

# Chapter 5

## Cumulative Impacts



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**Changes to Chapter 5 between Draft LUPA/EIS and Proposed LUPA/Final EIS**

- The cumulative impact analysis was moved from Chapter 4, Section 4.16 to Chapter 5. All subsequent chapters have been renumbered accordingly.
- The GRSG cumulative impact analysis in the DEIS was supplemented and additional information was included regarding quantitative impacts on the WAFWA Management Zone level.
- All sections were updated to include analysis of the Proposed Plan.
- Table 5-1 was revised to reflect an updated list of past, present, and reasonably foreseeable future actions.
- General corrections (e.g., typographical errors), clarifications, and acreage recalculations were included.

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## **Chapter 5. Cumulative Impacts**

This section presents the likely cumulative impacts on the human and natural environment that could occur from implementing the alternatives presented in **Chapter 2**. This section is organized by topic, similar to **Chapter 3**.

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts on the environment result from implementing any one of the Idaho and Southwestern Montana Greater Sage-Grouse LUPA/EIS alternatives, in combination with other federal, state, or private actions, either within or next to the planning area.

A cumulative impact analysis is required by CEQ regulations because environmental conditions result from many different factors that act together. The total effect of any single action cannot be determined by considering it in isolation; it must be determined by considering the likely result of that action in conjunction with many others. Evaluation of potential impacts considers incremental impacts that could occur from the proposed project, as well as impacts from past, present, and reasonably foreseeable future actions. Management actions could be influenced by activities and conditions on adjacent public and private lands beyond the planning area boundary; therefore, assessment data and information could span multiple scales, landownerships, and jurisdictions. These assessments involve determinations that often are complex and, to some degree, subjective.

### **5.1 Greater Sage-Grouse Cumulative Effects Analysis: Idaho and Southwestern Montana**

This cumulative effects analysis (CEA) discloses the long-term effects on Greater Sage-Grouse (GRSG) from implementing each LUPA/EIS alternative, in conjunction with other past, present, and reasonably foreseeable future actions. In accordance with Council on Environmental Quality guidance, cumulative effects need to be analyzed in terms of the specific resource and ecosystem being affected (Council on Environmental Quality 1997). As discussed in **Chapter 1**, the purpose for the proposed federal action is to identify and incorporate appropriate conservation measures to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to GRSG habitat. The Western Association of Fish and Wildlife Agencies (WAFWA) delineated seven sage-grouse management zones based on populations within floristic provinces (Stiver et al. 2006). Therefore, the cumulative effects analysis study area for GRSG extends beyond the Idaho and Southwestern Montana Sub-region boundary and incorporates Western Association of Fish and Wildlife Agencies (WAFWA) Management Zones (MZs) IV, and II/VII.

MZ II and VII are combined for the purpose of characterizing GRSG habitat conditions and impacts, as was done in the Summary of Science, Activities, Programs, and Policies That Influence the Range-Wide Conservation of Greater Sage-Grouse (Manier et al. 2013). However, the Idaho and southwestern Montana sub-region contains a portion of MZ II and

does not overlap with MZ VII. The analysis of BLM and Forest Service actions in MZs IV and II/VII is primarily based on MZ-wide datasets developed by the BLM National Operations Center (NOC).

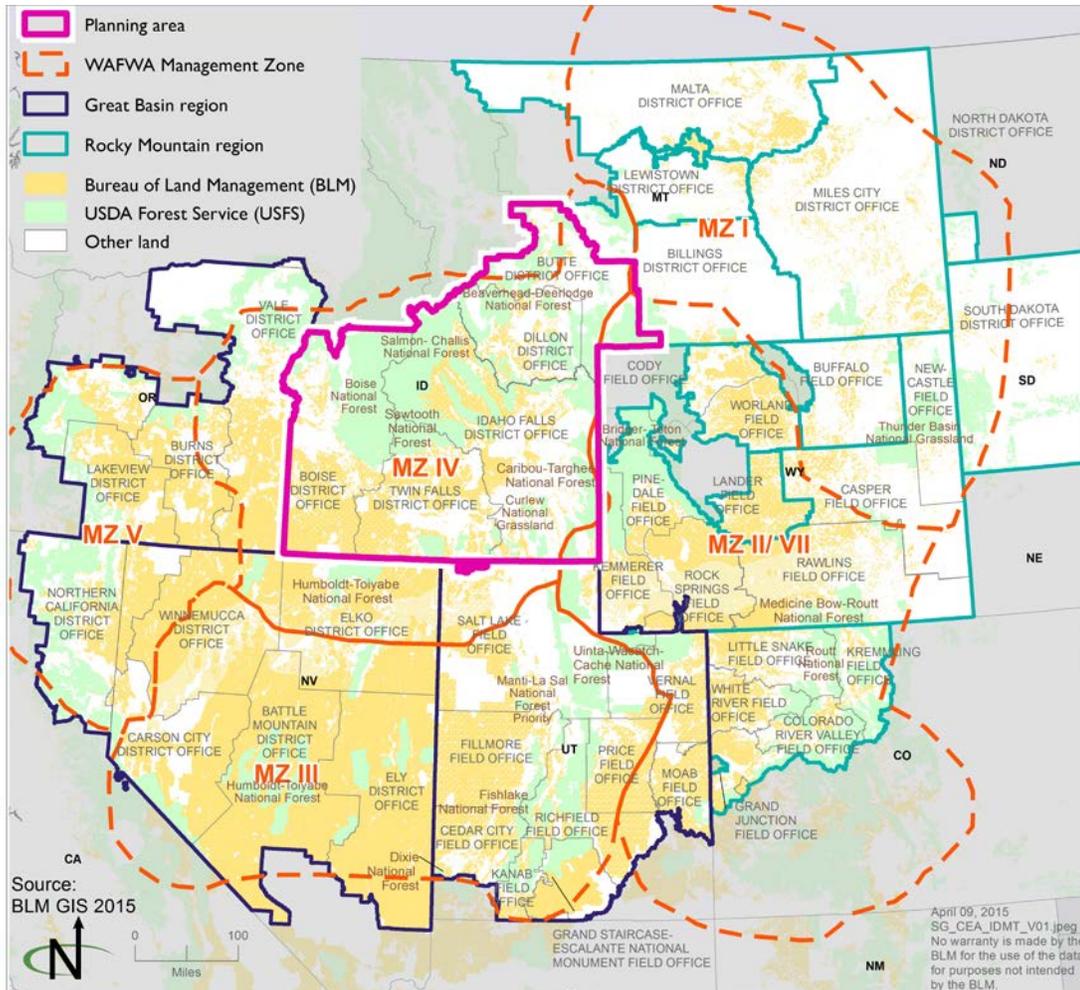
As indicated in the DEIS, the CEA for the FEIS includes quantitative analysis where possible. Where quantitative data are not available, analysis is qualitative. This analysis includes past, present and reasonably foreseeable future actions for all land ownerships in the MZs, and evaluates the impacts of the Idaho and Southwestern Montana LUPA, by alternative, when added to those.

The analysis of nonfederal actions is more qualitative and includes a review and analysis of the following:

- State plans
- Coordination with states and agencies during consistency reviews
- Additional data from non-BLM-administered lands.

The following diagram shows the boundaries of the WAFWA Management Zones and the BLM and Forest Service planning areas. The Idaho and southwestern Montana sub-region contains a large proportion of MZ IV, with 11,827,900 acres of PHMA out of 22,105,600 total acres in MZ IV (54 percent); and 5,635,700 acres of GHMA out of 10,128,500 total acres in MZ IV (56 percent). In contrast, the Idaho and southwestern Montana sub-region has a relatively small influence in the context of MZ II/VII, because it contains relatively few priority habitat management areas (PHMA) or general habitat management areas (GHMA): 147,100 acres of PHMA out of 14,105,000 total acres in MZs II/VII (1 percent); and 23,600 acres of GHMA out of 17,771,500 total acres in MZs II/VII (less than 1 percent). As a result, actions in the Idaho and southwestern Montana LUPA/EIS may have less cumulative impact on GRSG than those in larger planning areas in MZs II/VII.

**Section 5.1.1**, Methods, provides a description of the methodology used for this cumulative effects analysis. **Section 5.1.2** lists assumptions used in the analysis. **Section 5.1.3** describes existing conditions in WAFWA MZ IV and in the Idaho and southwestern Montana sub-region. **Section 5.1.4**, provides a broad-scale description regional efforts to manage GRSG in MZ IV. **Section 5.1.5** discusses the relevant cumulative actions in MZ IV that will be analyzed in this CEA. **Section 5.1.6** analyzes threats to GRSG in MZ IV and discusses the potential cumulative effects resulting from each threat for each alternative. **Section 5.1.7** describes existing conditions in WAFWA MZs II/VII. **Section 5.1.8** provides a broad-scale description regional efforts to manage GRSG in MZs II/VII. **Section 5.1.9** discusses the relevant cumulative actions in MZs II/VII that will be analyzed in this CEA. **Section 5.1.10** analyzes threats to GRSG in MZs II/VII and discusses the potential cumulative effects resulting from each threat for each alternative. **Section 5.1.11**, Conclusions, determines the cumulative effects on GRSG as a result of implementing each alternative in combination with other private, local, regional, state, and federal past, present, and reasonably foreseeable future actions in MZs IV and II/VII.



### 5.1.1 Methods

The CEA uses the following methods:

- Data from the USGS publication Summary of Science, Activities, Programs, and Policies That Influence the Range-Wide Conservation of Greater Sage-Grouse (Manier et al. 2013) establishes the reference condition against which the alternatives and other past, present, and reasonably foreseeable future actions are compared. Data from this publication are presented in terms of priority habitat and general habitat. Where Manier et al. (2013) data are used in this CEA, “priority habitat” refers to PPH and “general habitat” refers to PGH”.
- The USFWS’s 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered” (USFWS 2010) and the USFWS publication Conservation Objectives: Final Report (i.e., the COT report; USFWS 2013a) were reviewed to identify the primary threats facing

GRSG in each WAFWA MZ. Table 2 of the COT report lists threats to GRSG that are present and widespread in each population in the MZ.

- For MZ IV the list of present and widespread threats that are directly or indirectly affected by BLM and Forest Service actions are fire, spread of weeds, conifers, infrastructure, grazing/free-roaming equids, conversion to agriculture, energy development/mining, and recreation (USFWS 2013a, pp. 22-24). For MZ II/VII, these threats include: energy development/mining, infrastructure, grazing, conversion to agriculture, fire, spread of weeds, recreation, and conifers (USFWS 2013a, pp. 17-19, 27-28). Two other threats listed in the COT report, sagebrush eradication and isolation/small population size, affect GRSG populations in MZs IV and II/VII. While they are not addressed separately in this analysis, they are discussed as elements of other threats.
- Predation was not included as a threat in the final COT report and was not identified by USFWS as a significant threat to GRSG populations (USFWS 2010). Predation is a natural occurrence that may be enhanced by human habitat modifications such as construction of infrastructure that may increase opportunities for nesting and perching or increase exposure of GRSG nests. In such altered habitats, predators may exert an undue influence on GRSG populations. Predation is discussed in this CEA in the context of these other threats.
- Sagebrush eradication and isolation/small population size are discussed as a component of other threats and in the conclusions. This is because sagebrush eradication is a component of many threats and is not addressed by any one management program. Isolation/small population size is not analyzed separately because no management actions directly address this threat. Not all the threats discussed in this section represent major threats to GRSG in each planning area in the MZs, but each poses a present and widespread threat to at least one population.
- Each threat is analyzed (quantitatively when possible), and a brief conclusion for each threat is provided.
  - The BLM NOC compiled MZ-wide datasets for quantifiable actions in all LUPA/EISs in MZs IV and II/VII. These datasets provide a means by which to quantify cumulative impacts from direct impacts of the threats identified in the COT report.
  - Data and information were gathered from other federal, state, and local agencies and tribal governments, where available, and were used to inform the analysis of cumulative impacts on GRSG from each of the threats in MZs IV and II/VII.
  - The tables in this cumulative analysis display the number of acres across the entire MZ and the percentage of those acres that are located within the Idaho and southwestern Montana sub-region. To calculate the total number of

acres in the MZ, the number of acres in the other BLM and Forest Service proposed plans across MZ IV or MZs II/VII are added to the number of acres in the applicable Idaho and southwestern Montana LUPA alternative. For example, the total number of acres for Alternative A includes all of the other proposed plans in MZ IV or MZs II/VII plus Idaho and Southwestern Montana LUPA Alternative A. Likewise, the Alternative B acreage includes all of the other proposed plans in MZ IV or MZs II/VII plus Idaho and Southwestern Montana LUPA Alternative B.

- A discussion is provided for each alternative in **Section 5.1.11**. Each alternative considers the cumulative impacts on GRSG from each of the threats. It also considers whether those threats can be ameliorated by implementing that particular alternative in conjunction with past, present, and reasonably foreseeable non-BLM and non-Forest Service actions in MZs IV and II/VII.
- The list of relevant cumulative actions in **Sections 5.1.5** and **5.1.9** was derived from each LUPA in MZs IV and II/VII to provide an overview of the ongoing and proposed land uses there.
- Baseline data that are consistent across planning areas and that analyze cumulative effects for each alternative, including the no action alternative and Proposed Plan, are used in this analysis.
- The Idaho and southwestern Montana sub-region is located within two MZs. In this instance, the CEA analyzes threats and impacts for each MZ separately.
- Although Alternative A does not designate PHMA or GHMA, spatial GIS data was clipped to these boundaries to allow for a consistent comparison across all alternatives.
- This analysis uses the most recent information available. It assumes that the Proposed Plan will be implemented in the other BLM and Forest Service sub-regions in MZs IV and II/VII.

### 5.1.2 Assumptions

This cumulative analysis uses the same assumptions and indicators as those established for the analysis of direct and indirect effects on GRSG in **Section 4.4.9**. In addition, the following assumptions have been made:

- The timeframe for this analysis is 20 years.
- The CEA area extends beyond the sub-region boundary and encompasses all of WAFWA MZ IV and II/VII; the quantitative impact analysis focuses on impacts across the MZs. The MZ is the appropriate geographic scope for this analysis because it encompasses areas with similar floristic conditions containing important GRSG habitat.

- The magnitude of each threat would vary geographically and may have more or less impact on GRSG in some parts of the MZs, depending on such factors as climate, land use patterns, and topography.
- In order to have consistency of analysis across the various planning areas within the MZ, the proposed Idaho Important Habitat Management Areas (IHMA) have been classified as GHMA for cumulative analysis.
- A management action or alternative would contribute a net conservation gain to GRSG if there is an actual benefit or gain above baseline conditions. Baseline conditions are defined as the pre-existing condition of a defined area and/or resource that can be quantified by an appropriate metric(s). During environmental reviews, the baseline is considered the affected environment that exists at the time the NEPA analysis is initiated, and is used to compare predicted effects of the proposed action and the effects of a reasonable range of alternative actions.
- The CEA quantitatively analyzes impacts on GRSG and their habitat in the MZs. Impacts on habitat are likely to correspond to impacts on populations within the MZs, since reductions or alterations in habitat could affect reproductive success through reductions in available forage or nest sites. Human activity could cause disturbance to the birds, preventing them from mating or successfully rearing offspring. Human activities also could increase opportunities for predation, disease, or other stressors (Connelly et al. 2004; USFWS 2010; Manier et al. 2013).
- The governor of Idaho is expected to issue an executive order providing direction for GRSG conservation in Idaho on state lands. This executive order is expected to be largely consistent with BLM and Forest Service direction, though exact details are not known at the time this FEIS is published.

### 5.1.3 Existing Conditions in WAFWA MZ IV and the Idaho and Southwestern Montana Sub-region

This section summarizes existing conditions and past and present actions for the Idaho and southwestern Montana sub-region (provided in more detail in **Chapter 3**) and for MZ IV as a whole. Reasonably foreseeable future actions are discussed in **Section 5.1.5**.

#### *GRSG Habitats and Populations*

MZ IV consists of nine GRSG populations: Baker, East-Central, Southwest Montana, Snake-Salmon-Beaverhead, Belt Mountains, Weiser, Northern Great Basin, Box Elder, and Sawtooth (Garton et al. 2011). The sub-region includes seven of these populations: East-Central, Southwest Montana, Snake-Salmon-Beaverhead, Weiser, Northern Great Basin, Box Elder, and Sawtooth. This MZ represents one of the largest areas of connected GRSG habitat, as demonstrated by Knick et al. (2011), and supports the largest population of GRSG outside of the Wyoming Basin (Garton et al. 2011). MZ IV includes GRSG populations in Oregon, Idaho, Nevada, Utah and Montana.

In MZ IV, BLM-administered and other federal lands account for approximately 22,522,300 million acres of GRSG habitat (approximately 68 percent of habitat), with state and private lands accounting for over 10 million acres of GRSG habitat (approximately 31 percent of habitat) (Manier et al. 2013, p. 118). The BLM also has some management authority over split estate lands, with privately held surface and federal subsurface mineral rights. Approximately 21 percent of PHMA and 44 percent of GHMA within MZ IV are located on BLM-administered and National Forest System lands in the Idaho and southwest Montana sub-region.

**Table 5-1**, Management Jurisdiction in MZ IV by Acres of Priority and General Habitats, provides a breakdown of landownership and acres of GRSG habitat in MZ IV. As the table shows, approximately 52 percent of priority habitat and 19 percent of general habitat is on BLM-administered lands. Approximately 7 percent of priority habitat and 5 percent of general habitat is on National Forest System lands.

**Table 5-1**  
**Management Jurisdiction in MZ IV by Acres of Priority and General Habitats**

	<b>Total Surface Area (Acres)</b>	<b>Priority (Acres)</b>	<b>General (Acres)</b>	<b>Non-habitat (Acres)</b>
<b>MZ IV</b>	78,259,200 (100%)	21,930,600 (28%)	10,958,500 (14%)	45,370,100 (58%)
BLM	26,220,300 (34%)	13,710,700 (52%)	4,928,200 (19%)	7,581,400 (29%)
Forest Service	22,291,600 (28%)	1,613,800 (7%)	1,113,500 (5%)	9,564,300 (43%)
Tribal and other federal	2,431,000 (3%)	633,600 (26%)	522,500 (21%)	1,274,900 (52%)
Private	23,150,400 (30%)	4,890,200 (21%)	3,516,700 (15%)	14,743,500 (64%)
State	3,681,000 (5%)	1,019,400 (28%)	846,200 (23%)	1,815,400 (49%)
Other	484,800 (<1%)	62,900 (13%)	31,400 (6%)	390,500 (81%)

Source: Manier et al. 2013, p. 118

***Sub-region Habitat Conditions***

Sub-regional habitat conditions and trends are presented by population area in **Table 3-4** in this EIS.

***Idaho and Southwestern Montana LUPA/EIS Alternatives***

The Idaho and Southwestern Montana LUPA and EIS evaluates the following seven alternatives:

- Alternative A, current management (the no action alternative)

- Alternative B, which was developed using GRSG conservation measures in A Report on National Greater Sage-Grouse Conservation Measures (Sage-Grouse National Technical Team 2011)
- Alternative C, which was developed based on recommendations from individuals and conservation groups for protecting and conserving GRSG and habitat rangewide
- Alternative D, which incorporates conservation measures to conserve, enhance, and restore GRSG habitat on BLM-administered and National Forest System lands, while balancing resources and resource use among competing human interests, land uses, and the conservation of natural and cultural resource values, and sustaining and enhancing ecological integrity across the landscape, including plant, wildlife, and fish habitat
- Alternative E, which was developed from recommendations by the State of Idaho's GRSG Task Force
- Alternative F, which was derived from individual and conservation group comments. This alternative contains a mixture of management actions from A Report on National Greater Sage-Grouse Conservation Measures as well as additional restrictions on resource uses and increased resource protection; and
- Proposed Plan, which was developed through a coordinated partnership of BLM, Forest Service, the States of Idaho and Montana and the USFWS and is consistent with the objectives described in the COT report

#### ***Population Trends in Management Zone IV***

Historic conversion of habitat to agriculture as well as fire, urbanization, and spread of weeds have resulted in a residual sagebrush landscape that is less productive and more fragmented than those prior to European colonization. As a result, more GRSG populations in the region are relatively small and/or separated from adjacent populations. Notable exceptions are the Snake-Salmon-Beaverhead and Northern Great Basin populations (Manier et al. 2013, p. 132). Garton et al. (2011) predicted a 10.5 percent chance this MZ will fall below 200 males by 2037, and a 39.7 percent chance it would fall below 200 males by 2107 (USFWS 2013a, p. 75).

While population estimates and trends for the sub-region are not available, GRSG populations are described in **Section 3.2** of the EIS. The Snake-Salmon-Beaverhead and Northern Great Basin populations encompass the largest number of occupied leks in the sub-region. The Northern Great Basin population is especially important to long-term conservation of GRSG in MZ IV. This is because it comprises a substantial portion of the Great Basin core population (Connelly et al. 2004); shared with Nevada, Utah, and Oregon, this is one of the two remaining major population strongholds in the range of the species. Between 2007 and 2013, this population showed a 34 percent decline in the estimated minimum male population attending leks in the population (Garton et al. 2015, p. 35). The Snake-Salmon-Beaverhead population provides additional and substantial population

contributions within Idaho. It also provides known connectivity with the Southwest Montana population area.

