Category B objectives; 1,047,266 acres managed to meet Category C objectives.
Fluid Minerals	282,062 acres of Federal minerals would be open to leasing subject to major constraints (NSO); 2,649,241 acres would be open to leasing, subject to minor constraints (TLS) and CSU, and 457,849 acres would be open to leasing, subject to standard lease terms only. Approximately 102,298 acres of Federal minerals would be closed to leasing.	1,711,378 acres of Federal minerals would be open to leasing, subject to major constraints (NSO); 1,460,096 acres would be open to leasing subject to minor constraints (TLS and CSU); and 167,273 acres would be open to leasing, subject to standard lease terms only. Approximately 152,702 acres of Federal minerals would be closed to leasing.
Forest and Woodland Products	The ASQ would not exceed 350 million board feet per year.	The Probable Sale Quantity (PSQ) of timber is 664 million board feet per year, along with 4,000 tons of biomass per year.
Lands and Realty	90,114 acres would be managed as Category 2 and 3 for disposal. One 4.5-mile-wide designated utility corridor, two ROW exclusion areas, and two ROW avoidance areas.	297,559 acres would be managed as Category 1 retention; 2,126,465 acres would be managed as Category 2 retention/disposal; 13,541 acres would be managed as category 3 disposal.  Five designated utility corridors (each one mile wide), two ROW exclusion areas, and nineteen ROW avoidance areas.
Livestock Grazing	Livestock would continue to be allocated approximately 386,600 AUMs of forage each year. Approximately 2,390,000 acres would be open to livestock grazing, and 47,000 acres would be closed to livestock grazing, except as needed for resource management.	Same as prior management decisions.
Mineral Materials	74,506 acres would be closed to mineral material development.	1,666,720 acres would be closed to mineral material development.

**Table 4-1  
Summary of Major Resources and Resource Uses Management Decisions Contained in the  
ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Paleontological Resources	Potential impacts on paleontological resources will be considered on an individual basis.	Paleontological assessments will be completed for all projects proposed on Federal lands.
Recreation	Five areas managed as SRMAs and three areas managed as ERMAs. Manage 70 existing recreation sites and facilities.	Two areas managed as SRMAs and ten areas managed as ERMAs. Manage 49 recreation sites and facilities.
Renewable Energy	2,248,366 acres would be open to wind energy ROWs, with minor constraints (standard terms and conditions and BMPs); 189,138 acres of the Planning Area would be exclusion areas for wind energy ROWs.	33,119 acres would be open to wind energy ROWs, with minor constraints. Approximately 1,600 acres of open areas near Shelby, Montana, would be designated potential wind development areas; 885,661 acres would be avoidance areas; 1,518,695 acres of the Planning Area would be exclusion areas for wind energy ROWs.
Solid Minerals	<p>76,477 acres would be closed to mineral leasing (including coal).</p> <p>Four mineral withdrawals would be continued (19,914 acres), including the Sweet Grass Hills TCP withdrawal, which would not be recommended for an extension. Two new withdrawals (1,991 acres) would be recommended. Areas closed to salable minerals would total 74,506 acres.</p>	<p>1,828,239 acres would be closed to mineral leasing (including coal).</p> <p>At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).</p> <p>Four existing mineral withdrawals would be continued (20,058 acres). The BLM would recommend a 20-year extension for the Sweet Grass Hills TCP withdrawal and modifications to the Camp Creek and Montana Gulch campgrounds withdrawals. Three withdrawals would be recommended for revocation. The BLM would consider the need for a new withdrawal or ROW for the Zortman/Landusky mine reclamation area. Three new withdrawals would be recommended (951,766 acres). Areas closed to salable minerals would total 1,666,720 acres.</p>

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**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Special Designations	Seven ACECs are retained. Several routes would be considered for backcountry byway status. No segments would be recommended for inclusion in the National Wild and Scenic Rivers System.	Six ACECs are retained. Four new ACECs would be designated. The half-mile segment of the Marias River at the confluence of the Missouri River would be recommended as unsuitable for inclusion in the National Wild and Scenic Rivers System.
Travel and Transportation Management	124 acres managed as open to OHV use; 2,429,930 acres managed as limited to OHV use; 7,419 acres managed as closed to OHV use; 27,529 would be managed as high priority for TMAs; 694,735 acres managed as moderate priority for TMAs; 1,715,311 acres managed as low priority for TMAs.	165 acres managed as open to OHV use; 2,429,889 acres managed as limited to OHV use; 7,419 acres managed as closed to OHV use; 1,440,901 would be managed as high priority for TMAs; 121,440 acres managed as moderate priority for TMAs; 875,133 acres managed as low priority for TMAs.
Vegetation	Some restrictions for certain activities in sensitive vegetation areas (e.g., riparian and wetlands).	The ARMP would increase the amount of restrictions on uses within sensitive vegetation areas (e.g., riparian and wetlands). Priority areas for vegetation treatments (e.g., weeds and conifer removal) are identified. Additional management actions were added to protect special status plant species and their habitat.
Visual Resources Management	74,506 acres managed as VRM Class I; 342,828 acres managed as VRM Class II; 58,213 acres managed as VRM Class III; 1,961,928 acres managed as VRM Class IV.	74,506 acres managed as VRM Class I; 841,087 acres managed as VRM Class II; 521,868 acres managed as VRM Class III; 1,000,013 acres managed as VRM Class IV.
Wilderness Characteristics	0 acres managed for lands with wilderness characteristics.	The BLM would manage three areas (16,393 acres) for lands with wilderness characteristics and would apply management restrictions to reduce impacts on wilderness characteristics on 290,865 acres.
<b>Miles City</b>		
Air	Emission reduction mitigation measures and conservation actions would be considered during project-level planning. The BLM would adjust the timing of authorized activities as needed to accommodate long-term changes in seasonal weather patterns, while	Same as prior management decisions, except a decision that oil and gas leasing would be offered with a CSU for each diesel-fueled non-road engine with greater than 200-horsepower design rating.

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**Summary of Major Resources and Resource Uses Management Decisions Contained in the ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
	considering the impacts on other resources and resource uses.	
Cultural Resources	Surface-disturbing activities would be allowed within the Planning Area.	The BLM would manage oil and gas leasing with an NSO stipulation in significant cultural sites, in National Historic Landmarks, and in historic battlefields. All other surface-disturbing activities would be allowed in significant cultural sites, as long as the activities would not have an adverse effect.
Fish and Wildlife	Apply restrictions to sensitive, special status, and threatened and endangered species habitat. See resources uses for applicable allocation decisions that protect these areas.	The ARMP would provide more specific direction to protect resources and manage resource uses than prior management. Under ARMP, additional protections would not be limited to oil and gas production; they may be applied to other resource uses as applicable and when needed to protect or manage resources and resource uses. Also, the ARMP provides more NSO/CSU restrictions for the protection of fish and wildlife habitats.
Fire Ecology and Management	Mechanical thinning of vegetation, biomass removal, and chemical and biological treatments would be allowed to reduce hazardous fuels or improve land health. Fuel treatment projects would be allowed in areas with high social or natural resource values as well as areas next to wildland urban interface areas considered a priority area for treatment. Prescribed fire would be allowed in Category B and C Fire Management Categories.	Same as prior management decisions, except prescribed fire would be allowed in the Planning Area with RDFs to meet resource goals and objectives.
Fluid Minerals	566,000 acres would be open to oil and gas leasing, subject to major constraints (NSO); 555,000 acres would be open to oil and gas leasing, subject to moderate constraints (CSU); 3,466,000 acres would be open to oil and gas leasing, subject to moderate constraints (TL); 1,316,000 acres would be open to oil and gas leasing, subject to standard constraints.	1,850,000 acres would be open to oil and gas leasing, subject to major constraints (NSO); 3,645,000 acres would be open to oil and gas leasing, subject to moderate constraints (CSU); 179,000 acres would be open to oil and gas leasing, subject to moderate constraints (TL); 987,000 acres would be open to oil and gas leasing, subject to standard constraints.

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<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Forest and Woodland Products	Forestlands in the Planning Area with 10 percent or more canopy cover per acre would be managed for the enhancement of other resources, not for the production of forest products or saw timber.	Forestlands would be managed to enhance the health and resiliency of forest and woodland resources and for a diversity of forest products. PSQ for commercial saw timber would be allowed up to 1,100 million board feet per year.
Lands and Realty	35,830 acres would be ROW avoidance areas; 128,960 acres would be ROW exclusion areas; 83,160 acres would be managed as category 1 retention lands; 2,585,535 acres would be managed as category 2 retention lands and disposal; 82,835 acres would be managed as category 3 disposal lands; nine communication sites would be designated.	83,659 acres would be minor and major ROW exclusion areas. Major ROWs would be avoided on 2,222,701 surface acres, and minor ROWs would be avoided on 858,073 surface acres; 83,160 acres would be managed as category 1 retention lands; 2,585,535 acres would be managed as category 2 retention lands and disposal; 82,835 acres would be managed as category 3 disposal lands; nine communication sites would be designated.
Livestock Grazing	2,700,000 acres and an estimated 546,508 AUMs would be available for livestock grazing. Livestock grazing would be unavailable on approximately 240 acres (62 AUMs).	2,700,000 acres and an estimated 546,496 AUMs would be available for livestock grazing. Livestock grazing would be unavailable on approximately 140 (12 AUMs).
Mineral Materials	2,500,000 acres would be available to mineral material sales and permits; 236,000 acres would not be allowed or closed to mineral material sales and permits.	1,521,869 acres would be available to mineral material sales and permits; 978,131 acres would be closed to all mineral material sales, except free-use permits and expansion of existing active pits if certain conditions are met; 169,000 acres would not be allowed or closed to mineral material sales and permits.
Recreation	16,583 acres would be managed as SRMAs and 28,884 would be managed as ERMAs.	21,948 acres would be managed as SRMAs and 2,200 would be managed as ERMAs.
Renewable Energy	60,000 acres would be avoided to renewable energy ROWs; 125,700 acres would be excluded to renewable energy ROWs.	1,400,514 acres would be avoided to renewable energy ROWs; 1,002,687 acres would be excluded to renewable energy ROWs.
Soils and Water	Surface-disturbing activities on slopes 30 percent or greater would be avoided unless the activity can be mitigated (43,780	Surface-disturbing activities on sensitive soils would be allowed, with specialized design features to maintain or improve

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<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
	acres). Surface water impoundments would be allowed. Surface-disturbing activities would be allowed within State-designated source water protection areas.	the stability of the site. Surface-disturbing activities on badlands and rock outcrop would be allowed, with specialized design features to maintain or improve the stability of the site. Surface water impoundments would be allowed, with measures designed to maintain water quality and riparian and watershed functionality and resiliency. Surface-disturbing activities would be allowed within State-designated source water protection areas, with specialized design features to minimize impacts on surface or groundwater quality.
Solid Minerals	Areas identified in the Big Dry and Powder River RMPs as acceptable for further consideration for coal leasing would be carried forward; 2.18 million acres would remain open to mineral location (locatables).	Same as prior management decisions. At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
Special Designations	Fifteen ACECs are retained. Sustain and enhance the Lewis and Clark Trail to complement its status as a National Historic Trail.	Thirteen ACECs are retained and five new ACECs would be designated. Sustain and enhance the Lewis and Clark Trail to complement its status as a National Historic Trail.
Travel and Transportation Management	2,372 acres are open to OHV use; 2,749,078 acres are limited to OHV use; 80 acres are closed to OHV use.	0 acres are open to OHV use; 2,748,730 acres are limited to OHV use; 2,800 acres are closed to OHV use.
Vegetation	Some restrictions for certain activities in sensitive vegetation areas (e.g., riparian and wetlands).	Compared to prior management, the ARMP would better maintain riparian and wetland areas. Vegetation treatments (e.g., weeds and conifer removal) are identified and prioritized.
Visual Resources Management	97,000 acres managed as VRM Class I; 400,000 acres managed as VRM Class II; 375,000 acres managed as VRM Class III; 1,890,000 acres managed as VRM Class IV.	83,000 acres managed as VRM Class I; 414,000 acres managed as VRM Class II; 695,000 acres managed as VRM Class III; 1,570,000 acres managed as VRM Class IV.



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<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Wilderness Characteristics	0 acres managed for lands with wilderness characteristics.	5,236 acres would be managed for lands with wilderness characteristics.
<b>South Dakota</b>		
Air	Tier 4 nonroad diesel engines or engines emitting NO <sub>x</sub> at rates less than or equal to EPA emission standards for Tier 4 nonroad diesel engines would be required.	Tier 4 engines would be required for oil and gas drilling and completion activities as follows: Tier 4 nonroad diesel engines or engines emitting NO <sub>x</sub> at rates less than or equal to EPA emission standards for Tier 4 nonroad diesel engines.
Cultural Resources	Apply restrictions to cultural properties determined to be of importance to Native American tribal groups, sites determined to be TCPS or designated for traditional use. See resource uses for applicable allocation decisions that protect these areas.	Same as prior management decisions, except acres of restrictive resource use allocations may vary. See resource uses for applicable allocation decisions that protect these areas.
Fire Ecology and Management	All 274,000 acres of BLM-administered lands, including the Exemption Area, Fort Meade ACEC, and remainder of South Dakota Fire Management Units, would be designated as Category B	Same as prior management direction.
Fish and Wildlife	Apply restrictions to sensitive, special status, and threatened and endangered species habitat. See resources uses for applicable allocation decisions that protect these areas.	The ARMP would provide more specific direction to protect resources and manage resource uses than prior management. Under the ARMP, additional protections would not be limited to oil and gas production; they may be applied to other resource uses when needed to protect or manage resources and resource uses. Also, the ARMP provides more NSO/CSU restrictions to protect fish and wildlife habitats.
Fluid Minerals	15,489 acres would be open to oil and gas leasing, subject to major constraints (NSO); 2,954 acres would be open to oil and gas leasing, subject to moderate constraints (CSU); 115,204 acres would be open to oil and gas leasing, subject to moderate constraints (TL); 103,033 acres would be open to oil and gas leasing, subject to standard constraints; 6,894 acres would be closed to oil and gas leasing.	152,100 acres would be open to oil and gas leasing, subject to major constraints (NSO); 21,175 acres would be open to oil and gas leasing, subject to moderate constraints (CSU); 1,169 acres would be open to oil and gas leasing, subject to moderate constraints (TL); 62,236 acres would be open to oil and gas leasing, subject to standard constraints; 6,894 acres would be closed to oil and gas leasing.

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<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Forest and Woodland Products	All lands would be available for the sale, use, and treatment of forest and woodland products, except sale would not be allowed on the Fossil Cycad ACEC. Forest and woodland products, such as firewood, posts, poles, biomass, and timber, would be managed to benefit other resources and offered for sale when they have an economic value. PSQ would be 7,000 tons/year for all forest and woodland products.	All lands would be available for the sale, use, and treatment of forest and woodland products, except sale would not be allowed on the Fossil Cycad ACEC. Forest and woodland products, such as firewood, posts, poles, biomass, timber, and other special forest products, would be managed to benefit other resources and offered for sale when they have an economic value and used or treated if there is no economic value. PSQ would be 7,000 tons/year for all forest and woodland products.
Lands and Realty	Consider landownership adjustments on a case-by-case basis, based on the criteria for retention, acquisition and disposal; 0 acres would be avoidance areas for ROWs; 5,522 acres would be exclusion areas for ROWs. No new ROW corridors.	Category 1—Retention area with no disposal (6,894 acres). Category 2—Retention with Limited disposal potential, based on specialist review (202,395 acres). Category 3—Disposal contingent on specialist review (64,030 acres); 247,551 acres would be avoidance areas for ROWs; 5,836 acres would be exclusion areas for ROWs. No new ROW corridors.
Livestock Grazing	Livestock grazing would be allowed on about 271,000 acres. The amount of forage available for permitted use on these lands would be about 73,400 AUMs.	Livestock grazing would be allowed on about 272,000 acres. The amount of forage that could be available for permitted use on these lands would be about 77,300 AUMs.
Mineral Materials	6,894 acres would be closed to mineral material development.	420,126 acres would be closed to mineral material development.
Recreation	Not applicable	11,652 acres would be managed as SRMAs.
Renewable Energy	0 acres would be renewable energy ROWs avoidance areas; 5,522 acres would be renewable energy ROWs exclusion areas.	107,147 acres would be renewable energy ROWs avoidance areas; 146,240 acres would be renewable energy ROW exclusion areas.
Soils and Water	Apply restrictions to perennial or intermittent streams, lakes, ponds, reservoirs, 100-year floodplains, wetlands, and riparian areas. See resource uses for applicable allocation decisions that protect these areas.	Same as prior management decisions, except acres of restrictive resource use allocations may vary. See resources uses for applicable allocation decisions that protect these areas.

**Table 4-1**  
**Summary of Major Resources and Resource Uses Management Decisions Contained in the**  
**ARMPs Compared to Prior RMP Management Decisions**

<b>Resource or Resource Use</b>	<b>Management Decisions Prior to the ARMP</b>	<b>Management Decisions Contained in the ARMP</b>
Solid Minerals	6,894 acres would be recommended for locatable mineral withdrawal. No specific management decisions associated with coal.	7,304 acres would be recommended for locatable mineral withdrawal; 7,304 acres would be closed to solid leasable mineral development. At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
Special Designations	Fort Meade and Fossil Cycad ACECs would be retained.	Fort Meade and Fossil Cycad ACECs would be retained.
Travel and Transportation Management	OHV use would be limited to existing roads and trails for the entire Planning Area.	Three TMAs would be developed. OHV use would be limited to existing roads and trails for the entire Planning Area until the implementation level route designation process is completed for each TMA.
Vegetation	Some restrictions for certain activities in sensitive vegetation areas (e.g., riparian and wetlands).	The ARMP would increase the amount of restrictions on uses within sensitive vegetation areas (e.g., riparian and wetlands). Priority areas for vegetation treatments (e.g., weeds and conifer removal) are identified.
Visual Resources Management	0 acres managed as VRM Class I ; 1,231 acres managed as VRM Class II; 4,993 acres managed as VRM Class III; 531 acres managed as VRM Class IV.	0 acres managed as VRM Class I; 1,544 acres managed as VRM Class II; 10,367 acres managed as VRM Class III; 259,841 acres managed as VRM Class IV.
Wilderness Characteristics	0 acres managed for lands with wilderness characteristics.	Same as prior management decisions.

Note: Acres depicted in this table represent BLM-administered surface estate. For more details regarding the management decisions for each of these resources and resource uses, please refer to the attached ARMPs.

The BLM is tasked to provide multiple use management for public lands under FLPMA and numerous other laws and regulations that govern the management of public lands. The BLM’s objective in choosing the Proposed RMPs as the ARMPs was to address diverse needs and concerns in a fair manner and to provide a practical and workable framework for managing public lands. The BLM is ultimately responsible for preparing these ARMPs, consistent with its legal mandates that reflect collective professional judgment using the best available science.

Specific to the ARMPs, these documents provide for the conservation of physical, biological, heritage, and visual resources, while allowing for resource use if the activities can be conducted in a manner that preserves these resource values. In reviewing the alternatives analyzed in the EISs for these plan revisions, incorporating current knowledge on existing and reasonably foreseeable development opportunities, and comparing to the existing RMP and Management Framework Plan (MFP) decisions, the BLM determined that the Proposed RMPs provided the most balanced management direction. Additional specific management considerations for each of the ARMPs (plan revisions) are listed below.

*Bighorn Basin (Planning Area for the Cody and Worland Field Offices)*

- Monitoring, the availability of new information, and advances in science and technology since the release of the Washakie RMP (1988), Grass Creek RMP (1998), and Cody RMP (1990, which the Cody and Worland ARMPs replace) provided new data to consider (for example, new data from the Potential for Renewable Energy on Public Lands, Lands with Wilderness Characteristics Inventory – 2011 Update, Visual Resource Inventory for the Cody Field Office, Washington Office IM-2012-044, Wyoming State Office IM-2012-019, and Wyoming Governor Executive Order 2011-05).
- In the Bighorn Basin Planning Area, approximately 476,000 acres of public lands were found to contain wilderness characteristics. These lands were also found to contain other resource values that provided protection to the important values. Therefore, the BLM determined that additional management, above the management assigned through wildlife timing and distance restrictions, travel and transportation management, and visual resource management was not warranted.
- The Cody and Worland Field Offices will consider interest in exploration for, or leasing of, federal coal, if any, by applying the coal screening process at the application stage. The coal screening process results would determine which lands may be available for further consideration for coal leasing and development. Appropriate NEPA analysis would be required prior to leasing. To emphasize the need for GRSG habitat protection, the following decision specific for GRSG PHMAs was added: 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 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
- Although there is record of historic mining in the area, coal production in the Planning Area is generally not considered economically feasible due to the relative thinness of the coalbeds, thickness of the overburden, and low quality of the coal.

*Buffalo*

- Need to address the *Pennaco v. U.S.*, 377 F.3d 1147 (10th Cir. 2004) decision, which required analysis of coal bed natural gas development for fluid mineral leasing decisions in the Powder River Basin.
- Peer-reviewed research concluded GRSG population viability within the Planning Area was questionable under the current management (1985 RMP). The RMP revision analyzed new data and information to update GRSG management and comply with Washington Office IM-

2012-044 and Wyoming State Office IM-2012-019 and to ensure consistency with Wyoming Governor Executive Order 2011-05.

- In the Buffalo Planning Area, approximately 12,237 acres of public lands were found to contain wilderness characteristics; 6,864 acres will be managed for lands with wilderness characteristics in the ARMP. The lands not being managed for lands with wilderness characteristics were also found to contain other resource values that provided protection to the important values. Therefore, the BLM determined that additional management, above the management assigned through wildlife timing and distance restrictions, travel and transportation management, and visual resource management was not warranted.
- The ARMP brought forward the suitability determinations made through a past planning effort (1985 Buffalo RMP, as updated in 2001). This RMP found areas suitable and acceptable for further consideration for coal leasing. To emphasize the need for GRS habitat protection, the following decision specific for GRS PHMAs was added: At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRS for purposes of the suitability criteria set forth at 43 CFR 3461.5 (o)(1).

#### *Billings and Pompeys Pillar National Monument*

- Monitoring, and the availability of new information and advances in science and technology since the release of the Billings RMP (1984), as amended, provided new data to consider.
- Need to incorporate special management considerations related to the Pryor Mountain Wild Horse Range to address resource conflicts.
- This comprehensive plan is needed to address competing resource uses and values in the same area. In addition, conditions have changed since the original RMP was approved, as follows
  - Changed ecological, socioeconomic, institutional, and regulatory conditions
  - Changing user demands and activities
  - Heightened public awareness and increased public demand for use of the lands
  - New laws, regulations, and policies that supersede previous decisions
  - Changing tolerance or acceptance of impacts
  - Increased conflict between competing resource values and land uses
- The RMP is also being prepared to incorporate consistent objectives and conservation measures for managing GRS habitat. These conditions also drive the need for an inclusive comprehensive plan that provides updated and clear direction to both the BLM and the public.
- Fluid and solid minerals—Management considerations included split-estate (private surface/Federal minerals), activities, and human presence in fish and wildlife habitats and the potential effects of mineral development on fish and wildlife habitat, recreation values, forage use, air resources, scenic quality, cultural and heritage resources, and water quality.

- Motorized and nonmotorized travel management considerations provide for suitable and sufficient recreation uses and facilities, cultural, wildlife, and visual resource management direction and resource protection.
- Thirteen units contained wilderness characteristics (27,507 acres), and nine of these areas are being managed for lands with wilderness characteristics (approximately 50 percent of the acres). The lands not being managed for lands with wilderness characteristics (13,854 acres) were also found to contain other resource values that provided protection to the important values (for example, ACECs and small river islands).
- The Billings ARMP will consider interest in exploration for, or leasing of, federal coal, if any, by applying the coal screening process at the application stage. The coal screening process results would determine which lands may be available for further consideration for coal leasing and development. To emphasize the need for GRS habitat protection, the following decision specific for GRS PHMAs was added: At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRS for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1). Appropriate NEPA analysis would be required prior to leasing. The prior RMP (BLM 1984) coal screening management decisions are current and relevant to the application area. Areas closed to coal leasing (225,655 acres) in the ARMP are WSAs, ACECs, lands with wilderness characteristics, and National Historic Trails.

The Pompeys Pillar National Monument ARMP complies with Presidential Proclamation 7396, and through implementation of this ARMP will conserve, enhance, and restore the nationally significant landscape, objects, and values for which Pompeys Pillar National Monument (51 acres) was designated for the benefit of present and future generations.

Pompeys Pillar National Monument would be managed to protect the historical and cultural objects for which it was nominated; the ARMP contains several management actions to protect these objects, such as:

- All Federal lands and interest in lands within the boundaries of PPNM are appropriated and withdrawn from all forms of entry, location, selection, sale, or leasing or other disposition under the public land laws, including, but not limited to withdrawal from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, subject to valid existing rights. Consider acquiring minerals from willing sellers.
- The National Historic Landmark (6 acres within the National Monument) which includes the rock feature itself (Clark’s signature), would be managed as a VRM Class II designation to protect the values associated with the landform.
- Opportunities for interpretation, education and enjoyment of the area would be emphasized.
- ROWs would be exclusion area, except for those necessary to serve the site facilities.
- Land disposal would not be allowed.

*HiLine*

- Monitoring, the availability of new information, and advances in science and technology since the release of the West HiLine RMP (1988) and the Judith-Valley-Phillips RMP (1994, which the HiLine ARMP replaces) provided new data to consider, for example, new data from an updated Lands with Wilderness Characteristics Inventory—2011 Update and the finding of 13 nominated ACECs that met the relevance and importance criteria.
- Fluid and solid minerals—Management considerations included split-estate (private surface/Federal minerals), activities and human presence in fish and wildlife habitats, and the potential effects of mineral development on recreation values, forage use, air resources, scenic quality, sensitive vegetation types, and water quality.
- Motorized travel—Management considerations included providing for suitable and sufficient recreation uses and facilities (both dispersed and commercial), visual resource management direction, and OHV use designations.
- Wildlife habitat and special status species, including GRSG management considerations included habitat identification, use, and quality and the interrelationships between these species and other resource uses and human activities. Specific management considerations in GRSG habitat were incorporated into the RMP for their conservation.
- Relationship to BLM Policies, Plans, and Programs—BLM plans relating to or otherwise governing management in the Planning Area provided perspective in developing the HiLine Approved Plan.
- Twenty-eight areas contained wilderness characteristics (399,000 acres), three of which (16,393 acres) will be managed for lands with wilderness characteristics. The 291,000 acres not being managed for wilderness characteristics are due to other management/resource priorities, such as ACECs and PHMAs (291,000 acres), which provide complementary management (e.g., NSO for leasing and ROW avoidance areas). The remaining 92,000 acres are being managed to emphasize other uses over wilderness characteristics (most of these acres are already held by oil and gas leases).
- Coal is a leasable solid mineral with low occurrence potential in the Planning Area. No leases have been issued in the Planning Area and no production is occurring because the potential for development is considered to be low enough that no interest has been shown in obtaining leases. At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR, CFR Part 3461.5. PHMAPHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR, CFR Part 3461.5(o)(1).

*Miles City*

- Most BLM-administered public lands in the Miles City Field Office are split-estate (10.6 million acres); BLM surface is 2.75 million acres (11 percent of the Planning Area).
- This comprehensive plan is needed to address competing resource uses and values in the same area. In addition, conditions have changed since the original RMPs were approved, as follows:

- Changed ecological, socioeconomic, institutional, and regulatory conditions
- New laws, regulations, and policies that supersede previous decisions
- Changing user demands and activities
- Changing tolerance or acceptance of impacts
- The ARMP was prepared to incorporate consistent objectives and conservation measures for the management of GRSG habitat. These conditions also drive the need for an inclusive comprehensive plan that provides updated and clear direction to both the BLM and the public.
- Five areas contained wilderness characteristics, one of which (5,200 acres) will be managed for lands with wilderness characteristics. The 23,600 acres not being managed for wilderness characteristics are due to other management and resource priorities, such as PHMAs and crucial big game winter range, which provide complementary management (such as NSO for leasing and ROW avoidance areas).
- The ARMP brought forward the suitability determinations made through past planning efforts, (Big Dry and Powder River RMPs). These RMPs found areas suitable and acceptable for further consideration for coal leasing. To emphasize the need for GRSG habitat protection, the following decision specific for GRSG PHMAs was added: At the time an application for a new coal lease or lease modification is submitted, the BLM would determine whether the lease application area is “unsuitable” for all or certain coal mining methods, pursuant to 43 CFR 3461.5. PHMAs are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5 (o)(1).

#### *South Dakota*

- BLM-administered public lands in South Dakota are highly intermingled with many small tracts of public land surrounded by state or private land. Over 98 percent of public land in South Dakota is in the western half of the state.
- Monitoring, and the availability of new information, and advances in science and technology since the release of the South Dakota RMP (1986), as amended, provided new data to consider.
- Increased recreational use at Fort Meade ACEC and the Exemption Area has created a need to look at management opportunities for recreation.
- Increased interest in wind energy development in South Dakota has created a need to evaluate potential impacts and provide improved management direction.
- The BLM South Dakota Field Office contains no lands with wilderness characteristics.
- BLM-administered public lands in the Planning Area have low coal development potential, relative to adjacent states. The RMP planning team discussed coal development and dismissed it because 1) the South Dakota Field Office received no comments or expressions of interest in coal development during scoping and has not received applications or expressions of interest in the last ten years, and 2) coal beds in the Planning Area have a less profitable stripping ratio than adjacent states, making development unlikely.



# CHAPTER 5

## MITIGATION MEASURES FOR ARMPs (PLAN REVISIONS)

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Mitigation measures required for actions in GRSG habitat for the ARMPAs and the GRSG habitat management decisions in the ARMPs (plan revisions) are discussed in **Section 1.6.2** of this ROD.

For lands within the Planning Areas described in the ARMPs that are outside of GRSG habitat, all practical means will be taken to avoid or minimize environmental harm. In developing the alternatives, the BLM used a variety of management methods and tools, including identifying allowable uses, temporal, spatial, and method restrictions on uses, where specific uses would be prohibited, and specific actions that are needed to achieve the goals and objectives. Restrictions on land uses are seasonal closures, stipulations on surface disturbances, and the application of BMPs.

The ARMPs provide a list of BMPs that are applicable to land use activities authorized by the BLM (these BMPs are listed in various appendices in each of the attached ARMPs). BMPs are state-of-the-art mitigation measures that may be applied on a site-specific basis to avoid, minimize, reduce, rectify, or compensate for adverse environmental or social impacts of land use activities. The BMPs included in each of the ARMPs are not intended to be a complete list; instead, they are displayed to show land use project proponents examples of commonly used practices the BLM may require to reduce impacts of surface-disturbing activities, use, or occupancy. More explicit BMPs based on local conditions and resource-specific concerns could be developed once a specific proposal is being evaluated through the environmental analysis process. Additional BMPs can be proposed by project applicants for activities on BLM-administered lands.

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# CHAPTER 6

## PLAN MONITORING FOR ARMPs (PLAN REVISIONS)

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The method for monitoring the implementation and effectiveness of the ARMP GRSG management actions is discussed in detail in **Section I.6.4** of this ROD.

For lands in the Planning Areas described in the ARMPs that are outside of GRSG habitat, land use plan decision monitoring will apply. Monitoring is a continuous process occurring over the life of the RMP. Monitoring data are collected, examined, and used to draw conclusions on the following:

- Whether planned actions have been implemented in the manner prescribed by the RMP (implementation monitoring)
- Whether RMP allowable use and management action decisions and the resultant implementation actions are effective in achieving program-specific objectives or desired outcomes (effectiveness monitoring)
- Calculating the cost of delivering a service or product (efficiency monitoring by program elements)

Conclusions are then used to make recommendations on whether to continue current management or determine what changes need to be made to implementation practices to better achieve RMP decisions. Indicators, methods, locations, units of measures, frequency, and action triggers can be established by national policy guidance, in RMPs, or by technical specialists in order to address specific issues.

Based on staffing and funding levels, monitoring is annually prioritized, consistent with the goals and objectives of the RMP. The BLM may work with local, State, and other Federal agencies, or it may use data collected by other agencies and sources when appropriate and available.

In accordance with the BLM's *Resource Management Planning Handbook* (H-1601-1), the approved RMP will be evaluated periodically to determine whether the RMP decisions and NEPA analysis are still valid and whether the plan is being implemented effectively. More specifically, the RMP will be evaluated to determine the following:

- If the decisions remain relevant to current issues
- If decisions are effective in achieving or making progress toward achieving the desired outcomes specified in the plan
- If any decisions are in need of revision
- If any decisions need to be dropped from further considerations
- If any areas require new decisions

In making these determinations, the BLM will consider whether mitigation measures—such as those presented in the ARMP—are satisfactory, whether there are significant changes in the related plans of other entities, and whether there is significant new information.

# CHAPTER 7

## PUBLIC INVOLVEMENT, CONSULTATION, AND COORDINATION

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BLM resource management planning is conducted in accordance with NEPA requirements, CEQ regulations, and US Department of the Interior policies and procedures for implementing NEPA, as well as specific BLM planning and NEPA policies. NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process, to develop a range of reasonable alternatives to proposed actions, and to prepare environmental documents that disclose the potential impacts of proposed management.

Public involvement and agency consultation and coordination have been at the heart of the planning process leading to these Rocky Mountain Region ARMPs and ARMPAs. These efforts were achieved through *Federal Register* notices, formal and informal public meetings, individual contacts, media releases, planning bulletins, and a series of GRSG planning-related websites.

This section documents the outreach efforts that have occurred to date. For more plan-specific information related to the public involvement, consultation, and coordination processes that the BLM conducted, please refer to Chapter 3 of the attached ARMPAs and Chapter 4 of the attached ARMPs.

### 7.1 PUBLIC INVOLVEMENT

The scoping period for the National GRSG Planning Strategy began with the publication of the Notice of Intent in the *Federal Register* on December 9, 2011, and ended on March 23, 2012. Beginning in December and ending in February 2012, the BLM hosted a series of public open house scoping meetings across the Rocky Mountain Region. A final National GRSG Planning Strategy Scoping Report was released in May 2012 (BLM and Forest Service 2012).

The plan revisions (Bighorn Basin, which includes the Cody and Worland Field Offices; Billings and Pompeys Pillar National Monument, Buffalo, HiLine, Miles City, and South Dakota) also held separate scoping periods throughout their individual Planning Areas, before the National GRSG Planning Strategy began. Individual scoping reports for each plan revision were completed between September 2005 and March 2009.

A NOA for the Bighorn Basin Draft RMP/EIS was published in April 2011. Throughout 2013, the NOAs announcing the release of the Draft RMPs and RMPAs/Draft EISs for the remaining planning efforts in the Rocky Mountain Region were published, including an NOA announcing the release of a supplement to Bighorn Basin Draft RMP/EIS.

Comments on the Draft RMPs and RMPAs/Draft EISs were considered and incorporated, as appropriate, into the Proposed Plans and Plan Amendments/Final EISs. The Rocky Mountain Region received approximately 10,300 substantive comments, contained in 45,200 submissions during the Draft RMPs and RMPAs/Draft EISs comment periods. Comments on the Draft RMPs and RMPAs/Draft EISs received from the public and internal BLM review were carefully considered and incorporated as appropriate into the Proposed RMPs and RMPAs/Final EISs. Public comments resulted in the addition of clarifying text but did not significantly change the Proposed RMPs and Plan RMPAs.

On May 29, 2015, the BLM released an NOA for all of the Rocky Mountain Region GRSG Proposed Plan Amendments/Final EISs and for each of the Proposed Plans/Final EISs. The release of the NOA initiated a 30-day public protest period and a 60-day Governor's consistency review. Refer to **Sections 2.5** and **2.6** for a full description of the protest period and the Governor's consistency review outcomes.

## **7.2 COOPERATING AGENCIES**

A cooperating agency is any Federal, State, or local government agency or Native American tribe that enters into a formal agreement with the lead Federal agency to help develop an environmental analysis. Cooperating agencies and tribes “work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks” (BLM 2005). The benefits of enhanced collaboration among agencies in preparing NEPA analyses are as follows:

- Disclosing relevant information early in the analytical process
- Applying available technical expertise and staff support
- Avoiding duplication with other Federal, State, tribal, and local procedures
- Establishing a mechanism for addressing intergovernmental issues

The BLM entered into a formal MOU for the National GRSG Planning Strategy with the FWS and the Forest Service. In addition, the Rocky Mountain sub-regions also invited local, State, other Federal, and tribal representatives to participate as cooperating agencies for these RMPs and RMPAs/EISs. In total, there were 172 MOUs signed with Federal, State, county, local, and tribal entities. The MOUs outline the interests, expertise, and jurisdictional responsibilities of both the BLM and its cooperating agency partners and their respective roles and responsibilities in the planning and NEPA processes. Additional information can be found in the Consultation and Coordination Chapter of each of the Proposed RMPs and RMPAs/Final EISs. These cooperating agencies divided by sub-region are provided below.

### **Rocky Mountain Region-Wide**

US Fish and Wildlife Service  
US Forest Service

**Lewistown**

Chain Buttes Cooperative State Grazing District  
Fergus County  
Judith Basin County  
Indian Butte Cooperative State Grazing District  
Lewis and Clark National Forest  
Montana Department of Fish, Wildlife and Parks  
Montana Department of Natural Resources and  
Conservation  
Natural Resources Conservation Service  
Petroleum County  
Petroleum County Conservation District  
Winnett Cooperative State Grazing District

**North Dakota**

North Dakota Game and Fish Department  
Bowman County Commissioners  
Bowman-Slope Conservation District

**Northwest Colorado**

Associated Governments of Northwest Colorado  
Arapaho National Wildlife Refuge  
Colorado Department of Natural Resources  
Colorado Department of Parks and Wildlife  
Denver Water Board  
Garfield County  
Grand County  
Jackson County  
Medicine Bow-Routt National Forest  
Mesa County  
Moffat County  
Natural Resource Conservation Service  
Rio Blanco County  
Routt County  
White River and Douglas Creek Conservation Districts

**Wyoming**

City of Laramie  
Converse County  
Crook County  
Lincoln County  
Lincoln County Conservation District  
Lingle–Fort Laramie Conservation District  
Little Snake River Conservation District  
Medicine Bow Conservation District

Natrona County  
Saratoga Encampment Rawlins Conservation District  
South Goshen Conservation District  
Sublette County  
Sublette County Conservation District  
Sweetwater County  
Sweetwater County Conservation District  
Uinta County  
Uinta County Conservation District  
US Environmental Protection Agency  
US Department of Agriculture: Animal and Plant Health Inspection Service  
Weston County  
Wyoming Department of Environmental Quality  
Wyoming Department of Agriculture  
Wyoming Game and Fish Department  
Wyoming Office of the Governor  
Wyoming State Historic Preservation Office  
Wyoming State Planning Office

***Billings and Pompeys Pillar National Monument***

Big Horn County (Wyoming)  
Carbon County  
Golden Valley County  
Northern Cheyenne Tribal Council  
Montana State Historic Preservation Office  
Montana Department of Natural Resources and Conservation – Northeastern and Southern Land  
Offices  
Montana Association of Conservation Districts  
Montana Fish, Wildlife and Parks  
Musselshell County  
Musselshell Planning Project  
US Bureau of Indian Affairs, Rocky Mountain Region  
US Bureau of Reclamation, Montana Area Office  
Wheatland County  
Yellowstone County

***Buffalo***

Campbell County Commission  
Campbell County Conservation District  
Crook County Commission  
Johnson County Commission  
Lake DeSmet Conservation District  
Medicine Bow-Routt National Forest  
Northern Cheyenne Tribe  
Powder River Conservation District  
Sheridan County Commission



Thunder Basin National Grasslands  
Wyoming Office of the Governor  
Wyoming Department of Agriculture  
Wyoming Department of Revenue  
Wyoming State Geological Survey  
Wyoming Office of State Lands and Investments  
Wyoming Oil and Gas Conservation Commission  
Wyoming State Historic Preservation Office  
Wyoming State Engineer's Office  
Wyoming State Forestry Division  
Wyoming State Parks and Cultural Resources  
Wyoming State Trails Program  
Wyoming Travel and Tourism  
Wyoming Water Development Commission  
Wyoming Department of Environmental Quality  
Wyoming Department of Transportation  
Wyoming Game and Fish Department  
US Environmental Protection Agency, Region 8  
US Office of Surface Mining

***Bighorn Basin (Cody and Worland)***

Big Horn County Commission  
Bighorn National Forest Ranger District  
Cody Conservation District  
Crow Tribe  
Hot Springs Conservation District  
Hot Springs County Commission  
Meeteetse Conservation District  
Northern Cheyenne Tribe Tribal Historic Preservation Office  
Park County Commission  
Powell-Clarks Fork Conservation District  
Rosebud Sioux Tribe  
Shoshone Conservation District  
Shoshone National Forest/Wapati Ranger District  
South Big Horn Conservation District  
Washakie County Commission  
Washakie County Conservation District  
Wyoming Office of the Governor  
Wyoming Department of Agriculture  
Wyoming Department of Environmental Quality  
Wyoming Game and Fish Department  
Wyoming Office of Lands and Investments  
Wyoming Oil and Gas Conservation Commission  
Wyoming State Engineer's Office  
Wyoming State Geological Survey

Wyoming State Historic Preservation Office  
US Environmental Protection Agency, Region 8

**HiLine**

Badlands Cooperative State Grazing District  
Blaine County  
Buggy Creek Cooperative State Grazing District  
Montana Fish, Wildlife and Parks  
North Blaine Cooperative State Grazing District  
North Valley Cooperative State Grazing District  
North Phillips Cooperative State Grazing District  
Phillips County  
South Phillips Cooperative State Grazing District  
Wayne Creek Cooperative State Grazing District  
Willow Creek Cooperative State Grazing District  
US Bureau of Indian Affairs  
US Bureau of Reclamation  
Valley County

**Miles City**

Big Horn County  
Carter County  
Carter County Conservation District  
Custer County  
Daniels County  
Fallon County  
Fork Peck Tribe  
Garfield County  
Garfield County Conservation District  
Lower Brule Sioux Tribe  
McCone County  
McCone County Conservation District  
Montana Department of Environmental Quality  
Montana Department of Natural Resources and Conservation  
Montana Fish, Wildlife and Parks  
Powder River County  
Prairie County Conservation District  
Prairie County Cooperative State Grazing District  
Richland County  
Richland County Conservation District  
Rosebud County  
Sheridan County  
Treasure County  
US Bureau of Indian Affairs  
US Environmental Protection Agency, Region 8  
Wibaux County Conservation District

**South Dakota Field Office**

Butte County Commission  
Custer County Commission  
Harding County Commission  
Lawrence County Commission  
Meade County Commission  
Pennington County Commission  
State of South Dakota

**7.3 FWS SECTION 7 CONSULTATION**

Under Section 7 of the ESA, Federal agencies must consult with the FWS when an action the agency carries out, funds, or authorizes *may affect* a listed endangered or threatened species or its designated critical habitat. For all ARMPs and ARMPAs in the Rocky Mountain Region where the BLM determined that it may affect a listed endangered or threatened species, the BLM initiated consultation by requesting a species list from the appropriate FWS office for Federally listed, Federally proposed, or current Federal candidate species that may be present in the Planning Area. The BLM subsequently prepared biological assessments based on the species lists in which a determination is made, pursuant to Section 7 of the ESA, as to whether the plans would affect a Federally listed, proposed, or candidate species. For all of the ARMPs and ARMPAs in the Rocky Mountain Region where consultation was required, the determinations from the BLM and the FWS concurrence letters or biological opinions from the FWS are an appendix to each of the attached ARMPs and ARMPAs.

**7.4 NATIVE AMERICAN AND STATE HISTORIC PRESERVATION OFFICERS CONSULTATION**

In recognition of the government-to-government relationship between individual tribes and the Federal government, the BLM initiated Native American consultation in preparation of the Rocky Mountain sub-regional RMPs and RMPAs/EISs. Coordination with Native American tribes occurred throughout the planning process. The BLM sent 102 individual letters to tribal governments, providing initial notification of the RMP and RMPAs/EISs and background information on the project, an invitation to be a cooperating agency, and notification of subsequent consultation related to the planning process. Tribes have been participating in the RMP and RMPAs/EISs processes through numerous meetings and through personal BLM contacts, and in some cases, as cooperating agencies.

**Lewistown, North Dakota, Northwest Colorado, and Wyoming ARMPAs, and HiLine ARMP**

As part of the NEPA scoping and consultation process for the Lewistown, North Dakota, Northwest Colorado, and Wyoming ARMPAs and the HiLine ARMP, the BLM notified the Colorado, Montana, North Dakota, and Wyoming State Historic Preservation Officers (SHPOs) of the opportunities to comment on the planning and NEPA documents prepared for these efforts, as they relate to the RMP decisions included in the ARMPAs.

The BLM sought information about historic properties in consideration of resource management planning decisions, in accordance with the National Programmatic Agreement between the BLM, Advisory Council on Historic Preservation, National Conference of SHPOs, and the state protocol agreements between the BLM and Colorado, Montana, North Dakota, and South Dakota SHPOs. If the BLM received comments and information from the SHPOs and tribes, it considered that information and

incorporated it into the Proposed RMP and RMPAs/Final EISs and the ARMP and ARMPAs. The BLM also considered such information in making the RMPA and revision decisions.

The BLM has met its obligations under Section 106 of the National Historic Preservation Act, 54 USC, Section 306108, as outlined in the National Programmatic Agreement and the state protocols. The BLM will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American Tribes, and other interested parties, consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant state protocols or, where applicable, the Section 106 regulations.

***Billings and Pompeys Pillar National Monument, Bighorn Basin, Buffalo, Miles City, and South Dakota ARMPs***

As part of the NEPA scoping and consultation process, BLM Montana/Dakotas and Wyoming invited the Montana, South Dakota, and Wyoming SHPOs to participate in preparing the ARMPs regarding the resource management planning decisions included in the Billings and Pompeys Pillar National Monument, Bighorn Basin (Cody and Worland Field Offices), Buffalo, Miles City, and South Dakota Planning Areas. The BLM sought information about the identification of historic properties in consideration of resource management planning decisions included in these ARMPs, in accordance with the National Programmatic Agreement between the BLM, Advisory Council on Historic Preservation, and National Conference of SHPOs and the Wyoming, Montana, and South Dakota State Protocol Agreement between the BLM and Wyoming, Montana, and South Dakota SHPOs, or, where applicable, the Section 106 regulations.

The BLM incorporated the information it received from the SHPOs into the Proposed RMPs and considered such information in making the RMP decisions. The BLM has met its obligations under Section 106 of the National Historic Preservation Act, 54 USC, Section 306108, as outlined in the National Programmatic Agreement and the state protocols or, where applicable, the Section 106 regulations. The BLM will satisfy the requirements of Section 106 of the National Historic Preservation Act for future implementation-level decisions, such as project proposals, including adequate consultation with SHPOs, Tribal Historic Preservation Officers, Native American tribes, and other interested parties, consistent with the alternative procedures set forth in the National Programmatic Agreement and relevant state protocol or, where applicable, the Section 106 regulations.

As identified in **Section 7.2**, the Wyoming SHPO was a cooperating agency for all the Wyoming planning efforts identified in this ROD, and the Montana SHPO was a formal cooperating agency for the Billings and Pompeys Pillar National Monument planning efforts.