In Montana, the GRSG population changes cyclically. The GRSG population declined sharply from 1991 to 1996, before increasing through 2000 (Montana Sage Grouse Work Group 2005). The population is thought to be down 33 percent from historic levels. Between 2004 and 2013, the average number of displaying males per lek in a given year in Montana ranged from 7 to 19 (Greater Sage-Grouse Habitat Conservation Advisory Council 2014).

#### **5.1.4 Regional Efforts to Manage Threats to GRSG in MZ IV**

There are several regional efforts to manage threats to GRSG in MZ IV. Regional efforts include past, present and reasonably foreseeable actions conducted by the BLM, Forest Service, and by other federal and or in cooperation with non-federal agencies, organizations, landowners, or other groups in MZ IV. Because state and private lands account for approximately 10 million acres (approximately 31 percent) of GRSG habitat in MZ IV (Manier et al. 2013, p. 118) these efforts play an important role in alleviating threats to GRSG.

##### ***Idaho Statewide Efforts***

Similar to efforts in nearby states, the governor of Idaho is expected to issue an executive order providing direction for GRSG conservation in Idaho on state lands. This executive order is expected to be largely consistent with BLM and Forest Service direction, though exact details are not known and are speculative as of the time of this FEIS publication.

Idaho Department of Lands prepared the Proposed Greater Sage-Grouse Conservation Plan (IDL 2015). Released in February 2015, and complementing Idaho Governor Otter's proposed plan (Alternative E of the Draft Idaho and Southwest Montana LUPA/EIS), the draft plan focuses on three primary threats to GRSG in Idaho: wildfire, infrastructure, and invasive species. The plan outlines enforceable stipulations in leases, permits, and easements on IDL lands. Conservation measures in the plan will be used as BMPs for activities supporting fire prevention, suppression, and rehabilitation, regulating oil and gas development, some mining activities, and abandoned mine reclamation. While the plan is comprised of voluntary management guidelines, the guidelines may be utilized by state regulatory agencies for projects requiring agency review or approval.

The Idaho Sage-grouse Advisory Committee prepared their Conservation Plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee 2006) to provide guidance, tools, and resources to GRSG Local Working Groups, and to facilitate and provide statewide consistency between Local Working Group plans. The plan identifies 19 threats to GRSG and GRSG habitat and presents conservation measures to address each of those threats. Rural Fire Protection Districts have been established within the state to help suppress fires in GRSG habitat.

### ***Utah State Efforts***

On February 25, 2015, Utah Governor Gary Herbert signed Utah Executive Order EO/2015/002. The EO directs state agencies whose actions may affect GRSG to implement Utah Division of Wildlife Resources' Conservation Plan for Greater Sage Grouse in Utah (Utah Greater Sage-Grouse Working Group 2013). The conservation plan identifies 11 population areas in Utah that are the focus of GRSG conservation efforts, and helps coordinate the efforts of ten local working groups in the state and UDWR. The goal of the state plan is to protect, maintain, improve and enhance GRSG populations and habitats on public and private lands within the established management areas. It includes conservation strategies and measurable objectives regarding populations and habitat, and through the EO, provides a regulatory mechanism to preserve GRSG through specific restrictions on public or private land use.

### ***Montana Statewide Efforts***

The Montana Department of Fish, Wildlife and Parks (MFWP) is tasked with implementing the range-wide WAFWA Sage-Grouse Strategy (Stiver et al. 2006) in Montana. The WAFWA Sage-Grouse Strategy monitors, researches, provides outreach, and funds conservation projects for GRSG. A basic premise of the WAFWA Sage-Grouse Strategy is that additional conservation capacity must be developed at all local, state, federal, and range-wide levels for both the short term (3 to 5 years) and for the long term (10 years or more) to ensure GRSG conservation.

In addition, the MFWP's Montana Management Plan and Conservation Strategy for Sage-Grouse was initiated in 2005 to protect, maintain, and restore GRSG habitat. The plan ranks threats to the species across the state and provides an overall strategy for public and private cooperation in conservation actions. In 2013, the governor established the Greater Sage-Grouse Habitat Conservation Advisory Council to provide recommendations on policies and actions for GRSG conservation. The council provided these recommendations in January 2014. The governor subsequently issued an executive order on September 9, 2014 (State of Montana 2014), based on the council recommendations that provided the direction for GRSG conservation in Montana.

Montana Executive Order. The Montana governor issued an executive order on September 9, 2014 (State of Montana 2014), based on the council recommendations that provided the direction for GRSG conservation in Montana. Stipulations for development in the executive order and Montana Management Plan and Conservation Strategy for Sage-Grouse include but are not limited to:

- A 0.6-mile NSO buffer around the perimeter of active leks for new activities
- Locating new overhead power lines and communication towers a minimum of 0.6-mile from the perimeter of active leks
- A minimum 2.0-mile buffer from active lek perimeters for main roads and a minimum 0.6-mile buffer for facility site access roads



- A 5 percent limit on anthropogenic surface disturbance within the Density and Disturbance Calculation Tool examination area (based upon suitable habitat)
- As authorized by permitting agency or agencies, activities (production, maintenance and emergency activity exempted), will typically be prohibited from March 15 through July 15 outside of the NSO perimeter of an active lek and within 2 miles of that perimeter in Core Population Areas where breeding, nesting, and early brood-rearing habitat is present

The approach of the Montana executive order/Montana Management Plan and Conservation Strategy for GRSG is similar to the Wyoming executive order. Montana's plan will apply a disturbance cap in core habitat and will limit well density and apply timing limitations. The 0.6-mile buffer would protect males in the vicinity of leks during the breeding season; the density limits and disturbance cap would protect GRSG during nesting, brood-rearing, and winter concentration activities. The timing restrictions would reduce the potential for displacement or disruption during the breeding season.

### *Oregon Statewide Efforts*

The Oregon Department of Fish and Wildlife (ODFW) has developed a strategy to promote conservation of GRSG and intact, functioning, GRSG habitats in Oregon. The Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (Oregon State Plan, Hagen 2011) describes the ODFW's proposed management of GRSG. It also provides guidance to public land management agencies and land managers for GRSG conservation. GRSG conservation guidelines in the State Plan are designed to maintain (at a minimum) or enhance the quality (the optimum) of current habitats. They will also assist resource managers in achieving the population and habitat objectives of the State Plan.

The Oregon State Plan provides biological recommendations for long-term conservation of GRSG in Oregon based on the best available science; however implementing recommendations is the responsibility of the respective land manager. Thus, the intent of the Oregon State Plan is plan is to inform decision-maker regarding the biological consequences of various actions on GRSG, but not to dictate land management decisions. Similarly, GRSG conservation proposed in the plan is voluntary on private lands (Hagen 2011, p. viii).

The Oregon State Plan establishes "Core Areas" to help delineate landscape planning units by distinguishing areas of high biological value to GRSG. These areas are based on the locations of breeding areas, wintering areas, and connectivity corridors and are intended to help balance GRSG habitat requirements with development outside of Core Areas, which would be subject to stipulations and regulations (Hagen 2011, p. 80). ODFW developed Core Areas necessary to conserve 90 percent of Oregon's GRSG population with emphasis on highest density and important use areas which provide for breeding, wintering and connectivity corridors. BLM used the same boundaries of ODFW Core Areas to delineate PHMA.

While the plan is comprised of voluntary management guidelines, the guidelines may be utilized by state regulatory agencies including the Energy Facility Siting Council as conditions of approval on a case-by-case basis for certain energy projects. For example, the council has jurisdiction on wind energy projects greater than 105 MW (Dave Budeau, phone conversation with author, March 26, 2015).

Further, The Oregon Governor's natural resources department is currently in the process of developing regulations for GRSG conservation. The forthcoming Sage Grouse Conservation Action Plan will supplement the state plan and provide land use regulations and mitigations for Oregon core habitat areas (Dave Budeau, phone conversation with author, March 26, 2015).

Oregon Candidate Conservation Agreements (CCA) and Candidate Conservation Agreements with Assurances (CCAA). CCAs are voluntary agreements between the USFWS and one or more parties (including federal agencies) to address the conservation needs of on-listed species at risk of being listed under the ESA. CCAAs are similar, though these voluntary agreements are made between the USFWS and non-federal landowners. One CCA and several CCAAs are currently in place or will soon be implemented that will cover the entire GRSG range in the state of Oregon. Under these agreements and the associated Enhancement of Survival permit issued under the ESA, landowners would voluntarily undertake management activities on their properties to enhance, restore, or maintain habitat benefiting GRSG, in exchange for assurances that they would not be subject to increased land use restrictions should GRSG become listed under the ESA in the future. The agreements have a term of 30 years, and can be renewed upon expiration. As of April 2015, over 2.7 million acres of GRSG habitat in Oregon are either enrolled or pending enrollment under such agreements; the amount of GRSG habitat enrolled is expected to rise as the GRSG listing decision nears (Jeff Everett, Email to author, April 16, 2015).

GRSG Programmatic Candidate Conservation Agreement for Rangeland Management Practices on BLM Lands in Oregon. In cooperation with the BLM and USFWS, the Oregon Cattlemen's Association developed a Programmatic Candidate Conservation Agreement (Programmatic CCA) to reduce or eliminate negative impacts of rangeland management practices to GRSG and to maintain and support livestock grazing practices that are beneficial or neutral to GRSG on enrolled allotments administered by the BLM in Oregon. The Programmatic CCA covers approximately 10.2 million acres of GRSG habitat on BLM grazing allotments in southeast Oregon; however, not all these lands may eventually be enrolled in the programmatic CCA (USFWS 2013b). As of April 2015, BLM has received 65 written requests for enrollment covering 121 allotments on more than 1.9 million acres (Jeff Everett, Email to author, April 16, 2015).

Harney County Programmatic CCAA. After implementation of the Programmatic CCA described above, Oregon's Harney County Soil and Water Conservation District developed a programmatic CCAA for private lands in the county (USFWS 2013c). The covered area encompasses all GRSG habitat on non-federal lands in Harney County, Oregon and on some lands immediately adjacent to but outside of Harney County, including 346,965 acres of PPH and 825,395 acres of PGH. BLM-administered grazing allotments within Harney



County are still eligible for inclusion under the Programmatic CCA. Because many grazers in Oregon utilize both private lands and BLM-administered allotments, the CCAA was structured after the Programmatic CCA in part to facilitate implementation of the agreements and encourage enrollment by such grazers (Jeff Everett, phone conversation with author, April 16, 2015). As of April 2015, 54 landowners have entered lands into the CCAA totaling approximately 320,000 acres of GRSG habitat (Jeff Everett, Email to author, April 16, 2015).

Oregon Multi-County Soil and Water Conservation District CCAA. Following development of the Harney County Programmatic CCAA, USFWS and the Soil and Water Conservation Districts from Baker, Crook, Deschutes, Grant, Lake, Malheur, and southern Union counties developed a CCAA for over 2.3 million acres of private rangelands within these counties, which represents the range of GRSG in Oregon. Again, BLM-administered grazing allotments within the counties are still eligible for inclusion under the Programmatic CCA, and again, the CCAA was structured after the Harney County CCAA in part to facilitate implementation of the agreements and encourage enrollment by grazers who utilize both private and BLM-administered allotments. As of April 2015, 55 landowners have entered lands into the CCAA totaling approximately 466,050 acres of GRSG habitat (Jeff Everett, Email to author, April 16, 2015).

The Oregon Department of State Lands (DSL) CCAA. DSL is working with the USFWS to develop a CCAA for State Common School Fund Rangelands in Oregon. These lands represent the final “gaps” in land ownership throughout GRSG range in Oregon not already covered by the CCA/CCAAs described above. The CCAA covers over 633,000 acres of DSL lands, including approximately 380,700 acres of low-density habitat, and 153,100 acres of core area habitat (80 FR 9475). The required Environmental Assessment under NEPA is currently available for public comment and will be finalized in May 2015 (Jeff Everett, phone conversation with author, April 16, 2015).

### ***Nevada/California State Efforts***

Nevada State Plan. The state of Nevada submitted a state alternative for inclusion in the Nevada and Northeast California Sub-Regional Greater Sage-Grouse Draft Land Use Plan Amendment and Environmental Impact Statement (EIS). The Nevada Greater Sage-Grouse Conservation Plan (Sagebrush Ecosystem Technical Team 2014) includes regulatory mechanisms to avoid, minimize (with the use of design features) and/or mitigate impacts through the Conservation Credit System (described in additional detail below) to protect and restore GRSG habitat. The plan defines Sage Grouse Management Areas (SGMA), and aims to reach a conservation goal of a Net Conservation Gain of GRSG habitat due to new anthropogenic disturbances. The state plan identifies GRSG core, priority, and general habitat within the SGMA.

Under the plan, project proponents must seek to avoid GRSG habitat disturbance. If a project proponent wishes to demonstrate that avoidance cannot be reasonably accomplished, exemptions will be granted to this restriction as part of the SETT Consultation. The project proponent must demonstrate that specific criteria are met; criteria are summarized in Table 3-1 of the plan. Criteria are more stringent in Core Management

Areas, and become less so as habitat quality decreases. If a project cannot avoid adverse effects (direct or indirect) to GRSG habitat, the project proponent will be required to implement design features that minimize the project's adverse effects to GRSG habitat to the extent practicable. Mitigation will be required for all anthropogenic disturbances to GRSG habitat, including those that have minimized disturbances through the process above. Mitigation requirements will be determined by the Conservation Credit System, a market-based mechanism that quantifies conservation outcomes (credits) and impacts from new anthropogenic disturbances (debits), defines standards for market transactions, and tracks conservation action implementation progress in the state.

GRSG habitat is determined based on the Nevada Habitat Suitability Map (described below) for GRSG habitat prepared by the state and USGS. The habitat map incorporates GRSG telemetry data along with environmental data at multiple scales, such as land cover, vegetation communities, physiographic indices and anthropogenic attributes. The habitat suitability model will be used to inform management decisions on protecting the most critical habitat and to provide strategic decision tools to identify where conservation activities will have the greatest beneficial impact on the habitat.

The Nevada state plan only applies to the state; it does not apply to portions of the Nevada and Northeastern California Sub-region within California.

Nevada State Regulations/Programs. Nevada has several state regulations and programs pertaining to GRSG. Assembly Bill 461 formally created and gave regulatory authorization for the Sagebrush Ecosystem Program. Governor Sandoval signed the bill into law in July, 2013. Nevada also has a pesticide registration fee; portions of the revenue from the fee will provide funding to the state noxious weed program and GRSG habitat conservation (WGA 2014). The state also has a Nevada Cheatgrass Action Team (WGA 2014), a voluntary multi-disciplinary group of individuals to assist the SETT with planning and managing projects to address cheatgrass and other invasive or noxious weeds that impact GRSG habitat.

#### ***Natural Resource Conservation Service Sage Grouse Initiative***

The Natural Resource Conservation Service's (NRCS) Sage Grouse Initiative (SGI) is working with private landowners in 11 western states to improve habitat for GRSG (Manier et al. 2013, p. 117). With approximately 31 percent of all sagebrush habitats across the range in private ownership (Stiver 2011, p. 39), and over 25 percent in MZ IV and nearly 38 percent in MZ II/VII (Manier et al. 2013, p. 118), a unique opportunity exists for the NRCS to benefit GRSG and ensure the persistence of large and intact rangelands through long-term contracts and conservation easements (USFWS 2010, p.5).

Participation in the SGI program is voluntary, but willing participants enter into binding contracts or easements to ensure that conservation practices that enhance GRSG habitat are implemented. Participating landowners are bound by a contract (usually 3 to 5 years) to implement, in consultation with NRCS staff, conservation practices if they wish to receive the financial incentives offered by the SGI. These financial incentives generally take the form of payments to offset costs of implementing conservation practices and easements or rental payments for long-term conservation.



While potentially effective at conserving GRSG populations and habitat on private lands, incentive-based conservation programs that fund the SGI generally require reauthorization from Congress under subsequent farm bills. These funding streams are potentially variable as they are subject to the political process.

As of 2014, the most recent year for which data are available, SGI has secured conservation easements on 98,167 acres within MZ IV (NRCS 2015). On these and additional private lands, SGI has completed other GRSG conservation actions within MZ IV, including implementation of grazing systems, conifer removal, vegetation seeding, and fence marking. These conservation actions are targeted at the critical threats in each MZ, consistent with those outlined in the COT report. SGI clusters implementation to achieve landscape benefits.

### ***Other Regional Efforts***

As part of the Greater Sage-Grouse Rangewide Planning Effort, other BLM and Forest Service sub-regions, as explained in **Chapter 1**, are undergoing LUPA/EIS processes similar to this one for the Idaho and Southwestern Montana Sub-Region. The Final EIS associated with each of these efforts has identified a Proposed Plan that meets the purpose and need of conserving, enhancing, and/or restoring GRSG habitat by reducing, eliminating, or minimizing threats. The management actions from the various Proposed Plans will cumulatively decrease the threat of GRSG habitat loss and will limit fragmentation throughout the range. Key actions present in many of the Proposed Plans include changes in land use allocations, a mitigation framework, an adaptive management strategy, anthropogenic disturbance cap, and lek buffers.

MZ IV contains 4,198,900 acres of the Southern Idaho/Northern Nevada Sagebrush Focal Area (SFAs), and MZs II/VII contain 563,300 acres of the Bear River Watershed Area SFA. SFAs are a subset of PHMA and represent recognized "strongholds" for the species that have been noted and referenced by the conservation community identified as having the highest densities of the species and other criteria important for the persistence of the species. Those portions of SFAs on BLM-administered and National Forest System lands would be recommended for withdrawal from mineral entry; subject to an NSO stipulation with no exceptions, modifications, or waivers (MZ IV only); and would be prioritized for management and conservation actions, including but not limited to, review of livestock grazing permits/leases. Management of SFAs would enhance protection of GRSG in these areas, providing a net conservation gain to the species in light of other past, present, and reasonably foreseeable future actions considered in this CEA.

Tribes, counties, and local working groups are playing a critical role in promoting GRSG conservation at the local level. Individual conservation plans have been prepared by most local working groups to develop and implement strategies to improve or maintain GRSG habitat and reduce or mitigate threats on the local level. The proposed conservation actions and recommendations in these plans are voluntary actions for private landowners.

Local working group projects have included monitoring, research, and mapping habitat areas, as well as public outreach efforts, such as landowner education and collaboration with federal, state, and other local entities.

A programmatic EIS by the Western Area Power Administration (WAPA) and the USFWS for the entire upper Great Plains will focus future wind energy developments in specific corridors outside of GRSG core habitat (WAPA 2013). In accordance with Section 7 of the ESA, preparation of the programmatic EIS has involved consultation between cooperating entities and the USFWS and preparation of a programmatic Biological Assessment to ensure that the action will not jeopardize the continued existence of any federally-listed species, including the federal candidate GRSG. At the time of this LUPA specific conservation measures for protecting GRSG and its habitat under the programmatic EIS are not developed.

Some local working group conservation plans recommend restricting resource uses as well. For example, the Big Desert Sage-Grouse Conservation Plan (Big Desert Sage-grouse Local Working Group 2010) limiting recreational OHV use to existing designated roads and trails. Local working group GRSG conservation plans in MZ IV include the following:

- North Magic Valley Conservation Plan (2011)
- West Central Conservation Plan (2010)
- East Idaho Uplands Conservation Plan (2011)
- Big Desert Conservation Plan (2010)
- Shoshone Basin Conservation Plan (2008)
- Jarbidge Conservation Plan (2007)
- Curlew Valley Conservation Plan (2004)
- Owyhee County Conservation Plan (2013)
- Upper Snake Conservation Plan (2009)
- Challis Conservation Plan (2010)

### 5.1.5 Relevant Cumulative Actions

This cumulative effects analysis considers the incremental impact of the Idaho and Southwestern Montana Proposed LUPA and alternatives in combination with other past, present, and reasonably foreseeable future federal and non-federal actions on all lands in MZ IV (**Section 5.1.12**). Where these actions occur within GRSG habitat, they would cumulatively add to the impacts of BLM- and Forest Service-authorized activities set forth in the Idaho and Southwestern Montana Proposed LUPA. In addition to the conservation efforts described above, relevant reasonably foreseeable future cumulative actions occurring on federal, private, or mixed land ownership in MZ IV are described in the Proposed



RMPAs/LUPAs for Idaho and southwestern Montana, Utah, Montana, Oregon, and Nevada and northeastern California, which are hereby incorporated by reference.

The following list includes large-scale past, present, and future actions in MZ IV that, when added to the Proposed Plan and alternatives for the Idaho and Southwestern Montana sub-region, could cumulatively affect threats to GRSG (more detail is included in the table in **Section 5.1.12**):

- Gateway West 230/500 Transmission Line Project, Wyoming and Idaho
- Boardman to Hemingway Transmission Line Project, Oregon and Idaho
- Fuels and vegetation treatments throughout the MZ
- Grazing permit renewals and allotment management plan updates throughout the MZ
- China Mountain Wind Project, Nevada and Idaho
- Small mining projects throughout the MZ

Several Native American tribal members have expressed concern about military overflights causing mortality of GRSG chicks as they incubate within their eggs. Further investigation into these impacts is needed, as effects seem to be anecdotal.