# CHAPTER 8

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# CHAPTER 9


## APPROVAL

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### Land Use Plan Decisions

It is the decision of the Bureau of Land Management (BLM) to approve the Rocky Mountain Region Resource Management Plan (RMP) Amendments for the Lewistown, North Dakota, Northwest Colorado, and Wyoming Sub-regions; and the RMPs for Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument, South Dakota, and Worland, as described in this Record of Decision. The Proposed RMPs and Proposed RMP Amendments and related Final Environmental Impact Statements were published on May 29, 2015, in the *Federal Register* (80 FR 30711). I have resolved all protests and, in accordance with BLM regulations 43 CFR 1610.5-2, my decision on the protests is the final decision of the Department of the Interior. The approval is effective on the date this Record of Decision is signed.

Approved by:


  
\_\_\_\_\_  
Neil Kornze  
Director  
Bureau of Land Management

Date Sept. 21, 2015

### Approval

I hereby approve the land use plan decisions. My approval of the land use plan decisions constitutes the final decision of the Department of the Interior and, in accordance with regulations at 43 CFR 1610.5-2(b) and 43 CFR 4.410(a)(3), is not subject to appeal under Departmental regulations at 43 CFR Part 4. Any challenge to these land use plan decisions must be brought in Federal district court.

Approved by:

  
\_\_\_\_\_  
Janice M. Schneider  
Assistant Secretary  
Land and Minerals Management

Date 9-21-15

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# ATTACHMENTS

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The following approved resource management plan amendments and approved resource management plans are included in this Record of Decision and are bound as separate documents.

Attachment 1: Lewistown Field Office Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 2: North Dakota Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 3: Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 4: Wyoming Greater Sage-Grouse Approved Resource Management Plan Amendment

Attachment 5: Billings Field Office Approved Resource Management Plan

Attachment 6: Buffalo Field Office Approved Resource Management Plan

Attachment 7: Cody Field Office Approved Resource Management Plan

Attachment 8: HiLine District Office Approved Resource Management Plan

Attachment 9: Miles City Field Office Approved Resource Management Plan

Attachment 10: Pompeys Pillar National Monument Approved Resource Management Plan

Attachment 11: South Dakota Approved Resource Management Plan

Attachment 12: Worland Field Office Approved Resource Management Plan



# Northwest Colorado Greater Sage-Grouse Approved Resource Management Plan Amendment

## Attachment 3

From the Record of Decision and Approved Resource Management Plan Amendments for the Rocky Mountain Region including the Greater Sage-Grouse Sub-Regions of: Lewistown, North Dakota, Northwest Colorado, and Wyoming and the Approved Resource Management Plans for: Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument, South Dakota, and Worland

Prepared by  
US Department of the Interior  
Bureau of Land Management  
Northwest Colorado District Office  
Colorado State Office

September 2015



## **MISSION STATEMENT**

The BLM manages more than 245 million acres of public land, the most of any Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western states, including Alaska.

The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's mission is to manage and conserve the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield. In Fiscal Year 2014, the BLM generated \$5.2 billion in receipts from public lands.

BLM/CO/PL-15/018

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## State Director Recommendation for Approval

I hereby recommend for approval this resource management plan amendment.

SEP 15 2015



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Ruth Welch  
Colorado State Director

Date

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## ACRONYMS AND ABBREVIATIONS

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Full Phrase

ADH	all designated habitat (includes PHMA, GHMA, and LCHMA)
ARMPA	approved resource management plan amendment
BLM	United States Department of the Interior, Bureau of Land Management
CFR	Code of Federal Regulations
COA	condition of approval
COT	Conservation Objectives Team
CSU	controlled surface use
EIS	environmental impact statement
ESA	Endangered Species Act
ESR	emergency stabilization and rehabilitation
FLPMA	Federal Land Policy and Management Act of 1976
Forest Service	United States Department of Agriculture, Forest Service, Routt National Forest
GHMA	general habitat management area(s)
GIS	geographical information system
GRSG	Greater Sage-Grouse
HMA	herd management area
LCHMA	linkage/connectivity habitat management area(s)
LN	lease notice
MZ	management zone
NEPA	National Environmental Policy Act of 1969
NSO	no surface occupancy
NTT	Sage-Grouse National Technical Team
OHV	off-highway vehicle
PDF	preferred design feature
PHMA	priority habitat management area(s)
RDF	required design feature
RMP	resource management plan
ROD	record of decision
ROW	right-of-way
SDF	suggested design feature
TL	timing limitation
USFWS	United States Department of the Interior, Fish and Wildlife Service
WAFWA	Western Association of Fish and Wildlife Agencies

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# CHAPTER I

## INTRODUCTION

---

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the US Department of the Interior, Bureau of Land Management (BLM) to develop and periodically revise or amend its resource management plans (RMPs), which guide management of BLM-administered lands.

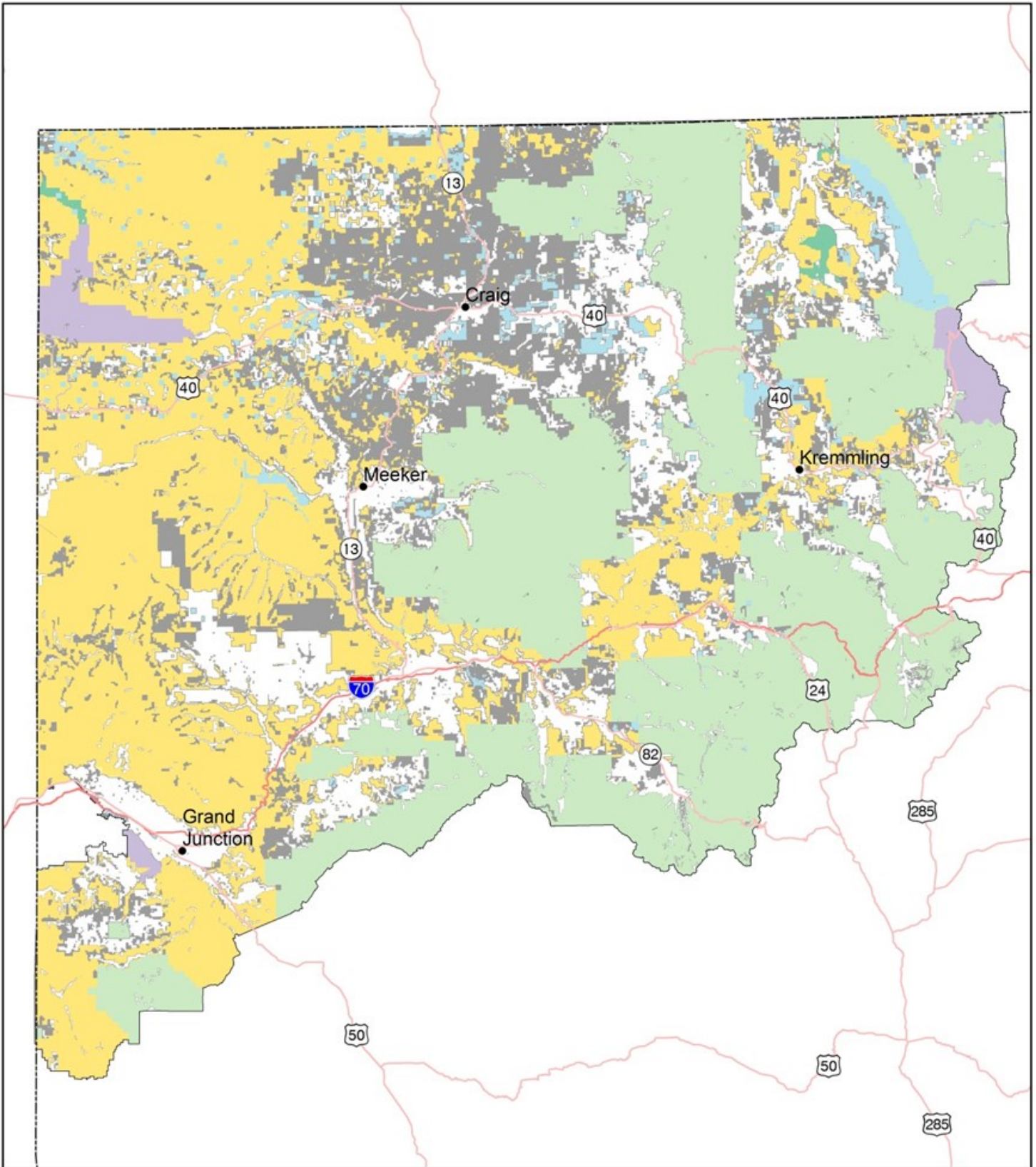
This Approved Resource Management Plan Amendment (ARMPA) is the result of the March 2010 US Fish and Wildlife Service (USFWS) 12-Month Finding for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (75 *Federal Register* 13910, March 23, 2010; USFWS 2010). In that finding, the USFWS concluded that the Greater Sage-Grouse (GRSG) was “warranted, but precluded” for listing as a threatened or endangered species.

The USFWS reviewed the status of and threats to the GRSG in relation to the five listing factors provided in Section 4(a)(1) of the Endangered Species Act (ESA). It determined that Factor A, “the present or threatened destruction, modification, or curtailment of the habitat or range of the GRSG,” and Factor D, “the inadequacy of existing regulatory mechanisms,” posed “a significant threat to the GRSG now and in the foreseeable future” (USFWS 2010). The USFWS identified the principal regulatory mechanisms for the BLM as conservation measures in RMPs.

### **I.1 DESCRIPTION OF THE NORTHWEST COLORADO SUB-REGIONAL PLANNING AREA**

The ARMPA planning area boundary includes all lands regardless of jurisdiction (see **Figure I-1**, Northwest Colorado Planning Area, and **Figure I-2**, Northwest Colorado Greater Sage-Grouse Habitat Management Areas across All Jurisdictions). **Table I-1**, Land Management in the Planning Area, lists the number of surface acres that are administered by specific federal agencies, states, and local governments and lands that are privately owned in the planning area. The planning area includes other BLM-administered lands that are not allocated as habitat management areas for GRSG. The ARMPA does not establish any additional management for these lands; they will continue to be managed according to the existing, underlying land use plan (LUP) for the areas.

The decision area for the ARMPA is BLM-administered lands in GRSG habitat management areas (see **Figure I-3**, Northwest Colorado Decision Area, Greater Sage-Grouse Habitat Management Areas for BLM Administered Lands), including surface and split-estate lands with BLM federal subsurface mineral



**Figure 1-1: Northwest Colorado Sub-Regional Planning Area, Surface Management and Sub-Surface Estate**

**Legend**

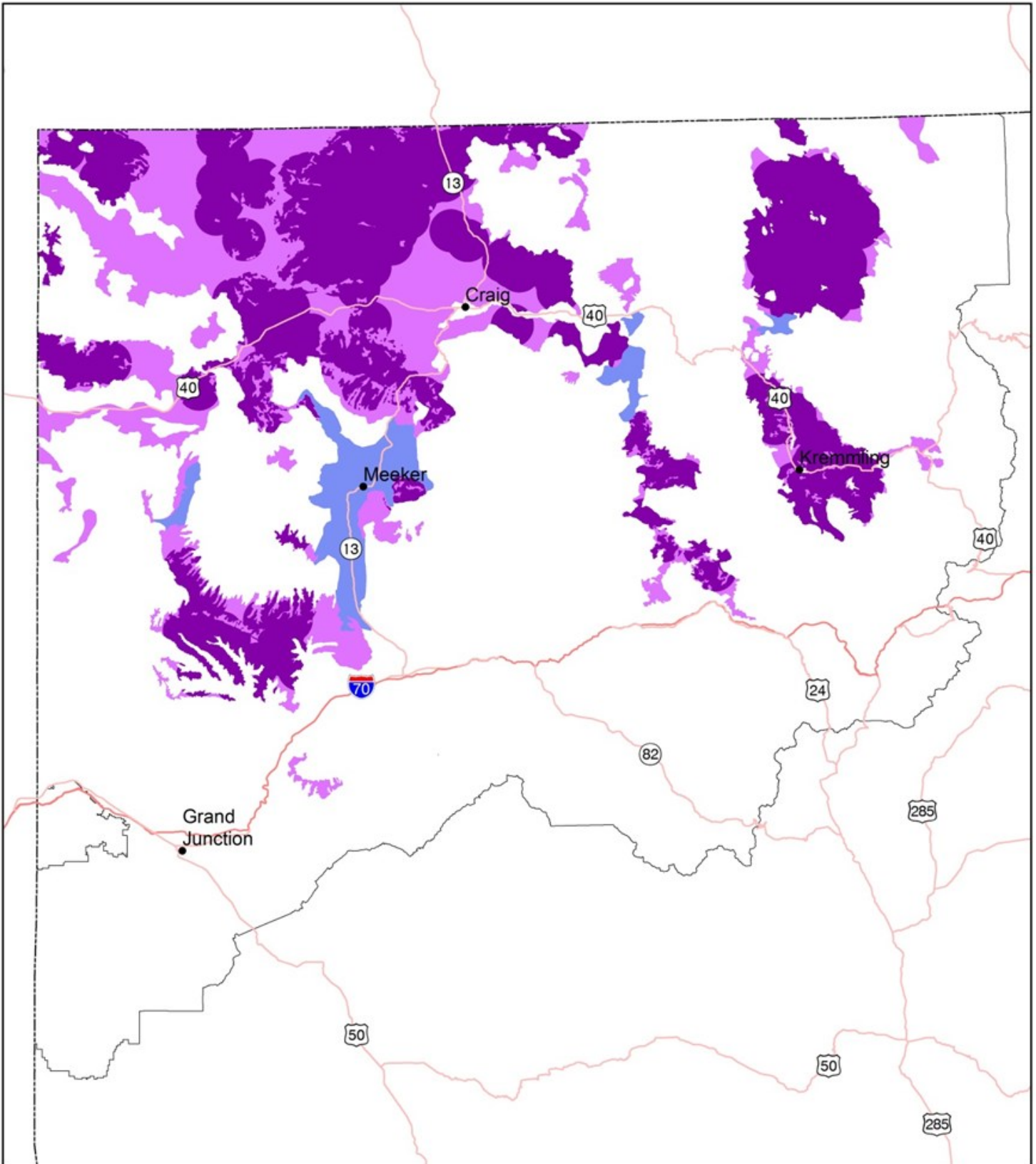
Bureau of Land Management	State/Local	Non-Federal Surface, Federal Sub-Surface
National Park Service	Private/Other	Planning Area Boundary
US Forest Service		State Boundary
US Fish and Wildlife		
Bureau of Reclamation		

0 12.5 25 Miles

September 2015



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 1-2: Northwest Colorado Sub-Regional Planning Area, Greater Sage Grouse Habitat Management Areas Across all Jurisdictions**

**Legend**

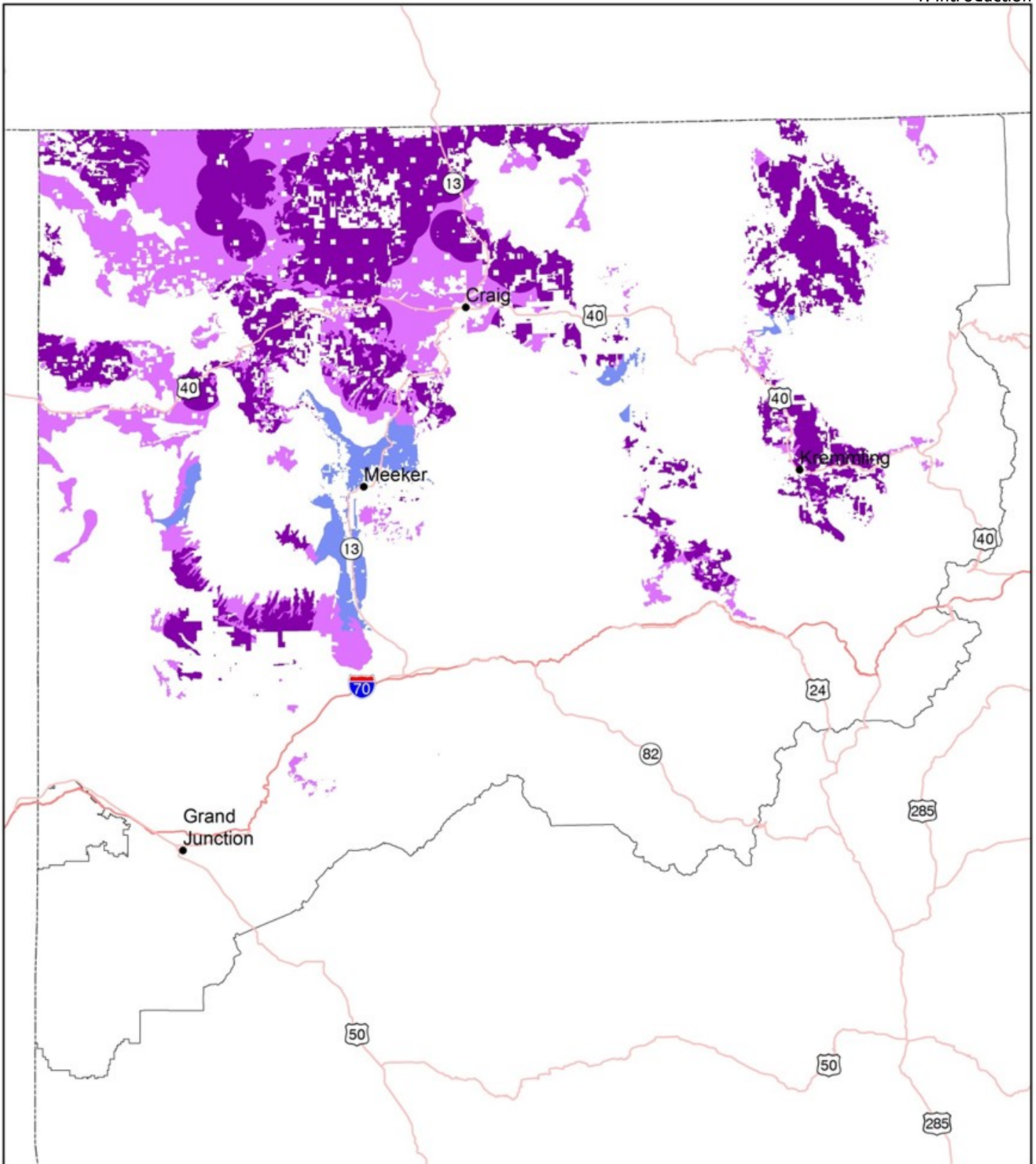
- Priority Habitat Management Areas (PHMAs)
- General Habitat Management Areas (GHMAs)
- Linkage Connectivity Habitat Management Areas (LCHMAs)
- Planning Area Boundary
- State Boundary

0 12.5 25 Miles

September 2015



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 1-3: Northwest Colorado Sub-Regional Decision Area, Greater Sage Grouse Habitat Management Areas for BLM Administered Lands**

**Legend**

- Priority Habitat Management Areas (PHMAs)
- General Habitat Management Areas (GHMAs)
- Linkage Connectivity Habitat Management Areas (LCHMAs)
- Planning Area Boundary
- State 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.



**Table I-1  
Land Management in the Planning Area**

<b>Surface Land Management</b>	<b>Total Surface Land Management Acres within GRSG Habitat</b>
BLM	1,731,400
United States Department of Agriculture, Forest Service, Routt National Forest (Forest Service)	20,100
Private	2,051,500
USFWS	34,700
Other	300
State	263,400
National Park Service	9,900
Local government	41,700
<b>Total</b>	<b>4,153,000</b>

Source: BLM geographic information system (GIS) 2012

rights. Any decisions in the ARMPA apply only to BLM-administered lands, including split-estate lands within GRSG habitat management areas (the decision area). These decisions are limited to providing land use planning direction specific to conserving GRSG and its habitat.

GRSG habitat on BLM-administered lands in the decision area consists of lands allocated as priority habitat management areas (PHMA), general habitat management areas (GHMA), and linkage/connectivity habitat management areas (LCHMA) (see **Table I-2**). PHMA, GHMA, and LCHMA are defined as follows:

- **PHMA**—BLM-administered lands identified as having the highest value to maintaining sustainable GRSG populations. Areas of PHMA largely coincide with areas identified as priority areas for conservation in the USFWS’s 2013 Conservation Objectives Team (COT) report (USFWS 2013). These are areas that have been identified as having the highest conservation value to maintaining sustainable GRSG populations; they include breeding, late brood-rearing, and winter concentration areas.
- **GHMA**—BLM-administered lands where some special management would apply to sustain GRSG populations. These are areas of seasonal or year-round habitat outside of priority habitat.
- **LCHMA**—Areas that have been identified as broader regions of connectivity important to facilitate the movement of GRSG and maintain ecological processes.

Collectively, PHMA, GHMA, and LCHMA are considered all designated habitat (ADH). PHMA, GHMA, and LCHMA on BLM-administered lands in the decision area fall within 10 counties in northwest Colorado: Eagle, Garfield, Grand, Jackson, Larimer, Mesa, Moffat, Rio Blanco, Routt, and Summit (see **Table I-3**). The habitat management areas also span five BLM field offices: Colorado River Valley, Grand Junction, Kremmling, Little Snake, and White River (see **Table I-4**).

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

<b>Surface Land Management</b>	<b>PHMA</b>	<b>GHMA</b>
BLM	921,500	728,000
<b>Subsurface Management</b>	<b>PHMA</b>	<b>GHMA</b>
BLM	1,241,700	896,000

Source: BLM GIS 2012

**Table I-3**  
**Acres of GRSG Habitat by County in the Decision Area (BLM-Administered Lands Only<sup>1</sup>)**

<b>County</b>	<b>ARMPA</b>		
	<b>PHMA</b>	<b>GHMA</b>	<b>Total</b>
Eagle	20,900	16,100	37,000
Garfield	24,800	35,900	60,700
Grand	60,700	11,300	72,000
Jackson	137,600	1,100	138,700
Larimer	0	6,700	6,700
Mesa	0	4,500	4,500
Moffat	623,300	542,000	1,165,300
Rio Blanco	36,400	108,800	145,200
Routt	17,100	1,600	18,700
Summit	700	0	700
<b>Total</b>	<b>921,500</b>	<b>728,000</b>	<b>1,649,500</b>

Source: BLM GIS 2012

<sup>1</sup>Does not include subsurface mineral estate

**Table I-4**  
**Acres of GRSG Habitat by BLM District/Field Office in the Decision Area (BLM-Administered Surface Lands Only)**

<b>BLM Field Office</b>	<b>ARMPA</b>		
	<b>PHMA</b>	<b>GHMA</b>	<b>Total</b>
Colorado River Valley Field Office	24,700	40,200	64,900
Grand Junction Field Office	5,600	8,900	14,500
Kremmling Field Office	198,900	18,900	217,800
Little Snake Field Office	570,400	479,700	1,050,100
White River Field Office	122,000	180,200	302,200

Source: BLM GIS 2012

The following BLM RMPs are hereby amended to incorporate appropriate GRSG conservation measures:

- Colorado River Valley RMP (BLM 2015a)
- Grand Junction RMP (BLM 2015b)
- Kremmling RMP (BLM 2015c)
- Little Snake RMP (BLM 2011)
- White River RMP (BLM 1997) and associated amendments, including the White River Oil and Gas Amendment (BLM 2015d)

## **I.2 PURPOSE AND NEED**

The BLM has prepared this ARMPA with an associated environmental impact statement (EIS) to amend RMPs for its field offices and district offices containing GRSG habitat. This planning process is needed to respond to the USFWS's March 2010 "warranted, but precluded" ESA listing decision for GRSG. The USFWS identified the present or threatened destruction, modification, or curtailment of habitat or range and the inadequacy of existing regulatory mechanisms as significant threats. It also identified the principal regulatory mechanisms for the BLM as conservation measures incorporated into LUPs.

The purpose of the ARMPA is to identify and incorporate appropriate measures in existing LUPs to conserve, enhance, and restore GRSG habitat by avoiding, minimizing, or compensating for unavoidable impacts on GRSG habitat in the context of the BLM's multiple use and sustained yield mission under FLPMA. Changes in management of GRSG habitats are necessary to avoid the continued decline of populations across the species' range. This ARMPA focuses on areas affected by threats to GRSG habitat identified by the USFWS in the March 2010 listing decision and in the USFWS 2013 COT report.

The major threats to GRSG and GRSG habitat on BLM-administered lands in the northwest Colorado sub-region are the following:

- Fluid mineral development—fragmentation of GRSG habitat due to mineral exploration and development
- Infrastructure—fragmentation of GRSG habitat due to development, such as rights-of-way (ROWs) and renewable energy development
- Grazing—loss of habitat components due to improper livestock grazing
- Wildfire—loss of large areas of GRSG habitat due to wildfire
- Invasive species—conversion of GRSG habitat to cheatgrass-dominated plant communities

Because the BLM administers a large portion of GRSG habitat in the affected states, changes in GRSG habitat management are anticipated to have a considerable beneficial impact on present and future GRSG populations.

## **I.3 NORTHWEST COLORADO SUB-REGIONAL GRSG CONSERVATION SUMMARY**

The ARMPA identifies and incorporates measures to conserve, enhance, and restore GRSG habitat by avoiding, minimizing, and compensating for unavoidable impacts of threats to GRSG habitat. The ARMPA

addresses threats to GRSG and its habitat identified by the GRSG National Technical Team (NTT) (2011), by the USFWS in the March 2010 listing decision. It also addresses threats described in the USFWS's 2013 COT report, in which the USFWS identified threats to GRSG by population across the range and stated whether that threat is present and widespread, present but localized, or unknown for that specific population.

**Table I-5** identifies the GRSG populations and the threats identified in the COT contained within the Northwest Colorado Sub-region.

**Table I-5**  
**Threats to GRSG in the Northwest Colorado Sub-region, as Identified by the COT**

<b>GRSG Identified Populations in Colorado from the COT Report Applicable to the Northwest Colorado Sub-region</b>	<b>Population Number</b>	<b>Isolated Small Size</b>	<b>Sagebrush Elimination</b>	<b>Agriculture Conversion</b>	<b>Fire</b>	<b>Conifers</b>	<b>Weeds/Annual Grasses</b>	<b>Energy</b>	<b>Mining</b>	<b>Infrastructure</b>	<b>Improper Grazing</b>	<b>Free-Roaming Equids</b>	<b>Recreation</b>	<b>Urbanization</b>
Eagle-South Routt)	5	Y	L	Y	L	L	Y	Y		Y	Y		L	Y
Middle Park	6	Y	Y	Y	Y		Y	Y	Y	Y	Y		Y	Y
North Park	9d		Y	Y	Y		Y	Y	Y	Y	Y		Y	Y
Northwest Colorado	9e		L	Y	Y	L	Y	Y	Y	Y	Y	L	Y	L
Parachute-Piceance-Roan Basin	34	Y	L		Y	Y	L	Y	Y	Y	Y	Y		
Meeker-White River	35	Y	Y	Y	Y		L	Y	Y	Y	Y			Y

Source: USFWS 2013

Threats are characterized as Y = threat is present and widespread, L = threat present but localized, and U = unknown.

**Table I-6** provides a crosswalk as to how the ARMPA for the Northwest Colorado Sub-region addresses the threats from the COT report.

The ARMPA also identifies and incorporates measures for other uses and resources that are designed to conserve, enhance, and restore GRSG habitat. Specifically, the ARMPA requires the following summarized management decisions, subject to valid existing rights:

- Requiring specific design features for certain land and realty uses
- Implementing the disturbance cap to limit disturbance in PHMA
- Including GRSG habitat objectives in land health standards.
- Adjusting grazing practices as necessary, based on GRSG habitat objectives, land health standards, and ecological site potential

**Table I-6  
Key Components of the Northwest Colorado GRSG ARMPA Addressing COT Report  
Threats**

<b>Threats to GRSG and its Habitat (from COT Report)</b>	<b>Key Component of the Northwest Colorado ARMPA</b>
All threats	<ul style="list-style-type: none"> <li>• Implement the adaptive management plan, which allows for more restrictive land use allocations and management actions to be implemented if habitat or population hard triggers are met</li> <li>• Require and ensure mitigation that provides a net conservation gain to GRSG for actions that result in habitat loss and degradation</li> <li>• Monitor implementation and effectiveness of conservation measures in GRSG habitats according to the habitat assessment framework</li> </ul>
All development threats, including mining, infrastructure, and energy development	<ul style="list-style-type: none"> <li>• PHMA—Implement the disturbance cap, which provides a human disturbance cap of 3 percent within the biologically significant unit (BSU)</li> <li>• PHMA—Implement a density cap of an average of 1 energy and mining facility per 640 acres</li> <li>• Apply buffers necessary based on project type and location to address impacts on leks when authorizing actions in GRSG habitat</li> <li>• Apply required design features (RDFs) when authorizing actions in GRSG habitat</li> <li>• Minimize effects of infrastructure projects, including siting, using the best available science, updated as monitoring information on current infrastructure projects becomes available</li> </ul>
Energy development—fluid minerals, including geothermal resources	<ul style="list-style-type: none"> <li>• PHMA—Closed to fluid mineral leasing within 1 mile of active leks; open to fluid mineral leasing subject to no surface occupancy (NSO) stipulation without waiver or modification and with limited exception</li> <li>• GHMA—Closed to fluid mineral leasing within 1 mile of active leks; open to fluid mineral leasing subject to NSO with waiver, modification, or exception within 2 miles of active leks; open to fluid mineral leasing subject to timing limitation (TL) stipulations</li> <li>• Prioritize the leasing and development of fluid mineral resources outside of GRSG habitat</li> </ul>
Energy development—wind energy	<ul style="list-style-type: none"> <li>• PHMA—Exclusion area (not available for wind energy development under any conditions)</li> <li>• GHMA—Avoidance area (may be available for wind energy development with special stipulations)</li> </ul>
Energy development—solar energy	<ul style="list-style-type: none"> <li>• PHMA—Exclusion area (not available for solar energy development under any conditions)</li> <li>• GHMA—Exclusion area (not available for solar energy development under any conditions)</li> </ul>
Infrastructure—major ROWs	<ul style="list-style-type: none"> <li>• PHMA—Avoidance area (may be available for major ROWs with special stipulations)</li> <li>• GHMA—Avoidance area (may be available for major ROWs with special stipulations)</li> </ul>

**Table I-6  
Key Components of the Northwest Colorado GRSG ARMPA Addressing COT Report  
Threats**

<b>Threats to GRSG and its Habitat (from COT Report)</b>	<b>Key Component of the Northwest Colorado ARMPA</b>
Infrastructure—minor ROWs	<ul style="list-style-type: none"> <li>• PHMA—Avoidance area (may be available for minor ROWs with special stipulations)</li> <li>• GHMA—Avoidance area (may be available for minor ROWs with special stipulations)</li> </ul>
Mining—locatable minerals	<ul style="list-style-type: none"> <li>• PHMA—Apply RDFs to locatable minerals consistent with applicable law.</li> </ul>
Mining—nonenergy leasable minerals	<ul style="list-style-type: none"> <li>• PHMA—Closed area (not available for nonenergy leasable minerals)</li> </ul>
Mining—salable minerals	<ul style="list-style-type: none"> <li>• PHMA—Closed area (not available for salable minerals) with a limited exception (may remain open to free use permits and expansion of existing active pits if criteria are met)</li> </ul>
Mining—coal	<ul style="list-style-type: none"> <li>• PHMA is essential habitat for GRSG for purposes of the suitability criteria set forth at 43 Code of Federal Regulations (CFR), Part 3461.5(o)(1).</li> </ul>
Improper Livestock grazing	<ul style="list-style-type: none"> <li>• Prioritize the review and processing of grazing permits and leases in PHMA</li> <li>• Include in National Environmental Policy Act of 1969 (NEPA) analysis for renewals and modifications of grazing permits and leases specific management thresholds, based on the GRSG habitat objectives table land health standards and ecological site potential, to allow adjustments to grazing that have already been subjected to NEPA analysis</li> </ul>
Free-roaming equid (wild horses and burros) management	<ul style="list-style-type: none"> <li>• Manage herd management areas (HMAs) in GRSG habitat within established appropriate management level ranges to achieve and maintain GRSG habitat objectives</li> <li>• Prioritize rangeland health assessment, gathers and population growth suppression techniques, monitoring, and review and adjustment of appropriate management levels and preparation of HMA plans in GRSG habitat</li> </ul>
Range management structures	<ul style="list-style-type: none"> <li>• Allow range improvements that do not impact GRSG or that provide a conservation benefit to GRSG, such as fences for protecting important seasonal habitats</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• Allow special recreation permits only if their impacts on GRSG and its habitat are neutral or result in a net conservation gain</li> </ul>
Fire	<ul style="list-style-type: none"> <li>• Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection</li> <li>• Prioritize post-fire treatments in PHMA and GHMA</li> </ul>
Nonnative, invasive plant species	<ul style="list-style-type: none"> <li>• Improve GRSG habitat by treating annual grasses</li> <li>• Treat sites in PHMA and GHMA that contain invasive species infestations through integrated pest management</li> </ul>

**Table I-6**  
**Key Components of the Northwest Colorado GRSG ARMPA Addressing COT Report Threats**

Threats to GRSG and its Habitat (from COT Report)	Key Component of the Northwest Colorado ARMPA
Sagebrush removal	<ul style="list-style-type: none"> <li>• PHMA—Maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions</li> <li>• Ensure that all BLM use authorizations contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives for GRSG</li> </ul>
Pinyon and juniper expansion	<ul style="list-style-type: none"> <li>• Remove conifers encroaching into sagebrush habitats, in a manner that considers tribal cultural values, prioritizing occupied GRSG habitat</li> </ul>
Agricultural conversion and exurban development	<ul style="list-style-type: none"> <li>• PHMA—Retain under federal management</li> </ul>

The ARMPA also establishes screening criteria and conditions for new human activities in PHMA and GHMA to ensure a net conservation gain to GRSG. The ARMPA would reduce habitat disturbance and fragmentation by limiting surface-disturbing activities, while addressing changes in resource condition and use through monitoring and adaptive management.

For a full description of the BLM’s ARMPA, see **Section 2**.

#### **I.4 PLANNING CRITERIA**

Planning criteria are based on appropriate laws, regulations, BLM manual and handbook sections, and policy directives. It is also based on public participation and coordination with cooperating agencies, other federal agencies and state and local governments, and Native American tribes. Planning criteria are the standards, rules, and factors used as a framework to resolve issues and develop alternatives. Planning criteria are prepared to ensure decision-making is tailored to the issues and to ensure that the BLM avoid unnecessary data collection and analysis. Preliminary planning criteria were included in the Draft RMP Amendment/Draft EIS and were further refined for the Proposed RMP Amendment/Final EIS.

Planning criteria carried forward for this ARMPA are as follows:

- The BLM used the Western Association of Fish and Wildlife Agencies (WAFWA) Conservation Assessment of GRSG and Sagebrush Habitats (Connelly et al. 2004; Coates and Delehanty 2004, 2008, 2010) and any other appropriate resources to identify GRSG habitat requirements and RDFs.
- The ARMPA is consistent with the BLM’s 2011 National GRSG Conservation Strategy.
- The ARMPA complies with BLM direction, such as FLPMA, NEPA, and Council on Environmental Quality regulations at 40 CFR, Parts 1500-1508; US Department of the Interior regulations at 43 CFR, Parts 4 and 1600; the BLM H-1601-1 Land Use Planning Handbook, “Appendix C: Program-Specific and Resource-Specific Decision Guidance

- Requirements,” for affected resource programs (BLM 2005); the 2008 BLM NEPA Handbook (H-1790-1; BLM 2008); and all other applicable BLM policies and guidance.
- The ARMPA is limited to providing direction specific to conserving GRSG species and habitats.
  - The BLM considered land allocations and prescriptive standards to conserve GRSG and its habitat, as well as objectives and management actions to restore, enhance, and improve GRSG habitat.
  - The ARMPA recognizes valid existing rights.
  - The ARMPA addresses BLM-administered land in GRSG habitats, including surface and split-estate lands with BLM subsurface mineral rights. Any decisions in the ARMPA apply only to BLM-administered lands.
  - The BLM used a collaborative and multi-jurisdictional approach, where appropriate, to determine the desired future condition of BLM-administered lands for conserving GRSG and their habitats.
  - As described by law and policy, the BLM ensured that conservation measures are as consistent as possible with other planning jurisdictions within the planning area boundaries.
  - The BLM considered a range of reasonable alternatives, including appropriate management prescriptions that focus on the relative values of resources, while contributing to the conservation of the GRSG and GRSG habitat.
  - The BLM addressed socioeconomic impacts of the alternatives. It used such tools as the input-output quantitative models Impact Analysis for Planning and the National Renewable Energy Laboratory’s Jobs and Economic Development Impact model for renewable energy analysis, where quantitative data was available.
  - The BLM used the best available scientific information, research, technologies, and results of inventory, monitoring, and coordination to inform appropriate local and regional management strategies that will enhance or restore GRSG habitats.
  - The BLM is consistent with the objectives in BLM Manual 6840 which are to preserve the ecosystem that species depend on and to initiate proactive conservation measures that minimize listing the species under the ESA.
  - Management of GRSG habitat that intersects with designated wilderness areas on BLM-administered lands is guided by BLM Manual 6340, Management of Designated Wilderness Areas. Land use allocations made for GRSG are consistent with BLM Manual 6340 and other laws, regulations, and policies related to wilderness area management.
  - Management of GRSG habitat that intersects with National Conservation Areas on BLM-administered lands is guided by BLM Manual 6220, Management of National Conservation Areas. Land use allocations made for GRSG are consistent with BLM Manual 6220; other laws, regulations, and policies related to areas on BLM-administered lands are guided by BLM Manual 6220, Management of National Conservation Area management.
  - Management of GRSG habitat that intersects with eligible, suitable, or designated wild and scenic rivers are guided by BLM Manual 6400, Wild and Scenic Rivers—Policy and Program



Direction for Identification, Evaluation, Planning, and Management. Land use allocations made for GRSG are consistent with BLM Manual 6400 and other laws, regulations, and policies related to wild and scenic rivers management.

- Management of GRSG habitat that intersects with National Historic Trails or trails under study for possible designation (study trails) are guided by BLM Manual 6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation. Land use allocations made for GRSG are consistent with BLM Manual 6280 and other laws, regulations, and policies related to National Historic Trail management.
- Management of GRSG habitat that intersects with lands with wilderness characteristics on BLM-administered lands is guided by BLM Manuals 6310 and 6320, Conducting Wilderness Characteristics Inventory on BLM Lands and Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process. Land use allocations made for GRSG are consistent with BLM Manuals 6310 and 6320 and other laws, regulations, and policies related to lands with wilderness characteristics management.
- Management of GRSG habitat that intersects with wilderness study areas on BLM-administered lands are guided by the Manual 6330, Management of Wilderness Study Areas. Land use allocations made for wilderness study areas are consistent with Manual 6330 and with other laws, regulations, and policies related to wilderness study area management.
- For BLM-administered lands, all activities and uses in GRSG habitats have followed existing land health standards. Standards and guidelines for livestock grazing and other programs that have developed standards and guidelines are applicable to all alternatives for BLM-administered lands. For National Forest System lands, all activities in GRSG habitat will achieve the GRSG habitat objectives.
- The BLM has consulted with Native American tribes to identify sites, areas, and objects important to their cultural and religious heritage in GRSG habitats.
- The BLM has coordinated and communicated with state, local, and tribal governments to ensure that the BLM considered providing pertinent plans, sought to resolve inconsistencies between state, local, and tribal plans, and provided ample opportunities for state, local, and tribal governments to comment on the development of amendments.
- The ARMPA has incorporated the principles of adaptive management.
- Reasonably foreseeable development scenarios (RDFs) and planning for fluid minerals follow the BLM Handbook H-1624-1 and current fluid minerals manual guidance (oil and gas, coal bed methane, and oil shale) and geothermal resources (BLM 1990).
- Data used in developing the ARMPA are consistent with the principles of the Information Quality Act of 2000 (Public Law 106-554, Section 515); state data was used as the basis for PHMA and GHMA identification.
- State fish and wildlife agencies' GRSG data and expertise have been considered in making management determinations on BLM-administered lands.

- Where more restrictive land use allocations or decisions are made in existing RMPs, those more restrictive land use allocations or decisions will remain in effect and will not be amended by this ARMPA.

# CHAPTER 2

## APPROVED RESOURCE MANAGEMENT PLAN AMENDMENT

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### 2.1 APPROVED RESOURCE MANAGEMENT PLAN AMENDMENT INSTRUCTIONS

This ARMPA is now the baseline plan for managing GRSG in northwest Colorado in the following Field Offices: Colorado River Valley, Grand Junction, Kremmling, Little Snake, and White River. The ARMPA adopts the management described in the Northwest Colorado Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final EIS (BLM and Forest Service 2015), with modifications and clarifications as described in the *Modifications and Clarifications* section of the record of decision (ROD).

In the event there are inconsistencies or discrepancies between previously approved RMPs and this ARMPA, the decisions contained in this ARMPA will be followed, unless there are more restrictive decisions in the existing plans. The BLM will continue to tier to statewide, national, and programmatic EISs and other NEPA and planning documents. It will consider and apply RDFs or other management protocols contained in other planning documents after appropriate site-specific analysis.

All future resource authorizations and actions in GRSG habitat will conform to or be consistent with the decisions contained in this ARMPA. All existing operations and activities authorized under permits, contracts, cooperative agreements, or other authorizations will be modified, as necessary and appropriate, to conform to this plan amendment within a reasonable time frame. However, this ARMPA does not repeal valid existing rights on public lands. These are claims or authorizations that take precedence over the decisions developed in this plan. If such authorizations come up for review and can be modified, they will also be brought into conformance with this plan amendment, as appropriate.

While the Final EIS for the Northwest Colorado Proposed GRSG RMP Amendment constitutes compliance with NEPA for the broad-scale decisions made in this ARMPA, the BLM will continue to prepare environmental assessments and EISs where appropriate as part of implementation-level planning and decision-making.

## 2.2 GOALS, OBJECTIVES, AND MANAGEMENT DECISIONS

This section of the ARMPA presents the goals, objectives, land use allocations, and management actions established for protecting and preserving GRSG and its habitat on BLM-administered lands in Northwest Colorado. These management decisions are presented by program area. Not all types of decisions were identified for each program. A *Monitoring Framework* is also included (in **Appendix D**) to describe how the implemented program decisions will be monitored.

This section is organized by program area beginning with the special status species program, which identifies specific goals, objectives, and management actions for GRSG and its habitat. For ease of identification into the future, each program area has identified abbreviations (see below) for these program areas and each decision in that program is numbered in coordination with the abbreviation:

- Special Status Species (**SSS**)
- Vegetation (**VEG**)
  - Sagebrush Steppe
  - Conifer Encroachment
  - Invasive Species
  - Riparian and Wetlands
- Fire and Fuels Management (**FIRE**)
  - Pre-Suppression
  - Suppression
  - Fuels Management
  - Post-Fire Management
- Range Management (**RM**)
- Wild Horses and Burros (**WHB**)
- Minerals (**MR**)
  - Leasable Minerals
  - Locatable Minerals
  - Salable Minerals
  - Nonenergy Leasable Minerals
  - Coal
- Renewable Energy (Wind and Solar) (**RE**)
- Lands and Realty (**LR**)
  - Utility Corridors and Communication Sites
  - Land Use Authorizations
  - Land Tenure

## – Recommended Withdrawals

- Recreation **(REC)**
- Travel and Transportation **(TTM)**

**Table 2-1** is a summary of the allocation decisions presented for each GRSG habitat management area.

**Table 2-1**  
**Summary of Allocation Decisions by GRSG Habitat Management Areas**

<b>Resource</b>	<b>PHMA</b>	<b>GHMA</b>	<b>LCHMA</b>
Land Tenure	Retain		
Solar	Exclusion	Avoidance	Open
Wind	Exclusion	Avoidance	Open
Major ROWs	Avoidance	Avoidance	Open
Minor ROWs	Avoidance	Avoidance	Open
Oil and Gas	Closed within 1 mile of active leks Remainder of PHMA Open with Major Stipulations	Closed within 1 mile of active leks Open with Major Stipulations within 2 miles of active leks Remainder of GHMA Open with Standard Stipulations	Open with Standard Stipulations
Nonenergy Leasables	Closed	Open	Open
Salable Minerals	Closed	Open	Open
Locatable Minerals	Open	Open	Open
Travel Management	Limited	Limited	Limited
Livestock Grazing	Open	Open	Open

### 2.2.1 Special Status Species (SSS)

**Objective SSS-1:** Maintain and enhance populations and distribution of GRSG by protecting and improving sagebrush habitats and ecosystems that sustain GRSG populations.

#### *Management Decisions (MD)*

**MD SSS-1: Adaptive Management:** Implement Adaptive Management Plan including soft and hard triggers as described in **Appendix H** (Guidelines for Implementation and Adaptive Management). 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.

**MD SSS-2:** 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 accordance with **Appendix B**.

**MD SSS-3:** In all 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.

## 2.2.2 Vegetation (VEG)

### **Sagebrush Steppe (Habitat Restoration)**

**Objective VEG-1:** (1) Use habitat restoration as a tool to create and/or maintain landscapes that benefit GRSG; (2) Use Integrated Vegetation Management to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2; and (3) In PHMA, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Technical Reference 1734-6).

#### *Management Decisions (MD)*

**MD VEG-1:** (ADH) When planning restoration treatments in GRSG habitat, identify seasonal habitat availability, and prioritize treatments in areas that are thought to be limiting GRSG distribution and/or abundance.

The habitat objectives for GRSG (**Table 2-2**) are a list of indicators and values that describe GRSG seasonal habitat conditions. The values for the indicators were derived using a synthesis of current local and regional GRSG habitat research and data and reflect variability of ecological sites. The habitat cover indicators are consistent with existing indicators used by the BLM.

**Table 2-2**  
**Seasonal Habitat Desired Conditions for GRSG**

Attribute	Indicators	Desired Condition
<b>BREEDING AND NESTING</b> <sup>1,2,3</sup> (Seasonal Use Period March 1-June 15) Apply 4 miles from active leks. <sup>15</sup>		
Lek Security	Proximity of trees <sup>4</sup>	Trees or other tall structures are none to uncommon within 1.86 miles of leks <sup>5,6</sup>
	Proximity of sagebrush to leks <sup>5</sup>	Adjacent protective sagebrush cover within 328 feet of lek <sup>5</sup>
Cover	Seasonal habitat extent <sup>6</sup>	>80% of the breeding and nesting habitat
	Sagebrush canopy cover <sup>5,6,7,17</sup> Arid sites Mesic sites	15 to 30% 20 to 30% <sup>17</sup>
	Sagebrush height <sup>6,17</sup> Arid sites <sup>5,6,9</sup> Mesic sites <sup>5,6,10</sup>	11.8 to 31.5 inches (30-80 cm) 15.7 to 31.5 inches (40-80 cm)
	Predominant sagebrush shape <sup>5</sup>	>50% in spreading <sup>11</sup>
	Perennial grass canopy cover (such as native bunchgrasses) <sup>5,6,17</sup> Arid sites <sup>6,9</sup> Mesic sites <sup>6,10,17</sup>	≥10% ≥20% <sup>17</sup>
	Perennial grass and forb height (includes residual grasses) <sup>5,6,7</sup>	>6 inches <sup>6,16,17</sup>

**Table 2-2**  
**Seasonal Habitat Desired Conditions for GRSG**

Attribute	Indicators	Desired Condition
	Perennial forb canopy cover <sup>5,6,7</sup> Arid sites <sup>9</sup> Mesic sites <sup>10</sup>	≥5% <sup>5,6,17</sup> ≥15% <sup>5,6,17</sup>
<b>BROOD-REARING/SUMMER<sup>1</sup> (Seasonal Use Period June 16-October 31)</b>		
Cover	Seasonal habitat extent <sup>6</sup>	>40% of the brood-rearing/summer habitat
	Sagebrush canopy cover <sup>5,6,7,17</sup> Arid sites Mesic sites	10 to 25% 10 to 25%
	Sagebrush height <sup>6,7,17</sup> Arid sites Mesic sites	11.8 to 31.5 inches (30 to 80 cm) 13.8 to 31.5 inches (35 to 80 cm)
	Perennial grass canopy cover and forbs <sup>6,7,17</sup> Arid sites Mesic sites	>15% <sup>17</sup> >25% <sup>17</sup>
	Riparian areas (both lentic and lotic systems)	Proper Functioning Condition <sup>13</sup>
	Upland and riparian perennial forb availability <sup>5,6</sup>	Preferred forbs are common with several preferred species present <sup>12</sup>
<b>WINTER<sup>1</sup> (Seasonal Use Period November 1-February 28)</b>		
Cover and Food	Seasonal habitat extent <sup>5,6,7</sup>	>80% of the winter habitat
	Sagebrush canopy cover above snow <sup>5,6,7,17</sup>	>20% Arid, 25% Mesic <sup>17</sup>
	Sagebrush height above snow <sup>5,6,7</sup>	>10 inches <sup>14</sup>

<sup>1</sup> Seasonal dates can be adjusted; that is, start and end dates may be shifted either earlier or later, but the amount of days cannot be shortened or lengthened by the local unit.