#### **5.1.6 Threats to GRSG in Management Zone IV**

In its CO<sub>T</sub> report, the USFWS identifies fire, spread of weeds, conifer encroachment, infrastructure, grazing/free-roaming equids, conversion to agriculture, energy development, and recreation as the present and widespread threats facing GRSG populations in MZ IV (USFWS 2013a, pp. 22-24). These threats impact GRSG mainly by fragmenting and degrading their habitat. The loss of sagebrush steppe across the West approaches or exceeds 50 percent in some areas. It is a primary factor in long-term declines in GRSG abundance across its historical range (USFWS 2010).

Habitat fragmentation reduces connectivity of populations and increases the likelihood of extirpation from random events, such as drought or outbreak of West Nile virus. Furthermore, climate change is predicted to affect the distribution of species through changes in annual average precipitation, greater early season plant growth, and increased frequency and severity of wildfires (BLM 2013a). Sensitive species such as GRSG, which are already stressed by declining habitat, increased development, and other factors, could experience additional pressures as a result of climate change.

Each CO<sub>T</sub> report threat considered present and widespread in at least one population in MZ IV is discussed below. The quantitative impact analysis focuses on impacts in the MZ (sub-region percentages are provided for context).

### ***Wildfire***

Nature and Type of Effects. Sagebrush killed by wildfire often requires many years to recover, especially after large fires. Contiguous old-growth sagebrush sites are at high fire risk, as are large blocks of contiguous dead sagebrush and sagebrush sites with a substantial cheatgrass understory. Before recovering, these sites are of limited use to GRSG, except along the edges and in unburned islands.

Because of its widespread impact on habitat, fire has been identified as a primary factor associated with GRSG population declines. Depending on the species of sagebrush and the size of a burn, a return to a full pre-burn community cover can take from 25 to 120 years (Baker 2011). In addition, fires can reduce invertebrate food sources and may facilitate the spread of invasive weeds.

While most sagebrush subspecies are killed by fire and slow to reestablish, cheatgrass recovers within one to two years of a fire from seed in the soil. This annual recovery leads to a reoccurring fire cycle that prevents sagebrush reestablishment (USFWS 2010, p. 13932).

BLM management to prevent or control wildfires can also affect GRSG and habitat. Increased human activity and noise associated with fire suppression, fuels treatments, and prescribed fire in areas occupied by GRSG could affect nesting, breeding, and foraging behavior. Important habitats could be altered because of the use of heavy equipment, hand tools, and noise.

In addition, suppression may initially result in higher rates of conifer encroachment in some areas. In the initial stages of encroachment, fuel loadings remain consistent with the sagebrush understory. As conifer encroachment advances, fire return intervals are altered by decreasing understory abundance. The depleted understory causes the stands to become resistant to low intensity wildfires; over years, the accumulating conifer loads contribute to larger-scale wildfires and confound control efforts due to extreme fire behavior.

Conditions in the Sub-region and in MZ IV. Wildfire has been a primary threat to GRSG habitats and populations occurring across MZ IV, with 81 percent of priority habitat and general habitat having high risk for fire, including the Snake-Salmon-Beaverhead and Northern Great Basin population areas (Manier et al. 2013, p. 133). Since 2000, more than 4.9 million acres (14 percent of priority habitat and 17 percent of general habitat) of GRSG habitats have burned in this MZ, with an average of more than 239,000 acres of priority habitats burned annually; more than 1 million acres burned in some years (Manier et al. 2013, p. 133). The Murphy Fire in Idaho and Nevada affected over 650,000 acres of habitat in this MZ in 2007 (USFWS 2013a, p. 78). In 2012, the Miller Homestead and Long Draw fires in southeastern Oregon burned 160,800 and 558,200 acres, respectively, mostly on BLM-administered lands with significant losses of GRSG habitat (BLM 2013c). An additional factor in the analysis of cumulative effects of fire on GRSG is the trend of increasing fire size and frequency and severity, due to factors including exotic annual grasses, and climate change.



Impact Analysis. Management actions in the Idaho and southwestern Montana sub-region that emphasize wildfire suppression in GRSG habitat would benefit the species by limiting habitat loss in the event of wildfire. Under current management (Alternative A), prescribed burning may be used to achieve habitat objectives. Alternatives B through F and the Proposed Plan provide for similar protection and maintenance of sagebrush habitat in implementing prescribed burning. The action alternatives all provide sagebrush protection in fuels treatment programs and would provide superior protection for sagebrush in prescribed burning, fuels treatment and fire suppression. The inter-agency Greater Sage Grouse Wildfire, Invasive Annual Grasses & Conifer Expansion Assessment (Fire and Invasive Assessment Tool (FIAT)) under the Proposed Plan prioritizes landscapes for wildfire prevention and suppression, fuels management, and habitat restoration and rehabilitation within key GRSG habitats based on resistance and resilience concepts in Chambers et al. (2014). These actions are in accordance with the COT report objective to retain and restore healthy native sagebrush plant communities within the range of GRSG.

The use of chaff and flares by the military may increase wildfire risk, but this risk is generally mitigated by release altitudes about 2,000 feet above ground level and only above 5,000 feet above ground level during fire risk categories 4 and 5 (Mountain Home Air Force Base 2012).

Recognition of the importance of sagebrush habitat during interagency wildfire response would benefit GRSG in the event of an unplanned fire. The State of Idaho, State of Nevada and State of Utah GRSG conservation plans discussed in **Section 5.1.4** would benefit GRSG habitat in the MZ. The Montana Executive Order emphasizes fire suppression in Core Population Areas, while recognizing other suppression priorities may take precedent. These programs would benefit GRSG during wildfire planning and response, particularly on lands not administered by the BLM or Forest Service.

On the local level, the Owyhee County Sage-Grouse Conservation Plan (Owyhee County 2013) recommends reseeding burned areas with sagebrush and implementing sagebrush restoration projects in historical GRSG habitat where historical fires have removed sagebrush cover. However, the conservation plan does not identify a funding source for this action.

The Interagency Standards for Fire and Fire Aviation Operations “Red Book” includes a BMP for GRSG habitat conservation for wildlife and fuels management (BLM 2013b). This document is a supplemental policy or guidance for the BLM, the Forest Service, and the USFWS. This BMP would benefit the GRSG during interagency wildland fire operations by using spatial habitat data and predictive services to prioritize and preposition firefighting resources in critical habitat areas. In January 2015, Secretarial Order 3336 “Rangeland Fire Prevention, Management and Restoration” was signed by the Secretary of the Interior. The order sets forth strategies for preventing and suppressing rangeland wildfire and for restoring sagebrush landscapes impacted by wildfire across the West. The order will improve coordination with local, state, tribal, and regional efforts to address rangeland wildfire at a landscape level. Coordination with rural fire districts to manage wildfires in GRSG habitat

will further reduce this threat across land ownership types and improve the quality and quantity of habitat.

Reasonably foreseeable wildland fire management efforts are projected to increase (**Section 5.1.12**), especially through increased coordination of federal, state, and local fire prevention actions and the implementation of other BLM and Forest Service LUPAs in MZ IV. When the impacts of the Idaho and southwestern Montana LUPA are added to these actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

### ***Spread of Invasive Plants***

Nature and Type of Effects. As discussed in **Section 3.3**, invasive weeds alter plant community structure and composition, productivity, nutrient cycling, and hydrology. Invasive weeds also may cause declines in native plant populations, including sagebrush habitat, through such factors as competitive exclusion and niche displacement. Invasive plants reduce and may eliminate vegetation that GRSG use for food and cover. Invasive weeds fragment existing GRSG habitat and reduce habitat quality by competitively excluding vegetation essential to GRSG. Invasive weeds can also create long-term changes in ecosystem processes, such as fire cycles and other disturbance regimes that persist even after an invasive plant is removed (Connelly et al. 2004).

Roads and recreation can promote the spread of invasive weeds through vehicular traffic. Weed infestations can further exacerbate the fragmentation effects of roadways. Irrigation water has also supported the conversion of native plant communities to hayfields, pasture, and cropland, thus fragmenting sagebrush habitats. Excessive grazing in these habitats can lead to the demise of the most common perennial grasses in this system and an abundance of invasive species, such as cheatgrass or Japanese brome (Reisner et al. 2013).

Conditions in the Sub-region and in MZ IV. By way of seeds carried by wind, humans, machinery, and animals, invasive and noxious weeds have invaded and will continue to invade many locations in MZ IV, including the sub-region. Some species, including annual bromes and Canada thistle, have become so ubiquitous throughout the sub-region that it is considered economically unfeasible to attempt to control certain areas, such as those that have crossed a threshold that precludes their returning to traditional plant community composition through normal plant succession. Such species are considered part of the vegetative landscape despite their adverse impacts on other vegetation. Canada thistle, although common throughout the sub-region, is not treated on a plant-by-plant basis; rather, it is treated when plant populations reach densities high enough to make it the majority species. Examples are when it is growing in the bottom of dry reservoirs, on recreation sites, and along established roads and undeveloped vehicle trails.

The BLM and Forest Service currently manage weed infestations through integrated weed management: biological, chemical, mechanical, manual, and educational methods. The BLM is guided by the 1991 and 2007 RODs for Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991) and by the 2007 Programmatic Environmental Report (BLM 2007). Weeds are managed in cooperation with county governments and represents a landscape-level approach across management jurisdictions.



Impact Analysis. Increased activity, such as surface disturbance, motorized transportation, and animal and human activity, would increase the chance for the establishment and spread of invasive plants.

Management under Alternative A would allow for the most acres of surface disturbance; therefore, the potential for invasive weed spread and establishment would be greatest under this alternative, and effects to GRSG (e.g. reduction in quality of habitat) would be more pronounced. All of the action alternatives would reduce surface disturbance and would include weed-prevention measures to some degree. Of all alternatives, the Proposed Plan would likely have the lowest potential for invasive weed spread and establishment, given the three percent anthropogenic disturbance threshold which would limit surface disturbance; extensive mitigation and monitoring plans; wildfire and invasive species assessments and subsequent prioritization; application of RDFs and BMPs; and requirement for no net loss of key GRSG habitat. The COT report objective for invasive species is to maintain and restore healthy native sagebrush plant communities.

Invasive species on BLM-administered and National Forest System lands would be controlled under all alternatives. This would provide a net conservation gain to GRSG by restoring degraded sagebrush habitat.

Relevant cumulative actions that result in surface-disturbing activities, such as ROWs and energy and mining projects, would increase the potential for the spread of invasive weeds on both federal and non-federal lands. Projects subject to the general stipulations outlined in the Montana Executive Order are required to control noxious and invasive weed species and to use native seed mixes during reclamation processes. Similarly, Utah's state plan directs land managers to aggressively respond to new infestations of invasive plants, and prioritize containment of infestations within sagebrush habitats. The Nevada state plan includes stipulations for including control of invasive plant species and use of native seed mixes during reclamation. The Nevada and Utah state plans also address invasive species in fire management. The Idaho state plan includes conservation measures to prevent invasive species spread. These stipulations would benefit GRSG habitat by limiting the spread or establishment of invasive species, particularly on lands that lack BLM and Forest Service protective regulatory mechanisms. Further, the Greater Sage-Grouse Habitat Conservation Strategy for NRCS in Idaho has identified GRSG conservation measures related to invasive weeds, such as reducing the risk and rate of fire spread, restoration and rehabilitation, and weed control. A number of projects are ongoing or in the planning phase to treat nonnative, invasive species (**Section 5.1.12**). These impacts would be the same under all alternatives.

Reasonably foreseeable weed management efforts are projected to increase (**Section 5.1.12**), including other state and county noxious weed regulations and the implementation of other BLM and Forest Service LUPAs in MZ IV. When the impacts of the Idaho and southwestern Montana LUPA are added to these actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV. The Proposed Plan may result in the greatest net conservation gain due to its three percent anthropogenic disturbance cap that should reduce potential for the spread of weeds during the 20-year analysis period.

### ***Conifer Encroachment***

Nature and Type of Effects. Conifer woodlands, especially juniper (*Juniperus* spp.) and in some regions pinyon pine (*Pinus edulis*), may expand into sagebrush habitat and reduce availability of habitat for GRSG. Conifer expansion may be encouraged by human activities, including fire suppression and grazing (Miller et al. 2011). If woodland development is sufficient to restrict shrub and herbaceous understory growth, habitat quality for GRSG will be reduced (Connelly et al. 2004). Mature trees offer perch sites for raptors; thus, woodland expansion may also increase the threat of predation, as with powerlines (Manier et al. 2013, p. 91). Locations within approximately 1,000 yards of current pinyon-juniper woodlands are at highest risk of expansion (Bradley 2010). Studies have shown that GRSG incur population-level impacts at very low levels of conifer encroachment (Baruch-Mordo et al. 2013). In MZ IV, conifer encroachment reduces habitat quality in important seasonal ranges when woodland development is sufficient to restrict shrub and herbaceous production (Connelly et al. 2004 in Manier et al. 2013, p. 91).

Conditions in the Sub-region and in MZ IV. Approximately 55 percent of conifer encroachment risk in priority habitat (and 34 percent in general habitat) occur on BLM-administered lands within MZ IV (Manier et al. 2013, p. 93). In comparison, 25 percent of conifer encroachment risk in priority habitat (and 32 percent in general habitat) occur on private lands and 15 percent in priority habitat occurs on National Forest System lands (25 percent in general habitat). Therefore, BLM actions are likely to have a greater potential to ameliorate the effects of conifer encroachment on GRSG, particularly in priority habitat, than any other single land management entity.

Impact Analysis. The COI objective is to remove pinyon-juniper from areas of sagebrush that are most likely to support GRSG (post-removal) at a rate that is at least equal to the rate of pinyon-juniper incursion (USFWS 2013a, p. 47). Management under Alternatives D, E, and the Proposed Plan would target conifers in GRSG habitat for removal. Treatment acres under the Proposed Plan are presented in **Table 2-5**. The Proposed Plan would also incorporate GRSG habitat objectives to guide treatments. Alternatives A, B, C, and F are largely silent on conifer removal and thus would not serve to reduce this threat on BLM-administered and National Forest System lands in the sub-region, though the cumulative impact of other past, present, and reasonably foreseeable future actions in the sub-region and larger MZ would help reduce the threat across the MZ.

Relevant cumulative actions on federal, private, and state lands within the MZ include several large conifer removal projects (**Section 5.1.12**). Further, the NRCS carries out conservation measures to remove encroaching conifers near leks and lek seasonal habitats while minimizing disturbance to GRSG (NRCS 2012, p. 13). SGI has helped reduce the threat of early succession conifer encroachment through mechanical removal on 206,099 acres of private lands within MZ IV. The majority of these efforts were located inside PACs (NRCS 2015), helping to preserve historic fire return intervals and important GRSG habitat. The Utah and Idaho state plans direct land management agencies to remove encroaching conifers and conduct restoration of sagebrush habitats to expand GRSG habitat where possible.



Reasonably foreseeable conifer encroachment management efforts are projected to increase (**Section 5.1.12**), including efforts on private land and implementation of other BLM and Forest Service LUPAs in MZ IV. When the impacts of the Idaho and southwestern Montana LUPA are added to these actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV. The Proposed Plan would have the greatest reduction in the threat from conifer encroachment and provide a net conservation gain to GRSG. Alternatives D and E would also reduce the threat, though to a lesser degree than the Proposed Plan because they do not specify acres for treatment or habitat objectives.

### ***Infrastructure***

#### *Rights-of-Way*

Nature and Type of Effects. As discussed in **Section 4.2**, power lines can directly affect GRSG by posing a collision and electrocution hazard. They also can indirectly decrease lek attendance and recruitment by providing perches and nesting habitat for potential avian predators, such as golden eagles and ravens (Connelly et al. 2004). In addition, power lines and pipelines often extend for many miles. The ground disturbance associated with construction, as well as vehicle and human presence on maintenance roads, may introduce or spread invasive weeds over large areas, degrading habitat. Impacts from roads may include direct habitat loss from road construction and direct mortality from collisions with vehicles. Roads may also present barriers to migration corridors or seasonal habitats, facilitate predator movements, spread invasive plants, and increase human disturbance from noise and traffic (Forman and Alexander 1998).

Conditions in the Sub-region and in MZ IV. Infrastructure, such as ROWs and associated facilities and urbanization, is widespread throughout MZ IV. In some locations, infrastructure development has affected GRSG habitat. Development of roads, fences, and utility corridors has also contributed to habitat loss and fragmentation in portions of MZ IV. The best available estimates suggest about 25 percent of the MZ IV is within approximately 4 miles of urban development (Knick et al. 2011, p. 214). Impacts of infrastructure development in MZ IV are primarily related to highways, roads, power lines, and communication towers, with 90 percent of MZ I within 4 miles of a road, 30 percent within 4 miles of a power line, and 5 percent within 4 miles of a communication tower (Knick et al. 2011, pp. 215-216).

Although not representative of all infrastructure ROWs, transmission lines greater than 115 kilovolts indirectly influence 37 percent of priority habitat and 38 percent of general habitat across MZ IV. Indirect effects are assumed to occur to a radius of 4 miles (Manier et al. 2013, p. 41). Approximately 62 percent of transmission lines in priority habitat and 43 percent in general habitat are on BLM-administered lands across GRSG habitats in MZ IV (Manier et al. 2013, p. 41). In contrast, National Forest System lands contain 5 percent of transmission lines in priority habitat and 7 percent in general habitat. Therefore, BLM actions are likely to have a greater potential to affect transmission line ROWs in GRSG habitat than any other land management entity. Designating ROW exclusion and avoidance areas in PHMA and GHMA on BLM-administered and National Forest System lands could reduce the threat on these lands. However, in areas with scattered federal landownership, infrastructure may be routed around federal lands, often increasing its length and impact.

ROW avoidance and exclusion areas on BLM-administered and National Forest System lands could increase this tendency.

Impact Analysis. **Table 5-2**, Acres of Rights-of-Way Designations in GRSG Habitat in MZ IV, lists the areas of ROW avoidance and exclusion in GRSG habitat by alternative. **Table 5-3**, Acres of Existing and Proposed Utility Corridors in GRSG Habitat in MZ IV, lists acres of PHMA and GHMA in existing or future utility corridors.

Alternative A (current management) has the most acres open to ROWs in PHMA. Across MZ IV, Alternative B, C, D, and F reduce the number of open acres in PHMA, with even larger reductions under Alternative E and the Proposed Plan. For GHMA, most of the action alternatives have comparable open acreage except for Alternative D, which has over a two-fold reduction. However, impacts would likely also be reduced under the Proposed Plan, which would use anthropogenic disturbance criteria to screen projects in GHMA. Alternatives B, C, and F would increase ROW exclusion areas in PHMA in MZ IV, whereas Alternatives A, E, and the Proposed Plan would have fewer acres managed as ROW exclusion in PHMA. Alternative D would have the fewest acres managed as ROW exclusion in both PHMA and GHMA. The other action alternatives would have a similar acreage managed as ROW exclusion compared to Alternative A.

In PHMA, Alternatives B, C, and F would not contribute acres of ROW avoidance within MZ IV, as PHMA would be managed as ROW exclusion under these alternatives. In contrast, Alternatives D, E, and the Proposed Plan manage PHMA as ROW avoidance, thereby increasing the acreage compared to Alternative A. The Proposed Plan offers additional protections due to the anthropogenic disturbance criteria, buffers, 3 percent disturbance cap, and mitigation requirements (**Appendix J**). Acres of utility corridors would be largely similar across all alternatives in both PHMA and GHMA.

Because of the additional protections under the Proposed Plan, this alternative provides the greatest net conservation gain to GRSG in the Idaho and southwestern Montana sub-region and is most likely to meet the COT report objective, which is to avoid development of infrastructure in GRSG priority areas for conservation.

The numbers of ROW authorizations are anticipated to grow in the sub-region. Increasing populations, continued energy development, and new communication sites drive the need for new ROWs on both federal and non-federal lands. For instance, the Boardman to Hemingway and Gateway West projects would influence GRSG habitat in MZ IV. While these projects would be exempted from the conservation measures in this plan, conservation measures for GRSG will be incorporated via the site-specific NEPA process for these projects. Actual impacts and contribution to cumulative effects from these projects are unknown at this time. Impacts on GRSG habitat on state or private land could be greater due to less restrictive management on those lands.



**Table 5-2**  
**Acres of Rights-of-Way Designations in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Open to Rights-of-Way				
Alternative A	6,511,000	99%	2,066,000	95%
Alternative B	113,000	40%	1,981,000	95%
Alternative C	153,000	56%	104,000	0%
Alternative D	116,000	41%	147,000	29%
Alternative E	68,000	0%	2,509,000	96%
Alternative F	113,000	40%	2,425,000	96%
Proposed Plan	97,000	30%	1,731,000	94%
Right-of-Way Exclusion				
Alternative A	922,000	74%	373,000	92%
Alternative B	8,411,000	97%	322,000	91%
Alternative C	11,264,000	98%	29,000	0%
Alternative D	238,000	0%	30,000	3%
Alternative E	907,000	74%	339,000	91%
Alternative F	8,411,000	97%	361,000	92%
Proposed Plan	787,000	70%	493,000	94%
Right-of-Way Avoidance				
Alternative A	7,600,000	14%	3,626,000	22%
Alternative B	6,510,000	0%	3,537,000	20%
Alternative C	6,510,000	0%	2,813,000	0%
Alternative D	14,682,000	56%	5,893,000	52%
Alternative E	13,478,000	52%	3,615,000	22%
Alternative F	6,510,000	0%	3,554,000	21%
Proposed Plan	11,092,000	41%	6,642,000	58%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within rights-of-way designations in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

**Table 5-3**  
**Acres of Existing and Proposed Utility Corridors in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Proposed Utility Corridor				
Alternative A	134,000	31%	104,000	40%
Alternative B	134,000	30%	103,000	39%
Alternative C	174,000	49%	63,000	0%
Alternative D	134,000	31%	104,000	40%
Alternative E	134,000	31%	103,000	40%
Alternative F	134,000	34%	109,000	42%
Proposed Plan	118,000	25%	123,000	49%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within existing and proposed utility corridors in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

New ROW authorizations that require state agency review or approval would be subject to the permitting process and stipulations for development in GRSG Core Areas (Montana and Nevada)/GRSG Management Areas (Utah) under the Montana Executive Order and the Nevada and Utah state conservation plans for GRSG. These stipulations would benefit the GRSG in these areas by encouraging ROW development outside of habitat, restricting surface occupancy within 0.6 mile of occupied leks, prohibiting power lines greater than 115 kV outside of designated corridors, and locating new roads used to transport products or waste over 1.9 miles from occupied leks. The Idaho state plan also includes conservation measures to reduce the impacts from ROW development.

The effect of the alternatives and other conservation actions in the MZ (most notably the Montana executive order) could be synergistic, meaning that the effects of the actions together is greater than the sum of their individual effects. By implementing restrictions on infrastructure in PHMA and on state and private lands together, the cumulative beneficial effect on GRSG would be greater than the sum of their individual effects because protections would be applied more consistently across the landscape. This is especially important in areas of mixed land ownership patterns where complementary protections can benefit leks, early brood rearing habitat, or other important areas that do not follow geopolitical boundaries.

Reasonably foreseeable ROW development in MZ IV is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by

restricting the type and location of developments. When restrictions within the Idaho and southwestern Montana LUPA are added to these conservation actions, the impacts of future ROW developments would be further reduced. The Proposed Plan would provide the greatest net conservation gain to GRSG habitats and populations in MZ IV by providing the flexibility to site ROWs with the least impact on GRSG habitat.

#### *Renewable Energy*

Nature and Type of Effects. Impacts on GRSG from renewable energy development, such as that for wind and solar power, are similar to those from nonrenewable energy development. Additional concerns associated with wind energy developments are rotor blade noise, structure avoidance, and mortality caused by collisions with turbines (Connelly et al. 2004).

Conditions in the Sub-region and in MZ IV. Wind energy development is an increasing threat in some populations. Over the last six years, the BLM in Idaho has authorized and then relinquished a ROW for wind development and has two pending applications. Wind testing sites have been authorized on BLM lands in the sub-region, though no wind developments have been authorized and constructed.

Solar energy potential is low in MZ IV, and the BLM has not received any applications for utility-scale solar production in the sub-region, nor are there solar resources comparable to the areas where utility-scale solar production projects are being proposed or built.

Although not representative of all renewable energy development, wind turbines indirectly influence less than 1 percent of priority habitat and general habitat combined across MZ IV. Private lands account for 82 percent of wind turbines affecting GRSG in priority habitat (and 62 percent in general habitat) within MZ IV. Therefore, conservation actions on private land are likely to have a greater potential to ameliorate the effects of wind energy development than any other single land management entity.

Impact Analysis. **Table 5-4**, Acres of Wind Energy Management Designations in GRSG Habitat in MZ IV, lists areas of wind energy ROW by alternative.

In the Idaho and southwestern Montana sub-region, the alternatives do not contribute to the open acres in PHMA in MZ IV, whereas the alternatives contribute most of the open and ROW exclusion acres in GHMA. Alternatives D and E manage the greatest acreage of PHMA as ROW avoidance, while Alternatives B, C, D, F, and the Proposed Plan would have the most acres managed as ROW exclusion for wind energy. The Proposed Plan would offer additional protections for PHMA, including anthropogenic disturbance criteria, a 3 percent disturbance cap, buffers, and mitigation requirements (**Appendix J**). Across MZ IV, most other sub-regions' proposed plans maintain exclusion areas in PHMA for wind energy, with the exception of Oregon which allows for avoidance in Lake, Harney, and Malheur counties. The Proposed Plan in Idaho would allow wind energy development in GHMA, subject to a screening process, whereas Montana would manage GHMA as avoidance for wind.

**Table 5-4  
Acres of Wind Energy Management Designations in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Open to Wind Rights-of-Way				
Alternative A	6,104,000	100%	1,876,000	100%
Alternative B	0	0%	1,8023,000	100%
Alternative C	85,000	100%	0	0%
Alternative D	47,000	100%	43,000	100%
Alternative E	44,000	100%	2,243,000	100%
Alternative F	0	0%	2,236,000	100%
Proposed Plan	0	0%	1,500,000	100%
Wind Right-of-Way Exclusion				
Alternative A	6,846,000	21%	557,000	95%
Alternative B	13,644,000	60%	493,000	94%
Alternative C	16,452,000	67%	30,000	0%
Alternative D	12,405,000	56%	412,000	93%
Alternative E	6,726,000	19%	621,000	95%
Alternative F	13,644,000	60%	552,000	95%
Proposed Plan	10,587,000	49%	1,261,000	98%
Wind Right-of-Way Avoidance				
Alternative A	2,084,000	33%	3,572,000	20%
Alternative B	1,390,000	0%	3,485,000	18%
Alternative C	1,390,000	0%	2,857,000	0%
Alternative D	2,581,000	46%	5,550,000	49%
Alternative E	7,982,000	82%	3,540,000	19%
Alternative F	1,390,000	0%	3,492,000	18%
Proposed Plan	1,390,000	0%	6,046,000	53%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within wind energy management designations in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

Projects that require state agency review or approval would be subject to the Montana Executive Order permitting process. This would encourage wind energy development outside of Core Areas. Similarly, in Nevada, wind energy developments would be located outside of core, priority and general habitats, or would minimize and/or mitigate for impacts if avoidance is not feasible. The Utah Executive Order directs state agencies to minimize disturbance within GRSG Management Areas and maintain consistency with conservation measures in the Utah state plan. In Oregon and Idaho, wind energy projects could voluntarily site development outside of GRSG habitat, but currently no regulatory mechanisms are in place to reduce impacts to GRSG habitat from projects requiring state agency review or approval.

Reasonably foreseeable renewable energy development in MZ IV is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state GRSG conservation efforts as well as wind energy restrictions in other BLM and Forest Service proposed plans in MZ IV would reduce the threat by implementing disturbance caps and restricting the location of developments. When restrictions in the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

#### ***Grazing/Free-Roaming Equids***

Nature and Type of Effects. In general, livestock can influence habitat by modifying plant biomass, plant height and cover, and plant species composition. As a result, livestock grazing could cause changes in habitat that alter species abundances and composition in GRSG insect prey. Changes in plant composition could occur in varying degrees and could change vegetative structure, affecting cover for nesting birds. Grazing could also alter fire regimes (Davies et al. 2010).

If not managed properly, cattle and sheep grazing can compact soil, enrich soil with nutrients, trample vegetation and nests, directly disturb GRSG and negatively affect GRSG recruitment. Cattle and sheep also can reduce invertebrate prey for GRSG or increase their exposure to predators (Beck and Mitchell 2000, pp. 998-1,000; Knick 2011; Coates 2007, pp. 28-33). Grazing in riparian areas can destabilize streams and riverbanks, cause the loss of riparian shade, and increase sediment and nutrient loads in the aquatic ecosystem (George et al. 2011). Stock watering tanks can contribute to stream and aquifer dewatering and may concentrate livestock movement and congregation in sensitive areas (Vance and Stagliano 2007).

However, grazing can reduce the spread of invasive grasses, if applied annually before the grasses have dried. It also can be used to reduce fuel load (Connelly et al. 2004, p. 7, 28-30). Light to moderate grazing does not appear to affect perennial grasses, which are important to nest cover (Strand and Launchbaugh 2013). However, excessive grazing can eliminate perennial grasses and lead to expansion of invasive species such as cheatgrass or medusahead (Reisner et al. 2013).

Periodic overgrazing can damage range resources over the long term. It often exacerbates drought effects when stocking levels are not quickly reduced to match the limited forage

production. The degree to which grazing affects habitat depends on several factors, such as the number of animals grazing in an area, the time of grazing, and the grazing system used.

A well-developed understory of grass, forbs, and deciduous shrubs is critical for GRSG and other wildlife. Impacts on habitat vary with livestock densities and distribution; the more evenly livestock is distributed, the lower their impact on any given area (Gillen et al. 1984). However, cattle show a strong preference for certain areas, leading to high use in some areas and little to no use in others. Livestock grazing is generally limited by slopes of greater than 30 percent, dense forests and vegetation, poor or little upland forage, and lack of water.

Since the passage of the 1934 Taylor Grazing Act, range conditions on BLM-administered lands have improved due to improved grazing management practices and decreased livestock numbers and annual duration of grazing.

In addition, the BLM has applied Standards for Rangeland Health since 1997. On National Forest Systems lands, livestock grazing is administered in accordance with a number of laws and regulations, including the Multiple Use and Sustained Yield Act of 1960, Granger-Thye Act of 1950, and Organic Administration Act of 1897. The purpose of these regulations is to enhance sustainable livestock grazing and wildlife habitat, while protecting watersheds and riparian ecosystems.

Although livestock grazing is the most widespread land use across the sagebrush biome, it exerts a more limited influence on soils and vegetation than land uses that remove or fragment habitat (e.g., mineral extraction or infrastructure development). GRSG are able to co-exist with grazing animals when properly managed. Thus, reducing AUMs or acres open to grazing would not necessarily restore high quality GRSG habitat.

Reducing grass height caused by livestock grazing in GRSG nesting and brood-rearing areas has been shown to negatively impact nesting success. Livestock grazing could reduce the suitability of breeding and brood-rearing habitat, which would impact GRSG populations (USFWS 2010).

For BLM-administered and National Forest System lands, Standards for Rangeland Health require the agencies to maintain or enhance habitats that support or could support endangered, threatened, or sensitive species. The BLM Washington Office IM 2009-018 requires that land health considerations, such as vegetation cover for GRSG, are considerations for prioritizing the processing of grazing authorizations.

Range improvements could result in livestock overusing important GRSG areas. For example, developing springs would generally change vegetative composition from a high diversity of grasses and forbs, important to broods, to one dominated by grasses; conversely, in areas where livestock use was not well managed, invasive forbs would rise in prevalence.

Concentrated livestock use would remove standing vegetation and subsequently reduce associated insects and forbs, both of which are important to GRSG broods. Allowing spring



developments along ephemeral streams and wetlands and allowing livestock watering tanks would decrease GRSG habitat. Springs, seeps, and wetland areas are vitally important to GRSG broods; therefore, allowing spring developments under this alternative could benefit some resources but not GRSG.

Wild horse and burro grazing has similar impacts as livestock grazing in their effect on soils, vegetation health, species composition, water, and nutrient availability by consuming vegetation, redistributing nutrients and seeds, trampling soils and vegetation, and disrupting microbial systems (Connelly et al. 2004).

Conditions in the Sub-region and in MZ IV. Livestock grazing is present and widespread on many land types, such as federal and private, across MZ IV. Rangeland health assessments have found that over 19 percent of BLM-administered grazing allotments in GRSG habitat in MZ IV are not meeting wildlife standards with grazing as a causal factor (Manier et al. 2013, p. 97). Additionally, nearly 2 million acres of GRSG habitat within MZ IV is federally managed wild horse and burro range (Manier et al. 2013, p. 102).

Perhaps the most pervasive change associated with grazing management in GRSG habitats throughout MZ IV is the construction of fencing and water developments (Knick et al. 2011, p. 224). Barbed wire fences contribute to direct mortality through fence collisions (Stevens et al. 2011); water developments may contribute to the increased occurrence of West Nile virus (Walker and Naugle 2011).

Additional habitat modifications associated with grazing management are mechanical and chemical treatments to increase grass production, often by removing sagebrush (Knick et al. 2011). Standards for Rangeland Health protect habitat from elements detrimental to GRSG, but not all rangelands in MZ IV are in compliance with these standards.

Wild horses also occur within MZ IV and the sub-region; within MZ IV, 5.7 percent of priority habitat is negatively influenced by free-roaming equids (Manier et al. 2013, p. 102). Six designated herd management areas (HMAs) and nine herd areas occur on BLM-administered lands in the sub-region; no active wild horse and burro territories occur on National Forest System lands in the sub-region (**Section 3.6**). The BLM establishes an appropriate management level (AML) for each HMA, which represents the population objective.

Impact Analysis. On all lands in the sub-region, the BLM manages livestock grazing on 12,129,800 acres, encompassing 2,654 grazing allotments, while the Forest Service manages 9,646,900 acres encompassing 319 grazing allotments. **Table 5-5, Acres Available and Unavailable to Livestock Grazing in GRSG Habitat in MZ IV**, lists the acres of PHMA and GHMA available and unavailable for grazing, by alternative.

Acres available to livestock grazing in PHMA and GHMA are similar across most alternatives. Acres unavailable to livestock grazing would be greatest under Alternative C, which closes all GRSG habitat to grazing, followed by Alternative F, which would reduce

**Table 5-5**  
**Acres Available and Unavailable to Livestock Grazing in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Available to Livestock Grazing				
Alternative A	14,819,000	55%	5,845,000	51%
Alternative B	14,819,000	55%	5,651,000	50%
Alternative C	6,696,000	0%	2,853,000	0%
Alternative D	14,819,000	55%	5,845,000	51%
Alternative E	14,224,000	53%	6,288,000	55%
Alternative F	14,819,000	55%	6,151,000	54%
Proposed Plan	11,687,000	43%	8,679,000	67%
Unavailable to Livestock Grazing				
Alternative A	123,000	25%	66,000	52%
Alternative B	123,000	25%	62,000	50%
Alternative C	11,166,000	99%	32,000	0%
Alternative D	123,000	25%	66,000	52%
Alternative E	135,000	32%	51,000	37%
Alternative F	123,000	25%	62,000	50%
Proposed Plan	262,000	65%	124,000	75%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA available and unavailable to livestock grazing in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

grazing by 25 percent in PHMA. Such reductions and closures would benefit GRSG by maintaining nesting cover for protection and forage; however, the increased need for fencing to exclude grazing animals could also harm nesting GRSG by increasing the likelihood of predation and collision.

However, as discussed, moderate grazing is compatible with GRSG habitat; thus, closing acres to grazing may not itself benefit or harm GRSG. Possibly equally or more beneficial is restricting range improvements in GRSG habitat, limiting fencing, and effectively implementing range health standards on grazing allotments in GRSG habitat. Alternatives B through F and the Proposed Plan include grazing restrictions (to varying degrees) which would help protect GRSG from potential impacts such as habitat changes due to herbivory and collisions with fencing. In terms of impacts on BLM-administered and National Forest System lands, Alternative A would have no GRSG-specific protective grazing restrictions,



and would therefore have the greatest impacts on the species. Alternative C would have no areas available for livestock within with designated habitat, and would therefore have the fewest impacts on the species. However, as a result of restricting grazing in GRSG habitat under Alternative C, increased fencing on private lands may occur. This could result in higher cumulative effects though mortality from fencing collisions. Reduced grazing under Alternative F would have similar, but fewer impacts, compared to Alternative C.

The COT report objectives for livestock grazing are to manage grazing in a manner consistent with local ecological conditions. This management would maintain or restore healthy sagebrush shrub and native perennial grass and forb communities and conserve essential habitat components for GRSG. Restoration to meet these standards and adequate monitoring would be required. The COT report also states that land managers should avoid or reduce the impact of range management structures on GRSG habitat.

If BLM-administered and National Forest System lands were made unavailable for livestock grazing, as under Alternative C, this could increase grazing pressure on adjacent private lands. Loss of federal grazing permits would pose a threat of indirect adverse effects, including potential conversion of private grazing lands to agriculture, if the loss of federal grazing privileges made ranching less economically viable.

Since 2010, SGI has enhanced rangeland health through rotational grazing systems, re-vegetating former rangeland with sagebrush and perennial grasses and control of invasive weeds. On privately-owned lands, SGI has developed a prescribed grazing approach that balances forage availability with livestock demand. This system allows for adjustments to timing, frequency, and duration of grazing, ensuring rangelands are managed sustainably to provide continued ecological function of sagebrush-steppe. A primary focus of the prescribed grazing approach is maintenance of key plant species, such as deep-rooted perennial grasses that have been shown to be essential for ecological resistance to invasive annual grasses (Reisner et al. 2013, pp. 1047-1048). These actions help to alleviate the adverse impacts associated with improper grazing practices outlined above under Nature and Type of Effects. Within MZ IV, SGI has implemented 314,930 acres of prescribed grazing systems. This program is likely the largest and most impactful program on private lands within MZ IV. Because of its focus on priority areas for conservation, which often overlap PHMA, the SGI's past, present, and reasonably foreseeable work has had and likely will continue to have a cumulative beneficial impact on GRSG when considered alongside protective BLM management actions in PHMA.

Reasonably foreseeable livestock grazing management efforts in MZ IV are expected to increase over the analysis period (**Section 5.1.12**), through increased NRCS conservation actions under the Sage-Grouse Initiative (e.g., fence marking and conservation easements), state efforts to maintain ranchland, and the implementation of other BLM and Forest Service LUPAs in MZ IV. When grazing management within the Idaho and southwestern Montana LUPA is added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

Under all alternatives the BLM has the ability to adjust appropriate management levels of wild horses if resource damage occurs; however, only Alternatives B through F and the Proposed Plan provide management guidelines specific to GRSG habitat (e.g. prioritizing gathers in GRSG habitat), which would benefit the species more than Alternative A.

Reasonably foreseeable wild horse management efforts are projected to increase over the analysis period (**Section 5.1.12**) with implementation of other BLM and Forest Service LUPAs in MZ IV. Other past, present, and reasonably foreseeable future actions are unlikely to affect the threat from wild horses and burros, as these animals are federally-managed. When wild horse management within the Idaho and southwestern Montana LUPA is added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV. Impacts may be reduced to the greatest extent under the Proposed Plan, where AMLs would be evaluated with consideration of GRSG habitat objectives for BLM-administered lands.

### ***Conversion to Agriculture***

Nature and Type of Effects. Converting sagebrush habitat to agricultural use, commonly referred to as sodbusting, causes direct loss of habitat available for GRSG. Habitat loss also decreases the connectivity between seasonal habitats, increasing population isolation and fragmentation. Fragmentation then increases the probability for decline of the population, reduced genetic diversity, and extirpation from stochastic events (Knick and Hanser 2011).

In addition to reducing the land area available to support GRSG, habitat loss and fragmentation also increase the likelihood of other disturbances, such as human traffic, wildfire, and invasive plant spread.

Converting cropland has eliminated or fragmented sagebrush on private lands in areas with deep fertile soils or irrigation potential. Sagebrush remaining in these areas has been limited to the agricultural edge or to relatively unproductive environments.

Conditions in the Sub-region and in MZ IV. Regional assessments estimate that while only 1 percent of priority habitat and general habitat in MZ IV are directly influenced by agricultural development, over 85 percent of these habitats are within approximately 4 miles of agricultural land (Manier et al. 2013, p. 27).

Impact Analysis. The BLM and Forest Service do not convert public lands to agriculture. As such, the only direct authority these agencies have over conversion to agriculture is by retaining or disposing of lands in the realty program. Lands retained under BLM and Forest Service management will not be converted to agriculture and disposing of lands could increase the likelihood they will be converted to agriculture, depending on their location and new management authority.

As shown below in **Table 5-6**, Acres Identified for Retention and Disposal in GRSG Habitat in MZ IV, acres identified for retention are similar in the sub-region and in MZ IV among the alternatives. Under Alternatives B, C, D, F, and the Proposed Plan, the BLM and



**Table 5-6  
Acres Identified for Retention and Disposal in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Acres Identified for Retention				
Alternative A	12,348,000	45%	4,930,000	45%
Alternative B	14,997,000	55%	4,760,000	43%
Alternative C	17,878,000	62%	2,707,000	0%
Alternative D	14,995,000	55%	5,803,000	53%
Alternative E	11,784,000	42%	5,352,000	49%
Alternative F	14,997,000	55%	5,209,000	48%
Proposed Plan	11,973,000	43%	8,628,000	69%
Acres Identified for Disposal				
Alternative A	520,000	99%	431,000	59%
Alternative B	4,000	0%	431,000	59%
Alternative C	4,000	0%	178,000	0%
Alternative D	5,000	10%	182,000	2%
Alternative E	436,000	99%	518,000	66%
Alternative F	4,000	0%	447,000	60%
Proposed Plan	4,000	0%	178,000	0%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA identified for retention and disposal in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

Forest Service would generally retain GRSG habitat, thereby eliminating the possibility that GRSG habitat would be converted to agriculture use. Alternatives A and E do not specify retention of GRSG habitat, and thus there is the possibility of these lands being disposed. Most acres within MZ IV that are identified for disposal under Alternatives A and E are within the Idaho and southwestern Montana sub-region. However, land tenure adjustments require site-specific NEPA analysis and land sales must meet the disposal criteria under applicable law. BLM land tenure adjustments are not anticipated to be a significant contributing element to the threat of agriculture conversion.