<sup>2</sup> Doherty 2008

<sup>3</sup> Holloran and Anderson 2005.

<sup>4</sup> Baruch-Mordo et al. 2013

<sup>5</sup> Stiver et. al. 2014

<sup>6</sup> Connelly et al. 2000

<sup>7</sup> Connelly et al. 2003

<sup>9</sup> 10–12 inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush sub-species for this type site (Stiver et. al. 2014).

<sup>10</sup> ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush sub-species for this type site (Stiver et. al. 2014).

<sup>11</sup> Sagebrush plants with a spreading shape provide more protective cover than sagebrush plants that are more tree or columnar shaped (Stiver et. al. 2014).

<sup>12</sup> Preferred forbs are listed in Habitat Assessment Framework Table III-2 (Stiver et. al. 2014). Overall, total forb cover may be greater than that of preferred forb cover since not all forb species are listed as preferred in Table III-2.

<sup>13</sup> Existing land management plan desired conditions for riparian areas/wet meadows (spring seeps) may be used in place of properly functioning conditions, if appropriate for meeting GRSG habitat requirements.

<sup>14</sup> 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.

<sup>15</sup> Buffer distance may be changed only if 3 out of 5 years of telemetry studies indicate the 4 miles is not appropriate.

<sup>16</sup> Measured as “droop height”; the highest naturally growing portion of the plant.

<sup>17</sup> Colorado Greater Sage-grouse Steering Committee 2008

When determining if a site is meeting habitat objectives, the measurements from that particular site would be assessed based on the range of values for the indicators in **Table 2-2**. **Table 2-2** is one component of GRSG multi-scale habitat assessment (see **Appendix D**, Greater Sage-Grouse Monitoring Framework). The results of the habitat assessment would be used during the land health evaluation to ascertain if the land health standard applicable to GRSG habitat (e.g., special status species habitat standard) is being met.

When authorizing activities in GRSG habitat, the BLM would consider if habitat objectives are being achieved. If the habitat objectives are not being achieved, and the site has the potential for achieving these objectives, the BLM would determine the causal factor(s) and make the necessary management adjustments to address the causal factor(s), following current BLM regulations and policy.

**MD VEG-2:** (PHMA) Include GRSG habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007), or, if available, state GRSG conservation plans and appropriate local information in habitat restoration objectives. Make meeting these objectives within GRSG PHMA areas a high restoration priority.

**MD VEG-3:** (ADH) Require use of native plant seeds that are beneficial for GRSG for vegetation treatments based on availability, adaptation (site potential), probability for success (Richards et al. 1998), and the vegetation management objectives for the area covered by the treatment. Where probability of success or native seed availability is low, use species that meet soil stability and hydrologic function objectives as well as vegetation and GRSG habitat objectives (Pyke 2011).

**MD VEG-4:** (PHMA) Design post restoration 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 management, travel management, and other uses, to achieve and maintain the desired condition of emergency stabilization and rehabilitation (ESR) projects to benefit GRSG (Eiswerth and Shonkwiler 2006).

**MD VEG-5:** (ADH) Manage for a habitat objective that is primarily sagebrush with a mosaic of seral stages and sagebrush in all age classes. On a site-by-site basis, do not allow treatments that would adversely affect GRSG populations.

**MD VEG-6:** (ADH) Make reestablishment of sagebrush and desirable understory plant cover (relative to ecological site potential) the highest priority for restoration efforts. Consider GRSG habitat requirements in conjunction with all resource values managed by the BLM, and give preference to GRSG habitat unless site-specific circumstances warrant an exemption.

**MD VEG-7:** (ADH) Authorize local sagebrush seed collection to support local restoration efforts.

**MD VEG-8:** (ADH) Treat areas that contain *Bromus tectorum* and other invasive or noxious species to minimize competition and favor establishment of desired species.

### **Conifer Encroachment**

**MD VEG-8:** Remove conifers encroaching into sagebrush habitats, in a manner that considers tribal cultural values. Prioritize treatments closest to occupied GRSG habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. Use of site-specific analysis and principles like those



included in the Fire and Invasives Assessment Team report (Chambers et. al., 2014) and other ongoing modeling efforts to address conifer encroachment will help refine the location for specific priority areas to be treated. See **Appendix H**, Guidelines for Implementation and Adaptive Management.

### 2.2.3 Fire and Fuels Management (FIRE)

#### **Suppression (Fire Operations)**

**Objective FIRE-1:** Manage fire to maintain and enhance large blocks of contiguous sagebrush.

#### *Management Decisions (MD)*

**MD FIRE-1:** (PHMA) The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Consider GRSG habitat requirements commensurate with all resource values at risk managed by the BLM.

**MD FIRE-2:** (GHMA) The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Consider GRSG habitat requirements commensurate with all resource values at risk managed by the BLM.

**MD FIRE-3:** (PHMA/GHMA) Temporary closures would be considered in accordance with 43 CFR subparts 8364, 8351, 6302 and 8341. Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR, Part 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas

#### **Fuels Management**

**Objective FIRE-2:** Manage the fuels program to avoid GRSG habitat loss and restore damaged habitat.

**MD FIRE-4:** (PHMA) Do not reduce sagebrush canopy cover to less than 15 percent (Connelly et al. 2000; Hagen et al. 2007) in a project area unless a vegetation management objective requires additional reduction in sagebrush cover to meet strategic protection of GRSG PHMA and conserve habitat quality for the species, in consultation with the State of Colorado.

**MD FIRE-5:** (PHMA) Apply appropriate seasonal restrictions for implementing vegetation management treatments according to the type of seasonal habitats present in a Colorado management zone (MZ).

**MD FIRE-6:** (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, unless in consultation with the State of Colorado it is deemed necessary to reduce risk to life and property.

**MD FIRE-7:** (ADH) 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). 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 or natural ignition fire for fuels breaks that would disrupt fuel continuity or enhance land health could be considered where cheatgrass is deemed a minor threat.

If prescribed fire is used in GRSG habitat, the NEPA analysis for the burn plan will address:

- why alternative techniques were not selected as 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

Prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the burn plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect GRSG habitat in PHMA (e.g., creating fuel designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer-reduction treatments, or being used as a component with other treatment methods to combat annual grasses and restore native plant communities).

Prescribed fire in known winter range shall only be considered after the NEPA analysis for the burn plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat would need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.

**MD FIRE-8:** (ADH) Monitor and control invasive vegetation post treatment.

**MD FIRE-9:** (ADH) Require use of native plant seeds for vegetation treatments based on availability, adaptation (site potential), probability for success (Richards et al. 1998), and the vegetation management objectives for the area covered by the treatment. Where probability of success or native seed availability is low, use species that meet soil stability and hydrologic function objectives as well as vegetation and GRSG habitat objectives (Pyke 2011).

**MD FIRE-10:** (PHMA) Design post fuels 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 management, travel management, and other uses, to achieve and maintain the desired condition of ESR projects to benefit GRSG (Eiswerth and Shonkwiler 2006).

**MD FIRE-11:** (ADH) Design vegetation treatments in GRSG habitats to strategically facilitate firefighter safety, reduce wildfire threats, and extreme fire behavior. This may involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant serial stages, natural barriers, and roads in order to constrain fire spread and growth. This may require vegetation treatments to be implemented in a more linear versus block design (Launchbaugh et al. 2007).

**MD FIRE-12:** (PHMA) 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 to native perennial grasses consistent with the objectives and conservation measures of the grazing section.

### **Post-Fire Management (Emergency Stabilization and Rehabilitation)**

**Objective FIRE-3:** Use ESR to address post-wildfire threats to GRSG habitat.

#### *Management Decisions (MD)*

**MD FIRE-13:** (ADH) Require use of native plant seeds that are beneficial for GRSG for vegetation treatments based on availability, adaptation (site potential), probability for success (Richards et al. 1998), and the vegetation management objectives for the area covered by the treatment. Where attempts to use native seeds have failed, or native seed availability is low, use species that meet soil stability and hydrologic function objectives, as well as vegetation and GRSG habitat objectives (Pyke 2011).

**MD FIRE-14:** (ADH) Design post-fire ESR and 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 management, travel management, and other uses to achieve and maintain the desired condition of ESR and Burn Area Emergency Rehabilitation projects to benefit GRSG (Eiswerth and Shonkwiler 2006).

**MD FIRE-15:** (ADH) Rest burned areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise (Wyoming Game and Fish Department 2011).

## **2.2.4 Range Management (RM)**

**Objective RM-1:** GRSG objectives and well-managed livestock operations are compatible because forage availability for livestock and hiding cover for GRSG are both dependent on healthy plant communities. Agreements with partners that promote sustainable GRSG populations concurrent with sustainable ranch operations offer long-term stability. In the context of sustainable range operations, manage the range program to: 1) maintain or enhance vigorous and productive plant communities; 2) maintain residual herbaceous cover to reduce predation during GRSG nesting and early brood-rearing; 3) avoid direct adverse impacts to GRSG-associated range project infrastructure; and 4) employ grazing management strategies that avoid concentrating animals on key GRSG habitats during key seasons.

#### *Management Decisions (MD)*

**MD RM-1:** (ADH) Within ADH, incorporate GRSG habitat objectives and management considerations into all BLM grazing allotments through Allotment Management Plans.

**MD RM-2:** (ADH) Work cooperatively on integrated ranch planning within GRSG habitat. Develop management strategies that are seamless with respect to actions on public and private lands within BLM grazing allotments.

**MD RM-3:** (PHMA) 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 PHMA.

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 (e.g., fire) and legal obligations.

**MD RM-4:** (ADH) Conduct land health assessments that include (at a minimum) indicators and measurements of vegetation structure/condition/composition specific to achieving GRSG habitat objectives (Doherty et al. 2011). If local/state seasonal habitat objectives are not available, use GRSG habitat recommendations from Connelly et al. 2000 and Hagen et al. 2007.

#### Implementing Management Actions after Land Health and Habitat Evaluations

**MD RM-5:** (ADH) Develop specific objectives—through NEPA analysis conducted in accordance with the permit/lease renewal process—to conserve, enhance, or restore GRSG habitat. Base benchmarks on Ecological Site/Range Site Descriptions. When existing on Ecological Site/Range Site Descriptions have not been developed, or are too general to serve adequately as benchmarks, identify and document local reference sites for areas of similar potential that exemplify achievement of GRSG habitat objectives and use these sites as the benchmark reference. Establish measurable objectives related to GRSG habitat from baseline monitoring data, ecological site descriptions, or land health assessments/evaluations, or other habitat and successional stage objectives.

**MD RM-6:** (ADH) Manage for vegetation composition and structure consistent with ecological site potential and within the reference state subject to habitat objectives, including successional stages.

**MD RM-7:** (ADH) Include terms and conditions on grazing permits and leases that address disruptive activities that affect GRSG and assure plant growth requirements are met and residual forage remains available for GRSG hiding cover.

Specify as necessary:

1. Season or timing of use
2. Numbers of livestock (include temporary non-use or livestock removal)
3. Distributions of livestock use
4. Intensity of use (utilization or stubble height objectives)
5. Kind of livestock (e.g., cattle, sheep, horse, llama, alpaca, and goat)

6. Class of livestock (e.g., yearlings versus cow/calf pairs)
7. Locations of bed grounds, sheep camps, trail routes, and the like

**MD RM-8:** (ADH) Develop drought contingency plans at the appropriate landscape unit that provide for a consistent/appropriate BLM response. Plans shall establish policy for addressing ongoing drought and post-drought recovery for GRSG habitat objectives.

**MD RM-9:** The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA would include specific management thresholds based on Table 2.3 in the Proposed Plan, Land Health Standards (43 CFR, Part 4180.2), ecological site potential, and one or more defined responses that would allow the authorizing officer to make adjustments to livestock grazing that have already been subject to NEPA analysis.

**MD RM-10:** Allotments within PHMA, focusing on those containing riparian areas, including wet meadows, would be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.

#### ***Riparian Areas and Wet Meadows***

**MD RM-11:** (ADH) Manage riparian areas and wet meadows for proper functioning condition within ADH.

**MD RM-12:** (ADH) Within ADH, manage wet meadows to maintain diverse species richness, including a component of perennial forbs, relative to site potential (i.e., reference state).

**MD RM-13:** (ADH) Establish permit/lease terms and conditions in conjunction with grazing strategies to ensure that the timing and level of utilization results in wet meadows with diverse species richness, including a component of perennial forbs, relative to site potential (i.e., reference state).

**MD RM-14:** (ADH) Authorize new water development only after determining that the project will not adversely impact GRSG from habitat loss. Ensure that adequate long-term grazing management is in effect before authorizing water developments that may increase levels of use or change season of use. Give specific consideration to adjacent or downstream wetland habitat when a project entails a diversion from a spring or seep.

**MD RM-15:** (ADH) Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area. If necessary to maintain GRSG populations or reverse a downward population trend caused by habitat loss, modify the project as necessary to restore the applicable wetland habitat.

#### ***Treatments to Increase Forage for Livestock/Wild Ungulates***

**MD RM-16:** (ADH) Manage for a habitat objective that is primarily sagebrush with a mosaic of seral stages and sagebrush in all age classes. On a site-by-site basis, do not allow treatments that would adversely affect GRSG populations. See **Appendix H**, Guidelines for Implementation and Adaptive Management.

**MD RM-17:** (PHMA) Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to GRSG PHMA to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If these seedings are part of an Allotment Management Plan/Conservation Plan or if they provide value in conserving or enhancing the rest of PHMA, then no restoration would be necessary. Assess the compatibility of these seedings for GRSG habitat or as a component of a grazing system during the land health assessments (Davies et al. 2011).

For example: Some introduced grass seedings are an integral part of a livestock management plan and reduce grazing pressure in important sagebrush habitats or serve as a strategic fuels management area.

### ***Structural Range Improvements and Livestock Management Tools***

**MD RM-18:** (ADH) Design new range improvement projects to enhance livestock distribution and to control the timing and intensity of utilization. Examples of structural range improvement projects are cattle guards, fences, corrals, pipelines, troughs, storage tanks, windmills, ponds/reservoirs, solar panels, and spring developments.

Include a plan to monitor and control invasive plant species following any related ground disturbance. Place mineral or salt supplements away from water sources and leks in locations that enhance livestock distribution.

**MD RM-19:** (PHMA) Where conditions create the potential for impacts from West Nile virus from developments or modification of water developments, use preferred design features (PDFs)/RDFs to mitigate the potential impacts. See **Appendix C** (Required Design Features, Preferred Design Features, and Suggested Design Features).

**MD RM-20:** (PHMA) Evaluate existing structural range improvements to determine if modifications are necessary to maintain GRSG populations or reverse a downward population trend caused by habitat loss. Modify, relocate, or remove projects as necessary.

Place mineral and salt supplements away from water sources and leks in locations that enhance livestock distribution.

**MD RM-21:** (ADH) Mark fences in high risk areas (Christiansen 2009; Stevens 2011).

(PHMA) Where marking fences does not reduce fence-related GRSG mortality, modify fences. Where modification does not reduce GRSG mortality and the fence-related mortality is sufficient to adversely affect GRSG populations, remove fences.

**MD RM-22:** (ADH) Monitor for and treat invasive species associated with existing range improvements (Gelbard and Belnap 2003; Bergquist et al. 2007).

### ***Retirement of Grazing Privileges***

**MD RM-23:** (ADH) 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 shall 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.

When a permittee or lessee voluntarily relinquishes grazing preference, consider conversion of the allotment to a reserve common allotment that will remain available for use on a temporary, nonrenewable basis for the benefit of GRSG habitat. Authorize temporary nonrenewal permits in Reserve Common Allotments to meet resource objectives elsewhere such as rest or deferment due to fire or vegetation treatments. Temporary use of reserve common allotments would not be allowed due to drought or overuse of customary allotments.

### **2.2.5 Wild Horses and Burros (WHB)**

**Objective WHB-1:** Manage wild horses in a manner designed to 1) avoid reductions in grass, forb, and shrub cover, and 2) avoid increasing unpalatable forbs and invasive plants such as *Bromus tectorum*.

#### *Management Decisions (MD)*

**MD WHB-1:** (ADH) Manage wild horse population levels within established appropriate management levels.

**MD WHB-2:** (ADH) Prioritize gathers in GRSG PHMA, unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health impacts. Consider GRSG habitat requirements in conjunction with all resource values managed by the BLM, and give preference to GRSG habitat unless site-specific circumstances warrant an exemption.

**MD WHB-3:** (PHMA) Within PHMA, develop or amend BLM HMA plans to incorporate GRSG habitat objectives and management considerations for all BLM HMAs. When developing HMA plans, apply all appropriate conservation measures from the range program, including, but not limited to, utilization of forage and structural range improvements.

**MD WHB-4:** (PHMA) For all BLM HMAs within PHMA, prioritize the evaluation of all appropriate management levels based on indicators that address vegetation structure/condition/composition and measurements specific to achieving GRSG habitat objectives. Consider GRSG habitat requirements in conjunction with all resource values managed by the BLM, and give preference to GRSG habitat unless site-specific circumstances warrant an exemption.

**MD WHB-5:** (ADH) Coordinate with other resources (range, wildlife, and riparian) to conduct land health assessments to determine existing vegetation structure/condition/composition within all BLM HMAs.

**MD WHB-6:** (PHMA) When conducting NEPA analysis for wild horse management activities, water developments, or other rangeland improvements for wild horses in PHMA, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PHMA.

## 2.2.6 Minerals (MR)

### *Leasable Fluid Minerals<sup>1</sup>*

**Objective MR-1:** Manage fluid minerals to avoid, minimize, and compensate for: 1) direct disturbance, displacement, or mortality of GRSG; 2) direct loss of habitat or loss of effective habitat through fragmentation; and 3) cumulative landscape-level impacts. Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside 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 GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 US Code 226(p) and 43 CFR, Part 3162.3-1(h).

### *Management Decisions (MD)*

#### Unleased Fluid Minerals

**MD MR-1:** No new leasing 1 mile from active leks in ADH.

**MD MR-2: No Surface Occupancy (NSO)** without waiver or modification in PHMA. See **Appendix G** (Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations) for exceptions. The following stipulation would apply:

**GRSG NSO-46e:** See **Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations, for waiver, modification, and exception criteria.

**MD MR-3:** In GHMA, any new leases would include **TL** stipulations to protect GRSG and its habitat. The following stipulation would apply:

**GRSG TL-46e:** No activity associated with construction, drilling, or completions within 4 miles from active leks during lekking, nesting, and early brood-rearing (March 1 to July 15). Authorized Officer could grant an exception, modification, or waiver in consultation with the State of Colorado (**Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations).

**MD MR-4: No Surface Occupancy (NSO)** within 2 miles of active leks in GHMA. Waivers, exceptions, and modification could be obtained under conditions described in **Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations.

**MD MR-5:** disturbance on new leases would be limited to 3 percent in PHMA (biologically significant unit) (see **Appendix E**, Methodology for Calculating Disturbance Caps) and would be limited to 1 disturbance per 640 acres calculated by Colorado MZ. The following Lease Notice (LN) would apply:

**GRSG LN-46e:** Any lands leased in PHMA are subject to the restrictions of 1 disturbance per 640 acres calculated by biologically significant unit (Colorado populations) and proposed project analysis area

<sup>1</sup> The Oil Shale and Tar Sands Programmatic EIS (March 2013) excludes from oil shale leasing all core/priority GRSG habitat (PHMA in Colorado). Note that in GHMA, the management actions for fluid minerals also pertain to oil shale resources through all alternatives. Decisions for leasable fluid minerals also apply to uranium.



(Colorado MZ) to allow clustered development (**Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations).

**MD MR-6:** No new leasing in PHMA if disturbance cap exceeds 3 percent calculated by biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ) or 1 disturbance per 640 acres density is exceeded (see **Appendix E**, Methodology for Calculating Disturbance Caps).

**MD MR-7:** (PHMA) Allow geophysical exploration within PHMA to obtain information for existing federal fluid mineral leases or areas adjacent to state or fee lands within PHMA. Allow geophysical operations only using helicopter-portable drilling, wheeled or tracked vehicles on existing roads, or other approved methods conducted in accordance with seasonal TLs and other restrictions that may apply. 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 GRSG.

#### Leased Fluid Minerals

**Objective MR-2:** Where a proposed fluid mineral development project on an existing lease could adversely affect GRSG populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce, and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator or project proponent in developing an Application for Permit to Drill for the lease to avoid, minimize, and compensate for impacts to GRSG or its habitat and will ensure that the best information about GRSG and its habitat informs and helps guide development of such federal leases.

**MD MR-8:** Within 1 mile of active leks, disturbance, disruptive activities, and occupancy are precluded.

If it is determined that this restriction would render the recovery of fluid minerals infeasible or uneconomic, considering the lease as a whole, or where development of existing leases requires that disturbance density exceeds 1 disturbance per 640 acres and/or the 3 percent disturbance cap (see **Appendix E**, Methodology for Calculating Disturbance Caps), use the **criteria\*** below to site proposed lease activities to meet GRSG habitat objectives and require mitigation as described in **Appendix F** (Greater Sage-Grouse Mitigation Strategy).

**MD MR-9:** In PHMA and within 4 miles of an active lek, the **criteria\*** below would be applied to guide development of the lease or unit that would result in the fewest impacts possible to GRSG.

**MD MR-10:** Based on site-specific conditions, prohibit construction, drilling, and completion within PHMA within 4 miles of a lek during lekking, nesting, and early brood-rearing (March 1 to July 15). In consultation with the State of Colorado, this TL may be adjusted based on application of the criteria below.

#### **Criteria\*:**

- Location of proposed lease activities in relation to critical GRSG habitat areas as identified by factors, including, but not limited to, average male lek attendance and/or important seasonal habitat

- An evaluation of the potential threats from proposed lease activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation
- An evaluation of the proposed lease activities, including design features, in relation to the site-specific terrain and habitat features. For example, within 4 miles from a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors. This is particularly likely in Colorado MZ 17, which has an atypical GRS habitat featuring benches with GRS habitat interspersed with steep ravines

To authorize an activity based on the criteria above, the environmental record of review must show no significant direct disturbance, displacement, or mortality of GRS.

**MD MR-11:** Within PHMA, operators would be encouraged to complete Master Development Plans in consultation with the State of Colorado, instead of single-well Applications for Permit to Drill for all but exploratory wells. (Notice to Lessees-54e: see **Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations.)

**MD MR-12:** When necessary, conduct effective mitigation in 1) GRS PHMA or—less preferably—2) GHMA (dependent upon the area-specific ability to increase GRS populations and in consultation with the State of Colorado).

**MD MR-13:** Conduct effective compensatory mitigation first within PHMA in the same Colorado MZ where the impact is realized; if not possible, then conduct mitigation within the same population as the impact, or in other Colorado GRS populations, in consultation with the State of Colorado.

**MD MR-14:** For future actions in ADH, require a full reclamation bond specific to the site in accordance with 43 CFR, Parts 3104.2, 3104.3, and 3104.5. Ensure bonds are sufficient for costs relative to reclamation (Connelly et al. 2000; 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 for the BLM will perform the work.

### ***Locatable Minerals***

**Objective MR-3:** Manage solid mineral programs to avoid, minimize, and compensate for adverse impacts to GRS habitat to the extent practical under the law and BLM jurisdiction.

**MD MR-15:** (PHMA) In plans of operations required prior to any proposed surface-disturbing activities include as appropriate effective mitigation for conservation in accordance with existing policy (BLM Washington Office Instruction Memorandum 2013-142).

**MD MR-16:** (PHMA) Where applicable to prevent unnecessary or undue degradation, apply seasonal restrictions if deemed necessary.

### ***Saleable Minerals***

**Objective MR-4:** Manage solid mineral programs to avoid, minimize, and compensate for adverse impacts to GRS habitat to the extent practical under the law and BLM jurisdiction.

**MD MR-17:** (PHMA) Close PHMA to new mineral material sales. However, these areas would remain open to free use permits and the expansion of existing active pits, only if the following criteria are met:

- The activity is within the biologically significant unit and the project area disturbance cap
- The activity is subject to the provisions set forth in the mitigation strategy (**Appendix F**)
- All applicable required/preferred design features are applied; and [if applicable] the activity is permissible under the regional screening criteria (**Appendix H**, Guidelines for Implementation and Adaptive Management).

**MD MR-18:** (ADH) Restore salable mineral pits no longer in use to meet GRSG habitat conservation objectives. Require reclamation/restoration of GRSG habitat as a viable long-term goal to improve the GRSG habitat (**Appendix H**, Guidelines for Implementation and Adaptive Management)

### ***Nonenergy Leasable Minerals***

**Objective MR-5:** Manage solid mineral programs to avoid, minimize, and compensate for adverse impacts to GRSG habitat to the extent practical under the law and BLM jurisdiction.

**MD MR-19:** No new nonenergy mineral leasing in PHMA.

**MD MR-20:** Existing nonenergy mineral leases: Apply the following conservation measures as conditions of approval (COAs) where applicable and feasible:

- Preclude new surface occupancy on existing leases within 1 mile of active leks (Blickley et al. 2012; Harju et al. 2012).
- If the lease is entirely within 1 mile of an active lek, require any development to be placed in the area of the lease least harmful to GRSG based on vegetation, topography, or other habitat features (**Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations).
- Preclude new surface disturbance on existing leases within 2 miles of active leks within PHMA. If the lease is entirely within 2 miles of an active lek, require any development to be placed in the area of the lease least harmful to GRSG based on vegetation, topography, or other habitat features (**Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations).
- Limit permitted disturbances to 1 disturbance per 640 acres average across the landscape in PHMA. Disturbances may not exceed 3 percent in PHMA (see **Appendix E**, Methodology for Calculating Disturbance Caps) in any biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ).

**GRSG TL-47-51** – Based on site-specific conditions, prohibit surface occupancy or disturbance within PHMA within 4 miles of a lek during lekking, nesting, and early brood-rearing (March 1 to July 15).

### ***Mineral Split-Estate***

**Objective MR-6:** Utilize federal authority to protect GRSG habitat on split-estate lands to the extent provided by law.

**MD MR-21:** (PHMA/GHMA) Where the federal government owns the mineral estate in PHMA and GHMA, and the surface is in nonfederal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs/PDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.

**MD MR-22:** (PHMA/GHMA) Where the federal government owns the surface and the mineral estate is in nonfederal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs/PDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.

### **Solid Minerals – Coal**

**Objective MR-7:** Manage solid mineral programs to avoid, minimize, and compensate for adverse impacts to GRS habitat to the extent practical under the law and BLM jurisdiction.

**MD MR-23:** (ADH) *Existing Coal Leases:* During the term of the lease, encourage the lessee to voluntarily follow PDFs (**Appendix C**, Required Design Features, Preferred Design Features, and Suggested Design Features) to reduce and mitigate any adverse impacts to GRS habitat. 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 GRS habitat for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1).

To authorize expansion of existing leases, the environmental record of review must show no significant direct disturbance, displacement, or mortality of GRS habitat based on these criteria:

- Important GRS habitat areas as identified by factors, including, but not limited to, average male lek attendance and/or important seasonal habitat
- An evaluation of the threats affecting the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation
- An evaluation of terrain and habitat features. For example, within 4 miles from a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors.

**MD MR-24:** No new surface coal mine leases would be allowed in PHMA. At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM would 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 GRS habitat for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1).

**MD MR-25:** *New Underground Coal Mine Leases would be subject to:* Special Stipulations:

- All surface disturbances will be placed more than 2 miles from active leks.
- No surface disturbance on remainder of PHMA subject to the following conditions:

If, after consultation with the State of Colorado, and in consideration of the following criteria, there is no significant direct disturbance, displacement, or mortality of GRSG or impact to GRSG habitat;

- 3 percent disturbance cap in PHMA with disturbances limited to 1 disturbance per 640 acres density calculated by Colorado MZ and proposed project analysis area would apply to new lease activities
- No new leasing in PHMA if disturbance cap exceeds 3 percent (see **Appendix E**, Methodology for Calculating Disturbance Caps) for the biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ) or 1 disturbance per 640 acres is exceeded

**MD MR-26:** (ADH) Underground mining exemption criteria for new leases:

- I. Federal lands with coal deposits that would be mined by underground mining methods shall not be assessed as unsuitable where there would be no surface coal mining operations, as defined in 43 CFR, Part 3400.0-5(mm) of this title, on any lease, if issued.

Where underground mining will include surface operations and surface impacts on federal lands to which a criterion applies, the lands shall be assessed as unsuitable unless the surface management agency find that a relevant exception or exemption applies. See 43 CFR, Part 3461.1(b). Where practicable, limit permitted disturbances as defined in **Appendix H**, Guidelines for Implementation and Adaptive Management, to 3 percent in any biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ). Where disturbance exceeds 3 percent in any biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ), make additional, effective mitigation necessary to offset the resulting loss of GRSG habitat.

**MD MR-27:** (PHMA) See 43 CFR, Part 3461.4 (a) and (b), Exploration. Authorized exploration activities may be conducted only if the Authorized Officer reviews any application for an exploration license on such lands to ensure that any exploration does not harm any value for which the area has been assessed as unsuitable and determines that the exploration will not adversely affect GRSG populations due to habitat loss or disruptive activities or that the impact can be fully mitigated. Where practicable, limit permitted disturbances as defined in **Appendix H**, Guidelines for Implementation and Adaptive Management, to 3 percent in PHMA any biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ). Where disturbance exceeds 3 percent in any biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ), make additional, effective mitigation necessary to offset the resulting loss of GRSG habitat.

**MD MR-28:** (PHMA) *Underground mining – lease renewals:*

- Require that all surface mining appurtenant facilities for underground mining be located outside of PHMA (unless the lessee establishes that that such location is not technically feasible).
- If surface mining facilities must be located in PHMA, require the facilities be located in areas of existing disturbance and to have the smallest footprint possible utilizing design strategies to minimize disturbance, such as those identified in the PDF section of this table.

- Apply as conditions of lease renewal all appropriate conservation measures, PDFs, and mitigation designed to avoid or minimize impacts to GRSG.

(ADH) *Surface mining – lease renewals/readjustments*: Apply as conditions of lease renewal all appropriate conservation measures, PDFs, and mitigation designed to avoid or minimize impacts to GRSG.

**MD MR-29:** (ADH) Recommend or require as appropriate during all relevant points of the coal leasing and authorization process, minimization of surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on important seasonal GRSG habitats. Apply these measures during activity-level planning (jurisdiction is managed by the State). The Office of Surface Mining or a delegated State Regulatory authority under the Surface Mining Control and Reclamation Act of 1977 authorizes surface-disturbing activities of active coal mining operations on federal mineral estate. The BLM coordinates with the Surface Mining Control and Reclamation Act of 1977 in overseeing coal leasing and permitting on federal lands. The resource recovery and protection plan for which BLM recommends approval to the Secretary integrates the reclamation plan recommended by the Surface Mining Control and Reclamation Act of 1977 for active coal mines on federal mineral estate. Approval of coal mining plans on lands containing leased federal coal is reserved to the Secretary of the Interior (30 CFR, Part 740.4). BLM issues coal leases and exploration licenses for right of entry to promote development of minerals on federal lands. See the following in regards to BLM exploration: 43 CFR, Part 3461.4, Exploration. States with delegated authority on federal lands from the Office of Surface Mining may have their own GRSG guidance in association with state wildlife agencies and such guidance may differ from state to state.

**MD MR-30:** (ADH) (a) Assessment of any area as unsuitable for all or certain stipulated methods of coal mining operations pursuant to Section 522 of the Surface Mining Control and Reclamation Act of 1977 (30 US Code 1272) and the regulations of this subpart does not prohibit exploration of such area under 43 CFR, Parts 3410 and 3480, and 43 CFR, Part 3461.4(a)

**MD MR-31:** (ADH) (b) An application for an exploration license on any lands assessed as unsuitable for all or certain stipulated methods of coal mining shall be reviewed by the BLM to ensure that exploration does not harm any value for which the area has been assessed as unsuitable (43 CFR, Part 3461.4(b))

### 2.2.7 Renewable Energy (Wind and Solar) (RE)

**Objective RE-I:** Manage the Lands and Realty program to avoid, minimize, and compensate for the loss of habitat and habitat connectivity through the authorizations of ROWs, land tenure adjustments, proposed land withdrawals, agreements with partners, and incentive programs.

#### *Wind Energy Development*

**MD RE-1:** (PHMA) Manage PHMA as exclusion areas for wind energy development.

**MD RE-2:** (GHMA) Manage GHMA as avoidance areas for wind energy development.

#### *Industrial Solar Development*

**MD RE-3:** (PHMA) Manage PHMA as exclusion areas for industrial solar projects.

**MD RE-4:** (GHMA) Manage GHMA as avoidance areas for industrial solar projects.

### 2.2.8 Lands and Realty (LR)

**Objective LR-1:** Manage the Lands and Realty program to avoid, minimize, and compensate for the loss of habitat and habitat connectivity through the authorizations of ROWs, land tenure adjustments, proposed land withdrawals, agreements with partners, and incentive programs.

**Objective LR-2:** Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.

#### **Land Use Authorizations**

**MD LR-1:** Manage areas within PHMA as avoidance areas\* for BLM ROW permits. (See **Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations.)

**MD LR-2:** Manage areas within GHMA as avoidance areas\* for major (transmission lines greater than 100 kilovolts and pipelines greater than 24 inches) and minor BLM ROW permits. (See **Appendix G**, Stipulations Applicable to Fluid Mineral Leasing and Land Use Authorizations.)

**MD LR-3:** No new roads or above-ground structures would be authorized within 1 mile of an active lek.

Above-ground structures are defined as structures that are located on or above the surface of the ground, including but not limited to: roads, fences, communication towers, and/or any structure that would provide perches.

Above-ground structures would only be authorized if:

1. It is consistent with the overall objective of the RMP Amendment;
2. The effect on GRSG populations or habitat is nominal or incidental;
3. Allowing the exception prevents implementation of an alternative more detrimental to GRSG or similar environmental concern, and;
4. Rigid adherence to the restriction would be the only reason for denying the action.

**MD LR-4:** PHMA and GHMA are designated as avoidance areas for high-voltage transmission line ROWs, except for the transmission projects specifically identified below. All authorizations in these areas, other than the following identified projects, must comply with the conservation measures outlined in this ARMPA, including the RDFs and avoidance criteria presented in this document. The BLM is currently processing applications for the TransWest and Energy Gateway South Transmission Line projects, and the NEPA review for these projects is well underway. Conservation measures for GRSG are being analyzed through the projects' NEPA review process, which should achieve a net conservation benefit for the GRSG.

**\*GRSG PHMA ROW Avoidance.** ROWs may be issued after documenting that the ROWs would not adversely affect GRSG populations based on the following criteria:

- Location of proposed activities in relation to critical GRSG habitat areas as identified by factors, including, but not limited to, average male lek attendance and/or important seasonal habitat.
- An evaluation of the potential threats from proposed activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation
- An evaluation of the proposed activities in relation to the site-specific terrain and habitat features. For example, within 4 miles from a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors.

**MD LR-5:** Any new projects within PHMA would be subject to the 3 percent disturbance cap as described in **Appendix E**, Methodology for Calculating Disturbance Caps. If the 3 percent disturbance cap is exceeded in PHMA in any Colorado MZ, no new ROW would be authorized in PHMA within that biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ), unless site-specific analysis documents no impact to GRSG. Within existing 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.

**MD LR-6:** Prohibit surface occupancy and surface-disturbing activities associated with BLM ROW within 4 miles from active leks during lekking, nesting, and early brood-rearing (March 1 to July 15). (See special stipulations applicable to **GRSG PHMA ROW TL**.)

**MD LR-7:** Construct new roads to the appropriate Gold Book standard and add the surface disturbance to the total disturbance in the PHMA.

**MD LR-8:** (PHMA) In PHMA, or within 4 miles of an active lek, for ROW renewals, where existing facilities cannot be removed, buried, or modified, require perch deterrents.

**MD LR-9:** (PHMA) Reclaim and restore ROWs considering GRSG habitat requirements.

**MD LR-10:** (PHMA) Designate new ROW corridors in GRSG PHMA only where there is a compelling reason to do so and location of the corridor within PHMA will not adversely affect GRSG populations due to habitat loss or disruptive activities.

**MD LR-11:** (PHMA) Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table D.2 of the Monitoring Framework (**Appendix D**)—under valid existing rights prior to authorizing new projects in PHMA.

### **Land Tenure Adjustment**

**MD LR-11:** Retain public ownership of GRSG PHMA. Consider exceptions where:

It can be demonstrated that: 1) disposal of the lands, including land exchanges, will provide a net conservation gain to the GRSG; or 2) the disposal of the lands, including land exchanges, will have no direct or indirect adverse impact on GRSG conservation.



There is mixed ownership, and land exchanges would allow for additional or more contiguous federal ownership patterns within the GRSG PHMA.

**MD LR-12:** (PHMA) In isolated federal parcels, only allow tract disposals that are beneficial or neutral to long-term management of GRSG populations.

**MD LR-13:** (GHMA) For lands in GHMA that are identified for disposal, the BLM would only dispose of such lands consistent with the goals and objectives of this ARMPA, including, but not limited to, the ARMPA objective to maintain or increase GRSG abundance and distribution.

**MD LR-14:** (ADH) Consider GRSG habitat values in acquisitions. For example: Identify key GRSG habitats on private or state land, adjacent to existing BLM land, where acquisition and protection by BLM could substantially benefit the local GRSG population. This could be accomplished via purchase, exchange, or donation to satisfy mitigation requirements.

### 2.2.9 Recreation (REC)

**Objective REC-1:** Manage recreation to avoid activities that 1) disrupt GRSG, 2) fragment GRSG habitat, or 3) spread noxious weeds.

**MD REC-1:** (PHMA) Do not allow special recreation permits with the potential to adversely affect GRSG or GRSG habitat.

### 2.2.10 Travel and Transportation (TTM)

**Objective TTM-1:** Manage travel and transportation to 1) reduce mortality from vehicle collisions, 2) limit change in GRSG behavior, 3) avoid, minimize, and compensate for habitat fragmentation, 4) limit the spread of noxious weeds, and 5) limit disruptive activity associated with human access.

**MD TTM-1:** (PHMA) Limit off-highway vehicle (OHV) travel to existing roads, primitive roads, and trails at a minimum. Special Zone Provision: Colorado MZ 13 – Manage the Wolford Mountain open OHV area.

**MD TTM-2:** (PHMA) Evaluate and consider permanent or seasonal road or area closures as needed to address a current threat.

**MD TTM-3:** (PHMA) Complete activity level travel plans as soon as possible, subject to funding. During activity level planning, where appropriate, designate routes with current administrative/agency purpose or need to administrative access only.

**MD TTM-4:** (PHMA) Complete activity level travel plans as soon as possible, subject to funding. Limit route construction to routes that will not adversely affect GRSG populations due to habitat loss or disruptive activities.

**MD TTM-5:** (PHMA) Use existing roads or realignments whenever possible. If it is necessary to build a new road, and the use of existing roads would cause adverse impacts to GRSG, construct new roads to the appropriate minimum Gold Book standard and add the surface disturbance to the total disturbance in the PHMA if it meets the criteria in **Appendix H**, Guidelines for Implementation and Adaptive Management.

Construct no new roads if the biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ) is over the 3 percent disturbance cap (see **Appendix E**, Methodology for Calculating Disturbance Caps), unless there is an immediate health and safety need, or to support valid existing rights that cannot be avoided. Evaluate and implement additional, effective mitigation necessary to offset the resulting loss of GRSg habitat.

**MD TTM-6:** (PHMA) Allow upgrades to existing routes after documenting that the upgrade will not adversely affect GRSg populations due to habitat loss or disruptive activities.

**MD TTM-7:** (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 wilderness study areas and within lands with wilderness characteristics that have been selected for protection in previous LUPs.

**MD TTM-8:** (PHMA) When reseeding roads, primitive roads and trails, use appropriate seed mixes and consider the use of transplanted sagebrush.

# CHAPTER 3

## CONSULTATION, COORDINATION, AND PUBLIC INVOLVEMENT

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The BLM land use planning activities are conducted in accordance with NEPA requirements, the Council on Environmental Quality regulations, and Department of the Interior and BLM policies and procedures implementing NEPA. NEPA and associated laws, regulations, and policies require the BLM to seek public involvement early in and throughout the planning process. Public involvement and agency consultation and coordination, which have been at the heart of the planning process leading to this ARMPA, were achieved through *Federal Register* notices, public and informal meetings, individual contacts, media releases, planning bulletins, and the Northwest Colorado GRSG website ([http://www.blm.gov/co/st/en/BLM\\_Programs/wildlife/sage-grouse.html](http://www.blm.gov/co/st/en/BLM_Programs/wildlife/sage-grouse.html)).

### 3.1 CONSULTATION AND COORDINATION

The BLM collaborated with numerous agencies, municipalities, and tribes throughout the preparation of this ARMPA. Its outreach and collaboration with cooperating agencies are described in Section 6.3 of the Proposed RMP and Final EIS. Fifteen agencies<sup>2</sup> accepted the offer to participate in the BLM planning process as cooperating agencies. The BLM formally invited the cooperating agencies to participate in developing the alternatives for the RMP Amendment and EIS and to provide data and other information related to their agency responsibilities, goals, mandates, and expertise.

#### 3.1.1 Section 7 Consultation

Under Section 7 of the ESA, federal agencies must consult with the USFWS when any action the agency carries out, funds, or authorizes *may affect* a listed endangered or threatened species. The BLM Northwest Colorado District initiated consultation by requesting a species list from the local USFWS office for federally listed, federally proposed, or current federal candidate species that may be present in the planning area. The BLM subsequently prepared biological assessments based on the species list in which a determination is made, in accordance with Section 7 of the ESA, that the Northwest Colorado

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<sup>2</sup> Garfield County, Grand County, Jackson County, Mesa County, Moffat County, Rio Blanco County, Routt County, Colorado Department of Natural Resources, Colorado Parks and Wildlife, Denver Water Board, White River and Douglas Creek Conservation Districts, Natural Resources Conservation Service, Forest Service, and USFWS

ARMPA “may affect, is not likely to adversely affect” federally listed, proposed, or candidate species. Section 7 consultation was completed on July 20, 2015, when the USFWS provided the BLM with a letter concurring with their determination.

### **3.1.2 Native American Consultation**

In accordance with FLPMA and BLM guidance, the BLM consulted with Native American representatives and coordinated with Native American tribes throughout the planning process. The BLM contacted all Native American tribes and organizations with interests in the planning area by mail and encouraged them to be cooperating agencies. Tribes have been participating in the RMP Amendment/EIS process through meetings and other contacts. The BLM requested a consultation and sent copies of the RMP to the following tribes and reservations on June 19, 2012:

- Eastern Shoshone Tribe (Wind River Reservation)
- Northern Arapaho Tribe
- Northern Cheyenne Tribe
- Southern Ute Indian Tribe
- Ute Indian Tribe (Uintah and Ouray Reservation)
- Ute Mountain Ute Tribe

The BLM received no written comments from tribal agencies during the scoping period, during the public comment period on the Draft ARMPA/EIS, after the consultation initiation letters were sent, or after the Proposed Plan was provided to the tribes. Tribal concerns or issues typically have been presented orally. Government-to-government consultation will continue throughout the ARMPA process to ensure that tribal groups’ concerns are considered.

As part of the NEPA scoping and consultation process and as an opportunity to provide comment, in accordance with Section 106 of the National Historic Preservation Act, the BLM notified the Colorado State Historic Preservation Officers seeking information on concerns with historic properties and land use planning direction in this ARMPA. The BLM has met its obligations under Section 106 of the National Historic Preservation Act, 54 USC, Section 306108, as outlined in the National Programmatic Agreement and the State Protocols.

## **3.2 PUBLIC INVOLVEMENT**

The public involvement process, consultation, and coordination conducted for the RMP are described in Chapter 6 of the Proposed RMP and Final EIS. As required by regulation, public scoping meetings were conducted following the publication of the notice of intent to prepare an EIS in the *Federal Register* on December 9, 2011.

A notice of availability for the Draft RMP Amendment/EIS was published in the *Federal Register* on August 16, 2013, initiating a 90-day public comment period, which was extended to December 2, 2013. The BLM held public comment open houses in Colorado for the Draft RMP Amendment/EIS on October 22 in Walden, October 23 in Lakewood, October 28 in Silt, and October 29 in Craig. All meetings were from 4:00 to 7:00 p.m. The comments received on the Draft RMP Amendment and EIS and the BLM’s responses were summarized in Appendix P of the Proposed RMP Amendment and Final EIS.

The notice of availability for the Proposed RMP and Final EIS was published on May 29, 2015, initiating a 30-day public protest period and a 60-day governor's consistency review period. The 30-day protest period ended on June 29, 2015. The BLM received 25 protest letters.

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# CHAPTER 4

## PLAN IMPLEMENTATION

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### 4.1 IMPLEMENTING THE PLAN

Implementation, after a BLM RMP or RMP amendment is approved, is a continuous and active process. Decisions presented as management decisions can be characterized as *immediate* or *one-time future* decisions.

**Immediate decisions**—These are the land use planning decisions that go into effect when the ROD is signed. They include goals, objectives, allowable uses, and management direction, such as the allocation of lands as open or closed for salable mineral sales, lands open with stipulations for oil and gas leasing, and areas designated for OHV use. These decisions require no additional analysis and guide future land management actions and subsequent site-specific implementation decisions in the planning area. Proposals for future actions, such as oil and gas leasing, land adjustments, and other allocation-based actions will be reviewed against these LUP decisions to determine if the proposal conforms with the LUP.

**One-time future decisions**—These types of decisions are those that are not implemented until additional decision-making and site-specific analysis is completed. Examples are implementation of the recommendations to withdraw lands from locatable mineral entry or development of travel management plans. Future one-time decisions require additional analysis and decision-making and are prioritized as part of the BLM budget process. Priorities for implementing one-time RMP decisions will be based on the following criteria:

- National BLM management direction
- Available resources

**General implementation schedule of one-time decisions**—Future decisions discussed in this ARMPA will be implemented over a period of years, depending on budget and staff availability. After issuing the ROD, the BLM will prepare implementation plans that establish tentative time frames for completing one-time decisions identified in the ARMPA. These actions require additional site-specific decision-making and analysis.

This schedule will assist BLM managers and staff in preparing budget requests and in scheduling work. However, the proposed schedule must be considered tentative and will be affected by future funding, nondiscretionary workloads, and by partner and external public cooperation. Yearly review of the plan will provide consistent tracking of accomplishments and information that can be used to develop annual budget requests to continue implementation.