Cumulative impacts vary relatively little across alternatives because BLM and Forest Service management have little impact on alleviating this threat. Restrictions on grazing on federal land could increase agriculture pressure on adjacent private lands. If the loss of federal grazing privileges makes ranching economically unviable, the potential conversion of private

grazing lands to agriculture would increase. However, the Proposed Plan does not substantially increase acreage unavailable to grazing.

The COT report objectives for converting land to agriculture are to avoid further loss of sagebrush habitat for agricultural activities (both plant and animal production) and to prioritize restoration. In areas where taking agricultural lands out of production has benefited GRSG, the programs supporting these actions should be targeted and continued (USFWS 2013a, p. 48). In accordance with this objective, the NRCS's SGI program focuses on maintaining ranchland that provides habitat for GRSG. This voluntary program provides private landowners with monetary incentives to protect GRSG habitat, often through conservation easements. As a result, private land containing GRSG habitat is protected from conversion to agriculture or other development for the life of the conservation agreement. The conservation easements and other conservation incentives, such as restoration of water features and fence marking, can enhance the ability of private ranchlands to support GRSG. As of 2014, SGI has secured conservation easements on 98,167 acres within MZ IV and marked or removed 95 miles of fence (NRCS 2015). This has preserved habitat and reduced the risk of direct mortality on these lands.

Over the analysis period, conversion to agriculture is expected to increase (**Section 5.1.12**), though state and private conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat. When land tenure decisions within the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in net conservation gain to GRSG habitats and populations in MZ IV.

### ***Energy Development and Mining***

The COT report states that energy development should be designed to ensure that it will not impinge on stable or increasing GRSG population trends. For mining, the COT report objective is to maintain stable to increasing GRSG populations and no net loss of GRSG habitats in areas affected by mining (USFWS 2013a, p. 49).

There are approximately 1,137,700 acres of GRSG habitat in MZ IV where energy and mineral development (including geothermal, mineral materials, wind energy, and non-energy leasable minerals) is presently occurring. There are 6,553,300 acres indirectly influenced by energy development (including oil and gas, mineral materials, and wind energy; indirect effects were not quantified for geothermal and nonenergy leasable mineral developments) (Manier et al. 2013, pp. 52-71). No coal or oil and gas development is presently occurring in MZ IV.

### ***Oil and Gas***

Nature and Type of Effects. As discussed in **Section 4.2**, oil and gas development impacts GRSG and sagebrush habitats through direct disturbance and habitat loss from well pads, access construction, seismic surveys, roads, power lines, and pipeline corridors. Indirect disturbances result from noise, gaseous emissions, changes in water availability and quality, and human presence. These factors could cumulatively or individually lead to habitat fragmentation in the long term (Connelly et al. 2004; Holloran 2005).



Oil and gas development results in direct loss of habitat from well pad and road construction as well as indirect disturbance impacts from increased noise and vehicle traffic. Oil and gas development also directly impacts GRSG through the species' avoidance of infrastructure. This development can also impact GRSG survival or reproductive success. Indirect effects include habitat quality changes, predator communities, and disease dynamics (Naugle et al. 2011).

Conditions in the Sub-region and in MZ IV. There is currently no oil and gas development within MZ IV (Manier et al. 2013, p. 52) and approximately 346,000 acres (1 percent) of GRSG habitat are leased but undeveloped (Manier et al. 2013, p. 55). Less than one percent of GRSG habitat in MZ IV is within 1.8 miles of oil and gas wells (Knick et al. 2011, p. 240). There are two leases in Bonneville County in the sub-region within MZ IV (**Section 3.12**).

Although oil and gas activities have a disproportionately greater effect on private lands, regulatory mechanisms on both federal surface and split estate lands in MZ IV are influential. Split estate lands with federal subsurface minerals may provide mitigation for impacts on GRSG habitat on private surface lands that would not be required on lands with both privately held surface and subsurface.

According to the RFD scenario (**Appendix O**), permanent disturbance associated with oil and gas development is projected to occur on 156 acres within the Idaho and southwestern Montana sub-region over the next 10 years, representing less than one percent of GRSG habitat within either the sub-region or MZ IV. Within MZ IV outside of the sub-region, less than 200 acres are projected by the Nevada, Oregon, and Utah sub-regional RFD scenarios. The potential for impacts would be reduced where areas are closed to fluid mineral leasing and where NSO and CSU/TL stipulations are applied. Given the small acreage and implementation of RDFs and BMPs (**Appendix B**), the likelihood for impacts on GRSG habitat on BLM-administered and National Forest System lands is anticipated to be small and localized under all alternatives.

Impact Analysis. **Tables 5-7**, Acres Open\* and Closed to Fluid Mineral Leasing in GRSG Habitat in MZ IV, and **5-8**, Acres with NSO and CSU/TL Stipulations in GRSG Habitat in MZ IV, provide a quantitative summary of fluid mineral leasing conditions on BLM-administered and National Forest System lands across MZ IV, followed by an analysis of the Idaho and southwestern Montana sub-regional alternatives.

As shown in **Tables 5-2** and **5-3**, fluid mineral closures and stipulations within the Idaho and southwestern Montana sub-region exert a fairly large influence within the broader MZ. Alternatives B, C, and F would provide the greatest protection to GRSG in the MZ by closing PHMA to new leases. This would reduce well density and impacts associated with construction and operation. Acres open and closed in GHMA would be similar across the alternatives, though the Proposed Plan would have approximately double the acreage closed

**Table 5-7**  
**Acres Open\* and Closed to Fluid Mineral Leasing in GRSG Habitat in MZ 1V**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Open <sup>2</sup> to Fluid Mineral Leasing				
Alternative A	85,742,000	100%	2,010,000	100%
Alternative B	0	0%	1,962,000	100%
Alternative C	0	0%	0	0%
Alternative D	0	0%	0	0%
Alternative E	0	0%	2,468,000	100%
Alternative F	0	0%	2,465,000	100%
Proposed Plan	0	0%	0	0%
Closed to Fluid Mineral Leasing				
Alternative A	1,737,000	60%	759,000	37%
Alternative B	9,447,000	93%	730,000	35%
Alternative C	12,740,000	94%	478,000	0%
Alternative D	9,210,000	92%	759,000	37%
Alternative E	1,679,000	58%	592,000	40%
Alternative F	762,000	93%	762,000	37%
Proposed Plan	1,507,000	53%	1,308,000	63%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> Open with standard lease terms and conditions. This table displays the acres of PHMA and GHMA open and closed to fluid mineral leasing in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

**Table 5-8**  
**Acres with NSO and CSU/TL Stipulations in GRSG Habitat in MZ 1V**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
NSO Stipulations				
Alternative A	7,332,000	12%	685,000	93%
Alternative B	6,485,000	0%	545,000	92%
Alternative C	6,485,000	0%	45,000	0%
Alternative D	6,597,000	2%	718,000	94%
Alternative E	13,543,000	52%	660,000	93%
Alternative F	6,485,000	0%	550,000	92%
Proposed Plan	11,354,000	43%	3,828,000	99%
CSU/TL Stipulations				
Alternative A	1,138,000	100%	3,327,000	19%
Alternative B	18,000	100%	3,290,000	18%
Alternative C	18,000	100%	2,710,000	0%
Alternative D	142,000	100%	5,304,000	49%
Alternative E	74,000	100%	3,285,000	18%
Alternative F	18,000	100%	3,290,000	18%
Proposed Plan	0	0%	5,037,000	46%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA with NSO Stipulations and CSU/TL Stipulations in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

in GHMA compared to the other alternatives. Acres managed as NSO would be similar across alternatives in PHMA and GHMA, with more acres managed as NSO under Alternative E and the Proposed Plan. The Proposed Plan would provide additional protections to GRSG from fluid mineral development by requiring anthropogenic disturbance criteria, a 3 percent disturbance cap, buffers, mitigation requirements (**Appendix J**), RDFs and BMPs, and by managing SFAs as NSO with no waivers, exceptions, and modifications.

Restoring disturbed habitats would require the reestablishment of native shrubs and forbs, including big sagebrush, which would benefit GRSG; however, restored habitats may not support GRSG for long periods following restoration (Arkle et al. 2014). For this reason, successful restoration may not be successful without a nearby source population.

Under the Montana Executive Order, authorizations of oil and gas development that require state agency review or approval would be subject to the GRSG permitting process. They also would be subject to stipulations for development in GRSG Core areas. Similarly, authorizations in Nevada would be subject to measures in the Nevada state plan, including avoidance, minimization, and mitigation of any unavoidable impacts to GRSG habitat. Oil and gas lease authorizations in Utah that require state agency review or approval would be subject to the Utah executive order, which directs the Utah division of Oil, Gas, and Mining to consult with UDWR on all actions within GRSG Management Areas, and incorporate conservation measures from the state's GRSG conservation plan. The Idaho state plan includes mandatory restrictions on surface use and timing on IDL lands and site reclamation requirements, as well as voluntary conservation measures that could be applied.

The effect of the alternatives and other conservation actions in the MZ (most notably the Nevada state plan and Montana and Utah executive order) could be synergistic, meaning that the effects of the actions together is greater than the sum of their individual effects. For example, applying buffers in PHMA and on state and private land would effectively conserve larger blocks of land than if these actions occurred individually. This would provide a landscape-scale net conservation benefit, especially in areas where little development has occurred to date.

Reasonably foreseeable oil and gas development in MZ IV is negligible though it is expected to increase over the 20-year analysis period (**Section 5.1.12**). However, state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by restricting the location of developments and requiring mitigation. When restrictions within the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV due in large part to implementation of NSO stipulations, anthropogenic disturbance caps, and adaptive management that would minimize future disturbances to GRSG populations and habitats.

#### *Geothermal*

Nature and Type of Effects. Impacts to GRSG from geothermal development are not well documented since geothermal development has been too recent to identify any immediate or lag effects (Knick et al. 2011 in Manier et al. 2013, p. 70). However, geothermal development is similar to fossil-fuel development and direct impacts to habitats would occur from development of power plants, access roads, pipelines and transmission lines. As a result, impacts of geothermal developments to GRSG from direct habitat loss, habitat fragmentation via roads and transmission lines, noise, and increased human presence (Connelly et al. 2004) may be similar to those discussed for nonrenewable energy development. Comparable effects on local GRSG populations are also anticipated (Manier et al. 2013, p. 70). Other concerns related to geothermal energy development include air and water pollution, disposal of hazardous waste, land subsidence, and release of toxic gases into the environment (Manier et al. 2013, p. 70).

Conditions in the Sub-region and MZ IV. Geothermal energy development potential is particularly high throughout MZ IV and geothermal leases directly affect 75,900 acres (less



than 1 percent) of GRSG habitats in the MZ (Manier et al. 2013, p. 71). Geothermal leases in the sub-region cover 60,000 acres (**Section 3.12**).

The RFD scenario for the Idaho and southwestern Montana sub-region (**Appendix O**) predicts up to 410 acres of permanent disturbance associated with geothermal development over the next 10 years. The potential for impacts would be reduced where areas are closed to fluid mineral leasing and where NSO and CSU/TL stipulations are applied. Given the small acreage and implementation of RDFs and BMPs (**Appendix B**), the likelihood for impacts on GRSG habitat is anticipated to be small and localized under all alternatives.

Impact Analysis. The quantitative analysis of effects from geothermal leasing would be the same as described for oil and gas because allocations and past, present, and reasonably foreseeable future actions would be the same.

#### *Coal*

Coal potential is low throughout MZ IV (Manier et al. 2013, p. 133) and there are no direct or indirect effects from surface coal leases in the MZ (Manier et al. 2013, p. 74). There is no coal development in the sub-region and lands are determined to be unsuitable for leasing; thus this threat will not be described further in this document.

#### *Mineral Materials*

Nature and Type of Effects. Development of surface mines (for sand, gravel and other common mineral materials found in MZ IV) may negatively impact GRSG numbers and disrupt the habitat and life-cycle of the species, similar to other types of mining activities (Braun 1998; Manier et al. 2013, pp. 70-71).

Conditions in the Sub-region and in MZ IV. There are 652,000 acres of mining and mineral materials disposal sites (not including minerals mined as energy sources) on BLM-administered surface land on priority habitat and general habitat in MZ IV. There are 1,049,600 acres across all landownership types, making BLM-administered land the largest contributor to direct effects from this threat. National Forest System lands contribute to direct effects on 170,200 acres of priority habitat and general habitat. Indirect effects are estimated to 1.5 miles out from the direct effects area (Manier et al. 2013, p. 77).

The mineral materials currently being developed for commercial purposes in the Idaho and southwestern Montana sub-region include stone, sand and gravel, limestone, soil, and pumice.

Across MZ IV, PHMA and GHMA are most affected by mining and mineral materials disposal sites on BLM-administered lands. GRSG may be directly impacted, being in the path of development; however, indirect impacts on habitat affect a much wider population of birds. In total, 61 percent of priority habitat and 48 percent of general habitat influenced by the indirect impact of mining and mineral materials disposal sites are on BLM-administered land. This does not include minerals mined as energy sources. Mining and mineral materials disposal sites on private land, by comparison, indirectly affect 26 percent of priority habitat and 34 percent of general habitat. National Forest System lands indirectly

affect 10 percent of priority habitat and 13 percent of general habitat (Manier et al. 2013, p. 77). As a result, management of mining and material disposal sites on BLM-administered land would have the greatest impact on GRSG habitat conditions. For example, closure of BLM-administered lands to mineral materials disposal could shift mineral material disposal in the MZ onto adjacent lands.

Impact Analysis. **Table 5-9**, Acres Open and Closed to Mineral Material Disposal in GRSG Habitat in MZ IV, provides a quantitative summary of acreages of BLM-administered and National Forest System lands open and closed to mineral material disposal across MZ IV.

**Table 5-9**  
**Acres Open and Closed to Mineral Material Disposal in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Open to Mineral Material Disposal				
Alternative A	8,592,000	100%	6,518,000	58%
Alternative B	0	0%	5,820,000	53%
Alternative C	0	0%	2,728,000	0%
Alternative D	5,830,000	100%	5,944,000	54%
Alternative E	7,982,000	100%	6,915,000	61%
Alternative F	0	0%	6,346,000	57%
Proposed Plan	5,000	100%	8,609,000	68%
Closed to Mineral Material Disposal				
Alternative A	7,732,000	7%	677,000	25%
Alternative B	15,922,000	55%	676,000	25%
Alternative C	19,113,000	62%	505,000	0%
Alternative D	10,092,000	29%	806,000	37%
Alternative E	7,798,000	8%	614,000	18%
Alternative F	15,922,000	55%	690,000	27%
Proposed Plan	12,850,000	44%	1,529,000	67%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> This table displays the acres of PHMA and GHMA open and closed to mineral material disposal in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

Under Alternatives B, C, F, and the Proposed Plan, all PHMA would be closed to mineral material disposal, which would constitute much of the closed acreage on BLM-administered



and National Forest System lands in MZ IV. Restrictions on mineral material development in the sub-region would be applied under Alternative D, and for IHMA and GHMA under the Proposed Plan. Acres closed in GHMA would be similar across most alternatives, though Alternative E and the Proposed Plan would have the greatest acres of GHMA closed. The Proposed Plan would provide additional protections to GRSG from mineral material development by requiring anthropogenic disturbance criteria, a 3 percent disturbance cap, RDFs and BMPs, buffers, and mitigation. These closures and restrictions would reduce the effect on GRSG from mineral material development on BLM-administered and National Forest System lands in MZ IV for most action alternatives, particularly the Proposed Plan and Alternative C.

Under the Montana Executive Order, authorizations of new mineral material disposal sites that require state agency review or approval would be subject to the GRSG permitting process. They also would be subject to stipulations for development in GRSG Core Areas. Similarly, authorizations in Nevada would be subject to measures in the Nevada state plan, including avoidance, minimization, and mitigation of any unavoidable impacts to GRSG habitat, and authorizations in GRSG Management Areas in Utah would be subject to consultation with UDWR and conservation measures. New authorizations that would occur in the majority of MZ IV within Idaho or Oregon that lack state plans containing regulatory mechanisms, may incorporate GRSG habitat recommendations from these states' plans though these would voluntary measures and not binding conditions. These stipulations would be of particular benefit on privately-owned surface and subsurface lands, where BLM and Forest Service protective regulatory mechanisms do not apply.

Reasonably foreseeable mineral materials development in MZ IV is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by restricting the location of developments and requiring mitigation. When restrictions within the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

#### *Locatable Minerals*

Nature and Type of Effects. Locatable minerals include gold, silver, uranium, and bentonite. Activities associated with locatable mineral development, such as stockpiling topsoil and extracting and transporting material, would cause mortality and nest disruption. These actions also would reduce the functionality of the surrounding habitat with noise and light disturbance, resulting in lost and degraded GRSG PHMA and GHMA.

As with fluid mineral development, reclamation practices may help to reduce long-term impacts on GRSG and their habitat. Although disturbed areas have not been restored to near pre-disturbance conditions in the past, recent efforts have been directed toward restoring functional habitat. Future reclamation should be focused on restoring habitats capable of supporting viable GRSG populations. Even with effective restoration, restored areas may not support GRSG populations at the same level as prior to disturbance.

Conditions in the Sub-region and in MZ IV. The primary locatable minerals in commercially viable quantities in the Idaho and southwestern Montana sub-region are zeolite and bentonite. Other locatable minerals are known to exist in the sub-region, but they are currently uneconomical to produce.

Impact Analysis. **Table 5-10**, Acres Open and Recommended for Withdrawal from Mineral Entry in GRSG Habitat in MZ IV, provides a quantitative summary of acreages of BLM-administered and National Forest System lands open and recommended for withdrawal from mineral entry across MZ IV.

**Table 5-10**  
**Acres Open and Recommended for Withdrawal from Mineral Entry**  
**in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Open to Mineral Entry				
Alternative A	12,308,000	67%	6,390,000	51%
Alternative B	4,006,000	0%	6,140,000	49%
Alternative C	4,006,000	0%	3,108,000	0%
Alternative D	12,308,000	67%	6,390,000	51%
Alternative E	11,706,000	66%	6,780,000	54%
Alternative F	4,006,000	0%	6,625,000	53%
Proposed Plan	6,108,000	34%	9,960,000	69%
Recommended for Withdrawal from Locatable Mineral Entry				
Alternative A	3,038,000	0%	0	0%
Alternative B	11,339,000	73%	0	0%
Alternative C	14,390,000	79%	0	0%
Alternative D	3,038,000	0%	0	0%
Alternative E	3,038,000	0%	0	0%
Alternative F	11,339,000	73%	0	0%
Proposed Plan	5,974,000	49%	9,000	100%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> This table displays the acres of PHMA and GHMA open to mineral entry and recommended for withdrawal from locatable mineral entry in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

Alternatives A and E would have similar acres open in PHMA and would not incorporate special mitigation measures for locatable mineral development in GRSG habitat. Locatable



mineral mining would continue to affect GRSG through habitat loss and degradation. As a result, Alternative E would not provide any net conservation gain to GRSG compared to Alternative A.

Under Alternatives B, C and F, PHMA would be recommended for withdrawal and applicable RDFs would be applied consistent with applicable law within PHMA. The most acreage of all the alternatives would be recommended for withdrawal in PHMA. These alternatives would restrict future locatable mineral operations on GRSG habitat more than other alternatives; thus they would provide more protections and conservation gains to GRSG habitat from locatable mineral development.

Under Alternatives D and the Proposed Plan, the BLM and Forest Service would apply reasonable and appropriate RDFs, consistent with applicable law, as Conditions of Approval to prevent unnecessary or undue degradation of GRSG habitat. The Proposed Plan would also recommend SFAs for withdrawal. Thus, these alternatives would provide a net conservation gain to GRSG.

Under all alternatives, RDFs outlined in **Appendix B** would help minimize impacts on GRSG from locatable mineral development on federal land to the extent they are applied consistent with applicable law. Clustering operations and facilities as close as possible and placing new infrastructure in already disturbed locations would reduce impacts on sagebrush habitats.

Authorizations of new locatable mineral sites that require state agency review or approval would be subject to either the regulatory mechanisms of the Montana, Nevada, or Utah state plans. These measures would be of particular benefit on privately-owned surface and on split-estate lands with BLM-administered federal mineral estate and other surface ownership, where BLM and Forest Service protective regulatory mechanisms do not apply.

Reasonably foreseeable locatable mineral development in MZ IV is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by applying RDFs as Conditions of Approval consistent with applicable law. The disturbance caps in the Proposed Plans would not block locatable mineral entry projects, but any locatable mineral entry would be considered as disturbance under the cap. When restrictions within the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

#### *Nonenergy Leasable Minerals*

Nonenergy leasable minerals are materials such as phosphate, sulfates, silicates, and trona (sodium carbonate). Impacts on GRSG are similar to those from other types of mining.

Conditions in the Sub-region and in MZ IV. Existing leases for nonenergy leasable minerals represent a relatively small threat spatially, as 12,000 acres (less than 1 percent) of GRSG habitats in MZ IV are directly affected by existing prospecting permits (Manier et al. 2013, p.