## **4.2 MAINTAINING THE PLAN**

The ARMPA can be maintained as necessary to reflect minor changes in data. Plan maintenance is limited to further refining or documenting a previously approved decision incorporated in the plan or clarifying previously approved decisions.

The BLM expects that new information gathered from field inventories and assessments, research, other agency studies, and other sources will update baseline data or support new management techniques, best management practices, and scientific principles. Where monitoring shows LUP actions or best management practices are not effective, plan maintenance or amendment may begin, as appropriate.

Plan maintenance will be documented in supporting records; it does not require formal public involvement, interagency coordination, or NEPA analysis for making new LUP decisions.

## **4.3 CHANGING THE PLAN**

The ARMPA may be changed, should conditions warrant, through a plan amendment or plan revision. A plan amendment may become necessary if major changes are needed or to consider a proposal or action that is not in conformance with the plan. The results of monitoring, evaluation of new data, or policy changes and changing public needs might also provide a need for a plan amendment. If several areas of the plan become outdated or otherwise obsolete, a plan revision may become necessary. Plan amendments and revisions are accomplished with public input and the appropriate level of environmental analysis conducted according to the Council on Environmental Quality procedures for implementing NEPA.

Adjustments to PHMA or GHMA boundaries should be made if BLM biologists, in coordination with State of Colorado biologists and USFWS, determine, based on best available scientific information, that such changes would more accurately depict existing or potential GRSG habitat. The appropriate planning process (i.e., plan maintenance or plan amendment/revision) would be used, as determined on a case-by-case basis considering site-specific issues.

## **4.4 PLAN EVALUATION AND MONITORING**

Evaluation is a process in which the plan and monitoring data are reviewed to see if management goals and objectives are being met and if management direction is sound. RMP evaluations determine if decisions are being implemented, if mitigation measures are satisfactory, if there are significant changes in the related plans of other entities, if there is new data of significance to the plan, and if decisions should be changed through amendment or revision. Monitoring data gathered over time is examined and used to draw conclusions on whether management actions are meeting stated objectives, and if not, why not. Conclusions are then used to make recommendations on whether to continue current management or to identify what changes need to be made in management practices to meet objectives.



The BLM will use RMP evaluations to determine if the decisions in the RMP Amendment, supported by the accompanying NEPA analysis, are still valid in light of new information and monitoring data. Evaluations will follow the protocols established by the BLM Land Use Planning Handbook (H-1601-1) or other appropriate guidance in effect at the time the evaluation is initiated. The monitoring framework for this ARMPA can be found in **Appendix D**.

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# CHAPTER 5

## GLOSSARY

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**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.

**All designated habitat.** Includes PHMA, GHMA, and LCHMA.

**Allotment.** An area of land in which one or more livestock operators graze their livestock. Allotments generally consist of BLM-administered or National Forest System lands but may include other federally managed, state-owned, and private lands. An allotment may include one or more separate pastures. Livestock numbers and periods of use are specified for each allotment.

**Allotment management plan (AMP).** A concisely written program of livestock grazing management, including supportive measures if required, designed to attain specific, multiple-use management goals in a grazing allotment. An AMP is prepared in consultation with the permittees, lessees, and other affected interests. Livestock grazing is considered in relation to other uses of the range and to renewable resources, such as watersheds, vegetation, and wildlife. An AMP establishes seasons of use, the number of livestock to be permitted, the range improvements needed, and the grazing system.

**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.

**Anthropogenic (human) disturbances.** Features include paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, agricultural conversion, homes, and mines.

**Avoidance/avoidance area.** These terms usually address mitigation of some resource use. Paraphrasing the CEQ Regulations (40 CFR, Part 1508.20), avoidance means to circumvent or bypass an

impact altogether by not taking a certain action or parts of an action. Therefore, avoidance does not necessarily prohibit a proposed activity, but it may require relocating or totally redesigning an action to eliminate any potential impacts resulting from it.

**Candidate species.** Taxa for which the USFWS has sufficient information on their status and threats to propose the species for listing as endangered or threatened under the Endangered Species Act, but for which issuing a proposed rule is currently precluded by higher priority listing actions. Separate lists for plants, vertebrate animals, and invertebrate animals are published periodically in the Federal Register (BLM Manual 6840, Special Status Species Manual).

**Closed area.** Where one or more uses are prohibited, either temporarily or over the long term. Areas may be closed to such uses such as off-road vehicles, mineral leasing, mineral or vegetation collection, or target shooting. In areas closed to off-road vehicle use, motorized and mechanized off-road vehicle use is prohibited. Use of motorized and mechanized off-road vehicles in closed areas may be allowed for certain reasons; however, such use would be made only with the approval of the BLM Authorized Officer (43 CFR, Part 8340.0-5).

**Compensatory mitigation.** Compensating for the residual impact by replacing or providing substitute resources or environments (40 CFR, Part 1508.20).

**Controlled surface use.** Areas open to fluid mineral leasing, but the stipulation allows the BLM to require special operational constraints, or the activity can be shifted more than 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. This can be any agency with jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR, Part 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.

**Decision area.** Public lands and mineral estate managed by the United States Department of the Interior, Bureau of Land Management, and public lands managed by the United States Department of Agriculture, Forest Service, Routt National Forest, that are within the planning area and that are encompassed by all designated habitat, which includes PHMA, GHMA, and LCHMA.

**Exclusion area.** An area on the public lands where a certain activities are prohibited to ensure protection of other resource values on the site. The term is frequently used in reference to lands and realty actions and proposals (e.g., ROWs) but is not unique to them. This restriction is functionally analogous to no surface occupancy, which is used by the oil and gas program, and is applied as an absolute condition to those affected activities. The less restrictive analogous term is avoidance area. Also see *right-of-way exclusion area*.

**Facility, Energy or Mining.** Human-constructed assets designed and created to serve a particular function and to afford a particular convenience or service that is affixed to a specific locations, such as oil and gas well pads and associated infrastructure.

**Federal Land Policy and Management Act of 1976.** Public Law 94-579, October 21, 1976, often referred to as the BLM's Organic Act, which provides most of the BLM's legislated authority, direction policy, and basic management guidance.

**Federal mineral estate.** Subsurface mineral estate owned by the United States and administered by the BLM. Federal mineral estate under BLM jurisdiction is composed of mineral estate underlying BLM-administered lands, private lands, and state-owned lands.

**Fluid minerals.** Oil, gas, coal bed natural gas, and geothermal resources.

**General habitat management areas.** Areas of seasonal or year-round GRSG habitat outside of priority habitat. The BLM has identified these areas in coordination with respective state wildlife agencies.

**Goal.** A broad statement of a desired outcome, usually not quantifiable and may not have established time frames for achievement.

**Grazing relinquishment.** The voluntary and permanent surrender by an existing permittee or lessee (with concurrence of any base property lienholders) of their priority (preference) to use a livestock forage allocation on public land and their permission to use this forage. Relinquishments do not require the consent by or approval of BLM. The BLM's receipt of a relinquishment is not a decision to close areas to livestock grazing.

**Land tenure adjustments.** Landownership or jurisdictional changes. To improve the manageability of BLM-administered lands and their usefulness to the public, the BLM has numerous authorities for repositioning lands into a more consolidated pattern, disposing of lands, and entering into cooperative management agreements. These land pattern improvements are completed primarily through the use of land exchanges but also through land sales, through jurisdictional transfers to other agencies, and through the use of cooperative management agreements and leases.

**Land use plan.** A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land use plan-level decisions developed through the planning process outlined in 43 CFR, Part 1600, regardless of the scale at which the decisions were developed. The term includes both RMPs and management framework plans (from H-1601-I, BLM Land Use Planning Handbook).

**Land use plan decision.** Establishes desired outcomes and actions needed to achieve them. Decisions are reached using the planning process in 43 CFR, Part 1600. When they are presented to the public as proposed decisions, they can be protested to the BLM Director. They are not appealable to Interior Board of Land Appeals.

**Large transmission lines.** The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to customers or is delivered to other electrical systems. Transmission is considered to end when the energy is transformed for distribution to the customer. For purposes of this EIS, large transmission lines are considered to be 230 kilovolts or higher; 230-kilovolt lines generally require a larger disturbance footprint to accommodate larger infrastructure.

**Late brood-rearing area.** Habitat that includes mesic sagebrush and mixed shrub communities, wet meadows, and riparian habitats, as well as some agricultural lands (e.g., alfalfa fields).

**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.** Section 302 of the Federal Land Policy and Management Act of 1976 provides the BLM's authority to issue leases for the use, occupancy, and development of public lands. Leases are issued for such purposes as commercial filming, advertising displays, commercial or noncommercial croplands, apiaries, livestock holding or feeding areas not related to grazing permits and leases, native or introduced species harvesting, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, ski resorts, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy (if the residential structures are not incidental to the mining operation), and water pipelines and well pumps related to irrigation and non-irrigation facilities. The regulations establishing procedures for processing these leases and permits are found in 43 CFR, Part 2920.

**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 GRSG display to gain breeding territories and attract 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. It is also called a "strutting ground" (Colorado Department of Natural Resources, Parks and Wildlife 2008a).

**Lek, active.** An open area that has been attended by more than two male GRSG for more than two of the previous five years (Connelly et al. 2000a). This definition is derived mainly from observations of leks in large stable populations and may not be appropriate for small populations with reduced numbers of males attending leks in fragmented sagebrush communities. Therefore, for smaller populations (e.g., Meeker – White River) that are isolated or disjunct from larger, more stable populations, an active lek is defined as an open area where one or more GRSG have been observed on more than one occasion engaging in courtship or breeding. An area used by displaying males in the last five years is considered an active lek (Colorado Department of Natural Resources, Parks and Wildlife 2008a).

**Lek, inactive.** Any lek where sufficient data suggests that there was no strutting activity throughout a strutting season. (Absence of strutting grouse during a single visit is insufficient documentation to establish that a lek is inactive.) This designation requires documentation of an absence of GRSG on the lek during at least two ground surveys separated by at least seven days. These surveys must be conducted under ideal conditions (April 1 to May 7 or other appropriate date, based on local conditions, no precipitation, light or no wind, a half-hour before sunrise to one hour after sunrise). Alternatively, a ground check of the exact known lek site must be made late in the strutting season (after April 15) and fails to find any sign (tracks, droppings, or feathers) of strutting activity. Data collected by aerial surveys should not be used to designate inactive status because the aerial survey may actually disrupt activities.

**Lek complex.** A lek or group of leks within 1.5 miles of each other, between which male GRSG may interchange from one day to the next. Fidelity to leks has been well documented. Visits to multiple leks are most common among yearlings and less frequent for adult males, suggesting an age-related period of establishment (Connelly et al. 2004).

**Lek, occupied.** A lek that has been active during at least one strutting season within the past 10 years.

**Lek, unoccupied.** A lek that has either been destroyed or abandoned.

**Lek, destroyed.** A formerly active lek site and surrounding sagebrush habitat that has been destroyed and is no longer suitable for GRSG breeding.

**Lek, abandoned.** A lek in otherwise suitable habitat that has not been active for 10 consecutive years. To be designated abandoned, a lek must be inactive (see above) in at least four nonconsecutive strutting seasons spanning 10 years. The site of an abandoned lek should be surveyed at least once every 10 years to determine whether it has been reoccupied.

**Linkage/connectivity habitat management areas (linkage/connectivity areas, linkages).** Areas that have been identified as broader regions of connectivity important to facilitate the movement of GRSG and to maintain ecological processes.

**Locatable minerals.** Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Act of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

**Management zone.** Two types of management zones are addressed:

- **Colorado Management Zones**—21 GRSG management zones, comprised of PHMA, GHMA, and LCHMA in order to manage disturbance caps and be able to identify specific habitat areas.
- **WAFWA Management Zones**—7 GRSG management zones established based on populations across the entire range of the GRSG. Northwest Colorado falls into WAFWA Management Zones II and VII. WAFWA management zones will be used to identify and address cross-state issues, such as regional mitigation and adaptive management monitoring response, through WAFWA Management Zone GRSG Conservation Teams (Teams). These Teams will convene and respond to issues at the appropriate scale, and will utilize existing coordination and management structures to the extent possible

**Mineral entry.** The filing of a claim on public land to obtain the right to any locatable minerals it may contain.

**Mineral estate.** The ownership of minerals, including rights necessary for access, exploration, development, mining, ore dressing, and transportation operations.

**Mining claim.** A parcel of land that a miner takes and holds for mining, having acquired the right of possession by complying with the Mining Law of 1872 and local laws and rules. A mining claim may

contain as many adjoining locations as the locator may make or buy. There are four categories of mining claims: lode, placer, mill site, and tunnel site.

**Mining Law of 1872.** Provides for claiming and gaining title to locatable minerals on public lands. Also referred to as the General Mining Law or Mining Law.

**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.

**Monitoring (plan monitoring).** The process of tracking the implementation of land use plan decisions and collecting and assessing data necessary to evaluate the effectiveness of land use planning decisions.

**Motorized vehicles or uses.** Vehicles that are motorized, including jeeps, all-terrain vehicles (such as four-wheelers and three-wheelers), trail motorcycles or dirt bikes, and aircraft.

**Multiple-use.** The management of public lands and their various resource values so that they are used in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and 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 (FLPMA; BLM Manual 6840, Special Status Species Manual).

**National Environmental Policy Act of 1969 (NEPA).** Public Law 91-190. Establishes environmental policy for the nation. Among other stipulations, NEPA requires federal agencies to consider environmental values in decision-making processes.

**Nonenergy leasable minerals.** Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. Nonenergy minerals include such resources as phosphate, sodium, potassium, and sulfur.



**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 and geophysical exploration equipment off designated routes, construction of wells 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.

**Noxious weeds.** A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the United States.

**Objective.** A description of a desired outcome for a resource. Objectives can be quantified and measured and, where possible, have established time frames for achievement.

**Off-highway vehicle.** Any motorized vehicle capable of or designated for travel on or immediately over land, water, or other natural terrain. It excludes the following:

- Any non-amphibious registered motorboat
- Any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes
- Any vehicle whose use is expressly authorized by the BLM Authorized Officer or otherwise officially approved
- Vehicles in official use
- Any combat or combat support vehicle when used for national defense emergencies (43 CFR, Part 8340.0-5)

**Open.** Generally denotes that an area is available for a particular use or uses. Refer to specific program definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR, Part 8340.0-5, defines the specific meaning as it relates to OHV use.

**Permitted use.** The forage allocated by or under the guidance of an applicable land use plan for livestock grazing in an allotment under a permit or lease and expressed in AUMs (43 CFR, Part 4100.0-5; from H-4180-1, BLM Rangeland Health Standards Manual).

**Permittee.** A person or company permitted to graze livestock on public land.

**Plan of operations.** Required for all mining exploration on greater than five acres or surface disturbance greater than casual use on certain special category lands. Special category lands are described under 43 CFR, Part 3809.11(c), and include such lands as designated areas of critical environmental concern, lands in the National Wilderness Preservation System, and areas closed to off-road vehicles, among others. In addition, a plan of operations is required for activity greater than casual use on lands patented under the Stock Raising Homestead Act with federal minerals where the operator does not have the written consent of the surface owner (43 CFR, Part 3814). The plan of operations needs to be filed in the BLM field office with jurisdiction over the land involved. It does not need to be

on a particular form but must address the information required by 43 CFR, Part 3809.401(b). It is required for all mining conducted under the General Mining Act of 1872, as amended, if the proposed operations will likely significantly disturb surface resources. The plan of operations describes the type of operations proposed and how they would be conducted, the type and standard of existing and proposed roads or access routes, the means of transportation to be used, the period during which the proposed activity will take place, and measures to be taken to meet the requirements for environmental protection (36 CFR, Part 228.4).

**Planning area.** The geographical area for which resource management plans are developed and maintained. The Northwest Colorado Greater Sage-Grouse ARMPA/EIS planning area boundary encompasses approximately 15 million acres in Eagle, Garfield, Grand, Jackson, Larimer, Mesa, Moffat, Rio Blanco, Routt, and Summit Counties. The planning area includes approximately 8.5 million acres of public lands managed by the Colorado River Valley, Grand Junction, Kremmling, Little Snake, and White River Field Offices and the Routt National Forest and approximately 7 million acres of National Park Service, US Department of Defense, USFWS, State of Colorado, County, City, and private lands.

**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.

**Priority Habitat Management Areas (PHMA).** Areas that have been identified as having the highest conservation value to maintaining sustainable GRSG populations. they include breeding, late brood-rearing, and winter concentration areas. The BLM has identified these areas in coordination with respective state wildlife agencies.

**Project area.** Encompasses the United States Department of the Interior, Bureau of Land Management Northwest Colorado District boundary, including all lands, regardless of ownership.

**Public land.** Land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands on the Outer Continental Shelf and lands held for the benefit of Indians, Aleuts, and Eskimos (H-1601-1, BLM Land Use Planning Handbook).

**Range improvement.** Any activity, structure or program on or relating to rangelands that is designed to improve production of forage, to change vegetative composition, to control patterns of use, to provide water, to stabilize soil and water conditions, and provide habitat for livestock and wildlife. The term includes structures, treatment projects, and use of mechanical means to accomplish the desired results.

**Range improvement project.** An authorized physical modification or treatment designed to improve production of forage, to change vegetation composition, to control patterns of use, to provide water, to stabilize soil and water conditions, to restore, protect, and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. This definition includes

structures, treatment projects and use of mechanical devices, or modifications achieved through mechanical means.

**Reclamation.** The suite of actions taken within an area affected by human disturbance, the outcome of which is intended to change the condition of the disturbed area to meet predetermined objectives or to make it acceptable for certain defined resources, such as wildlife habitat, grazing, and ecosystem function.

**Renewable energy.** Energy resources that constantly renew themselves or that are regarded as practically inexhaustible. These include solar, wind, geothermal, hydro, and biomass. Although particular geothermal formations can be depleted, the natural heat in the Earth is a virtually inexhaustible reserve of potential energy.

**Required design features (RDFs).** These are required for certain activities in all GRSG habitat. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts. However, the applicability and overall effectiveness of each RDF cannot be fully assessed until the project begins, when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) or may require slight variations (e.g., a larger or smaller protective area). All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project or activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project or 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 GRSG or its habitat.
- A specific RDF will provide no additional protection to GRSG or its habitat.

**Reserve common allotment.** An area designated in a land use plan as available for livestock grazing but reserved for use as an alternative to grazing in another allotment to facilitate rangeland restoration treatments and recovery from natural disturbances, such as drought or wildfire. The reserve common allotment would provide needed flexibility that would help the agency apply temporary rest from grazing where vegetation treatments or management would be most effective.

**Resource management plan.** 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.

**Restore/restoration.** Implementation of a set of actions that promotes plant community diversity and structure that allows plant communities to be more resilient to disturbance and invasive species over the long term. The long-term goal is to create functional high quality habitat that is occupied by GRSG. The short-term goals may be to restore the landform, soils, and hydrology and to increase the percentage of preferred vegetation, seeding of desired species, or treatment of undesired species.

**Restriction/restricted use.** A limitation or constraint on public land uses and operations. Restrictions can be of any kind, but they most commonly apply to certain types of vehicle use, temporal or spatial constraints, or certain authorizations.

**Right-of-way (ROW).** Public lands authorized to be used or occupied for specific purposes, pursuant to a right-of-way grant, which are in the public interest and require ROWs over, on, under, or through such lands.

**Right-of-way avoidance area.** An area identified through resource management planning to be avoided but may be available for ROW location with special stipulations.

**Right-of-way exclusion area.** An area identified through resource management planning that is not available for ROW location under any conditions.

**Road.** A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

**Routes.** Multiple roads, trails, and primitive roads; a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as routes.

**Scoping process.** An early and open public participation process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

**Seeding.** Seeding is a vegetation treatment that applies grass, forb, or shrub seed, either by air or on the ground. In areas of gentle terrain, seed is often applied with a rangeland drill. Seeding allows the establishment of native species or placeholder species and restoration of disturbed areas to a perennial-dominated cover type, thereby decreasing the risk of subsequent invasion by exotic plant species. Seeding would be used primarily as a follow-up treatment in areas where disturbance or the previously described treatments have removed exotic plant species and their residue.

**Special status species.** BLM special status species are those listed, candidate, or proposed for listing under the Endangered Species Act and those requiring special management consideration to promote their conservation and to reduce the likelihood and need for future listing under the Endangered Species Act that are designated as BLM sensitive by the BLM State Director. All federally listed candidate species, proposed species, and delisted species in the five years following delisting are conserved as BLM sensitive species.

**Split-estate.** This is the circumstance where the surface of a particular parcel of land is owned by a different party than the one that owns the minerals underlying the surface. Split-estates may have any combination of surface or subsurface owners: federal/state, federal/private, state/private, or percentage ownerships. When referring to the split-estate ownership on a particular parcel of land, it is generally necessary to describe the surface or subsurface ownership pattern of the parcel.

**Standard lease terms and conditions.** Areas may be open to leasing with no specific management decisions defined in a resource management plan; however, these areas are subject to lease terms and

conditions defined on the lease form (Form 3100-11, Offer to Lease and Lease for Oil and Gas; and Form 3200-24, Offer to Lease and Lease for Geothermal Resources).

**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 (RMP) process.

**Surface disturbance.** Suitable habitat is considered disturbed when it is removed and unavailable for immediate sage-grouse use.

- Long-term removal occurs when habitat is removed through activities that replace suitable habitat with long-term occupancy of unsuitable habitat, such as a roads, power lines, well pads, or active mines. Long-term removal may also result from any activities that cause soil mixing, soil removal, and soil exposure to erosion.
- Short-term removal occurs when vegetation is removed in small areas but is restored to suitable habitat within fewer than five years of disturbance, such as a successfully reclaimed pipeline, or successfully reclaimed drill hole or pit.
- Suitable habitat rendered unusable due to numerous human disturbances.
- Human surface disturbance are surface disturbances meeting the above definitions that result from human activities.

**Surface-disturbing activities.** An action that alters the vegetation, surface/near surface soil resources, or surface geologic features, beyond natural site conditions and on a scale that affects other public land values. Examples of surface-disturbing activities may include operation of heavy equipment to construct well pads, roads, pits and reservoirs; installation of pipelines and power lines; and the conduct of several types of vegetation treatments (e.g., prescribed fire). Surface-disturbing activities may be either authorized or prohibited.

**Surface use.** This is all the various activities that may be present on the surface or near-surface, such as pipelines, of public lands. It does not refer to those subterranean activities, such as mining, occurring on the public lands or federal mineral estate. When administered as a use restriction (e.g., no surface use), this phrase prohibits all but specified resource uses and activities in a certain area to protect particular sensitive resource values and property. This designation typically applies to small acreage sensitive resource sites (e.g., plant community study enclosure) or administrative sites (e.g., government ware-yard) where only authorized agency personnel are admitted.

**Timing limitation (TL).** The TL stipulation, a moderate constraint, is applicable to fluid mineral leasing, all activities associated with fluid mineral leasing (e.g., truck-mounted drilling and geophysical exploration equipment off designated routes, and construction of wells and pads), and other surface-disturbing activities (those not related to fluid mineral leasing). Areas identified for TL 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, completions, and

other operations considered to be intensive are not allowed. Intensive maintenance, such as work overs on wells, is not permitted. TLs can overlap spatially with NSO and CSU, as well as with areas that have no other restrictions.

**Transfer of grazing preference.** The BLM's approval of an application to transfer grazing preference from one party to another or from one base property to another or both. Grazing preference means a superior or priority position against others for receiving a grazing permit or lease. This priority is attached to base property owned or controlled by the permittee or lessee.

**Transmission.** The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

**Transmission line (large).** An electrical utility line with a capacity greater than or equal to 100 kilovolts or a natural gas, hydrogen, or water pipeline greater than or equal to 24 inches in diameter.

**Travel management areas.** Polygons or delineated areas where a rational approach has been taken to classify areas as open, closed, or limited and where a network of roads, trails, ways, landing strips, and other routes have been identified or designated that provide for public access and travel across the planning area. All designated travel routes within travel management areas should have a clearly identified need and purpose and clearly defined activity types, modes of travel, and seasons or time frames for allowable access or other limitations (BLM Handbook H-1601-1, Land Use Planning Handbook).

**Unitization.** Operation of multiple leases as a single lease under a single operator.

**Utility corridor.** Tract of land varying in width forming passageway through which various commodities are transported, such as oil, gas, and electricity.

**Valid existing rights.** Documented legal rights or interests in the land that allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include fee title ownership, mineral rights, rights-of-way, easements, permits, and licenses. Such rights may have been reserved, acquired, leased, granted, permitted, or otherwise authorized over time.

**Vegetation treatments.** Management practices that change the vegetation structure to a different stage of development. Vegetation treatment methods include managed fire, prescribed fire, chemical, mechanical, and seeding.

**Wildfire.** Unplanned ignitions or prescribed fires that are declared wildfires. Wildfires may be managed to meet one or more objectives as specified in the ARMPA and these objectives can change as the fire spreads across the landscape.

**Wildfire suppression.** An appropriate management response to wildfire, escaped wildland fire use or prescribed fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire.

**Wildland fire.** An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

**Wildland fire use.** *A term no longer used; these fires are now included in the “Wildfire” definition.*

**Withdrawal.** An action that restricts the use of public land and segregates the land from the operation of some or all of the public land and mineral laws. Withdrawals are also used to transfer jurisdiction of management of public lands to other federal agencies.

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## CHAPTER 6

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# Appendices



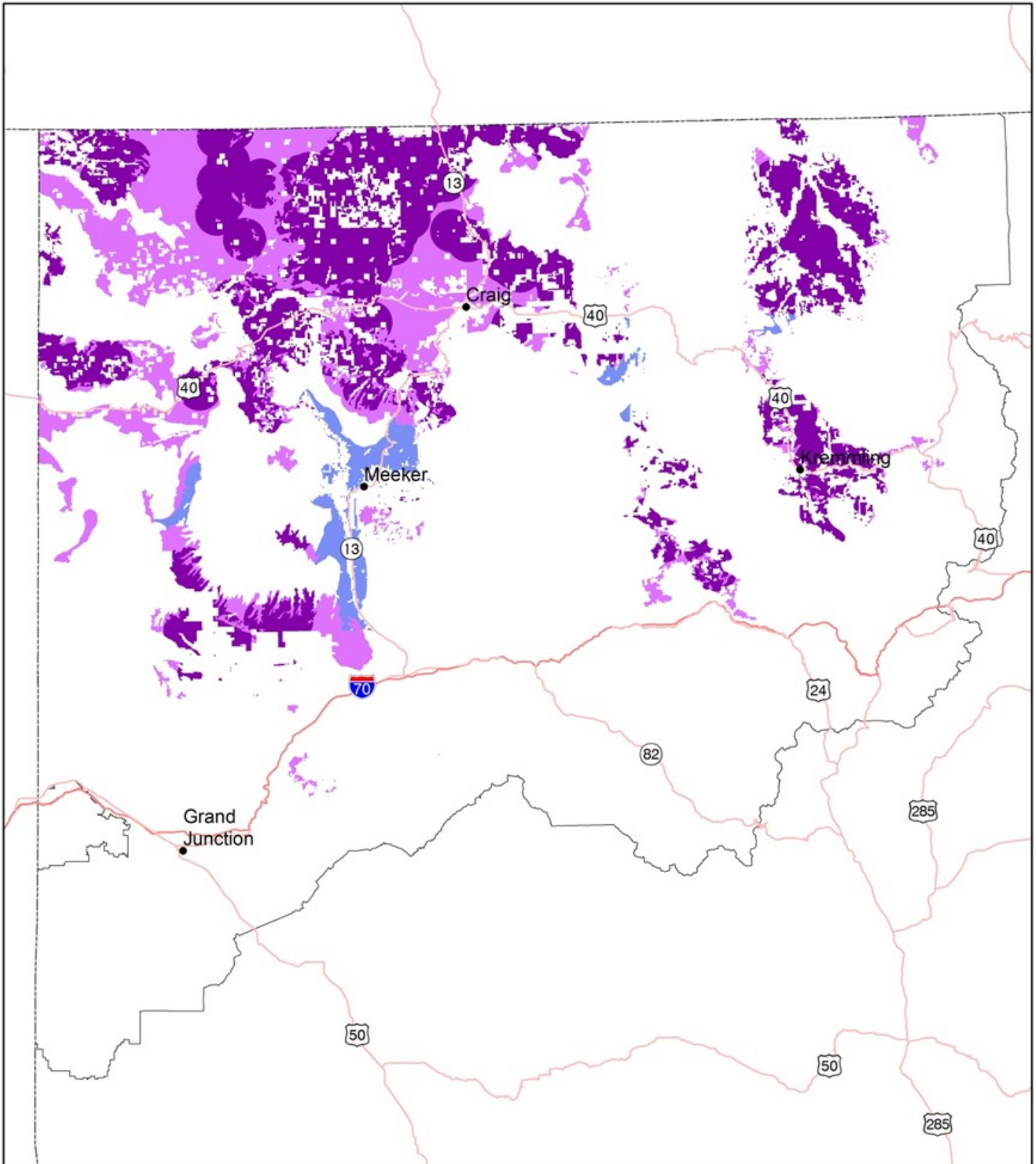
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# Appendix A

## Approved RMP Amendment Maps







**Figure 2-1: Northwest Colorado Sub-Regional Decision Area, Greater Sage Grouse Habitat Management Areas**

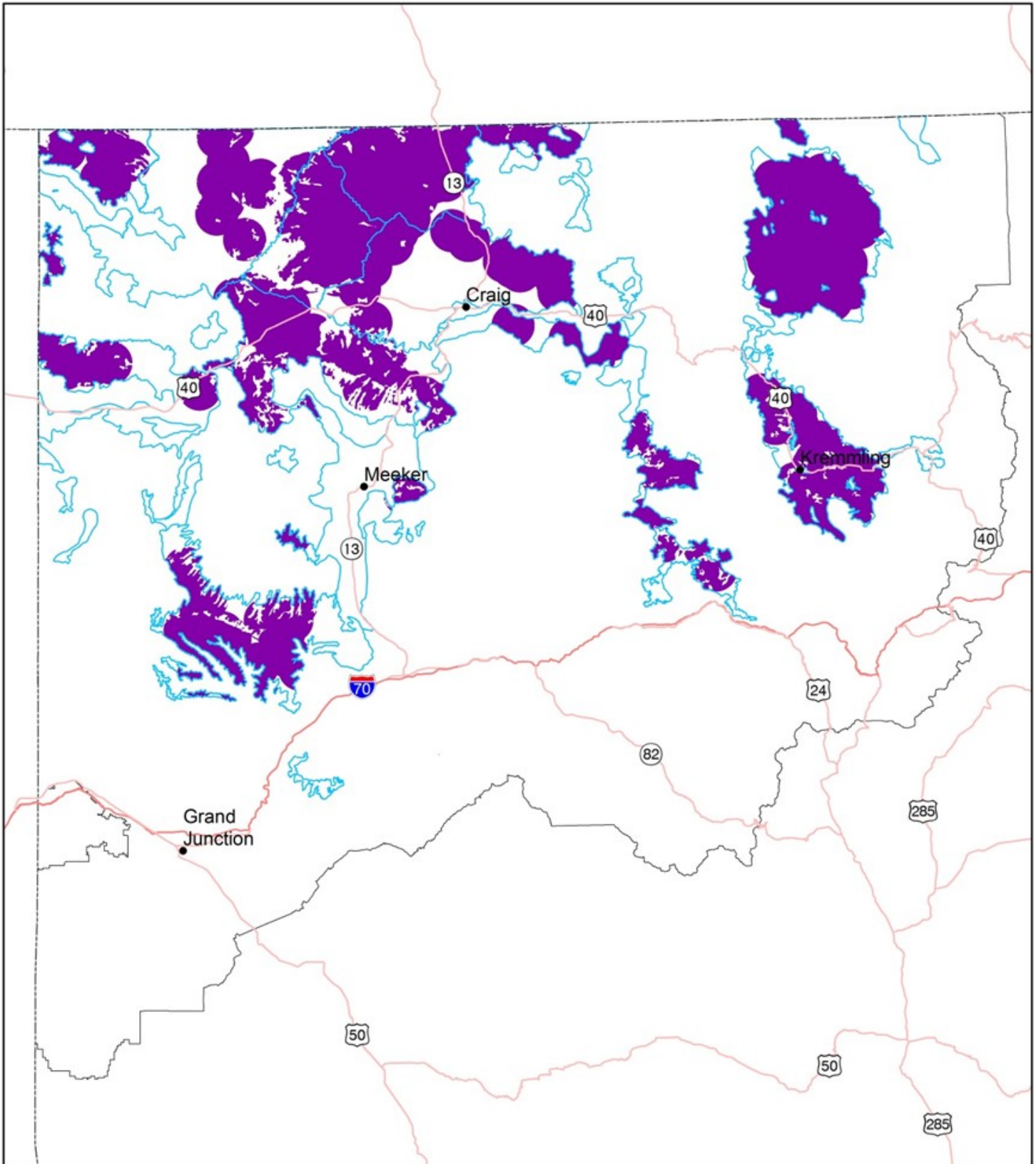
**Legend**

- Priority Habitat Management Areas (PHMAs)
- General Habitat Management Areas (GHMAs)
- Linkage Connectivity Habitat Management Areas (LCHMAs)
- Planning Area Boundary
- State Boundary

September 2015



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 2-2: Northwest Colorado Sub-Regional Planning Area, Greater Sage Grouse Biologically Significant Units and Priority Habitat Management Areas**

**Legend**

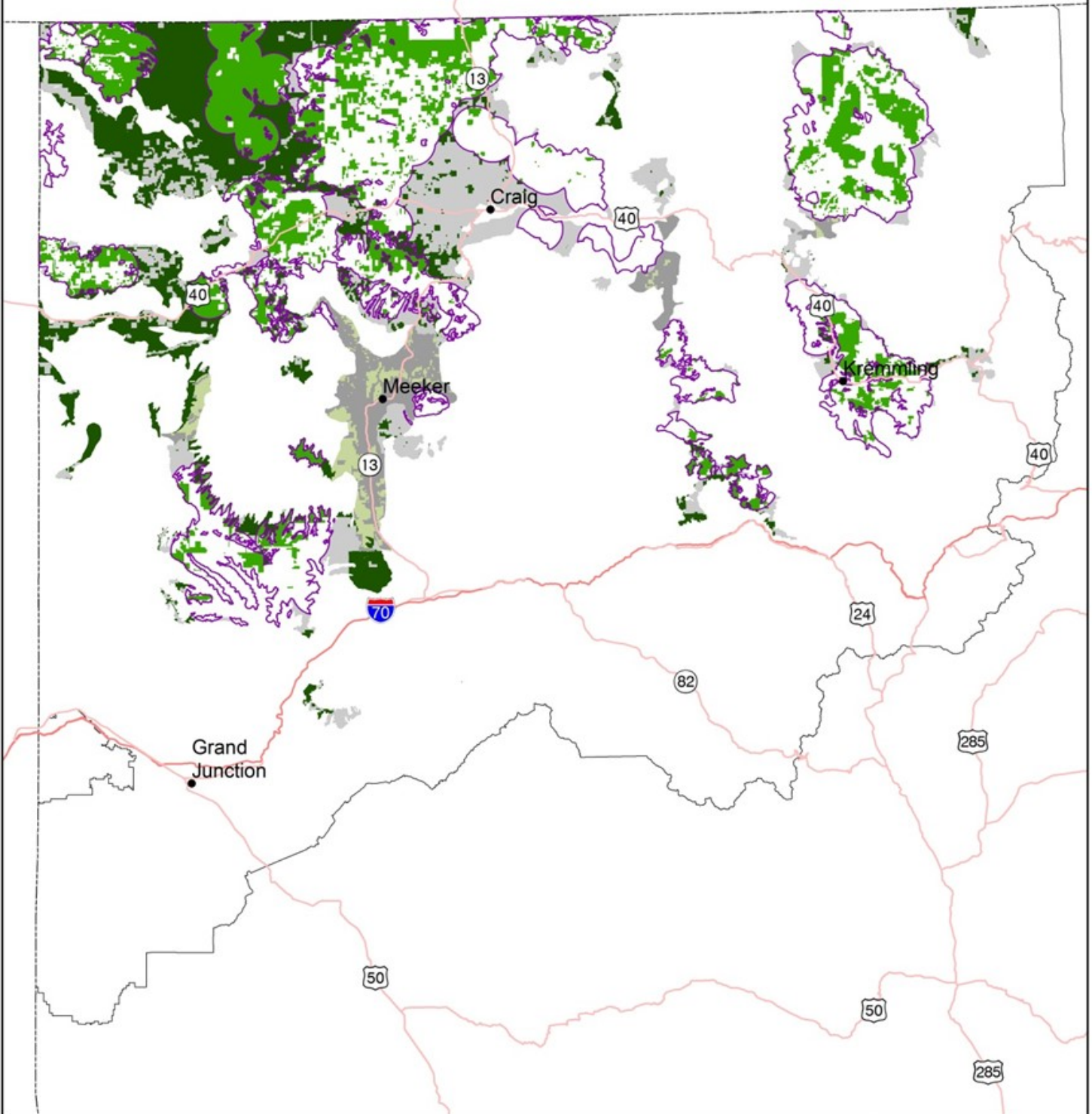
- Priority Habitat Management Areas (PHMAs)
- Biologically Significant Units (BSUs)
- Planning Area Boundary
- State Boundary

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Note: This map depicts livestock grazing decisions for the management of all resources. Please refer to the ARMPA for details regarding livestock grazing decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps



**Figure 2-3: Northwest Colorado Sub-Regional Planning Area, Livestock Grazing**

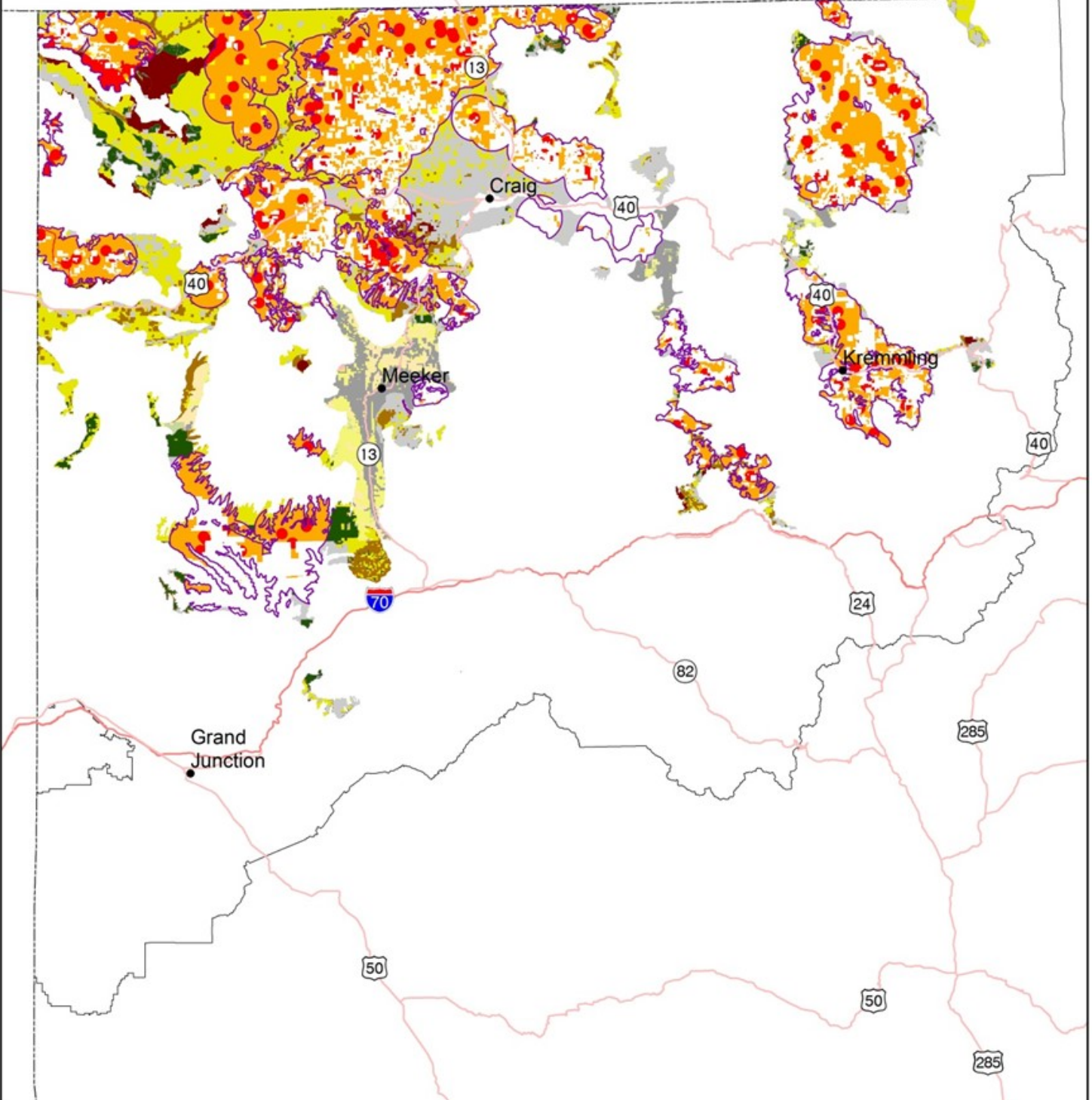
PHMA	LCHMA	GHMA			
Outside BLM Decision Area				Planning Area Boundary	State Boundary
Areas Available for livestock Grazing					

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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.

Note: This map depicts fluid mineral decisions for Greater Sage-Grouse protection as well as all other fluid mineral decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding fluid mineral decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps



**Figure 2-4: Northwest Colorado Sub-Regional Planning Area, Fluid Minerals**

PHMA  
LCHMA  
GHMA

- Outside of BLM Decision Area
- Closed
- Open w/ Major Stipulations (NSO)
- Open w/ Moderate Stipulations (CSU and/or TL)
- Open w/ Standard Stipulations

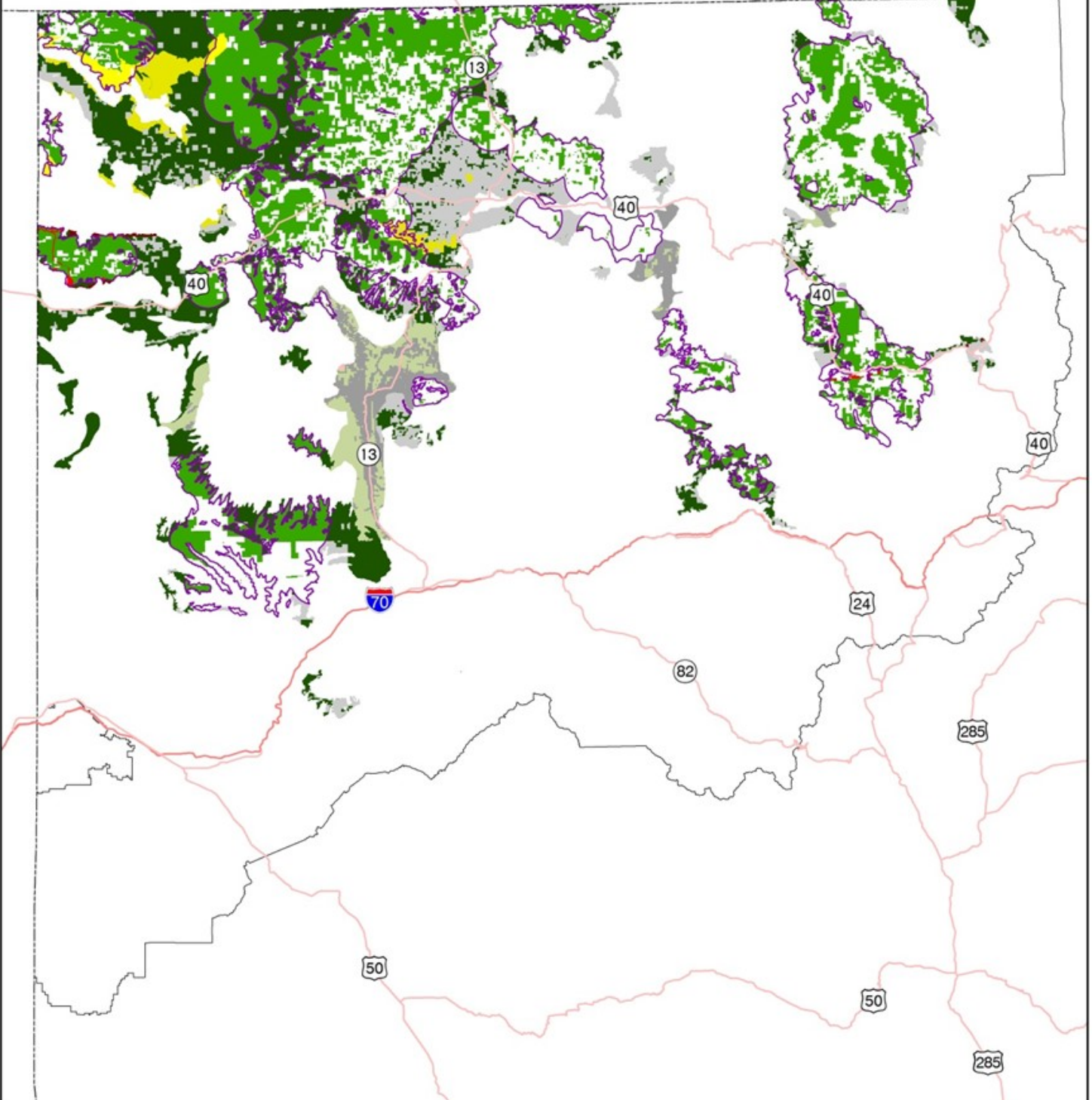
- Planning Area Boundary
- State Boundary

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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.

Note: This map depicts locatable mineral decisions for Greater Sage-Grouse protection as well as all other locatable mineral decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding locatable mineral decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps



**Figure 2-5: Northwest Colorado Sub-Regional Planning Area, Locatable Minerals**

PHMA  
LCHMA  
GHMA

- Existing Withdrawals
- Recommended Withdrawals
- Locatable Minerals Open

- Planning Area Boundary
- State Boundary



0 12.5 25 Miles

September 2015



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.