71). Phosphate development is prevalent in southeastern Idaho, though acres disturbed are not known (**Section 3.12**).

Impact Analysis. **Table 5-11**, Acres Open and Closed to Nonenergy Leasable Mineral Leasing in GRSG Habitat in MZ IV, provides a quantitative summary of acreages of BLM-administered and National Forest System lands open and closed to nonenergy leasable mineral leasing across MZ IV.

**Table 5-11**  
**Acres Open and Closed to Nonenergy Leasable Mineral Leasing in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	Percent Within Sub-Region	MZ IV	Percent Within Sub-Region
Open to Nonenergy Leasing				
Alternative A	7,886,000	100%	6,006,000	54%
Alternative B	0	0%	3,815,000	28%
Alternative C	0	0%	2,755,000	0%
Alternative D	6,000	100%	6,003,000	54%
Alternative E	7,220,000	100%	6,484,000	58%
Alternative F	0	0%	3,821,000	28%
Proposed Plan	0	0%	8,391,000	67%
Closed to Nonenergy Leasing				
Alternative A	8,036,000	11%	744,000	36%
Alternative B	15,922,000	55%	716,000	33%
Alternative C	19,185,000	63%	478,000	0%
Alternative D	15,916,000	55%	744,000	36%
Alternative E	8,064,000	11%	691,000	31%
Alternative F	15,922,000	55%	746,000	36%
Proposed Plan	12,855,000	44%	1,747,000	73%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> This table displays the acres of PHMA and GHMA open and closed to nonenergy leasing in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

Alternatives B, C, D, F and the Proposed Plan would increase the acreage of PHMA closed to nonenergy leasing compared to current management (Alternative A) and Alternative E. The alternatives would provide fewer protections in GHMA, though the Proposed Plan would increase the acres closed to nonenergy leasing. The Proposed Plan would provide

additional protections compared to the other action alternatives by requiring anthropogenic disturbance criteria, a 3 percent disturbance cap, buffers, RDFs and BMPs, and mitigation.

However, under the Montana Executive Order, authorizations of new nonenergy mineral leases that require state agency review or approval would be subject to the GRSG permitting process. They also would be subject to stipulations for development in GRSG Core Areas. Similarly, authorizations in Nevada would be subject to measures in the Nevada state plan, including avoidance, minimization, and mitigation of any unavoidable impacts to GRSG habitat, and authorization in GRSG Management Areas in Utah would subject to consultation with UDWR and conservation measures. New authorizations that would occur in the majority of MZ IV within Idaho or Oregon that lack state plans containing regulatory mechanisms, may incorporate GRSG habitat recommendations from these states' plans though these would voluntary measures and not binding conditions. These stipulations would be of particular benefit on privately-owned surface and on split-estate lands with BLM-administered federal mineral estate and other surface ownership, where BLM and Forest Service protective regulatory mechanisms do not apply.

Reasonably foreseeable nonenergy leasable mineral development in MZ IV is expected to increase over the 20-year analysis period (**Section 5.1.12**). However, state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by providing additional protections such as disturbance caps, RDFs, and mitigation. When restrictions within the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

### ***Recreation***

Nature and Type of Effects. Recreation, such as camping, bicycling, wildlife viewing, horseback riding, fishing, and hunting, can be dispersed; concentrated, such OHV use and developed campsites; and permitted, such as via BLM Special Recreation Permit and Forest Service Special Use Permit. The BLM also manages Special Recreation Management Areas (SRMAs) where recreation is a primary resource management consideration.

Recreation on federally administered lands that use the extensive network of double-track and single-track routes have an impact on sagebrush and GRSG. Ecological impacts of roads and motorized trails are mortality due to collisions; behavior modifications due to noise, activity, and habitat loss; alteration of physical environment; nutrient leaching; erosion; invasive plants spread; increased use; and alteration by humans due to accessibility (Knick et al. 2011, p. 219). Recreation activities can degrade GRSG habitat through direct impacts on vegetation and soils, introduction or spread of invasive species, and habitat fragmentation. This occurs in areas of concentrated use, trailheads, staging areas, and routes and trails.

Motorized activities, including OHV use, are expected to have a larger footprint on the landscape. They are anticipated to have the greatest level of impact due to noise levels, compared to nonmotorized uses, such as hiking or equestrian use. Cross-country motorized travel, which is permitted in designated areas on BLM-administered lands but not National Forest lands, would increase the potential for soil compaction, perennial grasses and forbs

loss, and reduce sagebrush canopy cover. Losses in sagebrush canopy could be the result of repeated, high frequency, cross-country OHV use over long periods. In addition, the chances of wildfire are increased during the summer, when fire dangers are high and recreation is at its highest.

Dispersed uses expand the human footprint. Closing areas to recreation and reclaiming unused, minimally used, or redundant roads in and around sagebrush habitats during seasonal use by GRSG may reduce the footprint and presumably impacts on wildlife. Restricting access to important habitat areas during seasonal use (lekking, nesting, brood-rearing, and wintering) may decrease the impacts associated with humans. However, access restriction will not eliminate other impacts, such as invasive plant spread, predator movements, cover loss, and erosion (Manier et al. 2013, p. 108).

Conditions in the Sub-region and in MZ IV. Human populations have increased and expanded, primarily over the past century and in the western portion of the sagebrush distribution (Knick et al. 2011, p. 212). With these expanding populations come greater human impacts (Leu et al. 2008).

The COT report objectives for recreation are to maintain healthy native sagebrush communities, based on local ecological conditions, and to manage direct and indirect human disturbance (including noise) to avoid interruption of normal GRSG behavior (USFWS 2013a, p. 49). Limits on road use under the action alternatives and limits on OHVs would help meet these objectives.

In the Idaho and southwestern Montana sub-region, travel management planning is underway to determine specific routes available for closure.

Impact Analysis. **Table 5-12**, Acres of Travel Management Designations in GRSG Habitat in MZ IV, shows Acres of Travel Management Designations in GRSG Habitat in MZ IV.

As shown in **Table 5-12**, there are slight variations among alternatives in acres closed and limited to motorized vehicles in both PHMA and GHMA. However, the action alternatives would reduce acres open in PHMA, particularly Alternatives C and the Proposed Plan, under which no acres would be open to motorized vehicles. There would be a similar reduction in GHMA except under Alternative E where more acres would be open compared to current management. As a result of travel management planning, impacts on GRSG from recreational motorized vehicle use would be greatest under Alternatives A and E; impacts would be reduced most under Alternative C and the Proposed Plan.

For recreation, Alternatives B, D, and the Proposed Plan would aim to reduce impacts on GRSG with issuance of SRPs and SUPs. Alternative F would take a similar approach, but with the addition of seasonal restrictions within 4 miles of active leks. Alternatives A, C, and E would not manage recreation to reduce impacts on GRSG.



**Table 5-12**  
**Acres of Travel Management Designations in GRSG Habitat in MZ IV**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ IV	<i>Percent Within Sub-Region</i>	MZ IV	<i>Percent Within Sub-Region</i>
Open				
Alternative A	2,236,000	100%	671,000	100%
Alternative B	1,000	100%	671,000	100%
Alternative C	0	0%	0	0%
Alternative D	1,000	100%	1,000	100%
Alternative E	1,833,000	100%	1,083,000	100%
Alternative F	1,000	100%	255,000	100%
Proposed Plan	0	0%	1,000	100%
Limited				
Alternative A	11,501,000	45%	5,561,000	41%
Alternative B	13,736,000	54%	5,359,000	38%
Alternative C	16,463,000	62%	3,304,000	0%
Alternative D	13,736,000	54%	6,231,000	47%
Alternative E	11,361,000	45%	5,530,000	40%
Alternative F	13,736,000	54%	5,530,000	47%
Proposed Plan	10,897,000	42%	66,262,000	64%
Closed				
Alternative A	824,000	90%	194,000	89%
Alternative B	824,000	90%	183,000	87%
Alternative C	984,000	91%	23,000	0%
Alternative D	824,000	90%	194,000	89%
Alternative E	785,000	89%	224,000	90%
Alternative F	824,000	90%	196,000	89%
Proposed Plan	640,000	87%	177,000	88%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within travel management designations of open, limited and closed in MZ IV; it also displays the percentage of those acres that are found within the sub-region.

Reasonably foreseeable recreation in MZ IV is expected to increase over the 20-year analysis period (**Section 5.1.12**). However, state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by providing additional protections such as disturbance caps and limitations on National Forest System lands. When restrictions within the Idaho and southwestern Montana LUPA are added to these conservation actions, this would result in a net conservation gain to GRSG habitats and populations in MZ IV.

### 5.1.7 Existing Conditions in WAFWA MZs II/VII

This section summarizes existing conditions and past and present actions for the Idaho and southwestern Montana sub-region (provided in more detail in **Chapter 3**) and for MZs II/VII as a whole. Reasonably foreseeable future actions are discussed in **Section 5.1.9**.

#### *GRSG Habitat and Populations*

MZs II/VII consist of eleven GRSG populations: Eagle-South Routt, Middle Park, Laramie, Jackson Hole, Wyoming Basin, Rich-Morgan-Summit, Uintah, North Park, Northwest Colorado, Parachute-Piceance-Roan Basin, and Meeker-White River (Garton et al. 2011). The sub-region includes the Wyoming Basin population. Leks in the northern portion of MZs II/VII are the most highly connected in the range (Knick and Hanser 2011); populations in southern portions of MZ II/VII (the Colorado Plateau) are less robust, with low lek connectivity and a 96 percent chance of populations declining below 200 males by 2037 (Garton et al. 2011; Knick and Hanser 2011). The Wyoming Basin population showed a 63 percent decline in estimated minimum male population attending leks in the population between 2007 and 2013 (Garton et al. 2015, p. 34). MZs II/VII include GRSG populations in Idaho, Montana, Wyoming, Utah, and Colorado.

In MZs II/VII, BLM-administered, National Forest System and other federal lands account for over 20 million acres of GRSG habitat (approximately 58 percent of habitat), with state and private lands accounting for approximately 16 million acres of GRSG habitat (approximately 44 percent of habitat) (Manier et al. 2013, p. 118). This indicates the importance of conservation and restoration on both private and public lands.

**Table 5-13**, Management Jurisdiction in MZs II/VII by Acres of Priority and General Habitats, provides a breakdown of landownership and acres of GRSG habitat in MZs II/VII. As the table shows, approximately 52 percent of priority habitat and 47 percent of general habitat is on BLM-administered lands. Less than one percent of priority habitat and 2 percent of general habitat is on National Forest System lands. The remaining 18,028,000 million acres (49 percent) of GRSG habitat in the MZs comprise private, local state, and other federal and tribal lands. Acres in these and other tables are rounded to the nearest 1,000 acres. Values of less than 1,000 acres are presented as 0 acres.



**Table 5-13**  
**Management Jurisdiction in MZs II/VII by Acres of Priority and General Habitats**

	<b>Total Surface Area (Acres)</b>	<b>Priority (Acres)</b>	<b>General (Acres)</b>	<b>Non-habitat (Acres)</b>
<b>MZ IV</b>	92,776,100 (100%)	17,476,000 (19%)	19,200,200 (21%)	56,099,900 (60%)
BLM	30,295,000 (33%)	9,021,200 (30%)	9,012,500 (30%)	12,261,300 (40%)
Forest Service	23,558,800 (25%)	162,000 (<1%)	452,500 (2%)	22,944,300 (97%)
Tribal and other federal	7,086,200 (8%)	784,000 (11%)	1,354,600 (19%)	4,947,600 (70%)
Private	27,405,400 (30%)	6,233,900 (23%)	7,394,800 (27%)	13,776,700 (50%)
State	4,053,900 (4%)	1,244,800 (31%)	979,800 (24%)	1,829,300 (45%)
Other	376,700 (<1%)	30,100 (8%)	6,000 (2%)	340,600 (90%)

Source: Manier et al. 2013, p. 118

A very small percentage—approximately one tenth of one percent—of PHMA and GHMA in MZs II/VII are located on BLM-administered and National Forest System lands in the Idaho and southwest Montana sub-region. As a result, BLM and Forest Service management in this sub-region would have very little influence on GRSG across the broader MZs II/VII. BLM and Forest Service management in this sub-region would be most effective at conserving a portion of the Wyoming Basin population; it would have little or no effect on other populations in the MZs. Because past, present, and reasonably foreseeable future actions do not vary by alternative, the incremental effect of implanting any of the Idaho and southwest Montana LUPA alternatives on GRSG in MZs II/VII would vary little across the range of alternatives.

***Population Trends in Management Zones II/VII***

The Wyoming Basin population within MZs II/VII is the largest population in the GRSG range with over 20,000 males attending leks annually. Although recent data suggests a population increase, long-term monitoring is trending downward and population modeling suggests this trend will continue (Garton et al. 2011). Between 2007 and 2013, this population showed a 63 percent decline in the estimated minimum male population attending leks in the population (Garton et al. 2015, p. 34).

Wyoming data suggest a cyclic pattern with population lows in 1995, 2002 and 2013 and peaks in 2000 and 2006. Actual trends are difficult to discern due to the lower survey effort prior to 2007, meaning the number and proportion of active/inactive leks is unknown. Since 2007, the number of active leks has remained stable (approximately 1,100 active leks), but the number of males/active lek has declined by more than half (from 42 to 17 males/lek).

The isolation of many other populations on the fringes of MZs II/VII makes them particularly vulnerable to habitat loss and fragmentation. The Wyoming Basin population within Wyoming and extending into the sub-region is at risk due to renewable and non-renewable energy development, long-term drought, and brush eradication programs (USFWS 2013a, p. 68).

### **5.1.8 Regional Efforts to Manage Threats to GRSG in MZs II/VII**

There are several regional efforts to manage threats to GRSG in MZs II/VII. Regional efforts include past, present and reasonably foreseeable actions conducted by the BLM, Forest Service, and by other federal and or in cooperation with non-federal agencies, organizations, landowners, or other groups in MZs II/VII. These efforts may have a strong influence in alleviating threats to GRSG than BLM and Forest Service actions alone. This is because state and private lands account for approximately 16 million acres (approximately 44 percent) of GRSG habitat in MZs II/VII (Manier et al. 2013, p. 118).

#### ***Idaho Statewide Efforts***

Idaho statewide efforts are as described in **Section 5.1.4**.

#### ***Montana Statewide Efforts***

Montana statewide efforts are as described in **Section 5.1.4**.

#### ***Natural Resource Conservation Service Sage Grouse Initiative***

The NRCS SGI is as described in **Section 5.1.4**. As of 2014, the most recent year for which data are available, SGI has secured conservation easements on 243,403 acres within MZs II/VII (NRCS 2015).

#### ***Wyoming Statewide Efforts***

Wyoming has established Core Population Areas to help delineate landscape planning units by distinguishing areas of high biological value. These areas are based on the locations of breeding areas and are intended to help balance GRSG habitat requirements with demand for energy development (Doherty et al. 2011).

In 2000, the Wyoming Sage-Grouse Working Group (WSGWG) was formed to develop a statewide strategy for GRSG conservation. This group prepared the Wyoming GRSG Conservation Plan (WSGWG 2003) to provide coordinated management and direction across the state. In 2004, local GRSG working groups were formed to develop and implement local conservation plans. Eight local working groups around Wyoming have completed conservation plans, many of which prioritize addressing past, present, and reasonably foreseeable threats at state and local levels, and prescribe management actions for private landowners to improve GRSG conservation at the local scale, consistent with the overall Wyoming Core Area Strategy.

Wyoming Executive Order. Wyoming Governor Matt Mead issued an executive order on June 2, 2011, that complemented and replaced several executive orders issued by his predecessor. The 2011 Wyoming Executive Order articulates Wyoming's Core Population



Area Strategy (Core Area Strategy) as an approach to balancing GRSG conservation and development. It also provides an approach to mitigating human disturbances to GRSG. The USFWS believes that Wyoming's Core Area Strategy, if extended to all landowners via regulatory mechanisms, would provide adequate protection for GRSG and its habitat (USFWS 2010); however, universal implementation remains uncertain due to the variety in landownership and management (Manier et al. 2013).

The Wyoming Executive Order applies to state trust lands starting in 2008. These trust lands cover almost 23 percent of GRSG habitat and benefit approximately 80 percent of the estimated breeding population in the state (USFWS 2010). All proposed activities are evaluated through a density/disturbance calculation tool to determine if the project would exceed recommended density/disturbance thresholds. Additionally, the order has stipulations to be included in permits, with varying restrictions depending on whether the proposed development activity occurs within or outside delineated Core Population Areas (Wyoming Executive Order, June 2, 2011).

In Core Areas, there is a 0.6-mile no surface occupancy (NSO) buffer around occupied leks, density restrictions of one location per 640 acres, a disturbance cap of 5 percent, and restrictions on activities in breeding and winter concentration habitat. This buffer provides protection for males during lekking season and acts in coordination with the density disturbance cap. Large wind energy and other development projects would not be allowed within Core Areas unless they would have no adverse effects to GRSG. Such a combination of restrictions could offer GRSG considerable regulatory protection within Wyoming.

Statewide modeling of trends under the Core Area Strategy suggests that with effective enforcement statewide, the strategy could reduce population losses by 9 to 15 percent across Wyoming. Moreover, the number of Core Areas predicted to maintain 75 percent of their current populations could increase from 20 to 25 under long-term scenarios (Copeland et al. 2013). Combining the Core Area Strategy with \$250 million in target conservation easements (provided willing landowners and funding are available) could reduce population declines by another 9 to 11 percent (Copeland et al. 2013).

Sweetwater River Conservancy Habitat Conservation Bank. The Sweetwater River Conservancy Habitat Conservation Bank is the first conservation bank established for GRSG. Located in central Wyoming, the bank manages habitat for GRSG allowing energy development and other activities to proceed on other lands within Wyoming. A conservation bank is a site or suite of sites established under an agreement with the USFWS, intended to protect, and improve habitat for species. Credits may be purchased which result in perpetual conservation easements and conservation projects on the land to offset impacts occurring elsewhere. The Sweetwater River Conservancy Habitat Conservation Bank launched with 55,000 deeded acres of GRSG habitat, and could expand up to 700,000 acres on other lands owned by the Sweetwater River Conservancy contingent upon demand (USFWS 2015).

Wyoming Landscape Conservation Initiative. The Wyoming Landscape Conservation Initiative is a long-term science based effort to assess and enhance aquatic and terrestrial habitats at a landscape scale in southwest Wyoming, while facilitating responsible

development through local collaboration and partnership. Collaborative efforts address multiple concerns at a scale that considers all activities on the landscape, and can leverage resources that might not be available for single agency projects. GRSG initiatives from the Wyoming Landscape Conservation Initiative have included habitat enhancement efforts (e.g., invasive weed treatment, prescribed grazing strategies), and GRSG research studies (Wyoming Landscape Conservation Initiative 2013).

**Umbrella Candidate Conservation Agreement with Assurances for Wyoming Ranch Management.** Candidate Conservation Agreements with Assurances are voluntary conservation agreements between the USFWS and one or more federal or private partners (e.g., the ranchers). In return for managing lands to benefit GRSG, landowners receive assurances against additional regulatory requirements should GRSG be listed under the Endangered Species Act. Within Wyoming, the USFWS and Wyoming Governor's Office in conjunction with the BLM, Natural Resources Conservation Service, Forest Service, and other agencies, have developed an umbrella Candidate Conservation Agreement with Assurances for range management activities. Enrolled landowners are expected to comply with grazing specific conservation measures including but not limited to: avoid (or rotationally utilize) known nesting and brood-rearing habitat as a location for activities that concentrate livestock such as stock tank placement branding and roundup; place salt or mineral supplements in sites minimizing impacts to GRSG habitat; and within 24 months develop and implement a written grazing management plan to maintain or enhance the existing plant community as suitable GRSG habitat (USFWS et al. 2013).

#### ***Colorado Statewide Efforts***

In 2008, the Colorado Division of Wildlife (now Colorado Parks and Wildlife) developed a state conservation plan, which prioritized threats and identified key issues facing conservation. The plan included issues, objectives, and strategies in detail. The strategies for conservation discussed responsible parties, lead agency, timeline, and cost associated with implementation of the strategy.

In 2012, a state conservation plan revision process began, and in consultation with stakeholders, a matrix summarizing implementation and effectiveness of the strategies was developed (Colorado Package), along with a subsequent Synthesis Report. The Colorado Package identified a number of conservation efforts within Colorado which have resulted in positive impacts to GRSG including acquisition of conservation easements and habitat improvement projects (Colorado Department of Natural Resources 2013). The Synthesis Report provided additional information on the effectiveness of conservation efforts such as county zoning ordinances which support protection of GRSG habitat, and measures from the Colorado State Board of Land Commissioners which will support adaptive management techniques to improve GRSG habitat (Colorado Department of Natural Resources 2014).