Note: This map depicts salable mineral decisions for Greater Sage-Grouse protection as well as all other salable mineral decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding salable mineral decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps

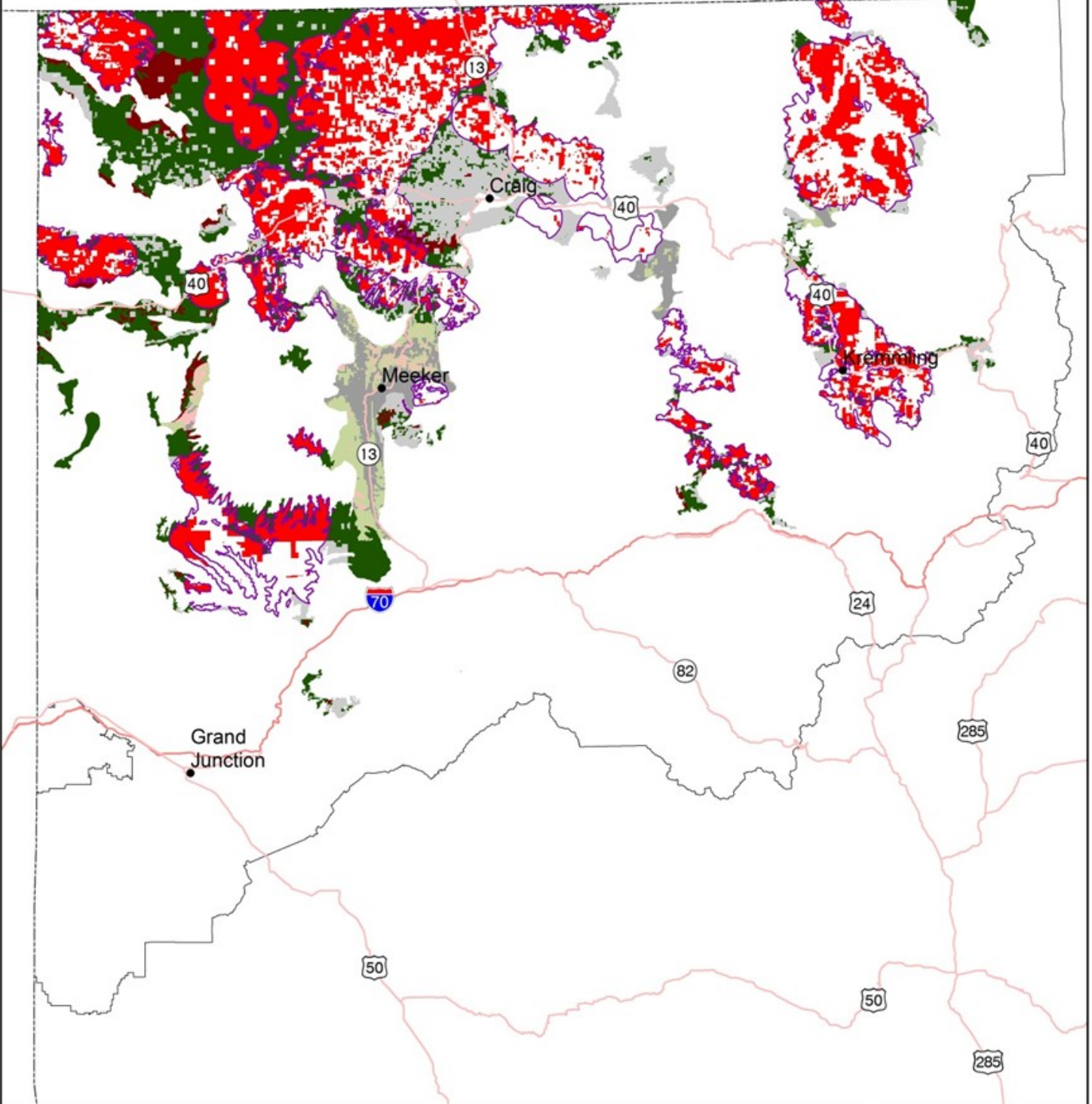


Figure 2-6: Northwest Colorado Sub-Regional Planning Area, Salable Minerals

PHMA  
LCHMA  
GHMA

- Outside BLM Decision Area
- Closed
- Open

- Planning Area Boundary
- State Boundary



0 12.5 25 Miles

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Map Area



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.

Note: This map depicts non-energy leasable mineral decisions for Greater Sage-Grouse protection as well as all other non-energy leasable mineral decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding non-energy leasable mineral decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps

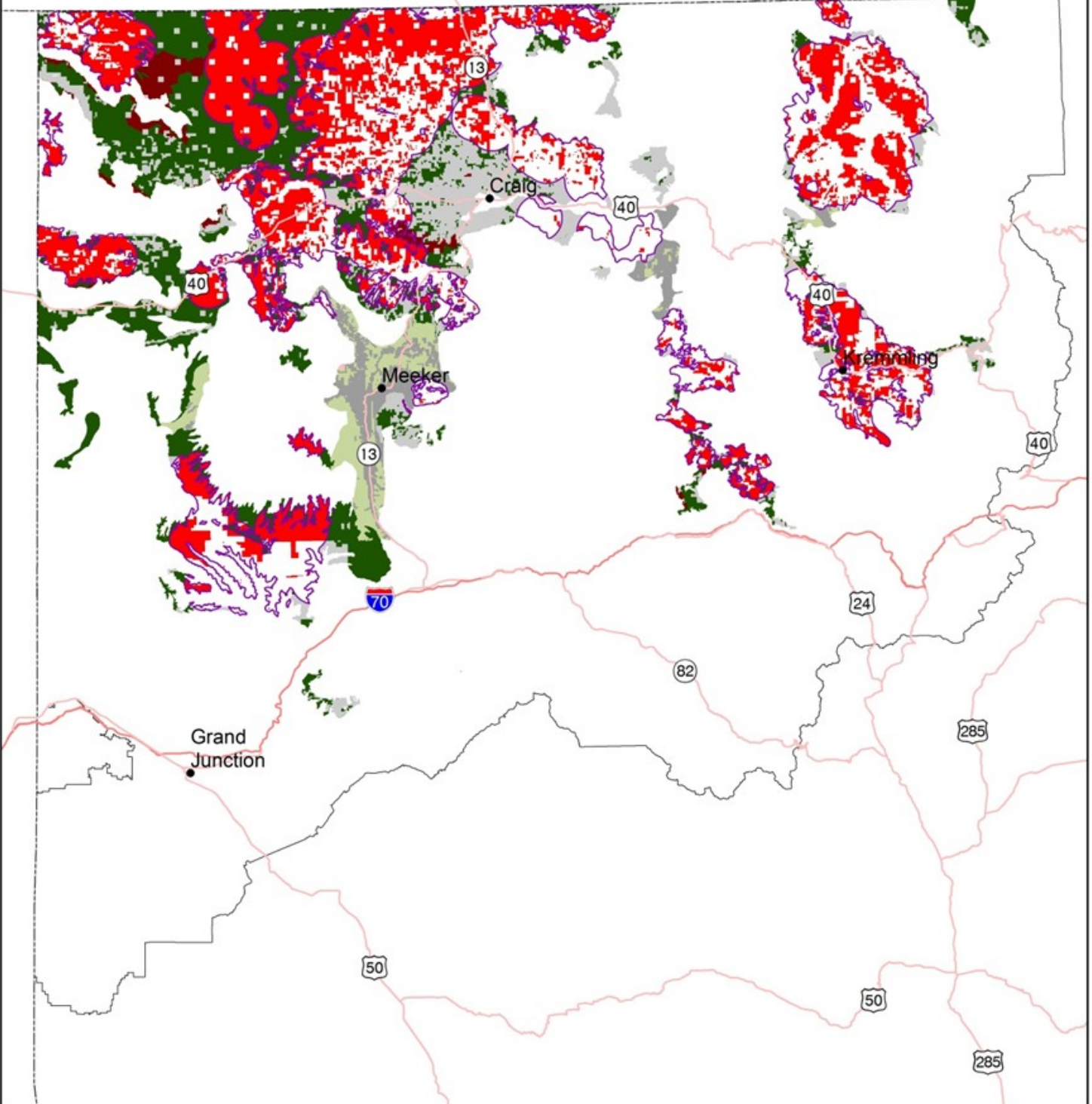
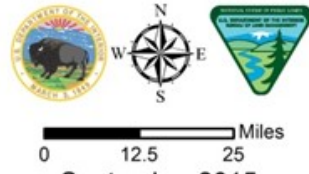


Figure 2-7: Northwest Colorado Sub-Regional Planning Area, Non-Energy Leasable Minerals

PHMA  
LCHMA  
GHMA

Outside BLM Decision Area  
Closed  
Open

Planning Area Boundary  
State Boundary

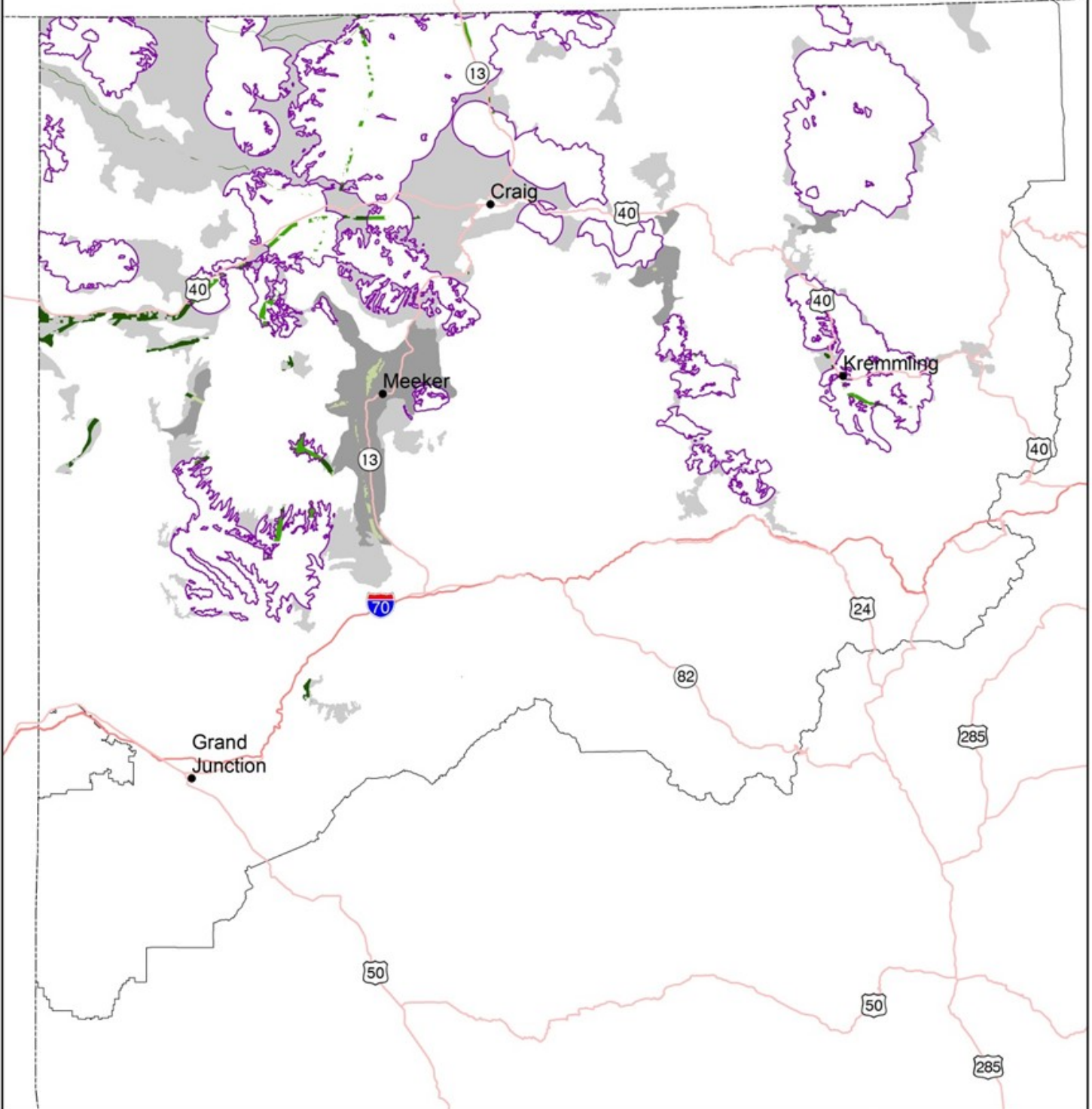


September 2015



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.

Note: This map depicts designated utility corridor decisions for the management of all resources. Please refer to the ARMPA for details regarding designated utility corridor decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps

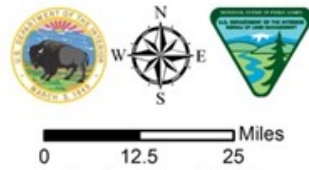


**Figure 2-8: Northwest Colorado Sub-Regional Planning Area, Designated Utility Corridors**

PHMA  
LCHMA  
GHMA

Outside BLM Decision Area  
Designated Utility Corridor

Planning Area Boundary  
State Boundary



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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.



Note: This map depicts designated major ROW decisions for Greater Sage-Grouse protection as well as all other designated major ROW decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding designated major ROW decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps.

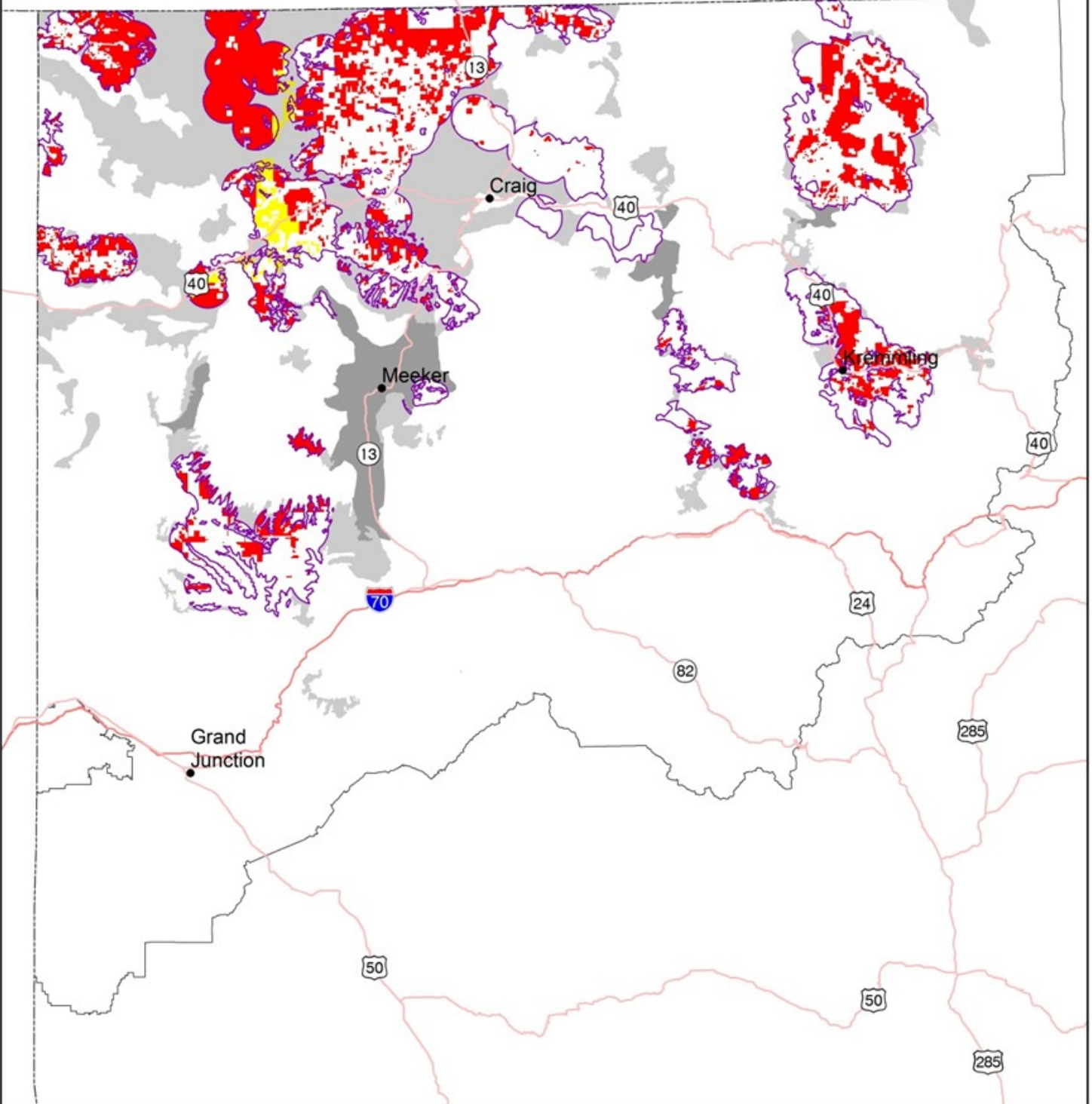


Figure 2-9a: Northwest Colorado Sub-Regional Planning Area, Major Rights-of-Way

PHMA  
LCHMA  
GHMA

- Exclusion
- Avoidance
- Outside BLM Decision Area

- Planning Area Boundary
- State Boundary



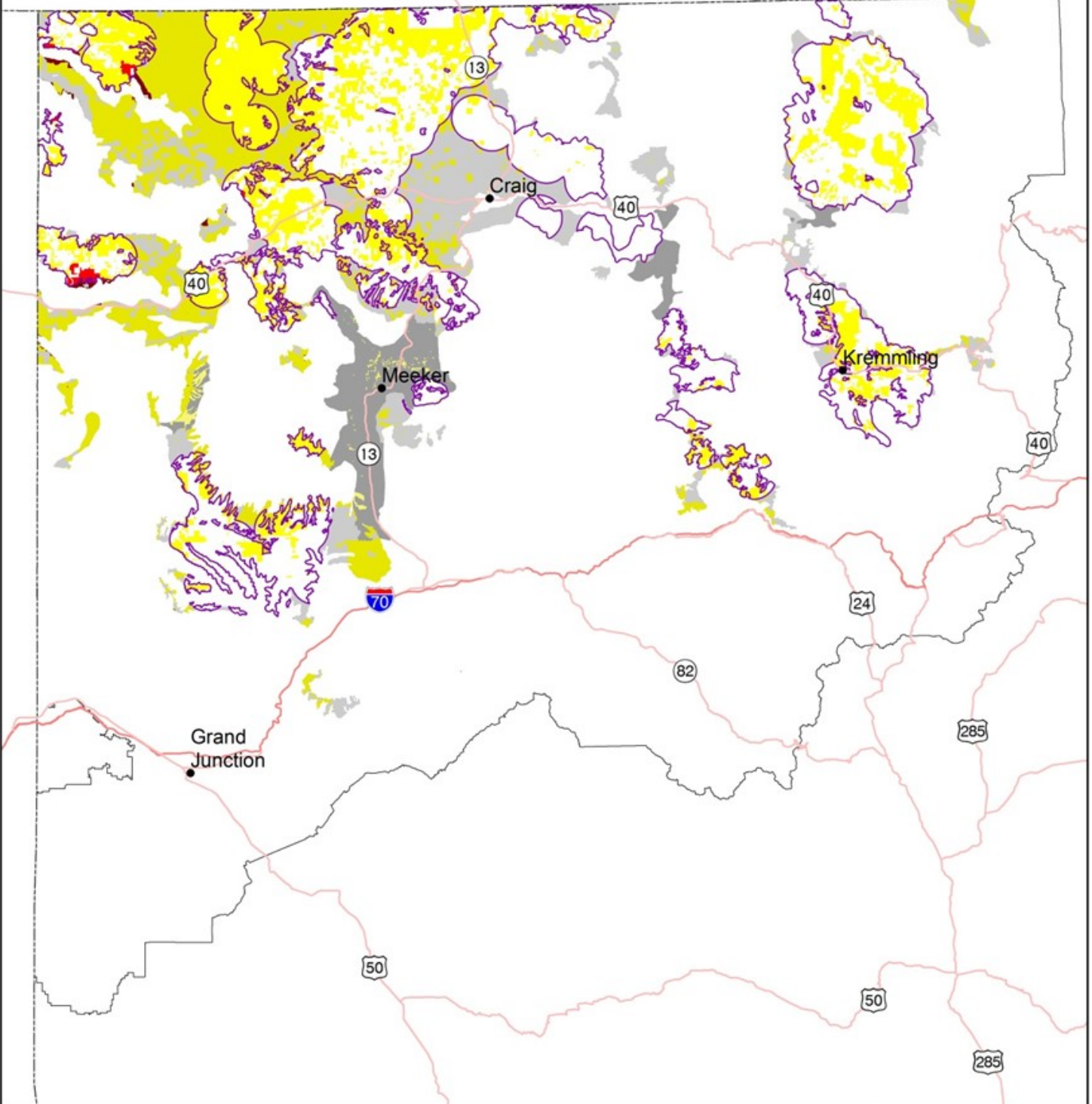
0 12.5 25 Miles

September 2015

Map Area



Note: This map depicts designated minor ROW decisions for Greater Sage-Grouse protection as well as all other designated minor ROW decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding designated minor ROW decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps.



**Figure 2-9b: Northwest Colorado Sub-Regional Planning Area, Minor Rights-of-Way**

PHMA  
LCHMA  
GHMA

- Outside BLM Decision Area
- Exclusion
- Avoidance

- Planning Area Boundary
- State Boundary



0 12.5 25 Miles

September 2015

Map Area



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.

Note: This map depicts land tenure decisions for Greater Sage-Grouse protection as well as all other land tenure decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding land tenure decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSG RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSG RMPA maps

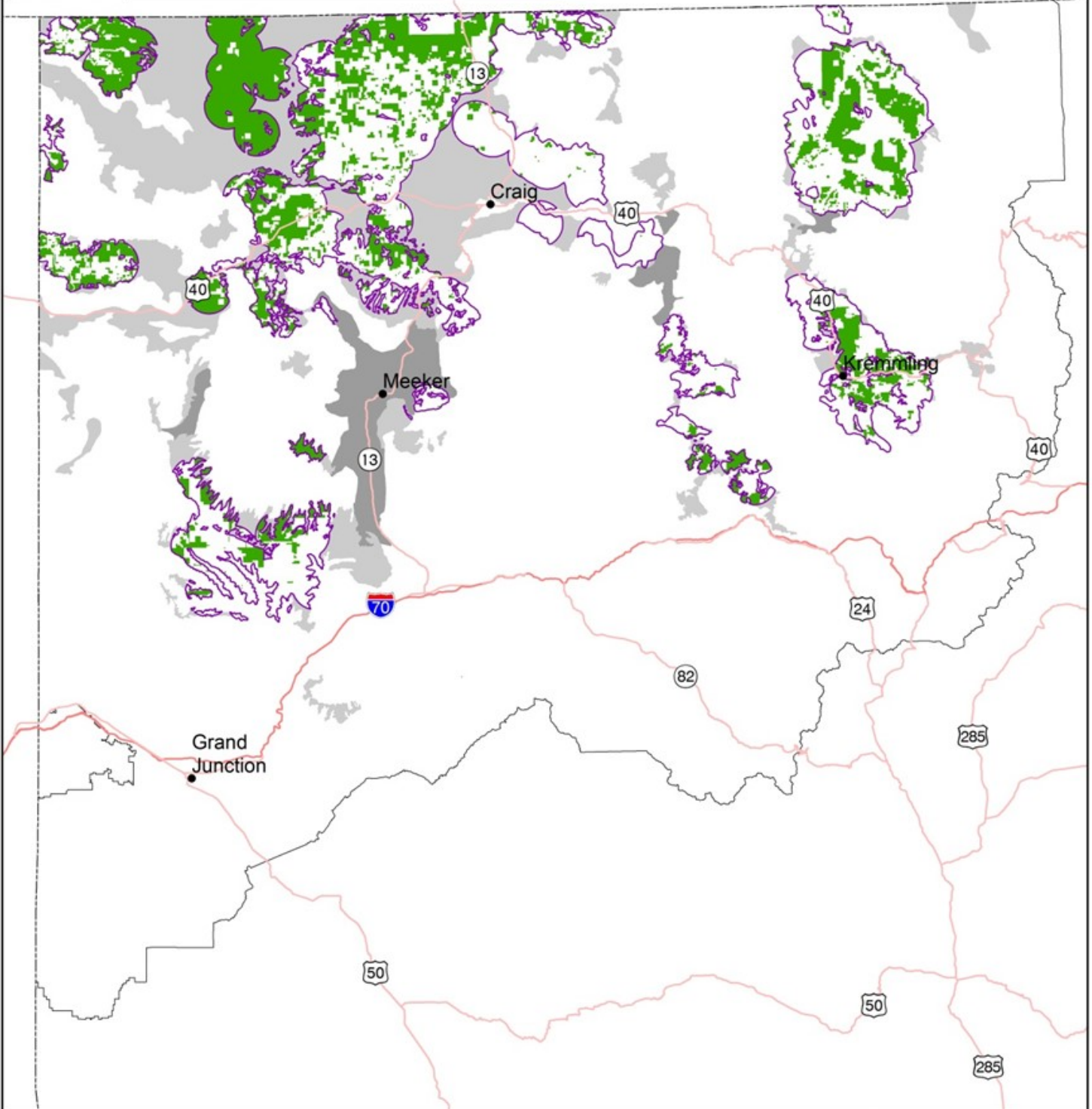


Figure 2-10: Northwest Colorado Sub-Regional Planning Area, Land Tenure

PHMA  
LCHMA  
GHMA

Outside BLM Decision Area  
Retention

Planning Area Boundary  
State Boundary



0 12.5 25 Miles

September 2015

Map Area



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.

Note: This map depicts travel management decisions for Greater Sage-Grouse protection as well as all other travel management decisions existing for the management of all other resources. Please refer to the ARMPA for details regarding travel management decisions. Due to the timing of some of the BLM RMPs that will be amended by the GRSR RMPA, there may be some new No Action (Alternative A) data sets not included in the GRSR RMPA maps

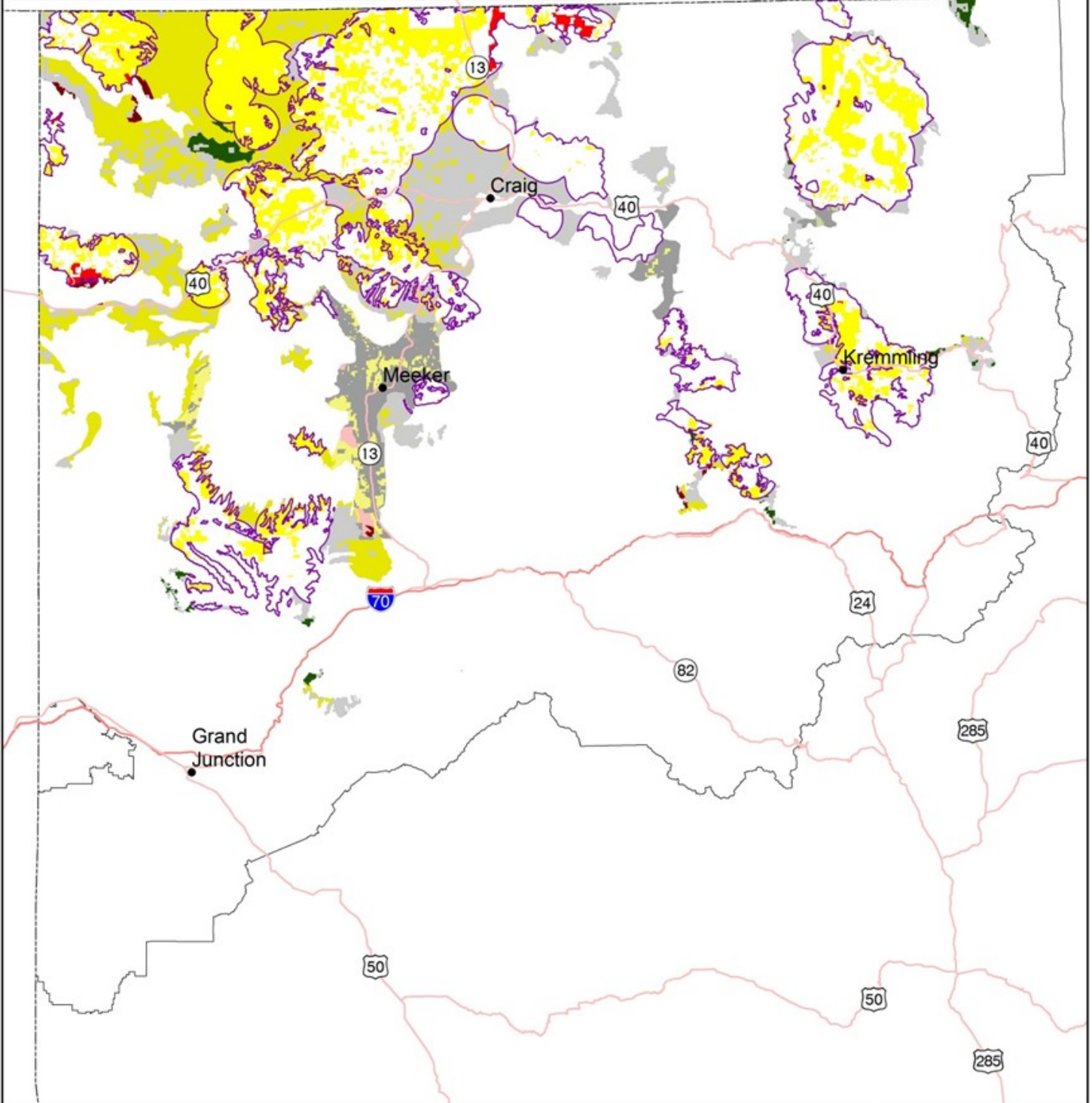


Figure 2-11: Northwest Colorado Sub-Regional Planning Area, Trails and Travel Management

PHMA	Outside of BLM Decision Area	Planning Area
LCHMA	Closed	Boundary
GHMA	Limited	State Boundary
	Open	

September 2015



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.

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# Appendix B

Buffer Distances and Evaluation of Impacts on Leks



# APPENDIX B

## BUFFER DISTANCES AND EVALUATION OF IMPACTS ON LEKS

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Evaluate impacts on leks from actions requiring NEPA analysis. In addition to any other relevant information determined to be appropriate (e.g., state wildlife agency plans), the BLM will assess and address impacts from the following activities using the lek buffer distances as identified in the United States Geological Survey's (USGS) report, *Conservation buffer distance estimates for Greater Sage-Grouse—A review* (Open File Report 2014-1239) (Manier et al. 2014). The BLM will apply the lek buffer distances specified as the lower end of the interpreted range in the report unless justifiable departures are determined to be appropriate (see below). The lower end of the interpreted range of the 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 2 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) 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-mile from leks

Justifiable departures to decrease or increase from these distances, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations and state regulations) may be appropriate for determining activity impacts. 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 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.

In determining lek locations, the BLM will use the most recent active or occupied lek data available from the state wildlife agency.

### **B.1 FOR ACTIONS IN GENERAL HABITAT MANAGEMENT AREAS**

The BLM will apply the lek buffer distances identified above as required conservation measures, such as Conditions of Approval, to fully address the impacts on leks as identified in the NEPA analysis.

Impacts should first be avoided by locating the action outside of the applicable lek buffer distance(s) identified above.

The BLM may approve actions in General Habitat Management Areas (GHMA) that are within the applicable lek buffer distance identified above only if:

- Based on best available science, landscape features, and other existing protections, (e.g., land use allocations and state regulations), the BLM determines that a lek buffer distance other than the applicable distance identified above offers the same or a greater level of protection to GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area; or
- The BLM determines that impacts on GRSG and its habitat are minimized such that the project will cause minor or no new disturbance (e.g., co-location with existing authorizations); and
- Any residual impacts within the lek buffer distances are addressed through compensatory mitigation measures sufficient to ensure a net conservation gain, as outlined in the Greater Sage-Grouse Mitigation Strategy (**Appendix F**).

### **B.2 FOR ACTIONS IN PRIORITY HABITAT MANAGEMENT AREAS (PHMA)**

The BLM will apply the lek buffer distances identified above as required conservation measures, such as Conditions of Approval, to fully address the impacts on leks as identified in the NEPA analysis. Impacts should be avoided by locating the action outside of the applicable lek buffer distance(s) identified above.

The BLM may approve actions in PHMA that are within the applicable lek buffer distance identified above only 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 buffer distance other than the distance identified above offers the same or greater level of protection to GRSG and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area.

Range improvements that do not impact GRSG or range improvements that provide a conservation benefit to GRSG, such as fences for protecting important seasonal habitats, meet the lek buffer requirement.



The BLM will explain its justification for determining the approved buffer distances meet these conditions in its project decision.

### **B.3 REFERENCES**

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. US Geological Survey Open-File Report 2014–1239. Internet website: <http://dx.doi.org/10.3133/ofr20141239>.

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# Appendix C

Required Design Features, Preferred Design Features, and Suggested Design Features



# APPENDIX C

## REQUIRED DESIGN FEATURES, PREFERRED DESIGN FEATURES, AND SUGGESTED DESIGN FEATURES

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**Table C-I** provides a list of preferred design features (PDFs) and required design features (RDFs).

RDFs are required for certain activities in all Greater Sage-Grouse (GRSG) habitats. RDFs establish the minimum specifications for certain activities to help mitigate adverse impacts. However, 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 (e.g., a resource is not present on a given site) or may require slight variations (e.g., a larger or smaller protective area). All variations in RDFs would require that at least one of the following be demonstrated in the NEPA analysis associated with the project or activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project or 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, a state-implemented conservation measure, or a plan-level protection is determined to provide equal or better protection for GRSG or its habitat.
- A specific RDF would provide no additional protection to GRSG or its habitat.

PDFs are established guidelines followed by the BLM to be incorporated into management activities where necessary, appropriate, and/or technically feasible. “Necessary” refers to the need for the PDF given the specifics of a proposal (e.g., it is not “necessary” to apply dust abatement on roads when the soil is sandy and wet). “Appropriate” refers to the wisdom of apply the PDF (e.g., it may not be “appropriate” to locate man camps outside priority habitat management areas [PHMA] because the additional vehicle miles required by a more distant location could be more detrimental to GRSG). A PDF is “technically feasible” when it entails proven, or in some cases, emerging technology.

Suggested design features (SDFs) apply to locatable minerals.

While the list of PDFs/RDFs/SDFs in **Table C-1** is thorough, the list is not intended to be exhaustive; additional PDFs/RDFs/SDFs could be developed and implemented to help achieve resource objectives. PDFs/RDFs/SDFs include state-of-the-art measures applied on a site-specific basis to avoid, minimize, reduce, rectify, or compensate for adverse environmental or social impacts. They are applied to management actions to help achieve desired outcomes for safe, environmentally responsible resource development by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. Project applicants also can propose PDFs/RDFs/SDFs for activities on public lands (e.g., for gas drilling). PDFs/RDFs/SDFs not incorporated into the permit application by the applicant may be considered and evaluated through the environmental review process and incorporated into the use authorization as conditions of approval or ROW stipulations. Standard conditions of approval and ROW stipulations from each LUP would apply to site-specific analysis. Additional PDFs/RDFs/SDFs, conditions of approval, and ROW stipulations could be developed to meet resource objectives based on local conditions and resource specific concerns.

**Table C-1  
Required Design Features, Preferred Design Features, and Suggested Design Features<sup>1</sup>**

<b>WEST NILE VIRUS All Designated Habitat (ADH)</b>	
<b>The following seven site modifications will minimize exploitation of coal bed natural gas ponds by <i>Culex tarsalis</i>:</b>	
1	RDF (ADH) Increase the size of ponds to accommodate a greater volume of water than is discharged. This will result in un-vegetated and muddy shorelines that breeding <i>Cx. tarsalis</i> avoid (De Szalay and Resh 2000). This modification may reduce <i>Cx. tarsalis</i> habitat but could create larval habitat for <i>Culicoides sonorensis</i> , a vector of blue tongue disease, and should be used sparingly (Schmidtman et al. 2000). Steep shorelines should be used in combination with this technique whenever possible (Knight et al. 2003).  PDF (ADH) When authorizing new ponds for watering livestock, evaluate the proposed design for features that reduce the potential for creating mosquito breeding habitat in conjunction with features that make the pond fit for the purpose for which it is intended.
<b>FLUID MINERAL DEVELOPMENT</b>	
<b>Fluid Mineral Roads Priority Habitat Management Areas (PHMA)</b>	
2	RDF (ADH) Design roads to an appropriate standard no higher than necessary to accommodate the intended purpose.
3	PDF (PHMA) Locate roads to avoid important areas and habitats.
4	RDF (PHMA) Coordinate road construction and use among ROW holders.
5	PDF (PHMA) Construct road crossing at right angles to ephemeral drainages and stream crossings.
6	PDF (PHMA) Establish speed limits on BLM system roads to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.
7	PDF (PHMA) Establish trip restrictions (Lyon and Anderson 2003) or minimization through use of telemetry and remote well control (e.g., Supervisory Control and Data Acquisition).
8	PDF (PHMA) Coordinate with counties on transportation management related to GRSG habitat issues.
9	PDF (PHMA) Restrict vehicle traffic to only authorized users on newly constructed routes (e.g., use signing and gates).
10	PDF (PHMA) Use dust abatement practices on roads and pads.
11	PDF (PHMA) Close and rehabilitate duplicate roads.

**Table C-1**  
**Required Design Features, Preferred Design Features, and Suggested Design Features<sup>1</sup>**

<b>Fluid Mineral Operations Priority Habitat Management Areas (PHMA)</b>	
12	PDF (PHMA) Cluster disturbances, operations (e.g., fracture stimulation and liquids gathering), and facilities.
13	PDF (PHMA) Use directional and horizontal drilling to reduce surface disturbance.
14	PDF (PHMA) Place infrastructure in already disturbed locations where the habitat has not been restored.
15	PDF (PHMA) Consider using oak (or other material) mats for drilling activities to reduce vegetation disturbance and for roads between closely spaced wells to reduce soil compaction and maintain soil structure to increase likelihood of vegetation reestablishment following drilling.
16	PDF (PHMA) Apply a phased development approach with concurrent reclamation.
17	PDF (PHMA) Place liquid gathering facilities outside of PHMA. Have no tanks at well locations within PHMA (minimizes perching and nesting opportunities for ravens and raptors and truck traffic). Pipelines must be under or immediately adjacent to the road (Bui et al. 2010).
18	PDF (PHMA)—Restrict the construction of facilities and fences to the minimum number and size necessary.
19	PDF (PHMA) Site and/or minimize linear ROWs to reduce disturbance to sagebrush habitats.
20	PDF (PHMA) Place new utility developments (e.g., power lines and pipelines) and transportation routes in existing utility or transportation corridors.
21	PDF (PHMA) Bury distribution power lines.
22	PDF (PHMA) Corridor power, flow, and small pipelines under or immediately adjacent to roads.
23	PDF (PHMA) Design or site permanent structures that create movement (e.g., a pump jack) to minimize impacts to GRSG.
24	PDF (PHMA)—Cover all drilling and production pits and tanks regardless of size with netting or some other BLM-approved cover method.
25	PDF (PHMA) Equip tanks and other above ground facilities with structures or devices that discourage nesting of raptors and corvids.
26	PDF (PHMA)—Clean vehicles in a manner that prevents transport of weeds.
27	PDF (PHMA) Use only closed-loop systems for drilling operations and no reserve pits.
28	PDF (PHMA) Restrict pit and impoundment construction to reduce or eliminate threats from West Nile virus (Doherty 2007).
29	PDF (PHMA) Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat: <ul style="list-style-type: none"> <li>• Overbuild size of ponds for muddy and non-vegetated shorelines.</li> <li>• Build steep shorelines to decrease vegetation and increase wave actions.</li> <li>• Avoid flooding terrestrial vegetation in flat terrain or low-lying areas.</li> <li>• Construct dams or impoundments that restrict down slope seepage or overflow.</li> <li>• Line the channel where discharge water flows into the pond with crushed rock.</li> <li>• Construct spillway with steep sides and line it with crushed rock.</li> </ul> Treat waters with larvicides to reduce mosquito production where water occurs on the surface.
30	PDF (PHMA) Limit noise to less than 10 decibels above ambient measures (20-24 dBA) at sunrise at the perimeter of a lek during active lek season (Patricelli et al. 2010; Blickley et al. <i>In preparation</i> ).
31	PDF (PHMA) Require noise shields when drilling during the lek, nesting, brood-rearing, or wintering season.
32	RDF (PHMA) Fit transmission towers with anti-perch devices (Lammers and Collopy 2007).
33	PDF (PHMA) Require GRSG-safe fences.
34	PDF (PHMA)—Locate new compressor stations outside PHMA.  RDF (PHMA)—Design compressor stations and other production equipment so that noise emitted or measured in PHMA is no reduced to the extent possible.
35	RDF (PHMA) Clean up refuse (Bui et al. 2010).
36	PDF (PHMA) Locate man camps outside of PHMA.

**Table C-1**  
**Required Design Features, Preferred Design Features, and Suggested Design Features<sup>1</sup>**

<b>Fluid Minerals Reclamation Priority Habitat Management Areas (PHMA)</b>	
37	RDF (PHMA) Include objectives for ensuring habitat restoration to meet GRSG habitat needs in reclamation practices/sites (Pyke 2011). Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve GRSG habitat needs. See <b>Appendix H</b> , Guidelines for Implementation
38	PDF (PHMA) Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, top soiling, and revegetating cut and fill slopes.
39	PDF (PHMA)—All disturbed areas will be contoured to the original contours or at least to blend with the natural topography. Blending is defined as reducing form, line, shape, and color contrast with the disturbing activity. In visually sensitive areas, all disturbed areas shall be contoured to match the original topography. Matching is defined as reproducing the original topography and eliminating form, line, shape, and color caused by the disturbance as much as possible.
40	PDF (PHMA) Irrigate interim reclamation if necessary for establishing seedlings more quickly.
41	PDF (PHMA) Utilize mulching techniques to expedite reclamation and to protect soils.
<b>Fluid Minerals Roads General Habitat Management Areas (GHMA)</b>	
42	RDF (ADH) Design roads to an appropriate standard no higher than necessary to accommodate their intended purpose.
43	RDF (ADH) Coordinate with counties on transportation management related to GRSG habitat issues.
44	PDF (ADH) Establish speed limits to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.
45	RDF (GHMA) Coordinate road construction and use among ROW holders.
46	PDF (ADH) Construct road crossing at right angles to ephemeral drainages and stream crossings.
47	PDF (ADH) Use dust abatement practices on roads and pads.
48	PDF (ADH) Close and reclaim duplicate roads, by restoring original landform and establishing desired vegetation.
<b>Fluid Minerals Operations General Habitat Management Areas (GHMA)</b>	
49	PDF (ADH) Cluster disturbances, operations (e.g., fracture stimulation and liquids gathering), and facilities.
50	PDF (ADH) Use directional and horizontal drilling to reduce surface disturbance.
51	RDF (ADH) Clean up refuse (Bui et al. 2010).
52	PDF (ADH)—Restrict the construction of facilities and fences to the minimum number and size necessary.
53	PDF (ADH)—Cover all drilling and production pits and tanks regardless of size with netting or some other BLM-approved cover method.
54	PDF (ADH) Equip tanks and other above ground facilities with structures or devices that discourage nesting of raptors and corvids.
55	PDF (ADH) Use remote monitoring techniques for production facilities and develop a plan to reduce the frequency of vehicle use.
56	PDF (ADH)—Clean vehicles in a manner that prevents transport of weeds.
57	PDF (ADH) Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus (Doherty 2007).
<b>Fluid Minerals Reclamation General Habitat Management Areas (GHMA)</b>	
58	RDF (ADH) Include restoration objectives to meet GRSG habitat needs in reclamation practices/sites (Pyke 2011). Address post reclamation management in reclamation plan such that goals and objectives are to enhance or restore GRSG habitat. See <b>Appendix H</b> , Guidelines for Implementation.



**Table C-1**  
**Required Design Features, Preferred Design Features, and Suggested Design Features<sup>1</sup>**

<b>LOCATABLE MINERALS</b>	
<b>Locatable Minerals Roads</b>	
<b>All Designated Habitat</b>	
59	SDF (ADH)—Request operators design roads to an appropriate standard no higher than necessary to accommodate their intended purpose; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
60	SDF (ADH)—Request operators locate roads to avoid important areas and habitats; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
61	SDF (ADH)—Request ROW holders coordinate road construction and use with other ROW holders; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
62	SDF (ADH)—Request operators construct road crossing at right angles to ephemeral drainages and stream crossings; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
63	SDF (ADH)—Request operators establish speed limits on BLM system roads to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
64	SDF (ADH)—Coordinate with counties on transportation management related to GRSG habitat issues.
65	SDF (ADH)—Request operators restrict vehicle traffic to only authorized users on newly constructed routes (e.g., use signing and gates); require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
66	SDF (ADH)—Request operators use dust abatement practices on roads and pads; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
67	SDF (ADH)—Request operators close and reclaim duplicate roads, by restoring original landform and establishing desired vegetation; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
<b>Locatable Minerals Operations</b>	
<b>All Designated Habitat</b>	
68	SDF (ADH)—Cluster disturbances associated with operations and facilities as close as possible; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
69	SDF (ADH)—Place infrastructure in already disturbed locations where the habitat has not been restored; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
70	SDF (ADH)—Restrict the construction of tall facilities and fences to the minimum number and amount needed; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
71	SDF (ADH)—Site and/or minimize linear ROWs to reduce disturbance to sagebrush habitats; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
72	SDF (ADH)—Request that operators place new utility developments (e.g., power lines and pipelines) and transportation routes in existing utility or transportation corridors; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
73	SDF (ADH)—Request that operators bury power lines; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
74	SDF (ADH)—Request that operators cover all pits and tanks regardless of size using fine mesh netting or other effective techniques to reduce GRSG mortality; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
75	SDF (ADH)—Request operators equip tanks and other above ground facilities with structures or devices that discourage nesting of raptors and corvids; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
76	SDF (ADH)—Request operators control the spread and effects of non-native plant species (Gelbard and Belnap 2003; Bergquist et al. 2007); require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
77	SDF (ADH)—Request operators restrict pit and impoundment construction to reduce or eliminate threats from West Nile virus (Doherty 2007); require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.

**Table C-1**  
**Required Design Features, Preferred Design Features, and Suggested Design Features<sup>1</sup>**

78	SDF (ADH)—Request that operators adhere to the PDF/RDF provisions in this table's section on West Nile Virus; require adherence as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
79	SDF (ADH)—Request operators install GRSG -safe fences around sumps; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
80	SDF (ADH)—Require operators to clean up refuse (Bui et al. 2010) so as to prevent unnecessary or undue degradation under 43 CFR 3809.
81	SDF (ADH)—Request that operators locate man camps outside PHMA; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
<b>Locatable Minerals Reclamation All Designated Habitat</b>	
82	SDF (ADH)—Include restoration objectives to meet GRSG habitat needs in reclamation practices/sites. Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve GRSG habitat needs. See <b>Appendix H</b> , Guidelines for Implementation
83	SDF (ADH) No similar action. (Interim Reclamation is a fluid mineral term that does not apply to locatable minerals.)
84	SDF (ADH)—Request operators' reclamation plans to target pre-disturbance landform and desired plant community vegetation; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
85	(ADH) No similar action. (Interim Reclamation is a fluid mineral term that does not apply to locatable minerals.)
86	SDF (ADH)—Request operators use mulching techniques to expedite reclamation; require as necessary to prevent unnecessary or undue degradation under 43 CFR 3809.
87	SDF (ADH)—Coordinate with counties on transportation management related to GRSG habitat issues.
<b>FIRE MANAGEMENT</b>	
<b>Fire Management—Fuels Management All Designated Habitat</b>	
88	PDF (ADH)—Where applicable, design fuels treatment objective to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns to address other values-at-risk.
89	PDF (ADH) Provide training to fuels treatment personnel on GRSG biology, habitat requirements, and identification of areas utilized locally.
90	PDF (ADH) Use fire prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of hydrophobicity).
91	RDF (ADH) Ensure proposed sagebrush treatments are planned with interdisciplinary input from BLM, and/or state wildlife agency biologist and that treatment acreage is conservative in the context of surrounding GRSG seasonal habitats and landscape.
92	RDF (ADH) Where appropriate, ensure that treatments are configured in a manner (e.g., strips) that promotes use by GRSG (Connelly et al. 2000).
93	RDF (ADH) Where applicable, incorporate roads and natural fuel breaks into fuel break design.
94	PDF (ADH) Power-wash all vehicles and equipment involved in fuels management activities prior to entering the area to minimize the introduction of undesirable and/or invasive plant species.
95	RDF (ADH) Design vegetation treatment in areas of high fire frequency to facilitate firefighter safety, reduce the risk of extreme fire behavior; reduce the potential of acres burned; and to reduce the fire risk to key GRSG habitats. Additionally, develop maps for GRSG habitat that spatially display current fuels treatment opportunities for suppression resources.
96	PDF (ADH) Give priority for implementing specific GRSG habitat restoration projects in annual grasslands first to sites which are adjacent to or surrounded by GRSG key habitats. Annual grasslands are second priority for restoration when the sites not adjacent to key habitat, but within 2 miles of key habitat. The third priority for annual grasslands habitat restoration projects are sites beyond 2 miles of key habitat. The intent is to focus restoration outward from existing, intact habitat.

**Table C-1  
Required Design Features, Preferred Design Features, and Suggested Design Features<sup>1</sup>**

97	PDF (ADH)—Restore annual grasslands to a species composition characterized by perennial grasses, forbs, and shrubs.
98	PDF (ADH) Emphasize the use of native plant species, recognizing that non-native species may be necessary depending on the availability of native seed and prevailing site conditions.
99	PDF (ADH) Remove standing and encroaching trees within at least 100 meters of occupied GRSG leks and other habitats (e.g., nesting, wintering, and brood rearing) to reduce the availability of perch sites for avian predators, as appropriate, and resources permit.
100	RDF (ADH)—Prioritize suppression immediately after firefighter and public safety commensurate with the values-at-risk.
101	PDF (ADH)—Reduce the risk of vehicle or human-caused wildfires and the spread of invasive species by planting perennial vegetation (e.g., green-strips) paralleling road ROW.
102	PDF (ADH) Strategically place and maintain pre-treated strips/areas (e.g., mowing, herbicide application, and strictly managed grazed strips) to aid in controlling wildfire should wildfire occur near key habitats or important restoration areas (such as where investments in restoration have already been made).
<b>Fire Management All Designated Habitat</b>	
103	RDF (ADH)—Develop state-specific GRSG reference and resource materials containing maps, a list of resource advisors, contact information, local guidance, and other relevant information. These state-specific GRSG reference and resource materials are for internal use only.
104	RDF (ADH) Provide localized maps to dispatch offices and extended attack incident commanders for use in prioritizing wildfire suppression resources and designing suppression tactics.
105	PDF (ADH)—Prior to the fire season, provide training to GRSG resource advisors on wildfire suppression organization, objectives, tactics, and procedures to develop a cadre of qualified individuals.
106	PDF (ADH)—Pre-position fire suppression resources based on all resource values-at-risk.
107	RDF (ADH) During periods of multiple fires, ensure line officers are involved in setting priorities.
108	PDF (ADH) Locate wildfire suppression facilities (i.e., base camps, spike camps, drop points, staging areas, and heli-bases) in areas where physical disturbance to GRSG habitat can be minimized. These include disturbed areas, grasslands, near roads/trails or in other areas where there is existing disturbance or minimal sagebrush cover. As appropriate, utilize existing fuel breaks, such as roads or discrete changes in fuel type, as control lines in order to minimize fire spread.
109	PDF (ADH) Power-wash all firefighting vehicles, to the extent possible, including engines, water tenders, personnel vehicles, and ATVs prior to deploying in or near GRSG habitat areas to minimize noxious weed spread.
110	RDF (ADH)—Eliminate unnecessary cross-country vehicle travel during fire operations in GRSG habitat.
111	PDF (ADH) Minimize burnout operations in key GRSG habitat areas by constructing direct fire line whenever safe and practical to do so.
112	PDF (ADH) Utilize retardant and mechanized equipment to minimize burned acreage during initial attack.
113	PDF (ADH) As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.

<sup>1</sup> All Designated Habitat (ADH) includes Priority Habitat Management Areas (PHMA), General Habitat Management Areas (GHMA), and Linkage/Connectivity Habitat Management Areas (LCHMA).

## C.1 REFERENCES

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# Appendix D

## Greater Sage-Grouse Monitoring Framework



# APPENDIX D

## GREATER SAGE-GROUSE MONITORING FRAMEWORK

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This framework was developed by the Interagency GRSB Disturbance and Monitoring Sub-Team.

### D.1 INTRODUCTION

The purpose of this US Bureau of Land Management (BLM) Greater Sage-grouse Monitoring Framework (hereafter, monitoring framework) is to describe the methods to monitor habitats and evaluate the implementation and effectiveness of the BLM planning strategy (BLM Instruction Memorandum 2012-044) to conserve the species and its habitat. The regulations for the BLM (43 CFR 1610.4-9) require that land use plans establish intervals and standards, as appropriate, for monitoring and evaluations, based on the sensitivity of the resource to the decisions involved. Therefore, BLM will use the methods described herein to collect monitoring data to evaluate implementation and effectiveness of the Greater Sage-Grouse (hereafter, sage-grouse) planning strategy and the conservation measures contained in land use plans. The type of monitoring data to be collected at the land use plan scale will be described in the monitoring plan which will be developed after the signing of the ROD. (For a summary of the frequency of reporting, see **Attachment A** at the end of this appendix.) Adaptive management will be informed by data collected at any and all scales.

To ensure the BLM have the ability to make consistent assessments about sage-grouse habitats across the range of the species, This framework lays out the methodology for monitoring the implementation and evaluating the effectiveness of BLM actions to conserve the species and its habitat through monitoring that informs effectiveness at multiple scales. Monitoring efforts will include data for measurable quantitative indicators of sagebrush availability, anthropogenic disturbance levels, and sagebrush conditions. Implementation monitoring results will provide information to allow the BLM to evaluate the extent that decisions from the BLM resource management plans (RMPs) to conserve sage-grouse and its habitat have been implemented. Population monitoring information will be collected by State fish and wildlife agencies and will be incorporated into effectiveness monitoring as it is made available.

This multi-scale monitoring approach is necessary as sage-grouse are a landscape species and conservation is scale-dependent whereby conservation actions are implemented within seasonal habitats to benefit populations. The four orders of habitat selection (Johnson 1980) used in this monitoring

framework are described by Connelly et al. (2003) and Stiver et al. (2014) as first order (broad scale), second order (mid-scale), third order (fine scale), and fourth order (site scale) to apply them to sage-grouse habitat selection. Habitat selection and habitat use by sage-grouse occurs at multiple scales and is driven by multiple environmental and behavioral factors. Managing and monitoring sage-grouse habitats are complicated by the differences in habitat selection across the range and habitat utilization by individual birds within a given season. Therefore, the tendency to look at a single indicator of habitat suitability or only one scale limits the ability for managers to identify the threats to sage-grouse and to respond at the appropriate scale. For descriptions of these habitat suitability indicators for each scale, see the Sage-Grouse Habitat Assessment Framework (HAF; Stiver et al. 2014).

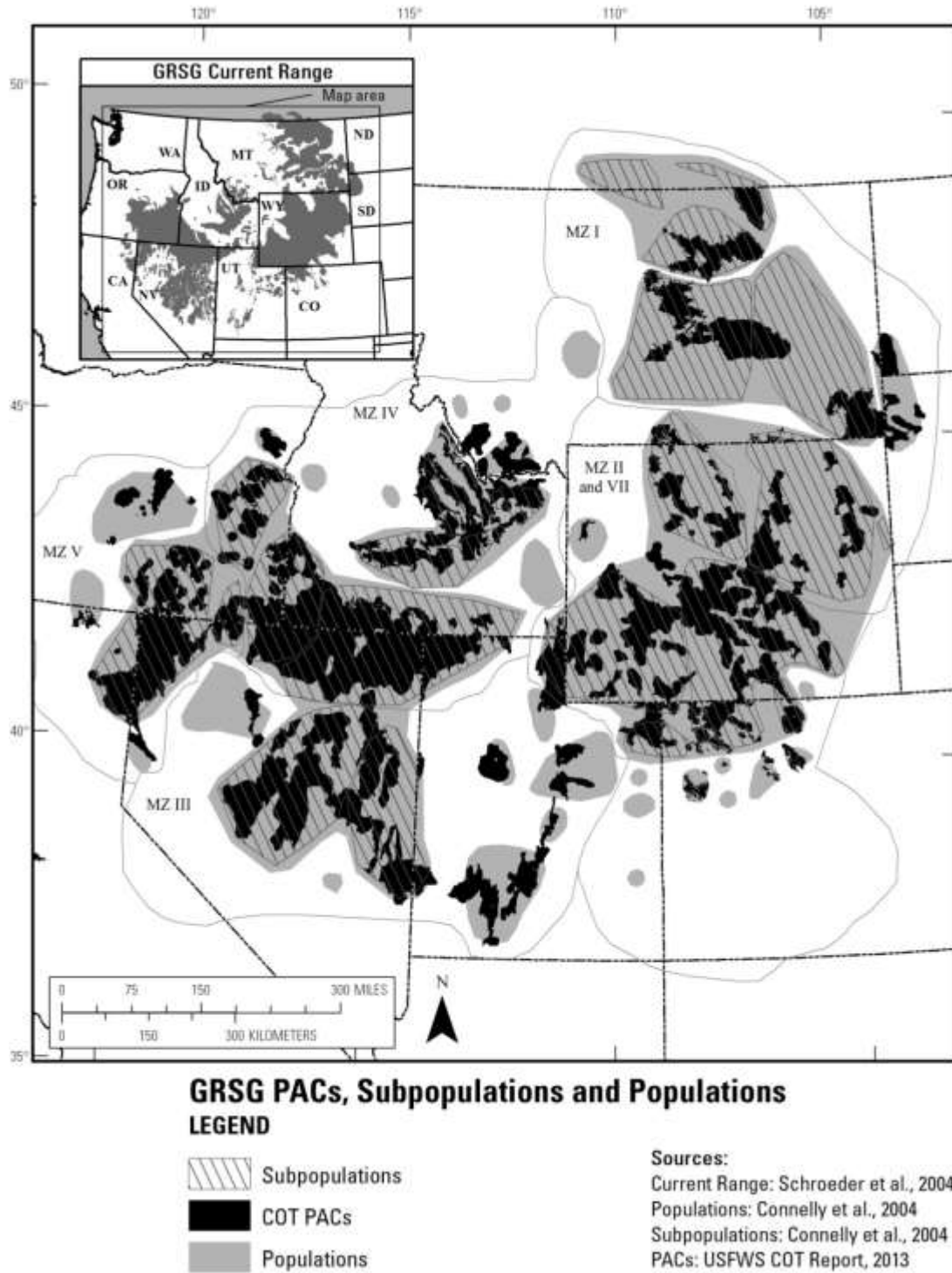
Monitoring methods and indicators in this monitoring framework are derived from the current peer-reviewed science. Range wide best-available datasets for broad and mid-scale monitoring will be acquired. If these existing datasets are not readily available or are inadequate, but are necessary to effectively inform the three measurable quantitative indicators (sagebrush availability, anthropogenic disturbance levels, and sagebrush conditions), the BLM will strive to develop datasets or obtain information to fill these data gaps. Datasets that are not readily available to inform the fine and site scale indicators will be developed. These data will be used to generate monitoring reports at the appropriate and applicable geographic scales, boundaries and analysis units: across the range of sage-grouse as defined by Schroeder et al. (2004), and clipped by Western Association of Fish and Wildlife Agencies (WAFWA) Management Zone (MZ) (Stiver et al. 2006) boundaries and other areas as appropriate for size (e.g., populations based on Connelly et al. 2004; **Figure D-1**). This broad and mid-scale monitoring data and analysis will provide context for RMP/LMP areas; states; GRSG priority habitat management areas, general habitat management areas and other sage-grouse designated management areas such as linkage/connectivity habitat management areas; and priority areas for conservation (PACs) as defined in the Greater Sage-Grouse Conservation Objectives: Final Report (COT report) (USFWS 2013). Throughout the remainder of the document, all of these areas will be referred to as “sage-grouse areas.”

This monitoring framework is divided into two sections. The broad and mid-scale methods, described in **Section D.2**, provide a consistent approach across the range of the species to monitor implementation decisions and actions, mid-scale habitat attributes (e.g., sagebrush availability and habitat degradation), and population changes to determine the effectiveness of BLM planning strategy and management decisions (see **Table D-1**). For the sage-grouse habitat fine and site scales (**Section D.3**), this framework describes a consistent approach (e.g., indicators and methods) for monitoring sage-grouse seasonal habitats. Funding, support, and dedicated personnel for broad and mid-scale monitoring will be renewed annually through the normal budget process. For an overview of the BLM multi-scale monitoring commitments, see **Attachment A** at the end of this appendix.

## **D.2 BROAD AND MID SCALES**

First order habitat selection at the broad scale describes the physical or geographical range of a species. The first order habitat, the range of the species, is defined by populations of sage-grouse associated with sagebrush landscapes based on Schroeder et al. (2004), Connelly et al. (2004), and population surveys and local adjustments based on population or habitat surveys since 2004. There is an intermediate scale between the broad and mid scales that was delineated by WAFWA from floristic provinces, within which similar environmental factors influence vegetation communities. This scale is referred to as the WAFWA sage-grouse MZs. Although no indicators are specific to this scale, these MZs are biologically meaningful as reporting units.





**Figure D-I.** Map of sage-grouse range, populations, subpopulations and PACs as of 2013

**Table D-1**  
**Indicators for Monitoring Implementation of the Strategy, Decisions, Sage-Grouse Habitat,**  
**and Sage-Grouse Populations at the Broad and Mid Scales**

Geographic Scales	Implementation	Habitat		Population (State Wildlife Agencies)
		Availability	Degradation	Demographics
Broad scale: From the range of sage-grouse to WAFWA MZs	BLM planning strategy goal and objectives	Distribution and amount of sagebrush within the range	Distribution and amount of energy, mining, and infrastructure facilities	WAFWA MZ population trend
Mid-scale: From WAFWA MZs to populations; PACs	RMP/LUP decisions	Mid-scale habitat indicators (Stiver et al. 2014); <b>Table D-2</b> (e.g., percent of sagebrush per unit area)	Distribution and amount of energy, mining, and infrastructure facilities ( <b>Table D-2</b> )	Individual population trend

Second-order habitat selection, the mid scale, includes sage-grouse populations and PACs. The second order includes at least 40 discrete populations and subpopulations (Connelly et al. 2004). Populations range in area from 150 to 60,000 square miles; PACs range from 20 to 20,400 square miles and are nested within population areas, and populations are nested within MZs.

Other mid-scale landscape indicators, such as patch size and number, patch connectivity, linkage areas, and landscape matrix and edge effects (Stiver et al. 2014) will also be assessed. The methods used to calculate these metrics will be derived from existing literature (Knick et al. 2011; Leu and Hanser 2011; Knick and Hanser 2011).

### **D.2.1 Implementation (Decision) Monitoring**

Implementation monitoring is the process of tracking and documenting the implementation (or the progress toward implementation) of land use plan decisions. The BLM will monitor implementation of project level and site-specific actions and authorizations with their associated conditions of approval/stipulations for sage-grouse spatially (as appropriate) within priority habitat, general habitat, and other sage-grouse designated management areas, at a minimum, for the Northwest Colorado GRSG ARMPA. These actions and authorizations and progress toward completing and implementing activity-level plans will be monitored consistently across all planning units and reported to BLM headquarters annually, with a summary report every 5 years, for this Northwest Colorado GRSG ARMPA.

The Implementation Monitoring Team will develop a national-level land use plan implementation monitoring and reporting structure (IMARS). It will describe how the BLM will consistently and systematically monitor and report implementation-level activity plans and implementation actions for all plans within the range of sage-grouse. The IMARS will be included in the record of decision (ROD)/approved plan. IMARS is a centralized tracking tool for collection, roll-up, and reporting of tabular and spatially explicit data. The BLM will provide data that can be integrated with other conservation efforts conducted by state and federal partners.

### D.2.2 Habitat Monitoring

In the USFWS's 2010 listing decision for the sage-grouse, USFWS identified 18 threats contributing to the destruction, modification, or curtailment of the sage-grouse's habitat or range (75 Federal Register 13910, March 23, 2010; USFWS 2010). The BLM will therefore monitor the relative extent of these threats that remove sagebrush (**Table D-2**), both spatially and temporally, on all lands within an analysis area, and to report on amount, pattern and condition at the appropriate and applicable geographic scales and boundaries. These 18 threats have been aggregated into three broad and mid-scale measures to account for whether the threat predominantly removes sagebrush or degrades habitat. The three measures are:

- Measure 1: Sagebrush availability (percent of sagebrush per unit area)
- Measure 2: Habitat degradation (percent of human activity per unit area)
- Measure 3: Density of energy and mining (facilities and locations per unit area)

**Table D-2**  
**Relationship Between the 18 Threats and the Three Habitat Disturbance Measures for Monitoring<sup>1</sup>**

USFWS Listing Decision Threat	Sagebrush Availability	Habitat Degradation	Density of Energy and Mining
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 salable 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 ways		X	

<sup>1</sup>Data availability may preclude specific analysis of individual layers; see the detailed method for more information.

These three habitat disturbance measures will evaluate disturbance on all lands regardless of land ownership. The direct area of influence will be assessed with the goal to account for actual removal of sagebrush upon which sage-grouse depend (Connelly et al. 2000) and for habitat degradation as a surrogate for human activity. Measure 1 examines where disturbances have removed plant communities that support sagebrush (or have broadly removed sagebrush from the landscape), and therefore

monitors the change in sagebrush availability, or specifically where and how much of the sagebrush community is available within the range of sage-grouse. The sagebrush community is defined as the ecological systems that have the capability to support sagebrush vegetation and seasonal sage-grouse habitats within the range of sage-grouse (see Sagebrush Availability, below).

Measures 2 and 3 (see Habitat Degradation, below) focus on where habitat degradation is occurring using the footprint/area of direct disturbance and the number of facilities at the mid-scale to identify the relative amount of degradation per geographic unit of interest and in areas that have the capability to support sagebrush and seasonal sage-grouse use. Measure 2 is not only a quantification of footprint/area of direct disturbance but also a surrogate for those threats most likely to have ongoing activity. In addition, energy development and mining activities are typically the most intensive activities in sagebrush habitat. Therefore, Measure 3, the density of active energy development, production, and mining sites will be monitored to help identify areas of particular concern for factors such as noise, dust, and traffic that degrade sage-grouse habitat.

The methods to monitor disturbance found herein differ slightly from methods used in the Sage-Grouse Baseline Environmental Report (BER; Manier et al. 2013) that provided a baseline of datasets of disturbance across jurisdictions. One difference is that, for some threats, the data in the BER were for federal lands only. In addition, threats were assessed individually in that report, using different assumptions from those in this monitoring framework about how to quantify the location and magnitude of threats. The methodology herein builds on the BER methodology and identifies datasets and procedures to utilize the best available data across the range of the sage-grouse and to formulate a consistent approach to quantify impact of the threats through time. This methodology also describes an approach to combine the threats and calculate the three measures.

#### ***D.2.2.1 Sagebrush Availability (Measure 1)***

Sage-grouse populations have been found to be more resilient where a percentage of the landscape is maintained in sagebrush (Knick and Connelly 2011), which will be determined by sagebrush availability. This measure has been divided into two sub-measures to describe sagebrush availability on the landscape:

- Measure 1a) the current amount of sagebrush on the landscape of interest and
- Measure 1b) the amount of sagebrush on the landscape of interest compared to the amount of sagebrush the landscape of interest could ecologically support.

Measure 1a (the current amount of sagebrush on the landscape) will be calculated using this formula: [the existing updated sagebrush layer] divided by [the geographic unit of interest]. The appropriate geographic units of interest for sagebrush availability include the species' range, WAFWA Management Zones, populations, and PACs. In some cases these sage-grouse areas will need to be aggregated to provide an estimate of sagebrush availability with an acceptable level of accuracy.

Measure 1b (the amount of sagebrush for context within the area of interest) will be calculated using this formula: [the existing updated sagebrush layer (EVT)] divided by [pre Euro-American geographic extent of lands that could have supported sagebrush (BpS)]. This will provide information during evaluations of monitoring data to set the context for a given geographic unit of interest. That information could also be used for management options for restoration or mitigation.

The sagebrush base layer for the sagebrush availability measure will be based on geospatial vegetation data adjusted for the threats listed in **Table D-2**. The following sub-sections of this monitoring framework describe the methodology to determine both the current availability of sagebrush on the landscape and the context of the amount of sagebrush on the landscape at the broad and mid-scales.

#### *Establishing the Sagebrush Base Layer*

The current geographic extent of sagebrush vegetation within the range wide distribution of sage-grouse populations will be ascertained using the most recent version of the EVT layer in LANDFIRE (2010). LANDFIRE EVT was selected to serve as the sagebrush base layer for five reasons, as follows:

- It is the only nationally consistent vegetation layer that has been updated multiple times since 2001.
- The ecological systems classification within LANDFIRE EVT include multiple sagebrush type classes that, when aggregated, provide a more accurate (compared with individual classes) and seamless sagebrush base layer across jurisdictional boundaries.
- LANDFIRE performed a rigorous accuracy assessment from which to derive the range-wide uncertainty of the sagebrush base layer.
- LANDFIRE is consistently used in several recent analyses of sagebrush habitats (Knick et al. 2011; Leu and Hanser 2011; Knick and Hanser 2011).
- LANDFIRE EVT can be compared against the geographic extent of lands that are believed to have had the capability to support sagebrush vegetation BpS.

This fifth reason provides a reference point for understanding how much sagebrush currently remains in a defined geographic area compared with how much sagebrush existed historically (Measure 1b). Therefore, BLM have determined that LANDFIRE provides the best available data at broad and mid-scales to serve as a sagebrush base layer for monitoring changes in the geographic extent of sagebrush. Along with aggregating the sagebrush types into the sagebrush base layer, BLM will aggregate the accuracy assessment reports from LANDFIRE to document the cumulative accuracy for the sagebrush base layer. For the long-term, BLM through its Assessment, Inventory, and Monitoring (AIM) Program and specifically the BLM'S Landscape Monitoring Framework (Taylor et al. In press) will provide field data to the LANDFIRE program to support continuous quality improvements in their products specifically for rangeland systems to improve the LANDFIRE EVT layer.

Within the BLM, forest-wide and field office-wide existing vegetation classification mapping and inventories are available that provide a much finer level of data than provided through LANDFIRE. Where available, these finer scale products are useful for additional and complimentary mid-scale indicators and local scale analyses (see **Section D.3**, Fine and Site Scales). The fact that these products are not available everywhere limits their utility for monitoring at the broad and mid-scale where consistency of data products is necessary across broader geographies.

The sagebrush layer based on LANDFIRE EVT will allow for the mid-scale estimation of existing percent sagebrush across a variety of reporting units. This sagebrush base layer will be adjusted by changes in land cover and successful restoration for future calculations of sagebrush availability (Measures 1a and 1b).

This layer will be used to determine the trend in other landscape indicators, such as patch size and number, patch connectivity, linkage areas, and landscape matrix and edge effects (Stiver et al. 2014).

In the future, changes in sagebrush availability, generated bi-annually, will be included in the sagebrush base layer. The landscape metrics will be recalculated to examine changes in pattern and abundance of sagebrush at the various geographic boundaries. This information will be included in effectiveness monitoring (see **Section D.2.4**, Effectiveness Monitoring).

#### Data Sources to Establish and Monitor Sagebrush Availability

In much the same manner as how the LANDFIRE data was selected as the data source, described above, the criteria for selecting the datasets (**Table D-3**) for establishing and monitoring the change in sagebrush availability, Measure I, were threefold:

- Nationally consistent dataset available across the range
- Known level of confidence or accuracy in the dataset
- Dataset is continually maintained with a known update interval

**Table D-3**  
**Datasets for Establishing and Monitoring Changes in Sagebrush Availability**

<b>Dataset</b>	<b>Source</b>	<b>Update Interval</b>	<b>Most Recent Version Year</b>	<b>Use</b>
BpS v1.1	LANDFIRE	Static	2008	Denominator for sagebrush availability (1b.)
EVT v1.2	LANDFIRE	Static	2010	Numerator for sagebrush availability
Cropland data layer (CDL)	National Agricultural Statistics Service (NASS)	Annual	2012	Agricultural updates; removes existing sagebrush from numerator of sagebrush availability
National Land Cover Dataset (NLCD) percent imperviousness	Multi-Resolution Land Characteristics Consortium (MRLC)	5 years	2011, made available in March 2014	Urban area updates; removes existing sagebrush from numerator of sagebrush availability
Fire perimeters	GeoMac	Annual	2013	< 1,000 acres fire updates; removes existing sagebrush from numerator of sagebrush availability
Burn severity	Monitoring Trends in Burn Severity (MTBS)	Annual	2012, made available in April 2014	> 1,000 acres fire updates; removes existing sagebrush from numerator of sagebrush availability, except for unburned sagebrush islands

LANDFIRE EVT Version 1.2

LANDFIRE EVT represents existing vegetation types on the landscape derived from remote sensing data. Initial mapping was conducted using imagery collected in approximately 2001. Since the initial mapping, there have been two update efforts: version 1.1 represents changes up to 2008 and version 1.2 reflects changes on the landscape up to 2010. Version 1.2 will be used as the starting point to develop the sagebrush base layer.

Ecological systems from the LANDFIRE EVT to be used in the sagebrush base layer were determined by sage-grouse subject matter experts through the identification of the ecological systems that have the capability of supporting sagebrush vegetation and could provide suitable seasonal habitat for the sage-grouse (**Table D-4**). Two additional vegetation types that are not ecological systems were added to the EVT and are *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance and *Quercus gambelii* Shrubland Alliance. These alliances have species composition directly related to the Rocky Mountain Lower Montane-Foothill Shrubland ecological system and the Rocky Mountain Gambel Oak-Mixed Montane Shrubland ecological system, both of which are ecological systems in LANDFIRE BpS. However, in LANDFIRE EVT in some map zones, the Rocky Mountain Lower Montane-Foothill Shrubland ecological system and the Rocky Mountain Gambel Oak-Mixed Montane Shrubland ecological system were named *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance and *Quercus gambelii* Shrubland Alliance.

**Table D-4**  
**Ecological Systems in BpS and EVT Capable of Supporting Sagebrush Vegetation and Could Provide Suitable Seasonal Habitat for Greater Sage-Grouse**

<b>Ecological System</b>	<b>Sagebrush Vegetation that the Ecological System has the Capability to Produce</b>
Colorado Plateau Mixed Low Sagebrush Shrubland	<i>Artemisia arbuscula</i> ssp. <i>longiloba</i> <i>Artemisia bigelovii</i> <i>Artemisia nova</i> <i>Artemisia frigida</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Columbia Plateau Scabland Shrubland	<i>Artemisia rigida</i>
Great Basin Xeric Mixed Sagebrush Shrubland	<i>Artemisia arbuscula</i> ssp. <i>longicaulis</i> <i>Artemisia arbuscula</i> ssp. <i>longiloba</i> <i>Artemisia nova</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Inter-Mountain Basins Big Sagebrush Shrubland	<i>Artemisia tridentata</i> ssp. <i>tridentata</i> <i>Artemisia tridentata</i> ssp. <i>xericensis</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Inter-Mountain Basins Mixed Salt Desert Scrub	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> <i>Artemisia spinescens</i>
Wyoming Basins Dwarf Sagebrush Shrubland and Steppe	<i>Artemisia arbuscula</i> ssp. <i>longiloba</i> <i>Artemisia nova</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> <i>Artemisia tripartita</i> ssp. <i>rupicola</i>
Columbia Plateau Low Sagebrush Steppe	<i>Artemisia arbuscula</i> <i>Artemisia arbuscula</i> ssp. <i>longiloba</i> <i>Artemisia nova</i>

**Table D-4**  
**Ecological Systems in BpS and EVT Capable of Supporting Sagebrush Vegetation and**  
**Could Provide Suitable Seasonal Habitat for Greater Sage-Grouse**

<b>Ecological System</b>	<b>Sagebrush Vegetation that the Ecological System has the Capability to Produce</b>
Inter-Mountain Basins Big Sagebrush Steppe	<i>Artemisia cana</i> ssp. <i>cana</i> <i>Artemisia tridentata</i> ssp. <i>tridentata</i> <i>Artemisia tridentata</i> ssp. <i>xericensis</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> <i>Artemisia tripartita</i> ssp. <i>tripartita</i> <i>Artemisia frigida</i>
Inter-Mountain Basins Montane Sagebrush Steppe	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> <i>Artemisia nova</i> <i>Artemisia arbuscula</i> <i>Artemisia tridentata</i> ssp. <i>spiciformis</i>
Northwestern Great Plains Mixed grass Prairie	<i>Artemisia cana</i> ssp. <i>cana</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i> <i>Artemisia frigida</i>
Northwestern Great Plains Shrubland	<i>Artemisia cana</i> ssp. <i>cana</i> <i>Artemisia tridentata</i> ssp. <i>tridentata</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Western Great Plains Sand Prairie	<i>Artemisia cana</i> ssp. <i>cana</i>
Western Great Plains Floodplain Systems	<i>Artemisia cana</i> ssp. <i>cana</i>
Columbia Plateau Steppe and Grassland	<i>Artemisia</i> spp.
Inter-Mountain Basins Semi-Desert Shrub-Steppe	<i>Artemisia tridentata</i> <i>Artemisia bigelovii</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>
Rocky Mountain Lower Montane-Foothill Shrubland	<i>Artemisia nova</i> <i>Artemisia tridentata</i> <i>Artemisia frigida</i>
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	<i>Artemisia tridentata</i>
Inter-Mountain Basins Curl-Leaf Mountain Mahogany Woodland and Shrubland	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> <i>Artemisia arbuscula</i> <i>Artemisia tridentata</i>
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> Shrubland Alliance (EVT only)	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
<i>Quercus gambelii</i> Shrubland Alliance (EVT only)	<i>Artemisia tridentata</i>

#### Accuracy and Appropriate Use of LANDFIRE Datasets

Because of concerns over the thematic accuracy of individual classes mapped by LANDFIRE, all ecological systems listed in **Table D-4** will be merged into one value that represents the sagebrush base layer. By aggregating all ecological systems, the combined accuracy of the sagebrush base layer (EVT) is much greater than if all categories were treated separately.



LANDFIRE performed the original accuracy assessment of their EVT product on a map zone basis. There are 20 LANDFIRE map zones that cover the historic range of sage-grouse as defined by Schroeder et al. (2004). **Attachment C** at the end of this appendix lists the user and producer accuracies for the aggregated ecological systems that make up the sagebrush base layer and also defines user and producer accuracies. The aggregated sagebrush base layer for monitoring had producer accuracies ranging from 56.7 to 100 percent and user accuracies ranging from 57.1 to 85.7 percent.

*LANDFIRE EVT data are not designed to be used at a local level.* In reporting the percent sagebrush statistic for the various reporting units (Measure 1a), the uncertainty of the percent sagebrush will increase as the size of the reporting unit gets smaller. LANDFIRE data should never be used at the pixel level (30m<sup>2</sup> resolution of raster data) for any reporting. The smallest geographic extent use of the data for this purpose is at the PAC level and for the smallest PACs the initial percent sagebrush estimate will have greater uncertainties compared with the much larger PACs.

#### Agricultural Adjustments for the Sagebrush Base Layer

The dataset for the geographic extent of agricultural lands will come from the National Agricultural Statistics Service (NASS) Cropland Data Layer (CDL) (<http://www.nass.usda.gov/research/Cropland/Release/index.htm>). CDL data are generated on an annual basis with “estimated producer accuracies for large row crops from the mid 80 to mid-90 percent” depending on the state ([http://www.nass.usda.gov/research/Cropland/sarsfaqs2.htm#Section3\\_18.0](http://www.nass.usda.gov/research/Cropland/sarsfaqs2.htm#Section3_18.0)). Readers are referred to the NASS metadata website for specific information on accuracy (<http://www.nass.usda.gov/research/Cropland/metadata/meta.htm>). CDL provided the only dataset that matches the three criteria (nationally consistent, known level of accuracy, and periodically updated) for use in this monitoring framework and represents the best available agricultural lands mapping product.

The CDL data contain both agricultural classes as well as non-agricultural classes. For this effort, as was also done in the Baseline Environmental Report (Manier et al. 2013), non-agricultural classes were removed from the original dataset. The excluded classes are:

- Barren (65 & 131)
- Deciduous Forest (141)
- Developed/High Intensity (124)
- Developed/Low Intensity (122)
- Developed/Med Intensity (123)
- Developed/Open Space (121)
- Evergreen Forest (142)
- Grassland Herbaceous (171)
- Herbaceous Wetlands (195)
- Mixed Forest (143)
- Open Water (83 and 111)
- Other Hay/Non-Alfalfa (37)

- Pasture/Hay (181)
- Pasture/Grass (62)
- Perennial Ice/Snow (112)
- Shrubland (64 and 152)
- Woody Wetlands (190)

The rule set for adjusting the sagebrush base layer for agricultural lands is that, once an area is classified as agriculture in any year of the CDL, those pixels will remain out of the sagebrush base layer, even if a new version of CDL classifies that pixel as one of the non-agricultural classes listed above. The assumption is that even though individual pixels may get classified as a non-agricultural class in any given year, the pixel has not necessarily been restored to a natural sagebrush community that would be included in **Table D-4**. It is further assumed that once an area has moved into agricultural use, it is unlikely that it would be restored to sagebrush, however, should that occur, the method and criteria for adding pixels back into the sagebrush base layer would follow those found in the Restoration Updates section of this framework.

#### Urban Adjustments for the Sagebrush Base Layer

The NLCD Percent Imperviousness was selected as the best available dataset to be used for urban updates. These data are generated on a 5-year cycle and specifically designed to support monitoring efforts. Other datasets were evaluated and lacked the spatial specificity that was captured in the NLCD product. Any new impervious pixel will be removed from the sagebrush base layer during the update process.

Although the impervious surface layer includes a number of impervious pixels outside of urban areas, there are two reasons why this is acceptable for this process. First, an evaluation of national urban area datasets did not reveal a layer that could be confidently used in conjunction with the NLCD product to screen impervious pixels outside of urban zones because unincorporated urban areas were not being included thus leaving large chunks of urban pixels unaccounted for in this rule set. Secondly, experimentation with setting a threshold on the percent imperviousness layer that would isolate rural features proved to be unsuccessful. No combination of values could be identified that would result in the consistent ability to limit impervious pixels outside urban areas. Therefore, to ensure consistency in the monitoring estimates, it was determined to include all impervious pixels.

#### Fire Adjustments for the Sagebrush Base Layer

Two datasets were selected for performing fire updates: GeoMac fire perimeters and Monitoring Trends in Burn Severity (MTBS). An existing data standard in the BLM requires all fires with sizes greater than 10 acres to be reported to GeoMac, therefore there will be many small fires less than 10 acres in size that will not be accounted for in the fire updates. In the update process using fire perimeters from GeoMac, all sagebrush pixels falling within the perimeter of fires less than 1000 acres in size will be used to update the sagebrush layer.

MTBS was selected for use as a means to account for unburned sagebrush islands during the update process of the sagebrush base layer. The MTBS program (<http://www.mtbs.gov>) is an on-going multi-year project to consistently map fire severity and fire perimeters across the US For lands in the Western US, MTBS only maps burn severity for fires greater than 1,000 acres in size. One of the burn severity classes

within MTBS is an unburned to low severity class. This burn severity class will be used to represent unburned islands of sagebrush within the fire perimeter that will be retained in the sagebrush base layer. Areas within the other severity classes within the fire perimeter will be removed from the base sagebrush layer during the update process. However, not all wildfires have the same impact on the recovery of sagebrush habitat depending largely on soil moisture and temperature regimes. For example, cooler, moister sagebrush habitat has a higher potential for recovery or, if needed restoration, than the warmer, dryer sagebrush habitat. These areas will likely be detected as sagebrush in future updates to LANDFIRE.

#### Conifer Encroachment Adjustment for the Sagebrush Base Layer

Conifer encroachment into sagebrush vegetation reduces the spatial extent of greater sage-grouse habitat (Davies et al. 2011; Baruch-Mordo et al. 2013). Conifer species that show propensity for encroaching into sagebrush vegetation which results in sage-grouse habitat loss include various juniper species, as follows (Gruell et al. 1986; Grove et al. 2005; Davies et al. 2011):

- Utah juniper (*Juniperus osteosperma*)
- Western juniper (*Juniperus occidentalis*)
- Rocky Mountain juniper (*Juniperus scopulorum*)
- Pinyon species (singleleaf pinyon [*Pinus monophylla*] and pinyon pine [*P. edulis*], ponderosa pine [*P. ponderosa*], lodgepole pine [*P. contorta*], and Douglas-fir [*Pseudotsuga menziesii*])

A rule set for conifer encroachment was developed to be used for determining the existing sagebrush base layer. To capture the geographic extent of sagebrush that is likely to experience conifer encroachment, ecological systems within LANDFIRE EVT version 1.2 (NatureServe 2011) were identified if they have the capability of supporting the conifer species (listed above) and have the capability of supporting sagebrush vegetation. Those ecological systems (**Table D-5**) were deemed to be the plant communities with conifers most likely to encroach into sagebrush vegetation. Sagebrush vegetation was defined as including sagebrush species (**Attachment B** at the end of this appendix) that provide habitat for the greater sage-grouse and are included in the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2014). An adjacency analysis was conducted to identify all sagebrush pixels that were directly adjacent to these conifer ecological systems and these immediately adjacent sagebrush pixels were removed from the sagebrush base layer.

#### Invasive Annual Grasses Adjustments for the Sagebrush Base Layer

There are no invasive species datasets from 2010 to present (beyond the LANDFIRE data) that meet our 3 criteria (nationally consistent, known level of accuracy, and periodically updated) for use in the determination of the sagebrush base layer. For a description of how invasive species land cover will be incorporated in the sagebrush base layer in the future, see *Monitoring Sagebrush Availability*, below.

#### Sagebrush Restoration Adjustments for the Sagebrush Base Layer

There are no datasets from 2010 to present that could provide additions to the sagebrush base layer from restoration treatments that meet the three criteria (nationally consistent, known level of accuracy, and periodically updated) therefore, no adjustments were made to the sagebrush base layer calculated from the LANDFIRE EVT (Version 1.2) due to restoration activities since 2010. Successful restoration treatments prior to 2010 are assumed to have been captured in the LANDFIRE refresh.

**Table D-5**  
**Ecological Systems with Conifers Most Likely to Encroach into Sagebrush Vegetation**

<b>EVT Ecological Systems</b>	<b>Coniferous Species and Sagebrush Vegetation that the Ecological System has the Capability to Produce</b>
Colorado Plateau Pinyon-Juniper Woodland	<i>Pinus edulis</i> <i>Juniperus osteosperma</i> <i>Artemisia tridentata</i> <i>Artemisia arbuscula</i> <i>Artemisia nova</i> <i>Artemisia tridentata</i> ssp. <i>tridentata</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i> <i>Artemisia bigelovii</i> <i>Artemisia pygmaea</i>
Columbia Plateau Western Juniper Woodland and Savanna	<i>Juniperus occidentalis</i> <i>Pinus ponderosa</i> <i>Artemisia tridentata</i> <i>Artemisia arbuscula</i> <i>Artemisia rigida</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
East Cascades Oak-Ponderosa Pine Forest and Woodland	<i>Pinus ponderosa</i> <i>Pseudotsuga menziesii</i> <i>Artemisia tridentata</i> <i>Artemisia nova</i>
Great Basin Pinyon-Juniper Woodland	<i>Pinus monophylla</i> <i>Juniperus osteosperma</i> <i>Artemisia arbuscula</i> <i>Artemisia nova</i> <i>Artemisia tridentata</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
Northern Rocky Mountain Ponderosa Pine Woodland and Savanna	<i>Pinus ponderosa</i> <i>Artemisia tridentata</i> <i>Artemisia arbuscula</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
Rocky Mountain Foothill Limber Pine-Juniper Woodland	<i>Juniperus osteosperma</i> <i>Juniperus scopulorum</i> <i>Artemisia nova</i> <i>Artemisia tridentata</i>
Rocky Mountain Poor-Site Lodgepole Pine Forest	<i>Pinus contorta</i> <i>Pseudotsuga menziesii</i> <i>Pinus ponderosa</i> <i>Artemisia tridentata</i>
Southern Rocky Mountain Pinyon-Juniper Woodland	<i>Pinus edulis</i> <i>Juniperus monosperma</i> <i>Artemisia bigelovii</i> <i>Artemisia tridentata</i> <i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>

**Table D-5**  
**Ecological Systems with Conifers Most Likely to Encroach into Sagebrush Vegetation**

<b>EVT Ecological Systems</b>	<b>Coniferous Species and Sagebrush Vegetation that the Ecological System has the Capability to Produce</b>
Southern Rocky Mountain Ponderosa Pine Woodland	<i>Pinus ponderosa</i> <i>Pseudotsuga menziesii</i> <i>Pinus edulis</i> <i>Pinus contorta</i> <i>Juniperus</i> spp. <i>Artemisia nova</i> <i>Artemisia tridentata</i> <i>Artemisia arbuscula</i> <i>Artemisia tridentata</i> ssp. <i>vaseyana</i>

#### *Monitoring Sagebrush Availability*

#### Updating the Sagebrush Availability Sagebrush Base Layer

Sagebrush availability will be updated annually by incorporating changes to the sagebrush base layer attributable to agriculture, urbanization, and wildfire. The monitoring schedule for the existing sagebrush base layer updates is as follows:

**2010 Existing Sagebrush Base Layer** = [Sagebrush EVT] minus [2006 Imperviousness Layer] minus [2009 and 2010 CDL] minus [2009/10 GeoMac Fires < 1,000 acres] minus [2009/10 MTBS Fires excluding unburned sagebrush islands] minus [Conifer Encroachment Layer]

**2012 Existing Sagebrush Update** = [Base 2010 Existing Sagebrush Layer] minus [2011 Imperviousness Layer] minus [2011 and 2012 CDL] minus [2011/12 GeoMac Fires < 1,000 acres] minus [2011/12 MTBS Fires that are greater than 1,000 acres, excluding unburned sagebrush islands within the perimeter]

**2013 and beyond Existing Sagebrush Updates** = [Previous Existing Sagebrush Update Layer] minus [Imperviousness Layer (if new data are available)] minus [Next 2 years of CDL] minus [Next 2 years of GeoMac Fires < 1,000 acres] minus [Next 2 years MTBS Fires that are greater than 1,000 acres, excluding unburned sagebrush islands within the perimeter] plus [restoration/monitoring data provided by the field]

#### Sagebrush Restoration Updates

restoration after fire, after agricultural conversion, after seedings of introduced grasses, or after treatments of pinyon pine and/or juniper, are examples of updates to the sagebrush base layer that can add sagebrush vegetation back in. When restoration has been determined to be successful through range wide, consistent, interagency fine and site-scale monitoring, the polygonal data will be used to add sagebrush pixels back into the broad and mid-scale sagebrush base layer.

#### Measure 1b – Context for the change in the amount of sagebrush in a landscape of interest

Measure 1b describes the amount of sagebrush on the landscape of interest compared with the amount of sagebrush the landscape of interest could ecologically support. Areas with the potential to support

sagebrush were derived from the BpS data layer that describes sagebrush pre Euro-American settlement (BpS v1.2 of LANDFIRE). This measure (1b) will provide information during evaluations of monitoring data to set the context for a given geographic area of interest. The information could also be used to inform management options for restoration, mitigation and inform effectiveness monitoring.

The identification and spatial locations of natural plant communities (vegetation) that are believed to have existed on the landscape (BpS) were constructed based on an approximation of the historical (pre Euro-American settlement) disturbance regime and how the historical disturbance regime operated on the current biophysical environment. BpS is composed of map units, which are based on NatureServe's (2011) terrestrial ecological systems classification.

The ecological systems within BpS used for this monitoring framework are those ecological systems that have the capability of supporting sagebrush vegetation and could provide seasonal habitat for the sage-grouse. These ecological systems are listed in **Table D-4**, with the exception of the *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance and the *Quercus gambelii* Shrubland Alliance. Ecological systems selected included sagebrush species or subspecies that are included in the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2014) and are found in Attachment B at the end of this appendix.

Attributable to the lack of any reference data, the BpS layer does not have an associated accuracy assessment. Visual inspection, however, of the BpS data reveals inconsistencies in the labeling of pixels among LANDFIRE map zones. The reason for these inconsistencies between map zones are the decision rules used to map a given ecological system will vary between map zones based on different physical, biological, disturbance, and atmospheric regimes of the region. This can result in artificial edges in the map that are an artifact of the mapping process. However, metrics will be calculated at broad spatial scales using BpS potential vegetation type, not small groupings or individual pixels; therefore, the magnitude of these observable errors in the BpS layer is minor compared with the size of the reporting units. Therefore, since BpS will be used to identify broad landscape patterns of dominant vegetation, these inconsistencies will have only a minor impact on the percent sagebrush availability calculation.

LANDFIRE BpS data are not designed to be used at a local level. In reporting the percent sagebrush statistic for the various reporting units, the uncertainty of the percent sagebrush will increase as the size of the reporting unit gets smaller. LANDFIRE data should never be used at the pixel level (30m<sup>2</sup>) for any reporting. The smallest geographic extent use of the data for this purpose is at the PAC level and for the smallest PACs the initial percent sagebrush remaining estimate will have greater uncertainties, compared with the much larger PACs.

### Tracking

The BLM will analyze and monitor sagebrush availability (Measure 1) on a bi-annual basis and it will be used to inform effectiveness monitoring and initiate adaptive management actions as necessary. The 2010 estimate of sagebrush availability will serve as the base year, and an updated estimate for 2012 will be reported in 2014 after all datasets become available. The 2012 estimate will capture changes attributable to fire, agriculture, and urban development. Subsequent updates will always include new fire and agricultural data and new urban data when available.

Restoration data that meets the criteria of adding sagebrush areas back into the sagebrush base layer will begin to be factored in as data allows. Attributable to data availability, there will be a two-year lag

(approximately) between when the estimate is generated and when the data used for the estimate becomes available (e.g., the 2014 sagebrush availability will be included in the 2016 estimate).

#### Future Plans

Geospatial data used to generate the sagebrush base layer will be available through the BLM's EGIS Web Portal and Geospatial Gateway or through the authoritative data source. Legacy datasets will be preserved so that trends may be calculated. Additionally, accuracy assessment data for all source datasets will be provided on the portal either spatially, where applicable, or through the metadata. Accuracy assessment information was deemed vital to share to help users understand the limitation of the sagebrush estimates and will be summarized spatially by map zone and included in the portal.

LANDFIRE plans to begin a remapping effort in 2015. This remapping has the potential to greatly improve overall quality of the data products primarily through the use of higher quality remote sensing datasets. Additionally, BLM and the Multi-Resolution Land Characteristics Consortium (MRLC) are working to improve the accuracy of vegetation map products for broad and mid-scale analyses through the grass/shrub mapping effort in partnership with the MRLC. The grass/shrub mapping effort applies the Wyoming multi-scale sagebrush habitat methodology (Homer et al. 2009) to spatially depict fractional percent cover estimates for five components range and West-wide. These five components are percent cover of sagebrush vegetation, percent bare ground, percent herbaceous vegetation (grass and forbs combined), annual vegetation, and percent shrubs. One of the benefits of the design of these fractional cover maps is that they facilitate monitoring "with-in" class variation (e.g., examination of declining trend in sagebrush cover for individual pixels). This "with-in" class variation can serve as one indicator of sagebrush quality that cannot be derived from LANDFIRE's EVT information. The grass/shrub effort is not a substitute for fine scale monitoring, but will leverage fine scale data to support the validation of the mapping products. An evaluation will be conducted to determine if either dataset is of great enough quality to warrant replacing the existing sagebrush layers. The earliest possible date for this evaluation will not occur until 2018 or 2019 depending on data availability.