**Colorado Oil and Gas Conservation Commission Rules.** Oil and gas development in Colorado is governed primarily by statutory provisions of the Oil and Gas Conservation Act (Colo. Rev. Stat. § 34-60-100, et seq.) and rules developed by the Colorado Oil and Gas Conservation Commission (COGCC) (2 CCR 404-1, et seq.). The rules are intended to prevent waste and to conserve oil and gas in Colorado while protecting public health, safety,



and welfare, including the environment and wildlife resources. As the state agency charged with promoting the exploration, development, and conservation of Colorado's oil and gas resources, the COGCC also handles the drilling permit process and ensures industry compliance with state-wide oil and gas statutes and regulations. Operators may be subject to consultation requirements under the Colorado Oil and Gas Conservation Commission Rules, to determine if conditions of approval are necessary to minimize adverse impacts from proposed oil and gas operations in sensitive wildlife habitat (e.g., GRSG PHMA).

### ***Utah Statewide Efforts***

The Conservation Plan for Greater Sage-grouse in Utah (2013) was designed to protect, enhance, and restore GRSG habitat, in an effort to reduce the threats to the species. The plan identifies 11 GRSG management areas throughout the state (including lands within MZs II/VII), which represent areas of high habitat value. The plan calls for state and local efforts to obtain incentive-based negotiated covenants, easements, leases or other legal tools in order to protect habitat. Additionally, the plan identifies a five percent disturbance limitation of habitat on state or federally managed lands, intended to limit the effects of large scale disturbances.

### ***Other Regional Efforts***

Other regional efforts are as described in **Section 5.1.4**.

#### **5.1.9 Relevant Cumulative Actions**

This cumulative effects analysis considers the incremental impact of the Idaho and Southwestern Montana Proposed LUPA and alternatives in combination with other past, present, and reasonably foreseeable future federal and non-federal actions on all lands in MZs II/VII (**Section 5.1.12**). Where these actions occur within GRSG habitat, they would cumulatively add to the impacts of BLM- and Forest Service-authorized activities set forth in the Idaho and Southwestern Montana Proposed LUPA. In addition to the conservation efforts described above, relevant reasonably foreseeable future cumulative actions occurring on federal, private, or mixed land ownership in MZs II/VII are described in the Proposed RMPAs/LUPAs for Idaho and southwestern Montana, Northwest Colorado, Wyoming Greater Sage-Grouse, Lander, Bighorn Basin, Billings, and Utah RMPs/LUPAs, which are hereby incorporated by reference.

The following list includes large-scale past, present, and future actions in MZs II/VII that, when added to the Proposed Plan and alternatives for the Idaho and Southwestern Montana sub-region, could cumulatively affect threats to GRSG (more detail is included in the table in **Section 5.1.12**):

- Pinedale Anticline Project, Wyoming
- LaBarge Platform Exploration and Development Project, Wyoming
- Continental Divide-Creston Natural Gas Project, Wyoming
- Moneta Divide Natural Gas and Oil Development Project, Wyoming

- Black Fork Project (Formerly Moxa Arch Area Infill), Wyoming
- Atlantic Rim Natural Gas Field Development Project, Wyoming
- Chokecherry Sierra Madre Wind Farm, Wyoming
- Hiawatha Regional Energy Development Project, Wyoming, Colorado
- Oil Shale and Tar Sands Programmatic EIS, Wyoming, Colorado, Utah
- Gateway South Transmission Project, Wyoming, Colorado, Utah
- TransWest Express Transmission Line Project, Wyoming, Colorado, Utah, Nevada
- Gateway West Transmission Line Project, Wyoming, Idaho
- Riley Ridge to Natrona Pipeline Project, Wyoming
- Invasive Plant Management EIS for the Medicine Bow-Routt National Forests and Thunder Basin National Grassland, Wyoming, Colorado

#### **5.1.10 Threats to GRSG in Management Zones II/VII**

In its COT report, the USFWS identifies energy development, infrastructure, grazing/free-roaming equids, conversion to agriculture, fire, spread of weeds, recreation, and conifers as the present and widespread threats facing GRSG in MZs II/VII (USFWS 2013a, pp. 17-19, 27-28). Each threat is discussed below.

##### ***Energy Development and Mining***

The COT report states that energy development should be designed to ensure that it will not impinge on stable or increasing GRSG population trends. For mining, the COT report objective is to maintain stable to increasing GRSG populations and no net loss of GRSG habitats in areas affected by mining (USFWS 2013a, p. 49).

There are approximately 1,144,800 acres of GRSG habitat in MZs II/VII where energy and mineral development is presently occurring. There are over 30 million acres indirectly influenced by energy development (including oil and gas, coal leasing, mineral materials, and renewables) (Manier et al. 2013, pp. 52-71). No geothermal energy development is presently occurring in MZs II/VII. Indirect influences are primarily due to oil and gas leases. Of the 80 percent of GRSG habitat in MZ II/VII indirectly influenced by oil and gas development, approximately 50 percent occurs on BLM-administered land, with most of the remainder on private lands (Manier et al. 2013, p. 52). Only 1 percent of oil and gas development affects National Forest System lands. Approximately 7 percent of federal lands are closed to oil and gas leasing, but the majority of leased lands are presently undeveloped. BLM and Forest Service regulatory actions would primarily influence unleased areas by way of attaching stipulations, conditions of approval, and other conservation measures on future leases.



*Oil and Gas*

Nature and Type of Effects. The impacts of oil and gas development on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Forty-four percent of the 39-million acre federal mineral estate in MZs I and II is leased and authorized for exploration and development (Naugle et al. 2011). The Greater Green River Basin, Uintah-Piceance Basin, and North Park Basin are all important oil and gas reserves in MZs II/VII. In Wyoming, which contains the bulk of the mineral estate, 52 percent is authorized for development (Naugle et al. 2011). There are two leases on the Bear Lake Plateau within the sub-region but there has been no oil and gas development.

Approximately 15 percent of GRSG habitat in MZs II/VII is within 1.8 miles of oil and gas wells (Knick et al. 2011, p. 240). Oil and natural gas development-related wells indirectly influence over 50 percent of priority habitat and general habitat on BLM-administered lands across MZs II/VII, occurring to a distance of 12 miles from the development. There are virtually no indirect impacts on National Forest System lands. Private surface lands account for 33 percent of the indirect impact in priority habitat and 37 percent in general habitat in MZs II/VII (Manier et al. 2013, p. 52). Thus, actions on BLM-administered land are likely to have a greater potential to ameliorate the adverse impacts of oil and gas development on GRSG habitat than any other single land management entity.

Though the BLM and Forest Service may restrict future leasing for oil and gas on BLM-administered and National Forest System lands within GRSG habitat, existing leases remain valid with potential for development based on locations of geologic fields for traditional oil and gas distributed extensively across eastern portions of GRSG range (Manier et al. 2013, p. 51). Oil and gas reserves are extensive across the Powder River Basin of northeastern Wyoming and southeastern Montana; the Wyoming Thrust Belt of extreme southwestern Wyoming, and the Southwest Wyoming Basin including portions of southwestern and central Wyoming. The Southwestern Wyoming and the Uinta–Piceance geological basins are both located partly in MZs II/VII, and coincide with high-density areas of GRSG, large numbers of leks, and the highest male attendance at leks compared with any areas in the eastern part of the range (USFWS 2010).

According to the RFD scenario (**Appendix O**), permanent disturbance associated with oil and gas development is projected to occur on 156 acres within the sub-region over the next 10 years. The potential for impacts would be reduced where areas are closed to fluid mineral leasing and where NSO and CSU/TL stipulations are applied. Given the small acreage and implementation of RDFs and BMPs (**Appendix B**), the likelihood for impacts on GRSG habitat on BLM-administered and National Forest System lands in the sub-region is anticipated to be small and localized under all alternatives.

Impact Analysis. **Tables 5-14**, Acres Open\* and Closed to Fluid Mineral Leasing in GRSG Habitat in MZ II/VII, and **5-15**, Acres with NSO and CSU/TL Stipulations in GRSG Habitat in MZ II/VII, provide a quantitative summary of fluid mineral leasing conditions on

BLM-administered and National Forest System lands across MZs II/VII, followed by an analysis of the Idaho and southwestern Montana sub-regional alternatives.

**Table 5-14**  
**Acres Open\* and Closed to Fluid Mineral Leasing in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open <sup>2</sup> to Fluid Mineral Leasing				
Alternative A	30,000	100%	2,401,000	1%
Alternative B	0	0%	2,382,000	<1%
Alternative C	0	0%	2,378,000	0%
Alternative D	0	0%	2,378,000	0%
Alternative E	0	0%	2,384,000	<1%
Alternative F	0	0%	2,382,000	<1%
Proposed Plan	0	0%	2,378,000	0%
Closed to Fluid Mineral Leasing				
Alternative A	1,307,000	1%	1,170,000	1%
Alternative B	1,358,000	5%	1,166,000	<1%
Alternative C	1,368,000	6%	1,164,000	0%
Alternative D	1,340,000	4%	1,170,000	1%
Alternative E	1,308,000	1%	1,166,000	<1%
Alternative F	1,358,000	1%	1,166,000	<1%
Proposed Plan	1,290,000	0%	1,165,000	<1%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> Open with standard lease terms and conditions. This table displays the acres of PHMA and GHMA open and closed to fluid mineral leasing in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.



**Table 5-15**  
**Acres with NSO and CSU/TL Stipulations in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
NSO Stipulations				
Alternative A	4,415,000	<1%	1,254,000	<1%
Alternative B	4,393,000	0%	1,254,000	<1%
Alternative C	4,393,000	0%	1,251,000	0%
Alternative D	4,397,000	<1%	1,256,000	<1%
Alternative E	4,442,000	1%	1,256,000	<1%
Alternative F	4,393,000	0%	1,254,000	<1%
Proposed Plan	4,442,000	1%	1,281,000	2%
CSU/TL Stipulations				
Alternative A	5,407,000	0%	6,955,000	0%
Alternative B	5,407,000	0%	6,955,000	0%
Alternative C	5,407,000	0%	6,955,000	0%
Alternative D	5,421,000	<1%	6,977,000	<1%
Alternative E	5,407,000	0%	6,955,000	0%
Alternative F	5,407,000	0%	6,955,000	0%
Proposed Plan	5,407,000	0%	6,957,000	<1%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA with NSO Stipulations and CSU/TL Stipulations in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

Acres open, closed, and with stipulations for fluid mineral leasing do not vary substantially across alternatives, as the acres in **Tables 5-14** and **5-15** represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres open, closed, or with stipulations. As shown in **Tables 5-14** and **5-15**, any action alternative for fluid mineral leasing in the Idaho and southwestern Montana LUPA would affect 6 percent or less of GRSG habitat within MZs II/VII.

Implementing any alternative under the Idaho and southwestern Montana LUPA/EIS would not affect pending or future oil and gas development projects outside of the sub-region. For example, numerous oil and gas development projects are proposed in Wyoming (**Section 5.1.12**). However, the NSO buffer and the disturbance cap under the Wyoming Executive Order would reduce the threat to GRSG from oil and gas development on non-federal lands in MZs II/VII.

All BLM and Forest Service Proposed Plans within MZs II/VII include BMPs and RDFs to minimize impacts on GRSG from oil and gas development on federal lands. In areas where mineral estate is currently unleased, these tools can be applied to future leases; in areas which are already leased, BMPs can be applied as conditions of approval for development of existing leases. Examples include: locating new compressor stations outside of PHMA to reduce noise disturbance; clustering operations and facilities as closely as possible; placing infrastructure in already disturbed locations where the habitat has not been fully restored; and restoring disturbed areas at final reclamation to the pre-disturbance landforms and desired plant communities. State plans contain similar measures to reduce impacts. Together, these measures would help protect unfragmented habitats, minimize habitat loss and fragmentation, and maintain conditions that meet GRSG life history needs. Recent research indicates that restored habitats lack many of the features sought by GRSG in their habitat areas, and may not support GRSG for long periods following restoration activities. In order to conserve GRSG populations on the landscape, protection of existing habitat through minimizing development, would provide the best hope for GRSG persistence (Arkle et al. 2014).

The effect of the Proposed Plans and other conservation actions in the MZ (most notably the Montana and Wyoming executive orders) could be synergistic, meaning that the effects of the actions together is greater than the sum of their individual effects. For example, applying buffers in PHMA and on state and private land would effectively conserve larger blocks of land than if these actions occurred individually. This would provide a landscape-scale net conservation benefit, especially in areas where little development has occurred to date.

Reasonably foreseeable oil and gas development in MZs II/VII is widespread and expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by restricting the location of developments, implementing disturbance caps and planned restoration activities. Together these conservation actions would result in a net conservation gain to GRSG habitats and populations in MZ IV regardless of management within the Idaho and southwestern Montana sub-region.

#### *Coal*

While coal is the major mining activity in GRSG habitat (Braun 1998), there is no potential for coal within the sub-region. Coal mines are widespread in southern portions of MZs II/VII, and federal leases developed through surface extraction directly influence approximately 52,100 acres of these MZs. There is the potential for additional coal mining in large portions of priority habitat and general habitat in MZs I, II, and VII. Indirect effects of



surface coal mines suggest influence over approximately 8 percent of priority habitat across the range of the species and approximately 5 percent of priority habitat in MZs II/VII. Approximately 36 percent of priority habitat that is indirectly influenced by coal mines across the species' range are managed by BLM. Although coal companies have demonstrated that disturbed lands can be restored to a point that supports a diversity of vegetative species, including big sagebrush, there is little evidence that GRSG populations have reoccupied habitat disturbed by coal mining, at least in terms of lek establishment (Manier et al. 2013, pp. 70-71, 74).

Coal development is also managed at the state level. For example, coal development that requires state agency review or approval would be subject to the permitting process and stipulations for development in GRSG Core areas under the Wyoming Executive Order. Additionally, new coal leases applications on federal lands would be subject to 43 CFR, Part 3461.5, Criterion 15. This states that a lease may be issued if, after consultation with the state, the surface management agency determines that all or certain stipulated methods of coal mining would not have a significant long-term impact on the GRSG. Special conditions could be required, as identified during the leasing process, to protect GRSG habitat. The requirements of 43 CFR, Part 3461.5, Criterion 15, in combination with BLM and Forest Service planning efforts and state plans, would help reduce the threat from coal extraction and would provide a net conservation gain to GRSG habitats and populations in MZs II/VII.

#### *Mineral Materials*

Nature and Type of Effects. The impacts of mineral material development on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. There are 846,600 acres of mining and mineral materials disposal sites (not including minerals mined as energy sources) on BLM-administered surface land on priority habitat and general habitat in MZs II/VII. There are 1,027,500 acres across all landownership types, making BLM-administered land the largest contributor to direct effects from this threat. National Forest System lands contribute to direct effects on 3,100 acres of priority habitat and general habitat (Manier et al. 2013, p. 77).

Indirect effects are estimated to 1.5 miles out from the direct effects area. In total, 65 percent of priority habitat and 60 percent of general habitat influenced by the indirect impact of mining and mineral materials disposal sites are on BLM-administered land. This does not include minerals mined as energy sources. Mining and mineral materials disposal sites on private land, by comparison, indirectly affect 26 percent of priority habitat and 32 percent of general habitat. National Forest System lands have virtually no indirectly effects on priority habitat and general habitat (Manier et al. 2013, p. 77). As a result, management of mining and material disposal sites on BLM-administered land would have the greatest impact on GRSG habitat conditions. For example, closure of BLM-administered lands to mineral material disposal could shift mineral material disposal in the MZ onto adjacent lands.

Impact Analysis. Acres open and closed to mineral material disposal do not vary substantially across alternatives, as the acres in **Table 5-16** represent the Proposed Plans

from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres open or closed. As shown in **Table 5-16**, Acres Open and Closed to Mineral Material Disposal in GRSG Habitat in MZ II/VII, any alternative for mineral materials management in the Idaho and southwestern Montana LUPA would affect 2 percent or less of GRSG habitat within MZs II/VII.

**Table 5-16**  
**Acres Open and Closed to Mineral Material Disposal in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open to Mineral Material Disposal				
Alternative A	7,249,000	1%	9,762,000	<1%
Alternative B	7,181,000	0%	9,740,000	<1%
Alternative C	7,181,000	0%	9,730,000	0%
Alternative D	7,222,000	1%	9,758,000	<1%
Alternative E	7,247,000	1%	9,743,000	<1%
Alternative F	7,181,000	0%	9,740,000	<1%
Proposed Plan	7,181,000	0%	9,762,000	<1%
Closed to Mineral Material Disposal				
Alternative A	3,446,000	0%	1,390,000	0%
Alternative B	3,514,000	2%	1,390,000	0%
Alternative C	3,524,000	2%	1,390,000	0%
Alternative D	3,473,000	1%	1,394,000	<1%
Alternative E	3,446,000	0%	1,390,000	0%
Alternative F	3,514,000	2%	1,390,000	0%
Proposed Plan	3,495,000	1%	1,390,000	0%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> This table displays the acres of PHMA and GHMA open and closed to mineral material disposal in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

Reasonably foreseeable future mineral material disposals in MZs II/VII could affect GRSG through habitat disturbance, fragmentation, or behavior disruptions, depending on the



location and extent of the project; however, implementation of BLM and Forest Service Proposed Plans in other areas of MZs II/VII would restrict development, thereby reducing the risk of removing or fragmenting habitat elsewhere in MZs II/VII, particularly on federal lands. There would be a net conservation gain to GRSG habitats and populations in MZs II/VII, but it would be concentrated in areas outside the Idaho and southwestern Montana sub-region.

Under the Wyoming and Montana Executive Orders, authorizations of new mineral material disposal sites that require state agency review or approval would be subject to the GRSG permitting process. They also would be subject to stipulations for development in GRSG Core areas. These stipulations would be of particular benefit on privately owned surface and subsurface lands, where BLM and Forest Service protective regulatory mechanisms do not apply.

Reasonably foreseeable mineral material development in MZs II/VII is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by restricting the location of developments, implementing disturbance caps and planned restoration activities. Together these conservation actions would result in a net conservation gain to GRSG habitats and populations in MZ IV regardless of management within the Idaho and southwestern Montana sub-region.

#### *Locatable Minerals*

Nature and Type of Effects. The impacts of locatable mineral development on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZ II/VII. The magnitude of existing conditions in the sub-region is largely unknown, but mining of locatable federal mineral resources currently affects approximately 2.2 percent of GRSG habitat in MZs II/VII (Manier et al. 2013, p. 74).

Impact Analysis. Under all alternatives, RDFs in all BLM and Forest Service Proposed Plans would help minimize the impacts on GRSG from locatable mineral development on federal land, consistent with applicable law. Examples include: clustering operations and facilities as closely as possible; placing infrastructure in already disturbed locations where the habitat has not been fully restored; and restoring disturbed areas at final reclamation to the pre-disturbance landforms and desired plant communities.

Acres open and recommended for withdrawal from locatable mineral entry do not vary substantially across alternatives, as the acres in **Table 5-17**, Acres Open and Recommended for Withdrawal from Mineral Entry in GRSG Habitat in MZ II/VII, represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres open or recommended for withdrawal. As shown in **Table 5-17**, any alternative for locatable minerals management in the Idaho and southwestern Montana

LUPA would affect 7 percent or less of GRSG habitat within MZs II/VII. The greatest impacts would result under Alternatives B, C, and F, where PHMA in the Idaho and southwestern Montana sub-region would be recommended for withdrawal.

**Table 5-17**  
**Acres Open and Recommended for Withdrawal from Mineral Entry**  
**in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open to Mineral Entry				
Alternative A	8,204,000	1%	8,932,000	<1%
Alternative B	8,140,000	0%	8,914,000	<1%
Alternative C	8,140,000	0%	8,905,000	0%
Alternative D	8,204,000	1%	8,932,000	<1%
Alternative E	8,202,000	1%	8,917,000	<1%
Alternative F	8,140,000	0%	8,914,000	<1%
Proposed Plan	8,190,000	1%	8,940,000	<1%
Recommended for Withdrawal from Locatable Mineral Entry				
Alternative A	893,000	0%	235,000	0%
Alternative B	957,000	7%	235,000	0%
Alternative C	965,000	7%	235,000	0%
Alternative D	893,000	0%	235,000	0%
Alternative E	893,000	0%	235,000	0%
Alternative F	957,000	7%	235,000	0%
Proposed Plan	893,000	0%	235,000	0%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> This table displays the acres of PHMA and GHMA open to mineral entry and recommended for withdrawal from locatable mineral entry in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

Under the Proposed Plans, portions of SFAs would be recommended for withdrawal. SFAs represent areas having the highest densities of GRSG and other criteria important for the persistence of the species. As such, if these areas are withdrawn, the Proposed Plan would provide a greater net conservation gain to GRSG populations by reducing disturbance to birds from mining. However due to the sub-region containing such a small percentage of GRSG habitat within the larger MZs, the impact of the sub-region would be limited.



Reasonably foreseeable locatable mineral development in MZs II/VII is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat. Together these conservation actions would result in a net conservation gain to GRSG habitats and populations in MZ IV regardless of management within the Idaho and southwestern Montana sub-region.

#### *Nonenergy Leasable Minerals*

Nature and Type of Effects. The impacts of nonenergy leasable mineral development on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Existing prospecting permits for nonenergy leasable minerals directly affect 935,500 acres (2.5 percent) of GRSG habitats in MZs II/VII, which is the largest proportion of GRSG habitat compared with the other MZs (Manier et al. 2013, p. 79). Phosphate development is prevalent in southeastern Idaho, though acres disturbed are not known (**Section 3.12**).