#### **D.2.2.2 Habitat Degradation Monitoring (Measure 2)**

The measure of habitat degradation will be calculated by combining the footprints of threats identified in **Table D-2**. The footprint is defined as the direct area of influence of "active" energy and infrastructure and is used as a surrogate for human activity. Thus, the footprint of habitat degradation per sage-grouse area will be calculated. Although these analyses will try to summarize results at the aforementioned meaningful landscape units, some may be too small to appropriately report the metrics and may be combined (e.g., smaller populations and PACs within a population). Data sources for each threat are found in **Table D-6**. Specific assumptions (e.g., inclusion criteria for data and width/area assumptions for point and line features) and methodology for each threat, and the combined measure are detailed below. All datasets will be updated annually to monitor broad and mid-scale year-to-year changes and to calculate trends in habitat degradation to inform adaptive management. A 5-year summary report will be available to USFWS.

#### *Habitat Degradation Datasets and Assumptions:*

##### Energy (oil and gas wells and development facilities)

This dataset will be a compilation of two oil and gas well databases: the proprietary IHS Enerdeq database and the BLM Automated Fluid Minerals Support System (AFMSS) database (AFMSS data will be

**Table D-6**  
**Geospatial Data Sources for Habitat Degradation (Measure 2)**

<b>FWS Listing Decision Threat</b>	<b>Data Source</b>	<b>Direct Area of Influence</b>
Agriculture	National Agriculture Statistics Service	Polygon area
Urbanization	USGS Percent Imperviousness	Polygon area
Wildfire	Geospatial Multi-Agency Coordination Group; Monitoring Trends in Burn Severity	Polygon area
Conifer encroachment	LANDFIRE	Polygon area
Energy (oil and gas wells and development facilities)	IHS; BLM (AFMSS)	5 acres (2.0 hectares)
Energy (reclaimed site degradation)	IHS; BLM (AFMSS)	3 acres (1.2 hectares)
Energy (coal mines)	BLM and Forest Service data; Office of Surface Mining Reclamation and Enforcement	Polygon area
Energy (wind towers)	Federal Aviation Administration	3 acres (1.2 hectares)
Energy (solar fields)	Argonne National Laboratory	Polygon area
Energy (geothermal)	Argonne National Laboratory	Polygon area or 5 acres (2.0 hectares)
Mining (active locatable, leasable, and salable developments)	InfoMine	Polygon area or 5 acres (2.0 hectares)
Infrastructure (roads)	ESRI StreetMap Premium	40.7-240.2 feet (12.4-73.2 meters)
Infrastructure (railroads)	Federal Railroad Administration	30.8 feet (9.4 meters)
Infrastructure (power lines)	Platts Transmission Lines	100-250 feet (30.5-76.2 meters)
Infrastructure (communication towers)	Federal Communications Commission	2.5 acres (1.0 hectares)
Infrastructure (other vertical structures)	Federal Aviation Administration	2.5 acres (1.0 hectares)

used to supplement the IHS data). Point data from wells active within the last ten years from IHS and producing wells from AFMSS will be considered as a 5-acre (2.0-hectare) footprint (BLM WO 2014) centered on the well point. Plugged and abandoned wells will be removed, though only if the date of well abandonment was prior to the first day of the reporting year (i.e., for the 2010 reporting year, a well must be plugged and abandoned by December 31, 2009, to be removed).

Additional Measure: Reclaimed Energy-related Degradation

This dataset will include those wells that have been plugged and abandoned in an effort to measure energy-related degradation that has been reclaimed but not necessary fully restored to sage-grouse habitat. This measure will establish a baseline by using wells that have been plugged and abandoned within the last ten years from the IHS and AFMSS datasets.



Time lags for lek attendance in response to infrastructure have been documented to be delayed by 2 to 10 years from energy development activities (Harju et al. 2010), while reclamation actions may require two or more years from the final abandonment notice. Sagebrush seedling establishment may take six or more years from the point of seeding, depending on variables such as annual precipitation, annual temperature, and soil type and depth (Pyke 2011). This ten-year period is conservative, assuming some level of habitat improvement ten years after plugging. However, research by Hemstrom et al. (2002) proposes an even longer period of greater than 100 years for recovery of sagebrush habitats even with active restoration approaches. Direct area of influence will be considered 3 acres (1.2 hectares<sup>1</sup>). This additional layer/measure could be used at the broad- and mid-scale to identify areas where sagebrush habitat and/or potential sagebrush habitat is likely still degraded and where further investigation at the fine or site-scale would be warranted to: (1) quantify the level of reclamation already conducted, and (2) evaluate the amount of restoration still required (for sagebrush habitat recovery). At a particular level (e.g., population or PACs), these areas and the reclamation efforts/success could be used to inform reclamation standards associated with future developments. Once these areas have transitioned from reclamation standards to meeting *restoration* standards, they can be added back into the sagebrush availability layer using the same methodology as described for adding restoration treatment areas lost to fire and agriculture conversion (see the *Sagebrush Restoration Updates* section). This dataset will be updated annually with new plugged and abandoned well from the IHS dataset.

#### Energy (coal mines)

Currently there is no comprehensive dataset available that identifies the footprint of active coal mining across all jurisdictions. Therefore, point and polygon datasets will be used each year to identify coal mining locations. Data sources will be identified and evaluated annually and will include at a minimum: BLM coal lease polygons, US Energy Information Administration mine occurrence points, US Office of Surface Mining Reclamation and Enforcement (OSMRE) coal mining permit polygons (as available), and USGS Mineral Resources Data System (MRDS) mine occurrence points. These data will inform where active coal mining may be occurring. Aerial imagery will then be used to manually digitize active coal mining surface disturbance in or near these known occurrence areas. While the date of aerial imagery varies by scale, the most current data available from ESRI and/or Google will be utilized to locate (generally at 1:50,000 and below) and digitize (generally at 1:10,000 and below) active coal mine footprints. Coal mine location data source and imagery date will be documented for each digitized coal footprint polygon at the time of creation. Sub-surface facility locations (polygon or point location as available) will also be collected, if available, and included in density calculations, and added to the active surface activity layer as appropriate (if actual footprint can be located).

#### Energy (wind energy facilities)

This dataset will be a subset of the Federal Aviation Administration Digital Obstacles point file to include points where "Type\_" = "WINDMILL." Direct area of influence of these point features will be measured by converting to a polygon dataset of 3 acres (1.2 hectares) centered on each tower point (BLM Wind Energy Programmatic Environmental Impact Statement, 2005). Additionally, the BLM will use Platts Power Plants and Generating Units database for transformer stations associated with wind energy sites.

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<sup>1</sup>J. Perry, BLM, Washington Office, personal communication via e-mail with Frank Quamen, BLM, National Operations Center, regarding reclaimed energy monitoring, February 12, 2014.

Energy (solar energy facilities)

This dataset will include solar plants in existence or under construction, as compiled with the proprietary Platts in the Power Plants and Generating Units database. The point data will be buffered to represent a 3-acre (1.2-hectare) direct area of influence.

Energy (geothermal energy facilities)

This dataset will include geothermal plants in existence or under construction as compiled with the proprietary I.H.S and Platts Power Plants and Generating Units databases. The point data will be buffered to represent a 3-acre (1.2-hectare) direct area of influence.

Mining (active developments; locatable, leasable, saleable)

This dataset will include active mining locations as compiled with the proprietary InfoMine database. Other data sources will be evaluated as they are identified or become available. The point data will be buffered to represent a 5-acre (2.0-hectare) direct area of influence, unless actual surface disturbance is available.

Infrastructure (roads)

This dataset will be compiled from the proprietary ESRI StreetMap Premium for ArcGIS. Dataset features that will be used are interstates, major roads, and surface streets to capture most paved and “crowned and ditched” roads, while not including “two-track” and 4-wheel-drive routes. These minor roads, while not included in the broad- and mid-scale monitoring, may support a volume of traffic that can have deleterious effects on sage-grouse leks.

It may be appropriate to consider the frequency and type of use of roads in a NEPA analysis for a proposed project. This fine-/project-scale analysis will require more site-specific data than is identified in this monitoring framework. The direct influence area for roads will be represented by 240.2 feet, 84.0 feet, and 40.7 feet (73.2 meters, 25.6 meters, and 12.4 meters) total widths, centered on the line feature for interstates, major roads, and surface streets, respectively (Knick et al. 2011). The most current dataset will be used for each monitoring update.<sup>2</sup>

Infrastructure (railroads)

This dataset will be a compilation of Federal Railroad Administration (FRA) Rail Lines of the USA dataset. Non-abandoned rail lines will be used; abandoned rail lines will not be used. The direct influence area for railroads will be represented by a 30.8-foot (9.4-meter) total width (Knick et al. 2011) centered on non-abandoned railroad line feature.

Infrastructure (power lines)

This line dataset will be a compilation from EV Energy Map, Platts/Global Energy of transmission lines, substations, electric power generation plants, and energy distribution control facilities. Linear features in the dataset attributed as “buried” will be removed from the disturbance calculation. Only “in service” lines will be used, not “proposed” lines. direct area of influence will be determined by the kV designation: 1 to 199 kV (100 feet/30.5 meters), 200 to 399 kV (150 feet/45.7 meters), 500 to 699 kV

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<sup>2</sup> This is a related but different dataset as was used in the Summary of Science, Activities, Programs, and Policies That Influence the Rangewide Conservation of Greater Sage-Grouse (Manier et al. 2013). Individual BLM planning units may utilize different roads layers for fine- and site-scale monitoring.

(200 feet/61.0 meters), and 700 or greater kV (250 feet/76.2 meters), based on average ROW and structure widths.

#### Infrastructure (communication towers)

This point dataset will be compiled from the Federal Communications Commission (FCC) communication towers point file; all duplicate points will be removed. It will be converted to a polygon dataset by using a direct area of influence of 2.47 acres (1.0 hectare) centered on each communication tower point (Knick et al. 2011).

#### Infrastructure (other vertical structures)

This point dataset will be compiled from the Federal Aviation Administration (FAA) Digital Obstacles point file. Points where “Type\_” = “WINDMILL” will be removed. Duplicate points from the FCC communication towers point file will be removed. Remaining features will be converted to a polygon dataset using a direct area of influence of 2.47 acres (1.0 hectare), centered on each vertical structure point (Knick et al. 2011).

#### Other developed rights-of-ways

Currently no additional data sources for other rights-of-ways have been identified; roads, power lines, railroads, pipelines, and other known linear features are represented in categories above. Our newly purchased IHS data does contain pipeline information, but further investigation is needed to determine if the dataset is comprehensive. If additional features representing human activities are identified, they will be added to monitoring reports using similar assumptions to the threats above.

#### *Habitat Degradation Threat Combination and Calculation*

The threats targeted for measuring human activity from **Table D-2** will be converted to direct area of influence polygons, as described for each threat above. These threat polygon layers will be combined and features dissolved to create one overall polygon layer representing footprints of human activity in the range of sage-grouse. However, individual datasets will be preserved to ascertain which types of threats may be contributing to overall habitat degradation. Percentages will be calculated as follows (this measure has been divided into three sub-measures to describe habitat degradation on the landscape):

- Measure 2a) Footprint by landscape unit—Divide area of the active/direct footprint within a sage-grouse area by the total area of the sage-grouse area (percent disturbance in landscape unit)
- Measure 2b) Active/direct footprint by historic sagebrush potential—Divide area of the active footprint that coincides with areas of historic sagebrush potential (BpS calculation from habitat availability) within a given landscape unit by the total area with sagebrush potential within the landscape unit (percent disturbance on potential historic sagebrush in landscape unit)
- Measure 2c) Active/direct footprint by current sagebrush—Divide area of the active footprint that coincides with areas of existing sagebrush (EVT calculation from habitat availability) within a given landscape unit by the total area that is current sagebrush within the landscape unit. (percent disturbance on current sagebrush in landscape unit)

### **D.2.2.3 Density of Energy and Mining (Measure 3)**

The measure of density of energy and mining will be calculated by combining the locations of threats identified in **Table D-2**. This will provide an estimate of intensity of human activity or intensity of habitat degradation. The number energy facilities and mining locations will be summed and divided by the area of meaningful landscape units to calculate density of these activities. Data sources for each threat are found in **Table D-6**. Specific assumptions (e.g., inclusion criteria for data and width/area assumptions for point and line features) and methodology for each threat, and the combined measure are detailed below. All datasets will be updated annually to monitor broad and mid-scale year-to-year changes and 5-year (or longer) trends in habitat degradation.

*Density of Energy and Mining Datasets and Assumptions:*

Energy (oil and gas wells and development facilities)

[See **Section D.2**]

Energy (coal mines)

[See **Section D.2**]

Energy (wind towers)

[See **Section D.2**]

Energy (solar energy facilities)

[See **Section D.2**]

Energy (geothermal energy facilities)

[See **Section D.2**]

Mining (active developments; locatable, leasable, salable)

[See **Section D.2**]

*Density of Energy and Mining Threat Combination and Calculation:*

Datasets for energy and mining will be collected in two primary forms: point locations (e.g., wells) and polygon areas (e.g., surface coal mining). The following rule set will be used to calculate density for meaningful landscape units including standard grids and per polygon:

- 1) Point locations will be preserved; no additional points will be removed beyond the methodology described above. Energy facilities in close proximity (an oil well close to a wind tower) will be retained.
- 2) Polygons will not be merged, nor features further dissolved. thus, overlapping facilities will be retained, such that each individual threat will be a separate polygon data input for the density calculation.
- 3) The analysis unit (polygon or 640 acre section in a grid) will be the basis for counting the number of mining or energy facilities per unit area. Within the analysis unit all point features will be summed, and any individual polygons will be counted as one (e.g.; a coal mine will be counted as one facility within population). Where polygon features overlap multiple units (polygons or pixels), the facility will be counted as one in each unit where the polygon

- occurs (e.g., a polygon crossing multiple 640 acre sections would be counted as 1 in each 640-acre section for a density per 640-acre section calculation).
- 4) In methodologies with different sized units (e.g., MZs and populations), raw counts will be converted to densities by dividing by the total area of the unit. Typically this will be measured as facilities per 640 acres.
  - 5) For uniform grids, raw facility counts will be reported. Typically this number will also be converted to facilities per 640 acres.
  - 6) Reporting may include summaries beyond the simple ones above. Zonal statistics may be used to smooth smaller grids to help with display and conveying information about areas within meaningful landscape units that have high energy and/or mining activity.
  - 7) Additional statistics for each defined unit may also include adjusting the area to only include area with the historic potential for sagebrush (BpS) or areas currently sagebrush (EVT).

Key habitat degradation individual datasets and threat combination datasets will be available through BLM's EGIS Web Portal and Geospatial Gateway. Legacy datasets will be preserved, so that trends may be calculated.

### **D.2.3 Population (Demographics) Monitoring**

State wildlife management agencies are responsible for monitoring sage-grouse populations within their respective states. WAFWA will coordinate this collection of annual population data by state agencies. These data will be made available to BLM through the Sage-Grouse Implementation Memorandum of Understanding (2013) signed by WAFWA, BLM, Forest Service, NRCS, USGS, Farm Service Agency, and USFWS.

An amendment to the MOU (2014) will outline a process, timeline, and responsibilities for regular data sharing of sage-grouse population and/or habitat information. The Landscape Conservation Management and Analysis Portal (LC MAP) will be used as the instrument for state wildlife agencies to annually submit population data and analyses that will be accessed by the BLM through a data sharing agreement. Population areas were refined from the Greater Sage-grouse Conservation Objectives: Final Report (COT) report by individual state wildlife agencies to create a consistent naming nomenclature for future data analyses. These population data will be used for analysis at the applicable scale to supplement habitat effectiveness monitoring of management actions and inform the adaptive management responses.

### **D.2.4 Effectiveness Monitoring**

Effectiveness monitoring will provide the information to evaluate BLM actions to reach the objective of the planning strategy (BLM Instruction Memorandum 2012-044), to conserve sage-grouse populations and its habitat, and the objectives in this Northwest Colorado GRSG ARMPA. Effectiveness monitoring methods described here will encompass multiple larger scales, from areas as large as the WAFWA MZ to the scale of this ARMPA. Effectiveness information used for these larger scale evaluations includes all lands in the area of interest regardless of surface ownership/management and will help inform where finer scale evaluations are needed, such as population areas smaller than an RMP or PACs within an RMP (described in **Section D.2**). The information will also include the trend of disturbance within these areas of interest, which informs the need to initiate adaptive management responses as described in this Northwest Colorado GRSG ARMPA.

Effectiveness monitoring reported for these larger areas provides the context to then conduct effectiveness monitoring at finer scales and helps focus scarce resources to areas experiencing habitat loss, degradation, or population declines. These large area evaluations would not exclude the need for concurrent finer scale evaluations where habitat or population anomalies have been identified through some other means.

To determine the effectiveness of the sage-grouse planning strategy, the BLM will evaluate the answers to the following questions and will prepare a broad- and mid-scale effectiveness report:

1. Sagebrush Availability and Condition:
  - a. What is the amount of sagebrush availability and the change in the amount and condition of sagebrush?
  - b. What is the existing amount of sagebrush on the landscape and the change in the amount relative to the pre Euro-American historical distribution of sagebrush (BpS)?
  - c. What is the trend and condition of the indicators describing sagebrush characteristics important to sage-grouse?
2. Habitat Degradation and Intensity of Activities:
  - a. What is the amount of habitat degradation and the change in that amount?
  - b. What is the intensity of activities and the change in the intensity?
  - c. What is the amount of reclaimed energy-related degradation and the change in the amount?
3. What is the population estimation of sage-grouse and the change in the population estimation?
4. How is the BLM contributing to changes in the amount of sagebrush?
5. How is the BLM contributing to disturbance?

The compilation of broad and mid-scale data (and population trends as available) into an effectiveness monitoring report will occur on a 5-year reporting schedule, which may be accelerated to respond to critical emerging issues (in consultation with USFWS and state wildlife agencies). In addition, effectiveness monitoring results will be used to identify emerging issues and research needs and will be consistent with and inform the BLM adaptive management strategy (see “Adaptive Management” section of the EIS).

To determine the effectiveness of the sage-grouse objectives of this Northwest Colorado GRSG ARMPA, the BLM will evaluate the answers to the following questions and prepare a plan effectiveness report:

1. Is this plan meeting the sage-grouse habitat objectives?
2. Are sage-grouse areas within the land use plan meeting, or making progress towards meeting, land health standards, including the special status species/wildlife habitat standard?
3. Is the plan meeting the disturbance objectives within sage-grouse areas?

4. Are the sage-grouse populations within this plan boundary and within the sage-grouse areas increasing, stable, or declining?

The effectiveness monitoring report for this ARMPA will occur on a 5-year reporting schedule (see **Attachment A** at the end of this appendix), or more often if habitat or population anomalies identify the need for an evaluation to facilitate adaptive management or respond to critical emerging issues. Data will be made available through the BLM's EGIS Web Portal and the Geospatial Gateway.

*Methods:* At the broad and mid- biological scales (PACs and above) the BLM will summarize the vegetation, disturbance, and population data (when available). Although the analysis will try to summarize results for PACs within each sage-grouse population, some populations may be too small to appropriately report the metrics and may need to be combined to provide an estimate with an acceptable level of accuracy or they will be flagged for more intensive monitoring by the appropriate landowner or agency. The BLM will then analyze monitoring data to detect the trend in the amount of sagebrush; the condition of the vegetation in the sage-grouse areas (MacKinnon et al. 2011); The trend in the amount of disturbance; The change in disturbed areas due to successful restoration; and The amount of new disturbance the BLM has permitted. This information could be supplemented with population data to understand the correlation between habitat and PACs within a population when population data are available. This overall effectiveness evaluation must consider the lag effect response of populations to habitat changes (Garton et al. 2011).

*Calculating Question 1, Planning Strategy Effectiveness:* The amount of sagebrush available in the large area of interest will utilize the information from Measure 1a (**Section D.2.2.1, Sagebrush Availability**) and calculate the change from the 2012 baseline to the end date of the reporting period. To calculate the change in the amount of sagebrush on the landscape to compare with the historical areas with potential to support sagebrush, the information from Measure 1b (**Section D.2.2.1, Sagebrush Availability**) will be utilized. To calculate the trend in the condition of sagebrush at the mid-scale, 3 sources of data will be utilized: the BLM Grass/ Shrub mapping effort (**Section D.2.2.1, Sagebrush Availability [Measure 1], Monitoring Sagebrush Availability, Future Plans**); the results from the calculation of the landscape indicators such as patch size (described below); and the BLM Landscape Monitoring Framework (LMF) and sage-grouse intensification effort (also described below). The LMF and sage-grouse intensification effort data is collected in a statistical sampling framework that allows calculation of indicator values at multiple scales.

Beyond the importance of sagebrush availability to sage-grouse, the mix of sagebrush patches on the landscape at the broad and mid-scale provides the life requisite of space for sage-grouse dispersal needs (see the Habitat Assessment Framework [Stiver et al. 2014]). The configuration of sagebrush habitat patches and the land cover or land use between the habitat patches at the broad and mid scales also defines suitability. There are three significant habitat indicators that influence habitat use, dispersal, and movement across populations: the size and number of habitat patches, the connectivity of habitat patches (linkage areas), and habitat fragmentation (scope of unsuitable and non-habitats between habitat patches). The most appropriate commercial software to measure patch dynamics, connectivity, and fragmentation at the broad and mid scales will be utilized, using the same data layers derived for sagebrush availability.

The BLM initiated the LMF in 2011 in cooperation with NRCS. The objective of the LMF effort is to provide non-biased estimates of vegetation and soil condition and trend using a statistically balanced

sample design across BLM-administered lands. Recognizing that sage-grouse populations are more resilient where the sagebrush plant community has certain characteristics unique to a particular life stage of sage-grouse (Knick and Connelly 2011; Stiver et al. 2014), a group of sage-grouse habitat and sagebrush plant community subject matter experts identified those vegetation indicators collected at LMF sampling points that inform sage-grouse habitat needs. The experts represented BLM, USFWS, WAFWA, NRCS, ARS, state wildlife agencies, and academia. The common indicators that were identified include: species composition, foliar cover, height of the tallest sagebrush and herbaceous plant, intercanopy gap, percent of invasive species, sagebrush shape, and bare ground. To increase the precision of estimates of sagebrush conditions within the range of sage-grouse, additional plot locations in occupied sage-grouse habitat (sage-grouse intensification) were added in 2013. The common indicators are also collected on sampling locations in the NRCS Rangeland Monitoring Survey.

The sage-grouse intensification baseline data will be collected over a 5-year period, and an annual sage-grouse intensification report will be prepared describing the status of the indicators. Beginning in year 6, the annual status report will be accompanied with a trend report, which will be available on an annual basis thereafter contingent upon continuation of the current monitoring budget. This information, in combination with the Grass/ Shrub mapping information, the mid-scale habitat suitability indicator measures, and the sagebrush availability information will be used to answer Question 1 of the Planning Strategy Effectiveness Report.

*Calculating Question 2, Planning Strategy Effectiveness:* The amount of habitat degradation and the intensity of the activities in the area of interest will utilize the information from Measures 2 and 3 (**Section D.2.2.2, Habitat Degradation Monitoring [Measure 2]**). The amount of reclaimed energy-related degradation will be collected by the Field Office on plugged and abandoned and oil/gas well sites. The data will demonstrate that the reclaimed sites have yet to meet the habitat restoration objectives for sage-grouse habitat. This information, in combination with the amount of habitat degradation, will be used to answer Question 2 of the Planning Strategy Effectiveness Report.

*Calculating Question 3, Planning Strategy Effectiveness:* The change in sage-grouse estimated populations will be calculated from data provided by the state wildlife agencies, when available. This population data (**Section D.2.3, Population [Demographics] Monitoring**) will be used to answer Question 3 of the Planning Strategy Effectiveness Report.

*Calculating Question 4, Planning Strategy Effectiveness:* The estimated contribution by the BLM to the change in the amount of sagebrush in the area of interest will utilize the information from Measure 1a (**Section D.2.2.1, Sagebrush Availability**). This measure is derived from the national data sets that remove sagebrush (Sagebrush Availability, **Table D-2**). To determine the relative contribution of the BLM management, the current Surface Management Agency geospatial data layer will be used to differentiate the amount of change for each management agency for this measure in area of interest. This information will be used to answer Question 4 of the Planning Strategy Effectiveness Report.

*Calculating Question 5, Planning Strategy Effectiveness:* The estimated contribution by the BLM to the change in the amount of disturbance in the area of interest will utilize the information from Measure 2a (Section **D.2.2.2, Habitat Degradation Monitoring [Measure 2], Habitat Degradation Threat Combination and Calculation**) and Measure 3 (**Section D.2.2.3, Density of Energy and Mining [Measure 3]**). These measures are all derived from the national disturbance data sets that degrade habitat (Habitat Degradation, **Table D-2**). To determine the relative contribution of the BLM management, the current



Surface Management Agency geospatial data layer will be used to differentiate the amount of change for each management agency for these two measures in area of interests. This information will be used to answer Question 5 of the Planning Strategy Effectiveness Report.

Answering the 5 questions that determine the effectiveness of the BLM planning strategy will identify areas that appear to be meeting the objectives of the strategy and will facilitate identification of population areas for more detailed analysis. Conceptually, if the broad scale monitoring identifies increasing sagebrush availability and improving vegetation conditions, decreasing disturbance, and a stable or increasing population for the area of interest, there is evidence the objectives of the planning strategy to maintain populations and their habitats have been met. Conversely, where information indicates sagebrush is decreasing and vegetation conditions are degrading, disturbance in sage-grouse areas is increasing, and populations are declining relative to the baseline, there is evidence the objectives of the planning strategy are not being achieved. This would likely result in a more detailed analysis and could be the basis for implementing more restrictive adaptive management measures.

At the ARMPA area, the BLM will summarize the vegetation, disturbance, and population data to determine if the ARMPA is meeting the plan objectives. Effectiveness information used for these evaluations includes BLM surface management areas and will help inform where finer scale evaluations are needed, such as seasonal habitats, corridors, or linkage areas. The information should also include the trend of disturbance within the sage-grouse areas, which informs the need to initiate adaptive management responses, as described in this Northwest Colorado GRSG ARMPA.

*Calculating Question 1, Land Use Plan Effectiveness:* The condition of vegetation and the allotments meeting land health standards in sage-grouse areas will both be used as part of the determination of the effectiveness of the ARMPA in meeting the vegetation objectives in sage-grouse habitat set forth in this ARMPA. The collection of this data will be the responsibility of the BLM Field Office or Forest Service Ranger District. In order for this data to be consistent and comparable, common indicators, consistent methods, and a, unbiased sampling framework should be implemented, following the principles in the AIM Strategy (Toevs et al. 2011; MacKinnon et al. 2011), in the BLM Technical Reference Interpreting Indicators of Rangeland Health (Pellant et al. 2005), and the Habitat Assessment Framework (Stiver et al. 2014), or other approved WAFWA MZ consistent guidance to measure and monitor sage-grouse habitats. The analysis of this information will be used to answer Question 1 of the Land Use Plan Effectiveness Report.

*Calculating Question 2, Land Use Plan Effectiveness:* The amount of habitat disturbance in sage-grouse areas identified in this LUP will be used as part of the determination of the effectiveness of the LUP in meeting the disturbance objectives set forth in this LUP. National data sets can be used to calculate the amount of disturbance, but BLM Field Office data will likely increase the accuracy of this estimate. This information will be used to answer Question 2 of the Land Use Plan Effectiveness Report.

*Calculating Question 3, Land Use Plan Effectiveness:* The change in estimated sage-grouse populations will be calculated from data provided by the state wildlife agencies, when available and will part of the determination of effectiveness. This population data (**Section D.2.3, Population [Demographics] Monitoring**) will be used to answer Question 3 of the Land Use Plan Effectiveness Report.

Results of the effectiveness monitoring process for the land use plan will be used to inform the need for finer scales investigations, initiate adaptive management actions as described in **Chapter 2, Section**

**2.6.1 of the Proposed LUPA/Final EIS**, Adaptive Management, initiate causation determination, and/or determine if changes to management decisions are warranted. The measures used at the broad and mid-scales will provide a suite of characteristics from which the effectiveness of the adaptive management strategy will be evaluated.

### **D.3 FINE AND SITE SCALES**

Fine scale (third order) habitat selected by sage-grouse is described as the physical and geographic area within home ranges including breeding, summer, and winter periods. At this level, habitat suitability monitoring should address factors that affect sage-grouse use of, and movements between, seasonal use areas. The habitat monitoring at fine and site scale (fourth order) should focus on indicators to describe seasonal home ranges for sage-grouse associated with a lek, or lek group within a population or subpopulation area. Fine and site scale monitoring should inform LUP effectiveness monitoring (see **Section D.2.4**, Effectiveness Monitoring) and the hard and soft triggers identified in the adaptive management section of the land use plan.

Site-scale habitat selected by sage-grouse is described as the more detailed vegetation characteristics of seasonal habitats. Habitat suitability characteristics include canopy cover and height of sagebrush and the associated understory vegetation as well as vegetation associated with riparian areas, wet meadows, and other mesic habitats adjacent to sagebrush that may support sage-grouse habitat needs during different stages in their annual cycle.

As described in the conclusion (**Section D.4**, below), details and application of monitoring at the fine and site scales will be described in the implementation-level monitoring plan of the Northwest Colorado GRSG ARMPA. The need for fine and site-scale specific habitat monitoring will vary by area depending on proposed projects, existing conditions, habitat variability, threats, and land health. Examples of fine and site-scale monitoring include: habitat vegetation monitoring to assess current habitat conditions; monitoring and evaluating the success of projects targeting sage-grouse habitat enhancement and/or restoration; and habitat disturbance monitoring to provide localized disturbance measures to inform proposed project review and potential mitigation for project impacts. Monitoring plans should incorporate the principles outlined in the BLM AIM Strategy (Toevs et al. 2011) and AIM-Monitoring: A Component of the Assessment, Inventory, and Monitoring Strategy (Taylor, et al. In press). Approved monitoring methods are:

- BLM Core Terrestrial Indicators and Methods (MacKinnon et al. 2011)
- BLM Technical Reference Interpreting Indicators of Rangeland Health (Pellant et al. 2005)
- Sage-Grouse Habitat Assessment Framework (Stiver et al. 2014)

Other state-specific disturbance tracking models are the BLM Wyoming Density and Disturbance Calculation Tool (<http://ddct.wygisc.org/>) and the BLM White River Data Management System (WRDMS), in development with the USGS.

Population monitoring data (in cooperation with state wildlife agencies) should be included during evaluation of the effectiveness of actions taken at the fine and site scales.

Fine- and site-scale sage-grouse habitat suitability indicators for seasonal habitats are identified in the Habitat Assessment Framework (Stiver et al. 2014). It has incorporated the Connelly et al. (2000) sage-

grouse guidelines and many of the core indicators in the assessment, inventory, and monitoring (AIM) strategy (Toevs et al. 2011). There may be a need to develop adjustments to height and cover or other site suitability values described in the Habitat Assessment Framework and any such adjustments should be ecologically defensible. However, to foster consistency, adjustments to site suitability values at the local scale should be avoided, unless there is a strong scientific justification for doing so and that justification should be provided. WAFWA MZ adjustments must be supported by regional plant productivity and habitat data for the floristic province. If adjustments are made to the site-scale indicators, they must be made using data from the appropriate seasonal habitat designation (breeding/nesting, brood-rearing, winter) collected from sage-grouse studies found in the relevant area and peer reviewed by the appropriate wildlife management agencies and researchers.

When conducting land health assessments, at a minimum, the BLM should follow Interpreting Indicators of Rangeland Health (Pellant et al. 2005) and the BLM Core Terrestrial Indicators and Methods, (MacKinnon et al. 2011). If the assessment is being conducted in sage-grouse areas, the BLM should collect additional data to inform the Habitat Assessment Framework indicators that have not been collected using the above methods. Implementation of the principles outlined in the AIM strategy will allow the data to be used to generate unbiased estimates of condition across the area of interest. It will facilitate consistent data collection and roll-up analysis among management units, will be useful to provide consistent data to inform the classification and interpretation of imagery, and will provide condition and trend of the indicators describing sagebrush characteristics important to sage-grouse habitat (see **Section D.2.4**, Effectiveness Monitoring).

#### **D.4 CONCLUSION**

This Greater Sage-grouse Monitoring Framework was developed for all of the final environmental impact statements involved in sage-grouse planning. As such, it describes the monitoring activities at the broad and mid-scales and sets the stage for BLM to collaborate with partners/other agencies to develop the Northwest Colorado GRSG ARMPA Monitoring Plan using this Greater Sage-Grouse Monitoring Framework as a guide.

#### **D.5 THE GREATER SAGE-GROUSE DISTURBANCE AND MONITORING SUB-TEAM MEMBERSHIP**

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## APPENDIX D, ATTACHMENT A – AN OVERVIEW OF MONITORING COMMITMENTS

	Broad and Mid Scales					Fine and Site Scales
	Implementation	Sagebrush Availability	Habitat Degradation	Population	Effectiveness	
<b>How will the data be used?</b>	Tracking and documenting implementation of land use plan decisions and inform adaptive management	Tracking changes in land cover (sagebrush) and inform adaptive management	Tracking changes in disturbance (threats) to sage-grouse habitat and inform adaptive management	Tracking trends in sage-grouse populations (and/or leks; as determined by state wildlife agencies) and inform adaptive management	Characterizing the relationship among disturbance, implementation actions, and sagebrush metrics and inform adaptive management	Measuring seasonal habitat, connectivity at the fine scale, and habitat conditions at the site scale, calculating disturbance and inform adaptive management
<b>Who is collecting the data?</b>	BLM FO and FS Forest	NOC and NIFC	National data sets (NOC), BLM FOs and FS Forests as applicable	State wildlife agencies through WAFWA	Comes from other broad and mid-scale monitoring types, analyzed by the NOC	BLM FO and SO, FS Forests and RO (with partners) including disturbance
<b>How often are the data collected, reported and made available to FWS?</b>	Collected and reported annually; summary every 5 years	Updated and changes reported annually; summary reports every 5 years	Collected and changes reported annually; summary reports every 5 years	State data reported annually per WAFWA MOU; summary reports every 5 years	Collected and reported every 5 years (coincident with LUP evaluations)	Collection and trend analysis ongoing, reported every 5 years or as needed to inform adaptive management
<b>What is the spatial scale?</b>	Summarized by LUP with flexibility for reporting by other units	Summarized by PACs (size dependent) with flexibility for reporting by other units	Summarized by PACs (size dependent) with flexibility for reporting by other units	Summarized by PACs (size dependent) with flexibility for reporting by other units	Summarized by MZ, and LUP with flexibility for reporting by other units (e.g., PAC)	Variable (e.g., projects and seasonal habitats)
<b>What are the potential personnel and budget impacts?</b>	Additional capacity or re-prioritization of ongoing monitoring work and budget realignment	At a minimum, current skills and capacity must be maintained; data mgmt. cost are TBD	At a minimum, current skills and capacity must be maintained; data mgmt. and data layer purchase cost are TBD	No additional personnel or budget impacts for BLM	Additional capacity or re-prioritization of ongoing monitoring work and budget realignment	Additional capacity or re-prioritization of ongoing monitoring work and budget realignment
<b>Who has primary and secondary responsibilities for reporting?</b>	1) BLM FO & SO; FS Forest & RO 2) BLM & FS Planning	1) NOC 2) WO	1) NOC 2) BLM SO, FS RO & appropriate programs	1) WAFWA & state wildlife agencies 2) BLM SO, FS RO, NOC	1) Broad and mid-scale at the NOC, LUP at BLM SO	1) BLM FO & FS Forests 2) BLM SO & FS RO
<b>What new processes/tools are needed?</b>	National implementation data sets and analysis tools	Updates to national land cover data	Data standards and roll-up methods for these data	Standards in population monitoring (WAFWA)	Reporting methodologies	Data standards data storage; and reporting

**APPENDIX D, ATTACHMENT B – LIST OF ALL SAGEBRUSH SPECIES AND SUBSPECIES INCLUDED IN THE SELECTION CRITERIA FOR BUILDING THE EVT AND BPS LAYERS**

- *Artemisia arbuscula* subspecies *longicaulis*
- *Artemisia arbuscula* subspecies *longiloba*
- *Artemisia bigelovii*
- *Artemisia nova*
- *Artemisia papposa*
- *Artemisia pygmaea*
- *Artemisia rigida*
- *Artemisia spinescens*
- *Artemisia tripartita* subspecies *rupicola*
- *Artemisia tripartita* subspecies *tripartita*
- *Tanacetum nuttallii*
- *Artemisia cana* subspecies *bolanderi*
- *Artemisia cana* subspecies *cana*
- *Artemisia cana* subspecies *viscidula*
- *Artemisia tridentata* subspecies *wyomingensis*
- *Artemisia tridentata* subspecies *tridentata*
- *Artemisia tridentata* subspecies *vaseyana*
- *Artemisia tridentata* subspecies *spiciformis*
- *Artemisia tridentata* subspecies *xericensis*
- *Artemisia tridentata* variety *pauciflora*
- *Artemisia frigida*
- *Artemisia pedatifida*



**APPENDIX D, ATTACHMENT C – USER AND PRODUCER ACCURACIES FOR AGGREGATED  
ECOLOGICAL SYSTEMS WITHIN LANDFIRE MAP ZONES**

<b>LANDFIRE Map Zone Name</b>	<b>User Accuracy</b>	<b>Producer Accuracy</b>	<b>% of Map Zone within Historic Schroeder</b>
Wyoming Basin	76.9%	90.9%	98.5%
Snake River Plain	68.8%	85.2%	98.4%
Missouri River Plateau	57.7%	100.0%	91.3%
Grand Coulee Basin of the Columbia Plateau	80.0%	80.0%	89.3%
Wyoming Highlands	75.3%	85.9%	88.1%
Western Great Basin	69.3%	75.4%	72.9%
Blue Mountain Region of the Columbia Plateau	85.7%	88.7%	72.7%
Eastern Great Basin	62.7%	80.0%	62.8%
Northwestern Great Plains	76.5%	92.9%	46.3%
Northern Rocky Mountains	72.5%	89.2%	42.5%
Utah High Plateaus	81.8%	78.3%	41.5%
Colorado Plateau	65.3%	76.2%	28.8%
Middle Rocky Mountains	78.6%	73.3%	26.4%
Cascade Mountain Range	57.1%	88.9%	17.3%
Sierra Nevada Mountain Range	0.0%	0.0%	12.3%
Northwestern Rocky Mountains	66.7%	60.0%	7.3%
Southern Rocky Mountains	58.6%	56.7%	7.0%
Northern Cascades	75.0%	75.0%	2.6%
Mogollon Rim	66.7%	100.0%	1.7%
Death Valley Basin	0.0%	0.0%	1.2%

There are two anomalous map zones with 0% user and producer accuracies attributable to no available reference data for the ecological systems of interest.

**Producer's accuracy** is a reference-based accuracy that is computed by looking at the predictions produced for a class and determining the percentage of correct predictions. In other words, if I know that a particular area is sagebrush (I've been out on the ground to check), what is the probability that the digital map will correctly identify that pixel as sagebrush? **Omission Error** equates to excluding a pixel that should have been included in the class (i.e., omission error = 1 - producer's accuracy).

**User's accuracy** is a map-based accuracy that is computed by looking at the reference data for a class and determining the percentage of correct predictions for these samples. For example, if I select any sagebrush pixel on the classified map, what is the probability that I'll be standing in a sagebrush stand when I visit that pixel location in the field? **Commission Error** equates to including a pixel in a class when it should have been excluded (i.e., commission error = 1 - user's accuracy).

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# Appendix E

## Methodology for Calculating Disturbance Caps



## APPENDIX E

# METHODOLOGY FOR CALCULATING DISTURBANCE CAPS

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In USFWS's 2010 listing decision for Greater Sage-Grouse (GRSG), the USFWS identified 18 threats contributing to the destruction, modification, or curtailment of GRSG habitat or range (75 FR 13910 2010). The 18 threats have been aggregated into 3 measures:

- 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 NEPA process for projects authorized or undertaken by the BLM.

### E.1 DISTURBANCE CAP

This land use plan has incorporated a 3 percent disturbance cap within GRSG Priority Habitat Management Areas (PHMA) and the subsequent land use planning actions if the cap is met:

*If the 3 percent anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within GRSG Priority Habitat Management Areas (PHMA) in any given Biologically Significant Unit, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the General Mining Law of 1872 and valid existing rights) will be permitted by BLM within GRSG PHMA in any given Biologically Significant Unit until the disturbance has been reduced to less than the cap.*

*If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by 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 General Mining Law of 1872 and valid existing rights).*

The disturbance cap applies to the PHMA within both the Biologically Significant Units and at the project authorization scale (Colorado MZ). For the Biologically Significant Units, west-wide habitat degradation (disturbance) data layers (**Table E-1**) 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 (LUP) are being implemented. Locally collected disturbance data will be used to determine if the disturbance cap has been exceeded for project authorizations, and may also be used to calculate the amount of disturbance in the Biologically Significant Units.

Although locatable mine sites are included in the degradation calculation, mining activities under the 1872 mining law 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 on GRSG and their habitat as well as to BLM goals and objectives, and other BLM programs and activities.

Formulas for calculations of the amount of disturbance in the PHMA in a Biologically Significant Unit and in a proposed project area are as follows:

- For the Biologically Significant Units:  

$$\text{Percent Degradation Disturbance} = (\text{combined acres of the 12 degradation threats}^1) \div (\text{acres of all lands within the PHMA in a Biologically Significant Unit}) \times 100.$$
- For the Project Analysis Area:  

$$\text{Percent Degradation Disturbance} = (\text{combined acres of the 12 degradation threats}^3 \text{ plus the 7 site scale threats}^4) \div (\text{acres of all lands within the PHMA in the project analysis area}) \times 100.$$

The denominator in the disturbance calculation formula consists of all acres of lands classified as PHMA within the analysis area (Biologically Significant Unit or project area). 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.

## E.2 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 the PHMA in a project authorization area. If the disturbance density in the 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 is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred until the density of energy and mining facilities is less than the cap or co-located it into existing disturbed area (subject to applicable laws and regulations, such as the General Mining Law of 1872 and valid existing rights). Facilities included in the density calculation (**Table E-3**) are:

- Energy (oil and gas wells and development facilities)
- Energy (coal mines)

<sup>3</sup> See **Table E-1**

<sup>4</sup> See **Table E-2**

- Energy (wind towers)
- Energy (solar fields)
- Energy (geothermal)
- Mining (active locatable, leasable, and saleable developments)

### **E.3 PROJECT ANALYSIS AREA METHOD FOR PERMITTING SURFACE DISTURBANCE ACTIVITIES**

- Determine potentially affected occupied leks by placing a four mile boundary around the proposed area of physical disturbance related to the project. All occupied leks located within the four mile project boundary and within PHMA will be considered affected by the project.
- Next, place a four mile boundary around each of the affected occupied leks.
- The PHMA within the four mile lek boundary and the four mile project boundary creates the project analysis area for each individual project. If there are no occupied leks within the four-mile project boundary, the project analysis area will be that portion of the four-mile project boundary within the PHMA.
- Digitize all existing anthropogenic disturbances identified in **Table E-1** and the 7 additional features that are considered threats to GRSG (**Table E-2**). Using 1 meter resolution NAIP imagery is recommended. Use existing local data if available.
- 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.
- 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.
- Calculate the disturbance density of energy and mining facilities (listed above). If the disturbance density is less than 1 facility per 640 acres, averaged across 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 project or co-locate it into existing disturbed area.
- If a project that would exceed the degradation cap or density cap 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.

**Table E-1**  
**Anthropogenic Disturbance Types for Disturbance Calculations**  
**Data Sources are Described for the West-Wide Habitat Degradation Estimates**

<b>Degradation Type</b>	<b>Subcategory<sup>1</sup></b>	<b>Data Source</b>	<b>Direct Area of Influence<sup>1</sup></b>	<b>Area Source</b>
<b>Energy (oil and gas)</b>	Wells	IHS; BLM (AFMSS)	5.0 acres (2.0 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	5.0 acres (2.0 hectares)	BLM WO-300
<b>Energy (coal)</b>	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
<b>Energy (wind)</b>	Wind Turbines	Federal Aviation Administration	3.0 acres (1.2 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	3.0 acres (1.2 hectares)	BLM WO-300
<b>Energy (solar)</b>	Fields/Power Plants	Platts (power plants)	7.3 acres (3.0 hectares)/MW	National Renewable Energy Laboratory
<b>Energy (geothermal)</b>	Wells	IHS	3.0 acres (1.2 hectares)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
<b>Mining</b>	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
<b>Infrastructure (roads)</b>	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7 feet (12.4 meters)	USGS
	Major Roads	Esri StreetMap Premium	84.0 feet (25.6 meters)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2 feet (73.2 meters)	USGS
<b>Infrastructure (railroads)</b>	Active Lines	Federal Railroad Administration	30.8 feet (9.4 meters)	USGS
<b>Infrastructure (power lines)</b>	1-199 kV Lines	Platts (transmission lines)	100 feet (30.5 meters)	BLM WO-300
	200-399 kV Lines	Platts (transmission lines)	150 feet (45.7 meters)	BLM WO-300
	400-699 kV Lines	Platts (transmission lines)	200 feet (61.0 meters)	BLM WO-300
	700+ kV Lines	Platts (transmission lines)	250 feet (76.2 meters)	BLM WO-300
<b>Infrastructure (communication)</b>	Towers	Federal Communications Commission	2.5 acres (1.0 hectares)	BLM WO-300

<sup>1</sup> kV=kilovolts; ac=acre; ha=hectare; ft=feet; m=meters; MW=megawatts

Table copied from the GRSG Monitoring Framework



**Table E-2**  
**The Seven Site Scale Features Considered Threats to GRSG Included in the Disturbance Calculation for Project Authorizations**

1. Coal Bed Methane Ponds
2. Meteorological Towers
3. Nuclear Energy Facilities
4. Airport Facilities and Infrastructure
5. Military Range Facilities and Infrastructure
6. Hydroelectric Plants
7. Recreation Areas Facilities and Infrastructure
<b>Definitions:</b>
<b>1. Coal Bed Methane and other Energy-related Retention Ponds</b> – The footprint boundary will follow the fence line and includes the area within the fence line surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (e.g., roads and well pads) will be captured in other disturbance categories.
<b>2. Meteorological Towers</b> – 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.
<b>3. Nuclear Energy Facilities</b> – The footprint boundary includes visible facilities (e.g., fence and road) and undisturbed areas within the facility’s perimeter.
<b>4. Airport Facilities and Infrastructure (public and private)</b> –The footprint boundary of will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangers, 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.
<b>5. Military Range Facilities and Infrastructure</b> – The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility’s perimeter.
<b>6. Hydroelectric Plants</b> – The footprint boundary includes visible facilities (e.g., fence and road) and undisturbed areas within the facility’s perimeter.
<b>7. Recreation Areas and Facilities</b> – This feature includes all sites/facilities larger than 0.25-acre in size. The footprint boundary will include any undisturbed areas within the site/facility.

**Table E-3**  
**Relationship Between the 18 Threats and the 3 Habitat Disturbance Measures for**  
**Monitoring and Disturbance Calculations**

<b>USFWS Listing Decision Threat</b>	<b>Sagebrush Availability</b>	<b>Habitat Degradation</b>	<b>Energy and Mining Density</b>
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	

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# Appendix F

## Greater Sage-Grouse Mitigation Strategy



# APPENDIX F

## GREATER SAGE-GROUSE MITIGATION STRATEGY

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### F.1 GENERAL

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 assure 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 compensating for impacts by applying beneficial mitigation actions. Mitigation will follow the regulations from the Council on Environmental Quality (40 CFR 1508.20; e.g., avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM management actions and authorized third-party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation (see **Glossary**).

Actions that result in habitat loss and degradation include those identified as threats that contribute to Greater Sage-Grouse disturbance as identified by US Fish and Wildlife Service in its 2010 listing decision (75 Federal Register 13910, March 23, 2010) and shown in **Table D-2** in the Monitoring Framework (**Appendix D**).

The BLM, via the WAFWA Management Zone Greater Sage-Grouse Conservation Team, will develop a WAFWA Management Zone Regional Mitigation Strategy that will inform the NEPA decision-making process, including the application of the mitigation hierarchy for BLM management actions and third-party actions that result in habitat loss and degradation. A robust and transparent Regional Mitigation Strategy will contribute to GRSG habitat conservation by reducing, eliminating, or minimizing threats and compensating for residual impacts to GRSG and its habitat.

The BLM's Regional Mitigation Manual, MS-1794, serves as a framework for developing and implementing a Regional Mitigation Strategy. The following sections provide additional guidance specific to the development and implementation of a WAFWA Management Zone Regional Mitigation Strategy.

## F.2 DEVELOPING A WAFWA MANAGEMENT ZONE REGIONAL MITIGATION STRATEGY

The BLM, via the WAFWA Management Zone Greater Sage-Grouse Conservation Team, will develop a WAFWA Management Zone Regional Mitigation Strategy to guide the application of the mitigation hierarchy for BLM management actions and third-party actions that result in habitat loss and degradation. The Regional Mitigation Strategy should consider any state-level GRSG mitigation guidance that is consistent with the requirements identified in this appendix. The Regional Mitigation Strategy should be developed in a transparent manner, based on the best science available and standardized metrics.

As described in **Chapter 2 of the Proposed LUPA/Final EIS**, the BLM will establish a WAFWA Management Zone Greater Sage-Grouse Conservation Team (hereafter, Team) to help guide the conservation of GRSG, within 90 days of the issuance of the Record of Decision. The Regional Mitigation Strategy will be developed within one year of the issuance of the Record of Decision.

The Regional Mitigation Strategy should include mitigation guidance on avoidance, minimization, and compensation, as follows:

- Avoidance
  - Include avoidance areas (e.g., right-of-way avoidance/exclusion areas, no surface occupancy areas) already included in laws, regulations, policies, and/or land use plans (e.g., Resource Management Plans, Forest Plans, and State Plans); and
  - Include any potential, additional avoidance actions (e.g., additional avoidance best management practices).
- Minimization
  - Include minimization actions (e.g., required design features and best management practices) already included in laws, regulations, policies, land use plans, and/or land-use authorizations; and
  - Include any potential, additional minimization actions (e.g., additional minimization best management practices).
- Compensation
  - Include discussion of impact/project valuation, compensatory mitigation options, siting, compensatory project types and costs, monitoring, reporting, and funds administration. Each of these topics is discussed in more detail below.
    - Residual Impact and Compensatory Mitigation Project Valuation Guidance
      - A standardized method should be identified for estimating residual impacts and valuing compensatory mitigation projects.
      - This method should consider the quality of habitat, scarcity of the habitat, and the size of the impact/project.
      - For compensatory mitigation projects, consideration of durability (see glossary) and timelines (see glossary) may require adjustment of the valuation.

- Compensatory Mitigation Options
  - Options for implementing compensatory mitigation should be identified, such as:
    - Utilizing certified mitigation/conservation bank or credit exchanges
    - Contributing to an existing mitigation/conservation fund
    - Authorized-user conducted mitigation projects
- Compensatory Mitigation Siting
  - Sites should be in areas that have the potential to yield the greatest conservation benefit to the GRSG, regardless of land ownership.
  - Sites should be sufficiently durable (see glossary).
  - Sites identified by existing plans and strategies (e.g., fire restoration plans, invasive species strategies, and healthy land focal areas) should be considered, if those sites have the potential to yield the greatest benefit to GRSG and are durable.
- Compensatory Mitigation Project Types and Costs
  - Project types should be identified that help reduce threats to GRSG (e.g., protection, conservation, and restoration projects).
  - Each project type should have a goal and measurable objectives.
  - Expected costs for these project types, within the WAFWA Management Zone, should be identified, including the costs to monitor and maintain the project for the duration of the impact.
- Compensatory Mitigation Compliance and Monitoring
  - Mitigation projects should be inspected to ensure they are implemented as designed, and if not, there should be methods to enforce compliance.
  - Mitigation projects should be monitored to ensure that the goals and objectives are met and that the benefits are effective for the duration of the impact.
- Compensatory Mitigation Reporting
  - Standardized, transparent, scalable, and scientifically defensible reporting requirements should be identified for mitigation projects.
  - Reports should be compiled, summarized, and reviewed in the WAFWA Management Zone in order to determine if GRSG conservation has been achieved and/or to support adaptive management recommendations.
- Compensatory Mitigation Program Implementation Guidelines

- Guidelines for implementing the state-level compensatory mitigation program should include holding and applying compensatory mitigation funds, operating a transparent and credible accounting system, certifying mitigation credits, and managing reporting requirements.

### **F.3 INCORPORATING THE REGIONAL MITIGATION STRATEGY INTO NEPA ANALYSES**

The BLM will include the avoidance, minimization, and compensatory recommendations from the Regional Mitigation Strategy in one or more of the NEPA analysis' alternatives for BLM management actions and third-party actions that result in habitat loss and degradation, and the appropriate mitigation actions will be carried forward into the decision.

### **F.4 IMPLEMENTING A COMPENSATORY MITIGATION PROGRAM**

The BLM need to ensure that compensatory mitigation is strategically implemented to provide a net conservation gain to the species, as identified in the Regional Mitigation Strategy. In order to align with existing compensatory mitigation efforts, this compensatory mitigation program will be managed at a state level (as opposed to a WAFWA Management Zone, a Field Office, or a Forest), in collaboration with our partners (e.g., federal, tribal, and state agencies).

To ensure transparent and effective management of the compensatory mitigation funds, the BLM will enter into a contract or agreement with a third party to help manage the state-level compensatory mitigation funds, within one year of the issuance of the Record of Decision. The selection of the third-party compensatory mitigation administrator will conform to all relevant laws, regulations, and policies. The BLM will remain responsible for making decisions that affect federal lands.



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# Appendix G

Stipulations Applicable to Fluid Mineral Leasing and  
Land Use Authorizations



# **APPENDIX G**

## **STIPULATIONS APPLICABLE TO FLUID MINERAL LEASING AND LAND USE AUTHORIZATIONS**

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This appendix lists the stipulations for fluid mineral leasing (e.g., oil, gas, and geothermal) referred to throughout this ARMPA. Stipulations outlined in this appendix also apply to fluid mineral leasing on lands overlying federal mineral estate, which includes federal mineral estate underlying BLM lands, privately owned lands, and state-owned lands.

Upon completion of the EIS and ARMPA, the list of stipulations that are included in the decision would supersede the relevant stipulations attached to the existing LUPs. Those program areas/stipulations that are not considered in this ARMPA (not relevant to GRSG and GRSG habitat) would continue in full force and effect where they apply (within individual BLM field offices or the Routt National Forest). The stipulations would not apply to activities and uses where they are contrary to laws, regulations, or specific program guidance.

### **G.1 DESCRIPTION OF STIPULATIONS**

Three types of stipulations could be applied to leasing authorizations and would also be applied as terms and conditions for land use authorizations: 1) No Surface Occupancy (NSO); 2) Controlled Surface Use (CSU); and 3) Timing Limitations (TL). Notice to Lessees (NTLs), Lease Notices (LNs) and Conditions of Approval (COAs), which are applied to existing leases, are also described below.

#### **G.1.1 No Surface Occupancy (NSO)**

Use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect GRSG and GRSG habitat. In areas open to fluid mineral leasing with NSO stipulations, fluid mineral leasing activities are permitted, but surface-disturbing activities cannot be conducted on the surface of the land unless an exception, modification, or waiver is granted. Access to fluid mineral deposits would require drilling from outside the boundaries of the NSO stipulation.

#### **G.1.2 Controlled Surface Use (CSU)**

A CSU stipulation is a category of moderate constraint that allows some use and occupancy of public land while protecting identified resources or values. A CSU stipulation allows the BLM to require

additional conditions be met to protect a specified resource or value in addition to standard lease terms and conditions.

### **G.1.3 Timing Limitations (TL)**

Areas identified for TLs, a moderate constraint, are closed to fluid mineral exploration and development during identified time frames. Construction, drilling, completions, and other operations considered to be intensive in nature are not allowed. Intensive maintenance, such as work overs on wells, is not permitted. Administrative activities are allowed at the discretion of the BLM Authorized Officer.

### **G.1.4 Notice to Lessees (NTL)**

A notice to lessee is a written notice issued by the BLM Authorized Officer. Notices to lessees implement regulations and operating orders, and serve as instructions on specific item(s) of importance within a state, district, or area.

### **G.1.5 Lease Notice (LN)**

A Lease Notice provides more detailed information concerning limitations that already exist in law, lease terms, regulations or operational orders. An LN also addresses special items that the lessee should consider when planning operations.

### **G.1.6 Condition of Approval (COA)**

Conditions of Approval are enforceable conditions or provisions under which an Application for Permit to Drill (APD) is approved.

## **G.2 EXCEPTIONS, MODIFICATIONS, AND WAIVERS**

An exception exempts the holder of the lease from the stipulation on a one-time basis. A modification changes the language or provisions of a stipulation due to changed conditions or new information either temporarily or for the term of the lease. A modification may or may not apply to all other sites within the leasehold. A waiver permanently exempts the surface stipulation for a specific lease, planning area, or resource based on absence of need, such as a determination that protection of winter use is unnecessary for maintenance or recovery of a species.

### **G.2.1 Exception, Modification, or Waiver Process**

An exception, modification, or waiver may be granted at the discretion of the BLM Authorized Officer if the specific criteria described below are met. In order to implement an action that would not normally be allowed because of a stipulation, the proponent must submit a written request for an exception, modification, or waiver and provide the data necessary to demonstrate that specific criteria have been met. Prior to any modification or waiver of a lease stipulation, a 30-day public notice and comment period may be required.

## **G.3 STIPULATIONS APPLICABLE TO LAND USE AUTHORIZATIONS**

Restrictions on land use authorizations (e.g., rights-of-way [ROWs]) are administered through the identification of exclusion and avoidance areas. Exclusion areas are unavailable for location of ROWs under any conditions. Avoidance areas are to be avoided when practicable due to identified resource values but may be available with special stipulations. Those ROW terms and conditions that would be attached to authorizations sited in areas identified as avoidance areas are described below.

<b>Management Action #46</b>	<b>Stipulation Type: No Surface Occupancy (NSO)</b>
<b>Objective:</b> Manage fluid minerals to avoid, minimize, and compensate for: 1) direct disturbance, displacement, or mortality of GRSG; 2) direct loss of habitat, or loss of effective habitat through fragmentation; and 3) cumulative landscape-level impacts.	
<b>Management Action</b>	No Surface Occupancy in PHMA
<b>Stipulation Description</b>	<p>Apply <b>NSO-46e(I)</b> stipulation to leases in PHMA.</p> <p>Include the following notification for limits on surface disturbance and disruption:</p> <p><i>This lease is subject to NSO and does not guarantee the lessee the right to occupy the surface of the lease for the purpose of producing oil and natural gas. In areas open to fluid mineral leasing with NSO stipulations, fluid mineral leasing activities are permitted, but surface-disturbing activities cannot be conducted on the surface of the land unless an exception, modification, or waiver is granted.</i></p> <p><i>Surface occupancy or use will be restricted to no more than 1 disruptive facility per 640 acres, and the cumulative value of all applicable surface disturbances, existing or future, must not result in greater than 3 percent loss of the sagebrush habitat within PHMA (as measured by Colorado Management Zone).</i></p> <p><b>Waivers, modifications, and exceptions:</b></p> <p>No <b>waivers</b> or <b>modifications</b> to fluid mineral lease NSO stipulation will be granted. The BLM Authorized Officer may grant an exception to this NSO stipulation only where the proposed action:</p> <ul style="list-style-type: none"> <li>(i) Would not have direct, indirect, or cumulative effects on GRSG or its habitat; or</li> <li>(ii) 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 GRSG.</li> </ul> <p>Exceptions based on conservation gain (ii) may only be considered in: (a) PHMA of mixed ownership where federal minerals underlie less than 50 percent of the total surface; or (b) areas of BLM-administered 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 RMP [revision or amendment]. 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>The BLM Authorized Officer may approve any exceptions to this lease stipulation only with the concurrence of the BLM State Director. The BLM Authorized Officer may not grant an exception unless the applicable state wildlife agency, USFWS, and BLM unanimously find that the proposed action satisfies (i) or (ii). A team of one field biologist or other GRSG expert shall initially make such</p>

	<p>finding 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 publically available at least quarterly.</p>
<p><b>Management Action</b></p>	<p>No Surface Occupancy within 2 miles of active leks in GHMA</p>
<p><b>Stipulation Description</b></p>	<p>Apply <b>NSO-46e(2)</b> stipulation within 2 miles of active leks in GHMA</p> <p><b>Waivers, modifications, and exceptions:</b></p> <p><b>Waiver:</b> No waivers are authorized unless the area or resource mapped as possessing the attributes protected by the stipulation is determined during collaboration with the State of Colorado to lack those attributes or potential attributes. A 30-day public notice and comment period is required before waiver of a stipulation. Waivers would require BLM State Director approval.</p> <p><b>Exception:</b> In consultation with the State of Colorado, an exception to occupancy of the surface associated with <b>GRSG NSO-46e(2) in GHMA</b> could be granted on a one-time basis (any occupancy must be removed within 1 year of approval) based on an analysis of the following factors:</p> <ul style="list-style-type: none"> <li>Location of proposed lease activities in relation to critical GRSG habitat areas as identified by factors including, but not limited to, average male lek attendance and/or important seasonal habitat</li> <li>An evaluation of the potential threats from proposed lease activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation (see <b>Chapter 2, Section 2.6.3 of the Proposed LUPA/Final EIS</b>, Regional Mitigation)</li> <li>An evaluation of the proposed lease activities in relation to the site-specific terrain and habitat features. For example, in the vicinity of leks, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors.</li> </ul> <p><b>Modification:</b> In consultation with the State of Colorado, a modification (changes to the stipulation either temporarily or for the term of either part of or the entire lease) to <b>GRSG NSO-46e(2)</b> could be granted based on an analysis of the following factors:</p> <ul style="list-style-type: none"> <li>Location of proposed lease activities in relation to critical GRSG habitat areas as identified by factors including, but not limited to, average male lek attendance and/or important seasonal habitat</li> <li>An evaluation of the potential threats from proposed lease activities that may affect the local population as compared to benefits that could be accomplished through compensatory or</li> </ul>

	<p>off-site mitigation (see <b>Chapter 2, Section 2.6.3 of the Proposed LUPA/Final EIS</b>, Regional Mitigation)</p> <p>An evaluation of the proposed lease activities in relation to the site-specific terrain and habitat features. For example, in the vicinity of leks, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors.</p>
<b>Management Action</b>	<p>Limit surface disturbance to 3 percent of PHMA</p> <p>Limit density of infrastructure to 1 per 640 acres</p>
<b>Stipulation Description</b>	<p><b>Apply Lease Notice (GRSG LN-46e) for leases in PHMA:</b></p> <p>Include the following notification for limits on surface disturbance and disruption:</p> <p><i>This lease is subject to NSO and does not guarantee the lessee the right to occupy the surface of the lease for the purpose of producing oil and natural gas. In areas open to fluid mineral leasing with NSO stipulations, fluid mineral leasing activities are permitted, but surface-disturbing activities cannot be conducted on the surface of the land unless an exception, modification, or waiver is granted.</i></p> <p><i>Surface occupancy or use will be restricted to no more than 1 disruptive facility per 640 acres, and the cumulative value of all applicable surface disturbances, existing or future, must not result in greater than 3 percent loss of the sagebrush habitat within PHMA (as measured by Colorado Management Zone).</i></p>
<b>Management Action #46</b>	<b>Stipulation Type: Timing Limitation</b>
<b>Management Action</b>	No activity associated with construction, drilling, or completions within 4 miles from active leks during lekking, nesting, and early brood-rearing (March 1 to July 15)
<b>Purpose</b>	Manage fluid minerals to avoid, minimize, and compensate for direct disturbance, displacement, or mortality of GRSG during lekking, nesting, and early brood-rearing
<b>Stipulation Description</b>	<p><b>Apply Timing Limitation (GRSG TL-46e) within 4 miles of active leks during lekking, nesting, and early brood-rearing (March 1 to July 15).</b></p> <p><b>Waiver:</b> No waivers are authorized unless the area or resource mapped as possessing the attributes protected by the stipulation are determined during collaboration with Colorado Parks and Wildlife to lack those attributes or potential attributes. A 30-day public notice and comment period is required before waiver of a stipulation. Waivers would require BLM State Director approval.</p> <p><b>Exception/Modification:</b> In consultation with the State of Colorado, a modification or an exception to <b>GRSG TL-46</b> could be granted based on an analysis of the following factors:</p> <p>Location of proposed lease activities in relation to critical</p>

	<p>GRSG habitat areas as identified by factors including, but not limited to, average male lek attendance and/or important seasonal habitat</p> <p>An evaluation of the potential threats from proposed lease activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation (see <b>Chapter 2, Section 2.6.3 of the Proposed LUPA/Final EIS</b>, Regional Mitigation)</p> <p>An evaluation of the proposed lease activities in relation to the site-specific terrain and habitat features. For example, within 4 miles of a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors</p>
<b>Management Action #47</b>	<b>Stipulation Type: Condition of Approval</b>
<b>Management Action</b>	<p>On existing leases within 1 mile of active leks, disturbance, disruptive activities, and occupancy are precluded.</p> <p>If it is determined that this restriction would render the recovery of fluid minerals infeasible or uneconomic, considering the lease as a whole, or where development of existing leases requires that disturbance density exceeds 1 disruptive facility per 640 acres, and/or 3 percent disturbance cap, use the criteria below to site proposed lease activities to meet GRSG habitat objectives and require mitigation as described in <b>Appendix F</b> (Greater Sage-Grouse Mitigation Strategy).</p> <p>In PHMAs and within 4 miles of an active lek, the criteria below would be applied to guide development of the lease or unit that would result in the fewest impacts possible to GRSG.</p> <p>Based on site-specific conditions, prohibit construction, drilling, and completion within PHMA within 4 miles of a lek during lekking, nesting, and early brood-rearing (March 1 to July 15). In consultation with the State of Colorado, this timing limitation may be adjusted based on application of the criteria below.</p> <p><b>Criteria</b> (see <b>Chapter 2 of the Proposed LUPA/Final EIS</b> for additional detail on these criteria):</p> <p style="padding-left: 40px;">Location of proposed lease activities in relation to critical GRSG habitat areas as identified by factors including, but not limited to, average male lek attendance and/or important seasonal habitat</p> <p style="padding-left: 40px;">An evaluation of the potential threats from proposed lease activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation (see <b>Chapter 2, Section 2.6.3 of the Proposed LUPA/Final EIS</b>, Regional Mitigation)</p> <p style="padding-left: 40px;">An evaluation of the proposed lease activities, including design features, in relation to the site-specific terrain and habitat</p>



	<p>features. For example, within 4 miles of a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors. This is particularly likely in Colorado Management Zone 17, which has an atypical GRSG habitat featuring benches with GRSG habitat interspersed with steep ravines.</p> <p>To authorize an activity based on the criteria above, the environmental record of review must show no significant direct disturbance, displacement, or mortality of GRSG.</p>
<b>Management Action #10</b>	<b>Avoidance criteria</b>
GRSG PHMA ROW Avoidance	<p>In GRSG PHMA or GHMA managed as avoidance, ROWs/Special Use Authorizations may be issued after documenting that the ROWs/Special Use Authorizations would not adversely affect GRSG populations based on the following criteria:</p> <p>Location of proposed activities in relation to critical GRSG habitat areas as identified by factors including, but not limited to, average male lek attendance and/or important seasonal habitat</p> <p>An evaluation of the potential threats from proposed activities that may affect the local population as compared to benefits that could be accomplished through compensatory or off-site mitigation (see <b>Chapter 2, Section 2.6.3 of the Proposed LUPA/Final EIS</b>, Regional Mitigation)</p> <p>An evaluation of the proposed activities in relation to the site-specific terrain and habitat features. For example, within 4 of from a lek, local terrain features such as ridges and ravines may reduce the habitat importance and shield nearby habitat from disruptive factors.</p> <p>Any new projects within PHMA would be subject to the 3 percent disturbance cap as described in <b>Appendix H</b>, Guidelines for Implementation. If the 3 percent disturbance cap is exceeded in PHMA in any Colorado Management Zone, no new ROW would be authorized in PHMA within that Colorado Management Zone, unless site-specific analysis documents no impact on GRSG.</p>

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# Appendix H

Guidelines for Implementation and Adaptive Management



# APPENDIX H

## GUIDELINES FOR IMPLEMENTATION AND ADAPTIVE MANAGEMENT

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### H.1 INTRODUCTION

This appendix provides guidelines for the implementation of the Northwest Colorado ARMPA, including Adaptive Management. The goals and objectives of the ARMPA address threats to GRSG and GRSG habitat and include management actions designed to maintain and enhance populations and distribution of GRSG. The specific management actions provide details by resource program. BLM programs include objectives designed to avoid direct disturbance of GRSG habitat or displacement of GRSG, and conditions under which it is necessary to minimize and mitigate the loss of habitat and habitat connectivity. To implement the ARMPA, the BLM would assess all proposed land uses or activities in PHMA and GHMA that potentially could result in direct habitat disturbance.

The following steps identify the screening process by which the BLM will review proposed activities or projects in PHMA and GHMA. This process will provide a consistent approach and ensure that authorization of these projects, if granted, will appropriately mitigate impacts and be consistent with the ARMPA goals and objectives for GRSG. The following steps provide for a sequential screening of proposals. However, Steps 2 through 6 can be done concurrently.

The screening process is meant to apply to externally generated projects that would cause discrete anthropogenic disturbances. See **Section H.3**, Restoration/Reclamation of Landscape-Scale Disturbances – Objectives for GRSG Habitat, for guidelines regarding landscape-scale disturbances such as wildfire and habitat restoration.

### H.2 SCREENING PROCESS

#### H.2.1 Step 1 – Determine Proposal Adequacy

This screening process is initiated upon formal submittal of a proposal for authorization for use of BLM lands to the field office/ranger district. The actual documentation of the proposal would include, at a minimum, a description of the location, scale of the project, and timing of the disturbance. The acceptance of the proposal(s) for review would be consistent with existing protocol and procedures for

each type of use. Upon a determination that the proposed project would affect GRSG or GRSG habitat, the District Sage-Grouse Coordinator would be notified.

### **H.2.2 Step 2 – Evaluate Proposal Consistency with LUPA**

The District Sage-Grouse Coordinator and the field office interdisciplinary team would evaluate whether the proposal would be allowed as prescribed in the ARMPA. For example, some activities or types of development are prohibited in PHMA or GHMA. Evaluation of projects will also include an assessment of the current state of the adaptive management hard and soft triggers (see Adaptive Management, below). If the proposal is for an activity that is specifically prohibited, the applicant should be informed that the application is being rejected since it would not be an allowable use, regardless of the design of the project.

### **H.2.3 Step 3 – Determine if GRSG Habitat Can be Avoided**

If the project can be relocated so that it would not have an impact on GRSG and GRSG habitat and still achieve objectives of the proposal, relocate the proposed activity and proceed with the appropriate process for review, decision, and implementation (NEPA and decision record).

### **H.2.4 Step 4 – Determine Proposal Consistency with Density and Disturbance Limitations**

If the proposed activity occurs within a PHMA, the District Sage-Grouse Coordinator would evaluate whether the disturbance from the activity exceeds 3 percent in the Colorado Management Zone using the Disturbance Analysis and Reclamation Tracking System database or a local disturbance database (see Disturbance Cap Guidance, below). If current disturbance within the activity area or the anticipated disturbance from the proposed activity exceeds this threshold (see Adaptive Management, Disturbance Cap Trigger, below), the project would be deferred until such time as the amount of disturbance within the area has been reduced below the threshold (see **Section H.3**, Restoration/Reclamation of Landscape-Scale Disturbances – Objectives for GRSG Habitat, for description of reclamation criteria), redesigned so as to not result in any additional surface disturbance (collocation), or redesigned to move it outside of PHMA.

The Northwest Colorado BLM has completed an inventory of all PHMA by Colorado Management Zone and would track actual disturbance using a local data management system and/or Disturbance Analysis and Reclamation Tracking System. The data management system would be used to inventory, prioritize, and track disturbance data within the decision area, including those projects that cross field office boundaries. The data would be used to determine the actual disturbance by Colorado Management Zone. Data from Colorado Parks and Wildlife, local working groups, and BLM would be used in conjunction with the disturbance inventory to determine future management actions.

#### ***Disturbance Cap Guidance***

For a detailed description of calculating the disturbance cap, see **Appendix E** (Methodology for Calculating Disturbance Caps).

In Northwest Colorado, the disturbance cap would be defined as habitat loss and/or degradation measured as the 3 percent disturbance cap in PHMAs calculated by Colorado Management Zone. Additionally, density of development would be limited to 1 per 640 acres calculated by Colorado Management Zone. In Colorado, Management Zones were developed in cooperation with Colorado Parks and Wildlife, USFWS, and Forest Service and represent biologically significant units based on the six identified Colorado populations, lek complexes, and associated seasonal habitat use.

The ARMPA disturbance cap would apply to anthropogenic disturbance in priority habitat management areas. Anthropogenic disturbance refers to physical removal of habitat, including, but not limited to, paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, pipelines, and mines.

Percentages would be calculated for each Colorado GRSG Management Zone, subject to the criteria listed below that describes the types of projects that would count toward the disturbance cap. Only physical disturbance would be inventoried for the 3 percent disturbance cap. Disruptive impacts, such as wildfire, would be considered in the site-specific analysis when surface-disturbing proposals are being considered.

Types of anthropogenic disturbance that *would be* counted toward the disturbance cap under the ARMPA include the following:

- Any anthropogenic disturbance on BLM surface lands
- Projects on private land in the public record because they entail a federal nexus due to funding or authorizations. Specifically included would be energy development, rights-of-way, or range projects approved by the BLM because they have components on both public and private land. Also included would be anthropogenic disturbance on private surface attributable to the authorized recovery of federal minerals
- Industrial operations on any surface ownership with a readily apparent impact on GRSG habitat
- Any disturbance data volunteered by private land owners

Types of projects that *would not be* counted toward the disturbance cap under the ARMPA include the following:

- Disturbance on individual sites such as stands of pinyon/juniper determined lacking in GRSG habitat potential
- Disturbance on private lands other than what has been described above. The BLM would not inventory or evaluate private property not linked to a specific project with a federal nexus. Private residences would not be inventoried or evaluated. Infrastructure on private land associated with family farm or ranch operations would not constitute “an industrial operation with a readily apparent impact on GRSG habitat.” Base property associated with grazing permits would not be considered a federal nexus in this context. Conservation easements would not trigger a federal nexus, and be cause for inventory of private lands. Conservation-oriented activities associated with US Department of Agriculture, Natural Resources Conservation Service would also not be counted.

The disturbance cap is an important component of the ARMPA adaptive management plan. If the 3 percent cap is exceeded in a Colorado Management Zone, more restrictive measures would be in effect (see **Chapter 2, Section 2.6.1 of the Proposed LUPA/Final EIS**, Adaptive Management, Disturbance Cap Trigger).

**Reclamation Criteria for Anthropogenic Disturbances**

In order for disturbance to be considered reclaimed and no longer counted against the Northwest Colorado disturbance cap, the following requirements would be insisted upon:

- Reclamation requirements would be consistent with the existing Northwest Colorado land use decisions and regulations.
- Reclamation success criteria in GRSG habitat would be contingent on evidence of successful establishment of desired forbs and sagebrush. Reclaimed acreage would be expected to progress without further intervention to a state that meets GRSG cover and forage needs (see **Table H-1**) based on site capability and seasonal habitat, as described in the Colorado Greater Sage Grouse Conservation Plan (Colorado Greater Sage-grouse Steering Committee 2008).
- Depending on site condition, the BLM may require a specific seed component and/or sagebrush (i.e., material collected on site or seed propagated from “local” collections) where appropriate to accelerate the redevelopment of sagebrush.

**H.2.5 Step 5 – Determine Projected Sage-Grouse Population and Habitat Impacts**

If it is determined that the proposed project may move forward, based on Steps 1 through 3, above, then the BLM would analyze whether the project would have a direct or indirect impact on GRSG populations or habitat within PHMA or GHMA. The analysis would include an evaluation of the following:

- Review of GRSG Habitat delineation maps
- Use of the US Geological Survey report *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review* (Manier et al. 2014) to assess potential project impacts based upon the distance to the nearest lek, using the most recent active lek (as defined by Colorado Parks and Wildlife; see Glossary) data available from the state wildlife agency. This assessment would be based upon the buffers identified below for the following types of projects:
  - Linear features 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 2 miles of leks
  - Low structures (e.g., rangeland improvements) within 1.2 miles of leks
  - All other surface disturbance not associated with linear features, energy development, tall structures, or low structures within 3.1 miles of leks
  - Noise and related disruption activities (including those that do not result in habitat loss) at least 0.25-mile from leks
- Review and application of current science recommendations
- Reviewing the Baseline Environment Report (Manier et al. 2013), which identifies areas of direct and indirect effects for various anthropogenic activities



- Consultation with agency or state wildlife agency biologist
- Evaluating consistency with (at a minimum) state GRSG regulations
- Other methods needed to provide an accurate assessment of impacts
- If the proposal will not have a direct or indirect impact on either the habitat or population, document the findings in the NEPA analysis and proceed with the appropriate process for review, decision, and implementation of the project.

**H.2.6 Step 6 – Determine Minimization Measures**

If impacts on GRSG or GRSG habitat cannot be avoided by relocating the project, then consider the tools above to apply appropriate minimization measures. Minimization measures could include timing limitations, noise restrictions, and design modifications.

**H.2.7 Step 7 – Apply Compensatory Mitigation or Reject / Defer Proposal**

If screening of the proposal (Steps 1 through 6) has determined that direct and indirect impacts cannot be eliminated through avoidance or minimization, evaluate the proposal to determine if compensatory mitigation can be used to offset the remaining adverse impacts and achieve GRSG goals and objectives (see **Appendix F**, Greater Sage-Grouse Mitigation Strategy). If the impacts cannot be effectively mitigated, the project would be rejected or deferred.

**H.3 RESTORATION/RECLAMATION OF LANDSCAPE-SCALE DISTURBANCES – OBJECTIVES FOR GRSG HABITAT**

For landscape-scale disturbances, including wildfire, livestock grazing, and habitat treatments, the objective is to maintain a minimum of 70 percent of lands capable of producing sagebrush with a minimum of 15% sagebrush canopy cover, or a similar standard consistent with specific ecological site conditions in PHMA. See **Table H-1**.

**Table H-1  
Seasonal Habitat Desired Conditions for Greater Sage-Grouse**

ATTRIBUTE	INDICATORS	DESIRED CONDITON
<b>BREEDING AND NESTING</b> <sup>1,2,3</sup> (Seasonal Use Period March 1-June 15) <b>Apply 4 miles from active leks.</b> <sup>15</sup>		
Lek Security	Proximity of trees <sup>4</sup>	Trees or other tall structures are none to uncommon within 1.86 miles of leks <sup>5,6</sup>
	Proximity of sagebrush to leks <sup>5</sup>	Adjacent protective sagebrush cover within 328 feet of lek <sup>5</sup>
Cover	Seasonal habitat extent <sup>6</sup>	>80% of the breeding and nesting habitat
	Sagebrush canopy cover <sup>5,6,7,17</sup> Arid sites Mesic sites	15 to 30% 20 to 30% <sup>17</sup>
	Sagebrush height <sup>6,17</sup> Arid sites <sup>5,6,9</sup> Mesic sites <sup>5,6,10</sup>	11.8 to 31.5 inches (30-80 cm) 15.7 to 31.5 inches (40-80 cm)
	Predominant sagebrush shape <sup>5</sup>	>50% in spreading <sup>11</sup>
	Perennial grass canopy cover <sup>5,6,17</sup> Arid sites <sup>6,9</sup> Mesic sites <sup>6,10,17</sup>	≥10% ≥20% <sup>17</sup>

**Table H-1**  
**Seasonal Habitat Desired Conditions for Greater Sage-Grouse**

ATTRIBUTE	INDICATORS	DESIRED CONDITON
	Perennial grass and forb height <sup>5,6,7</sup>	>6 inches <sup>6, 16, 17</sup>
	Perennial forb canopy cover <sup>5,6,7</sup> Arid sites <sup>9</sup> Mesic sites <sup>10</sup>	≥5% <sup>5,6,17</sup> ≥15% <sup>5,6,17</sup>
<b>BROOD-REARING/SUMMER<sup>1</sup> (Seasonal Use Period June 16-October 31)</b>		
Cover	Seasonal habitat extent <sup>6</sup>	>40% of the brood-rearing/summer habitat
	Sagebrush canopy cover <sup>5, 6,7, 17</sup> Arid sites Mesic sites	10 to 25% 10 to 25%
	Sagebrush height <sup>6,7, 17</sup> Arid sites Mesic sites	11.8 to 31.5 inches (30 to 80 cm) 13.8 to 31.5 inches (35 to 80 cm)
	Perennial grass canopy cover and forbs <sup>6,7,17</sup> Arid sites Mesic sites	>15% <sup>17</sup> >25% <sup>17</sup>
	Riparian areas (both lentic and lotic systems)	Proper Functioning Condition <sup>13</sup>
	Upland and riparian perennial forb availability <sup>5,6</sup>	Preferred forbs are common with several preferred species present <sup>12</sup>
<b>WINTER<sup>1</sup> (Seasonal Use Period November 1-February 28)</b>		
Cover and Food	Seasonal habitat extent <sup>5,6,7</sup>	>80% of the winter habitat
	Sagebrush canopy cover above snow <sup>5,6,7,17</sup>	>20% Arid, 25% Mesic <sup>17</sup>
	Sagebrush height above snow <sup>5,6,7</sup>	>10 inches <sup>14</sup>

<sup>1</sup> Seasonal dates can be adjusted; that is, start and end dates may be shifted either earlier or later, but the amount of days cannot be shortened or lengthened by the local unit.

<sup>2</sup> Doherty 2008

<sup>3</sup> Holloran and Anderson. 2005

<sup>4</sup> Baruch-Mordo et al. 2013

<sup>5</sup> Stiver et. al. 2014

<sup>6</sup> Connelly et al. 2000

<sup>7</sup> Connelly et al. 2003

<sup>9</sup> 10–12 inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush sub-species for this type site (Stiver et. al. 2014).

<sup>10</sup> ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush sub-species for this type site (Stiver et. al. 2014).

<sup>11</sup> Sagebrush plants with a spreading shape provide more protective cover than sagebrush plants that are more tree- or columnar shaped (Stiver et. al. 2014).

<sup>12</sup> Preferred forbs are listed in Habitat Assessment Framework Table III-2 (Stiver et. al. 2014). Overall, total forb cover may be greater than that of preferred forb cover since not all forb species are listed as preferred in Table III-2.

<sup>13</sup> Existing land management plan desired conditions for riparian areas/wet meadows (spring seeps) may be used in place of properly functioning conditions, if appropriate for meeting greater sage-grouse habitat requirements.

<sup>14</sup> 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.

<sup>15</sup> Buffer distance may be changed only if 3 out of 5 years of telemetry studies indicate the 4 miles is not appropriate.

<sup>16</sup> Measured as “droop height”; the highest naturally growing portion of the plant.

<sup>17</sup> Colorado Greater Sage-grouse Steering Committee 2008

These habitat objectives in **Table H-1** summarize the characteristics that research has found represent the seasonal habitat needs for GRSG. The specific seasonal components identified in the table were adjusted based on local science and monitoring data to define the range of characteristics used in this sub-region. Thus, the habitat objectives provide the broad vegetative conditions the BLM strive to obtain across the landscape that indicate the seasonal habitats used by GRSG. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the GRSG habitat assessment to be used during land health evaluations (see **Appendix D**, Greater Sage-Grouse Monitoring Framework). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination of whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in **Table H-1**.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use.

#### **H.4 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 learning 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.

In relation to the BLM's National Greater Sage-grouse Planning Strategy, adaptive management would help identify if GRSG conservation measures presented in this EIS contain the needed level of certainty for effectiveness. Principles of adaptive management are incorporated into the conservation measures in the LUPA to ameliorate threats to a species, thereby increasing the likelihood that the conservation measure and LUPA would be effective in reducing threats to that species. The following provides the BLM's adaptive management strategy for the Northwest Colorado Greater Sage-Grouse LUPA. In making amendments to this LUP, the BLM and will coordinate with USFWS as the BLM continues to meet their objective of conserving, enhancing, and restoring GRSG habitat by reducing, minimizing, or eliminating threats to that habitat.

##### **H.4.1 Adaptive Management and Monitoring**

This EIS contains a monitoring framework (**Appendix D**, Greater Sage-grouse Monitoring Framework) that includes an effectiveness monitoring component. The agencies intend to use the data collected from the effectiveness monitoring to identify any changes in habitat conditions related to the goals and objectives of the LUPA and other range-wide conservation strategies (US Department of the Interior 2004; Stiver et al. 2006; USFWS 2013). The information collected through the monitoring framework would be used by the BLM to determine when adaptive management hard and soft triggers (discussed below) are met.

Adjustments to PHMA or GHMA boundaries should be made if BLM biologists, in coordination with state of Colorado biologists, determine site-specific conditions warrant such changes to more accurately depict existing or potential GRSG habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) would be used, as determined on a case-by-case basis considering site-specific issues.

#### **H.4.2 Adaptive Management Triggers**

##### ***Soft Triggers***

Soft triggers represent an intermediate threshold indicating that management changes are needed at the project/implementation level to address habitat and population losses. If a soft trigger is identified, the BLM would apply more conservative or restrictive implementation conservation measures to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. For example, monitoring data within an already federally authorized project area within a given GRSG population area indicates that there has been a slight decrease in GRSG numbers in this area. Data also suggest the decline may be attributed to GRSG collisions with monitoring tower guy-wires from this federally authorized project. The BLM then receives an application for a new tower within the same GRSG population area. The response would be to require the new authorization's tower guy-wires to be flagged. Monitoring data then show the decline is curtailed. The adaptive management soft trigger response is to require future applications to flag for guy-wires. These types of adjustments would be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines). While there should be no expectation of hitting a hard trigger, if unforeseen circumstances occur that trip either a habitat or population hard trigger, more restrictive management would be required.

##### ***Hard Triggers***

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives as set forth in the BLM ARMPA. The hard trigger and the proposed management response to this trigger are presented below.

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.

#### **H.4.3 Northwest Colorado Adaptive Management Plan**

The Northwest Colorado Adaptive Management Plan includes an overarching adaptive management strategy consistent with national policy that includes soft and hard triggers for specific populations and an approach for developing responses. These triggers are not specific to any particular project, but identify habitat and population thresholds. The BLM in cooperation with USFWS and the State of Colorado, have identified appropriate triggers. Triggers would be based on the two key metrics that would be monitored: habitat loss and/or population declines.

##### ***Soft Triggers***

Soft triggers represent an intermediate threshold indicating that management changes are needed at the LUPA implementation level to address habitat or population losses. If a soft trigger is tripped, the BLM would change management to a more conservative or restrictive implementation conservation measure to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. These adjustments should be made to preclude tripping a "hard" trigger (which signals more severe habitat loss or population declines).

During implementation of this LUPA, population trends would be monitored by the Northwest Colorado Sage-Grouse Statewide Implementation Team, which would be made up of existing local population GRSG working groups (e.g., Northwest Colorado, Parachute-Piceance-Roan, Middle Park, and North Park), BLM biologists, and Colorado Department of Natural Resources, Parks and Wildlife biologists. This group would meet annually and would evaluate the health of each population and make recommendations to the BLM on any changes to fine site management. This statewide implementation team would also evaluate the effects to GRSG habitat and populations due to BLM permitted activities throughout the previous year(s) and make recommendations for changes in management or locations that should be avoided, for example. This group would also evaluate the effectiveness of mitigation and make recommendations on alternative mitigation strategies and locations, such as the Colorado Habitat Exchange. This team would also evaluate important locations each year, such as lek sites.

Restrictive management prescriptions would help ensure a greater degree of certainty of effectiveness in ameliorating a targeted threat so that there is less of a need to prescribe a detailed adaptive management decision strategy within the ARMPA to demonstrate certainty of effectiveness. The Northwest Colorado LUPA includes conditions under which activities could be permitted in GRSG habitat and criteria for granting exceptions, modifications, or waivers for lease stipulations. Soft triggers for restrictive management actions would include evaluation of the effectiveness of the minimization, mitigation, and location of permitted activities in the context of the PAC.

#### ***Disturbance Cap Trigger***

The disturbance cap trigger represents a threshold indicating that more restrictive action is necessary to prevent further degradation of GRSG habitat.

In Northwest Colorado, the disturbance cap trigger would be defined as habitat loss and/or degradation measured as the 3 percent disturbance cap in PHMA calculated by biologically significant unit (Colorado populations) and proposed project analysis area (Colorado MZ).

If the 3 percent anthropogenic disturbance cap is exceeded on lands (regardless of land ownership) within PHMA in any given biologically significant unit, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the General Mining Law of 1872 and valid existing rights) would be permitted by BLM within PHMA in any given biologically significant unit until the disturbance has been reduced to less than the cap.

If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance would be permitted by 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 General Mining Law of 1872 and valid existing rights).

Habitat disturbance would be monitored by the BLM and if the disturbance cap thresholds are exceeded in any PAC or Colorado MZ, more restrictive management would be implemented. The BLM would not grant modifications, exceptions, or waivers for existing lease stipulations if the intermediate trigger has been met. In addition, the BLM would defer new leasing in the Colorado MZ/PAC until the habitat is reclaimed and back under the disturbance cap.

### **Hard Trigger**

In the event that soft triggers and disturbance caps prove to be ineffective, the hard trigger represents a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives. The hard trigger is intentionally set at or below the normal range of variation to provide a threshold of last resort should either chronic degradation or a catastrophic event occur. The hard trigger is not intended to be an on-again/off-again toggle that would be exceeded periodically throughout the life of the LUPA. Colorado GRSG occur in six distinct populations. Two of these populations (Northwest Colorado and North Park) account for about 88 percent of the males in Colorado. Northwest Colorado includes Colorado MZs I through 10. North Park includes Colorado MZ 11. The remaining four populations are smaller by an order of magnitude, and, even in the aggregate, do not provide the significant numbers of GRSG necessary to contribute meaningfully to the hard trigger, and, in some cases, lack the long-term population trend information necessary to support trigger implementation. All six populations are important to GRSG conservation in Colorado; however, only the Northwest Colorado and North Park populations are large enough to reliably indicate the level of severe decline intended by this hard trigger. While the hard triggers focus on the two largest populations, all six populations should be rigorously managed via the soft triggers. If soft triggers work as intended, a hard trigger should never be breached.

#### *Development of the Hard Trigger*

The hard trigger is based on two metrics: GRSG lek (high male) counts and habitat loss.

*Lek Counts.* The lek count threshold is determined from the 25 percent quartile of the high male count in each of the Northwest Colorado and North Park populations over the period of years for which consistent lek counts are available: 17 years from 1998 to 2014 for Northwest Colorado and 41 years from 1974 to 2014 for North Park. The 25 percent quartiles were determined using the annual high male counts rather than the 3-year running average to ensure that normal variation in lek counts is above the threshold. The hard trigger for Northwest Colorado is 1,575 counted males, and for North Park is 670 counted males.

*Habitat Loss.* The habitat loss threshold is determined by 30 percent cumulative loss of PHMA, measured independently in Northwest Colorado and North Park. For the purpose of the hard trigger, habitat loss will be measured from the date of the ROD on this LUPA. Hard trigger habitat loss includes both anthropogenic (i.e., the disturbance cap) and non-anthropogenic forms of habitat loss (e.g., wildfire). The 30 percent habitat loss calculation is limited to loss of PHMA in each of Northwest Colorado and North Park populations; GHMA and any habitat loss in the other four populations are not included in the hard trigger. Restored or recovered habitat is not considered in this threshold, although it is tracked and summarized by the BLM's data management system.

#### *Breaching the Hard Trigger*

In order for the hard trigger to be breached, both the lek count (1,575 males in Northwest Colorado and 670 males in North Park) and habitat loss thresholds must be breached in both the Northwest Colorado and North Park populations simultaneously. In any other set of circumstances (e.g., when a threshold is violated in a single population), the management response will be as described in the *Soft Trigger* section, above.

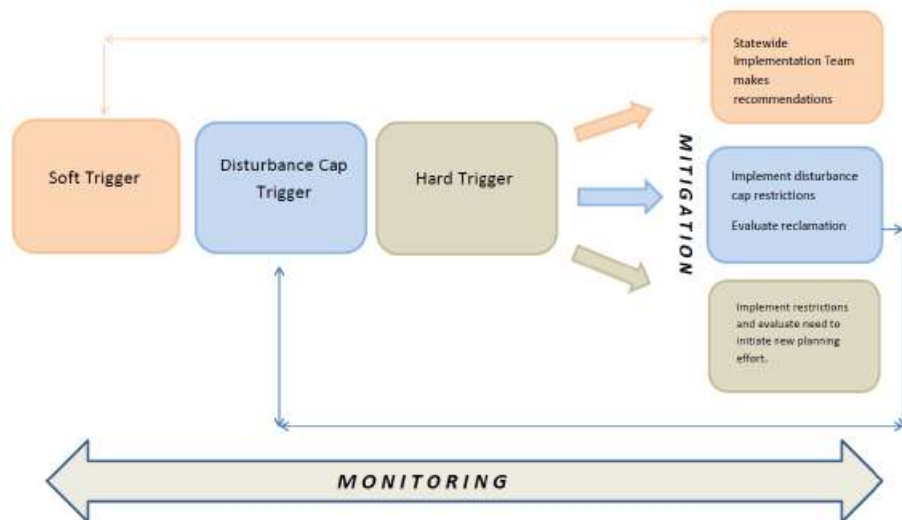
*Lek Counts.* The lek count threshold is compared to the 3-year running average of the high male count in Northwest Colorado and North Park, measured independently. The 3-year running average value is

used because it is considered to be more indicative of the population trend than annual high male counts. The 3-year running average in Northwest Colorado and North Park must fall below the threshold concurrently for this portion of the hard trigger to be breached. The Colorado Department of Natural Resources, Parks and Wildlife will conduct lek counts and provide this information annually to the statewide implementation team as described in the *Soft Trigger* section, above.

*Habitat Loss.* The habitat loss threshold is measured by 30 percent cumulative loss of PHMA, beginning when the ROD on this LUPA is signed. The loss will be measured independently in Northwest Colorado and North Park. The BLM will track anthropogenic and non-anthropogenic habitat loss. The statewide implementation team as described in the *Soft Trigger* section, above, will review summary information, above.

*Hard Trigger Response*

Upon determination that a hard trigger has been tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions for a period of 90 days. In addition, within 14 days of a determination that a hard trigger has been tripped, the Northwest Colorado Greater Sage-Grouse Statewide Implementation Team will convene to develop an interim response strategy and initiate an assessment to determine the causal factor or factors (hereafter the “causal factor assessment”).



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