Impact Analysis. Acres open and closed to nonenergy leasable mineral leasing do not vary substantially across alternatives, as the acres in **Table 5-18** represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres open or closed. As shown in **Table 5-18**, Acres Open and Closed to Nonenergy Leasable Mineral Leasing in GRSG Habitat in MZ II/VII, any alternative for nonenergy leasable minerals management in the Idaho and southwestern Montana LUPA would affect 2 percent or less of GRSG habitat within MZs II/VII.

Reasonably foreseeable nonenergy leasable mineral development in MZs II/VII is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZ IV would reduce the threat by restricting the location of developments, implementing disturbance caps and planned restoration activities. Together these conservation actions would result in a net conservation gain to GRSG habitats and populations in MZ IV regardless of management within the Idaho and southwestern Montana sub-region.

#### ***Infrastructure***

##### *Rights-of-Way*

Nature and Type of Effects. The impacts of ROWs on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Infrastructure, such as ROWs and associated facilities and urbanization, is widespread throughout MZs II/VII. In some locations, infrastructure development has affected GRSG habitat. Development of roads, fences, and utility corridors has also contributed to habitat loss and fragmentation in

**Table 5-18**  
**Acres Open and Closed to Nonenergy Leasable Mineral Leasing**  
**in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open to Nonenergy Leasing				
Alternative A	5,972,000	1%	7,939,000	<1%
Alternative B	5,921,000	0%	7,916,000	<1%
Alternative C	5,921,000	0%	7,913,000	0%
Alternative D	5,921,000	0%	7,939,000	<1%
Alternative E	5,970,000	1%	7,924,000	<1%
Alternative F	5,921,000	0%	7,916,000	<1%
Proposed Plan	5,921,000	0%	7,939,000	<1%
Closed to Nonenergy Leasing				
Alternative A	3,614,000	<1%	1,112,000	<1%
Alternative B	3,665,000	2%	1,109,000	<1%
Alternative C	3,675,000	2%	1,106,000	0%
Alternative D	3,665,000	2%	1,112,000	<1%
Alternative E	3,614,000	<1%	1,108,000	<1%
Alternative F	3,665,000	2%	1,109,000	<1%
Proposed Plan	3,646,000	1%	1,114,000	<1%

Source: BLM 2015

<sup>1</sup> Includes IHMA

<sup>2</sup> This table displays the acres of PHMA and GHMA open and closed to nonenergy leasing in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

portions of MZs II/VII. The best available estimates suggest about 25 percent of the MZs II/VII are within approximately 4 miles of urban development (Knick et al. 2011, p. 214). Impacts of infrastructure development in MZ IV are primarily related to highways, roads, power lines, and communication towers, with 90 percent of MZs II/VII within 4 miles of a road, 25 percent within 4 miles of a power line, and 5 percent within 4 miles of a communication tower (Knick et al. 2011, pp. 215-216).

Although not representative of all infrastructure ROWs, transmission lines greater than 115 kilovolts indirectly influence 60 percent of priority habitat and 63 percent of general habitat across MZs II/VII. Indirect effects are assumed to occur to a radius of 4 miles (Manier et al. 2013, p. 41). Approximately 50 percent of transmission lines in priority habitat and 45

percent in general habitat are on BLM-administered lands across GRSG habitats in MZs II/VII (Manier et al. 2013, p. 41). There is also a substantial contribution from private lands, where 42 percent of transmission lines in priority habitat and 47 percent in general habitat are located. In contrast, National Forest System lands contain 1 percent of transmission lines in priority habitat and 1 percent in general habitat. Therefore, actions on BLM-administered and private lands are likely to have the greatest potential to affect transmission line ROWs in GRSG habitat than other land management entities. Designating ROW exclusion and avoidance areas in PHMA and GHMA on BLM-administered and National Forest System lands could reduce the threat on these lands. However, in areas with scattered federal landownership, infrastructure may be routed around federal lands, often increasing its length and impact. ROW avoidance and exclusion areas on BLM-administered and National Forest System lands could increase this tendency.

Impact Analysis. Acres managed as open, exclusion, and avoidance for ROWs do not vary substantially across alternatives, as the acres in **Table 5-19** represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres managed as open, exclusion, or avoidance. As shown in **Table 5-19**, Acres of Rights-of-Way Designations in GRSG Habitat in MZ II/VII, any action alternative for ROW management in the Idaho and southwestern Montana LUPA would affect 8 percent or less of GRSG habitat within MZs II/VII. The greatest impacts would result under Alternatives B, C, and F, where PHMA in the Idaho and southwestern Montana sub-region would be managed as ROW exclusion.

The numbers of ROW authorizations are anticipated to grow in the sub-region. Increasing populations, continued energy development, and new communication sites drive the need for new ROWs on both federal and non-federal lands.

New ROW authorizations that require state agency review or approval would be subject to the permitting process and stipulations for development in GRSG Core areas under the Wyoming and Montana Executive Orders. These stipulations would benefit the GRSG in Core Areas by encouraging ROW development outside of core habitat areas, restricting surface occupancy within 0.6 mile of occupied leks, prohibiting power lines greater than 115 kV outside of designated corridors, and locating new roads used to transport products or waste over 1.9 miles from occupied leks.

Presidential Priority transmission projects which are proposed in MZs II/VII (i.e., Transwest Express and Gateway West), would not be subject to GRSG conservation requirements in BLM and Forest Service LUPAs, but would be subject to requirements in applicable state plans as well as other state and federal laws and regulations. They would also develop their own suite of protective measures analyzed in project-specific NEPA documents. Whether or

**Table 5-19**  
**Acres of Rights-of-Way Designations in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open to Rights-of-Way				
Alternative A	122,000	37%	5,980,000	<1%
Alternative B	77,000	0%	5,958,000	<1%
Alternative C	77,000	0%	5,594,000	<1%
Alternative D	77,000	0%	5,954,000	<1%
Alternative E	77,000	0%	5,961,000	<1%
Alternative F	77,000	0%	5,958,000	<1%
Proposed Plan	77,000	0%	5,954,000	<1%
Right-of-Way Exclusion				
Alternative A	564,000	0%	675,000	<1%
Alternative B	609,000	7%	674,000	0%
Alternative C	614,000	8%	674,000	0%
Alternative D	564,000	0%	674,000	0%
Alternative E	564,000	0%	674,000	0%
Alternative F	609,000	7%	674,000	0%
Proposed Plan	564,000	0%	674,000	0%
Right-of-Way Avoidance				
Alternative A	8,306,000	0%	3,114,000	0%
Alternative B	8,305,000	0%	3,114,000	0%
Alternative C	8,305,000	0%	3,114,000	0%
Alternative D	8,351,000	<1%	3,142,000	<1%
Alternative E	8,348,000	<1%	3,114,000	0%
Alternative F	8,305,000	0%	3,114,000	0%
Proposed Plan	8,336,000	<1%	3,134,000	<1%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within rights-of-way designations in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

not these project-specific measures would adequately protect GRSG is unknown at this point in time because the measures have not been finalized. Regardless, impacts would likely be greater in Colorado where the proposed route would impact approximately 26 miles in PACs and 57 miles in PHMA in the Little Snake and White River BLM Field Offices. This impact would be especially harmful to fringe GRSG populations in Colorado, as some are less robust than those in Wyoming and southern Montana. In Wyoming, the routes avoid Core Areas due to that state plan's requirements; this would reduce impacts in Wyoming.

The effect of the alternatives and other conservation actions in the MZ (most notably the Montana and Wyoming executive orders) could be synergistic, meaning that the effects of the actions together is greater than the sum of their individual effects. By implementing restrictions on infrastructure in PHMA and on state and private lands together, the cumulative beneficial effect on GRSG would be greater than the sum of their individual effects because protections would be applied more consistently across the landscape. This is especially important in areas of mixed land ownership patterns where complementary protections can benefit leks, early brood rearing habitat, or other important areas that do not follow geopolitical boundaries.

Reasonably foreseeable ROW development in MZs II/VII is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZs II/VII would reduce the threat by restricting the type and location of developments. These conservation actions would provide a net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management within the Idaho and southwestern Montana sub-region.

#### *Renewable Energy*

Nature and Type of Effects. The impacts of renewable energy development on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. While most federal lands are not currently leased or developed for wind or solar energy, the areas of potential development coincide closely with GRSG habitats, especially in MZs II/VII (Manier et al. 2013, p. 60).

Although not representative of all renewable energy development, wind turbines on BLM-administered land indirectly influence less than 1 percent of priority habitat and general habitat combined across MZs II/VII. Private lands account for 70 percent of wind turbines affecting GRSG in priority habitat (and 73 percent in general habitat) within MZs II/VII (Manier et al. 2013, p. 61). Therefore, conservation actions on private land are likely to have a greater potential to ameliorate the effects of wind energy development than any other single land management entity.

Impact Analysis. **Table 5-20**, Acres of Wind Energy Management Designations in GRSG Habitat in MZ II/VII, displays acres open to wind energy ROW and wind energy exclusion and avoidance areas by alternative.

**Table 5-20**  
**Acres of Wind Energy Management Designations in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open to Wind Rights-of-Way				
Alternative A	45,000	100%	5,487,000	<1%
Alternative B	0	0%	5,465,000	<1%
Alternative C	0	0%	5,460,000	0%
Alternative D	0	0%	5,460,000	0%
Alternative E	0	0%	5,467,000	<1%
Alternative F	0	0%	5,465,000	<1%
Proposed Plan	0	0%	5,461,000	0%
Wind Right-of-Way Exclusion				
Alternative A	3,765,000	0%	957,000	0%
Alternative B	3,810,000	1%	957,000	0%
Alternative C	3,815,000	1%	957,000	0%
Alternative D	3,809,000	1%	957,000	0%
Alternative E	3,765,000	0%	957,000	0%
Alternative F	3,810,000	1%	957,000	0%
Proposed Plan	3,796,000	1%	958,000	<1%
Wind Right-of-Way Avoidance				
Alternative A	5,184,000	0%	3,305,000	0%
Alternative B	5,184,000	0%	3,305,000	0%
Alternative C	5,184,000	0%	3,305,000	0%
Alternative D	5,185,000	<1%	3,332,000	<1%
Alternative E	5,226,000	1%	3,305,000	0%
Alternative F	5,184,000	0%	3,305,000	0%
Proposed Plan	5,184,000	0%	3,323,000	<1%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within wind energy management designations in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

Acres managed as open, avoidance, and exclusion for wind energy development do not vary substantially across alternatives, as the acres in **Table 5-20** represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres managed as open, avoidance, or exclusion. As shown in **Table 5-20**, any action alternative for wind energy management in the Idaho and southwestern Montana LUPA would affect 1 percent or less of GRSG habitat within MZs II/VII.

All Proposed Plans within Wyoming in MZs II/VII rely on wind ROW avoidance designations to protect GRSG habitat rather than wind ROW exclusion. Similar to other ROWs, this approach preserves management flexibility in situations where landownership is mixed. Without this flexibility, rerouting ROWs across nonfederal land may result in a longer route, increasing disturbance of GRSG leks, nests, and brood-rearing and wintering areas more than direct routing across federal land. Other Proposed Plans in MZs II/VII would manage PHMA as ROW exclusion, thereby providing the greatest protection on federal lands, but potentially increasing impacts on nonfederal lands.

Reasonably foreseeable future projects within MZs II/VII include renewable energy developments, such as the Chokecherry/Sierra Madre Wind Farm in southern Wyoming. Projects which require state agency review or approval would be subject to the Wyoming Executive Order permitting process for development in core areas, which would encourage ROW development outside of Core Areas and restrict surface occupancy within 0.6 miles of occupied leks.

Overall, the Montana and Wyoming state actions, other BLM and Forest Service Proposed Plans within MZs II/VII, and other past, present, and reasonably foreseeable future actions will provide a net conservation gain to GRSG habitats and populations in MZs II/VII from wind energy management regardless of management within the Idaho and southwestern Montana sub-region.

Reasonably foreseeable renewable energy development in MZs II/VII is expected to increase over the 20-year analysis period (**Section 5.1.12**), though state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZs II/VII would reduce the threat by restricting the location of developments. These conservation actions would provide a net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management within the Idaho and southwestern Montana sub-region.

### ***Grazing/Free-Roaming Equids***

Nature and Type of Effects. The impacts of livestock grazing and free-roaming equids on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Livestock grazing is present and widespread on many land types, such as federal and private, across MZs II/VII. Rangeland health assessments have found that nearly 4 percent of BLM-administered grazing

allotments in GRSG habitat in MZs II/VII are not meeting wildlife standards with grazing as a causal factor. Additionally, nearly 5 million acres of GRSG habitat within MZs II/VII, largely in the central portion of the area, is federally managed wild horse and burro range (Manier et al. 2013, p. 131).

Impact Analysis. **Table 5-21**, Acres Available and Unavailable to Livestock Grazing in GRSG Habitat in MZ II/VII, lists the acres of PHMA and GHMA available and unavailable for grazing by alternative.

**Table 5-21**  
**Acres Available and Unavailable to Livestock Grazing in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Available to Livestock Grazing				
Alternative A	8,915,000	1%	9,711,000	<1%
Alternative B	8,915,000	1%	9,689,000	<1%
Alternative C	8,871,000	0%	9,684,000	0%
Alternative D	8,915,000	1%	9,711,000	<1%
Alternative E	8,913,000	<1%	9,692,000	<1%
Alternative F	8,915,000	1%	9,689,000	<1%
Proposed Plan	8,901,000	<1%	9,705,000	<1%
Unavailable to Livestock Grazing				
Alternative A	28,000	0%	16,000	0%
Alternative B	28,000	0%	16,000	0%
Alternative C	78,000	64%	16,000	0%
Alternative D	28,000	0%	16,000	0%
Alternative E	28,000	0%	16,000	0%
Alternative F	28,000	0%	16,000	0%
Proposed Plan	28,000	0%	16,000	0%

Source: BLM 2015

This table displays the acres of PHMA and GHMA available and unavailable to livestock grazing in MZ I; it also displays the percentage of those acres that are found within the sub-region.

Acres available and unavailable to livestock grazing generally do not vary substantially across alternatives, as the acres in **Table 5-21** represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region.

Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres available or unavailable. As shown in **Table 5-21**, most alternatives for livestock grazing management in the Idaho and southwestern Montana LUPA would affect 1 percent or less of GRSG habitat within MZs II/VII. The exception would be under Alternative C, where grazing would be removed from PHMA in the Idaho and southwestern Montana sub-region. This represents 64 percent of the total acres unavailable to grazing in MZs II/VII under this alternative. Impacts from removal of grazing under Alternative C would be as described in **Section 5.1.6**.

Since 2010, SGI has enhanced rangeland health through rotational grazing systems, re-vegetating former rangeland with sagebrush and perennial grasses and control of invasive weeds. On privately-owned lands, SGI has developed a prescribed grazing approach that balances forage availability with livestock demand. This system allows for adjustments to timing, frequency, and duration of grazing, ensuring rangelands are managed sustainably to provide continued ecological function of sagebrush-steppe. A primary focus of the prescribed grazing approach is maintenance of key plant species, such as deep-rooted perennial grasses that have been shown to be essential for ecological resistance to invasive annual grasses (Reisner et al. 2013, pp. 1047-1048). These actions help to alleviate the adverse impacts associated with improper grazing practices outlined above under Nature and Type of Effects. Within MZs II/VII, SGI has implemented 543,511 acres of prescribed grazing systems. This program is likely the largest and most impactful program on private lands within MZs II/VII. Because of its focus on priority areas for conservation, which often overlap PHMA, the SGI's past, present, and reasonably foreseeable work has had and likely will continue to have a cumulative beneficial impact on GRSG when considered alongside protective BLM management actions in PHMA.

Reasonably foreseeable livestock grazing management efforts in MZs II/VII are expected to increase over the analysis period (**Section 5.1.12**), through increased NRCS conservation actions under the Sage-Grouse Initiative (e.g., fence marking and conservation easements), state efforts to maintain ranchland, and the implementation of other BLM and Forest Service LUPAs in MZs II/VII. These conservation actions would result in a net conservation gain to GRSG habitats and populations in MZ II/VII regardless of management within the Idaho and southwestern Montana sub-region.

### ***Spread of Invasive Plants***

Nature and Type of Effects. The impacts of weed spread on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Cheatgrass is distributed throughout these MZs, though generally not with the same abundance observed in other areas, such as the Great Basin. Localized areas, such as southern Wyoming, are more invaded than cooler parts of the region (Manier et al. 2013, p. 131).

The BLM and Forest Service currently manage weed infestations through integrated weed management: biological, chemical, mechanical, manual, and educational methods. The BLM

is guided by the 1991 and 2007 RODs for Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991) and by the 2007 Programmatic Environmental Report (BLM 2007). Weeds are managed in cooperation with county governments and represents a landscape-level approach across management jurisdictions.

Impact Analysis. Given the small acreage of the Idaho and southwestern Montana sub-region within MZs II/VII, it is unlikely that the alternatives in the Idaho and southwestern Montana LUPA would have a measurable contribution to cumulative effects from invasive weed management within MZs II/VII.

Invasive species on BLM-administered and National Forest System lands would be controlled under all alternatives and may be more successful given the lower extent of invasion within the MZs. This would provide a net conservation gain to GRSG by restoring degraded sagebrush habitat.

Relevant cumulative actions that result in surface-disturbing activities would increase the potential for the spread of invasive weeds on both federal and non-federal lands. Projects subject to the general stipulations outlined in the Montana and Wyoming Executive Orders are required to control noxious and invasive weed species and to use native seed mixes during reclamation processes. These stipulations would benefit GRSG core habitat areas. They would accomplish this by limiting the spread or establishment of invasive species, particularly on lands that lack BLM and Forest Service protective regulatory mechanisms. Further, the Greater Sage-Grouse Habitat Conservation Strategy for NRCS in Idaho has identified GRSG conservation measures related to invasive weeds, such as reducing the risk and rate of fire spread, restoration and rehabilitation, and weed control. A number of projects are ongoing or in the planning phase to treat nonnative, invasive species (**Section 5.1.12**).

Reasonably foreseeable weed management efforts are projected to increase (**Section 5.1.12**), including other state and county noxious weed regulations and the implementation of other BLM and Forest Service LUPAs in MZ II/VII. These conservation actions would result in a net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management within the Idaho and southwestern Montana sub-region.

### ***Conversion to Agriculture***

Nature and Type of Effects. The impacts of conversion to agriculture on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Regional assessments estimate that while only 1 percent of priority habitat and general habitat in MZs II/VII are directly influenced by agricultural development, over 80 percent of these habitats are within approximately 4 miles of agricultural land (Manier et al. 2013, p. 27).

Impact Analysis. The BLM and Forest Service do not convert public lands to agriculture. As such, the only direct authority these agencies have over conversion to agriculture is by retaining or disposing of lands in the realty program. Lands retained under BLM and Forest



Service management will not be converted to agriculture and disposing of lands could increase the likelihood they will be converted to agriculture, depending on their location and the policies of the new management authority.

Acres identified for retention and disposal generally do not vary substantially across alternatives, as the acres in **Table 5-22**, Acres Identified for Retention and Disposal in GRSG Habitat in MZ II/VII, represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres identified for retention or disposal. As shown in **Table 5-22**, most alternatives for land tenure adjustments in the Idaho and southwestern Montana LUPA would affect 4 percent or less of GRSG habitat within MZs II/VII. The exception would be under Alternatives A and E, which would identify some PHMA in the Idaho and southwestern Montana sub-region for disposal. This represents 65 and 63 percent of the total acres identified for disposal in MZs II/VII under Alternatives A and E, respectively.

Cumulative impacts vary relatively little across alternatives, and BLM and Forest Service management may have little impact on alleviating this threat. Restrictions on grazing on federal land could increase agriculture pressure on adjacent private lands. If the loss of federal grazing privileges makes ranching economically unviable, the potential conversion of private grazing lands to agriculture would increase. However, the Proposed Plan does not substantially increase acreage unavailable to grazing.

The COT report objectives for converting land to agriculture are to avoid further loss of sagebrush habitat for agricultural activities (both plant and animal production) and to prioritize restoration. In areas where taking agricultural lands out of production has benefited GRSG, the programs supporting these actions should be targeted and continued (USFWS 2013a, p. 48). In accordance with this objective, the NRCS's SGI program focuses on maintaining rangeland that provides habitat for GRSG.

This voluntary program provides private landowners with monetary incentives to protect GRSG habitat, often through conservation easements. As a result, private land containing GRSG habitat is protected from conversion to agriculture or other development for the life of the conservation agreement. The conservation easements and other conservation incentives, such as restoration of water features and fence marking, can enhance the ability of private rangelands to support GRSG. As of 2014, SGI has secured conservation easements on 243,403 acres within MZs II/VII and marked or removed 23 miles of fence (NRCS 2015). This has preserved habitat and reduced the risk of direct mortality on these lands.

**Table 5-22**  
**Acres Identified for Retention and Disposal in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Acres Identified for Retention				
Alternative A	7,272,000	<1%	8,930,000	<1%
Alternative B	7,315,000	1%	8,908,000	<1%
Alternative C	7,320,000	1%	8,907,000	0%
Alternative D	7,315,000	1%	8,934,000	<1%
Alternative E	7,272,000	<1%	8,908,000	<1%
Alternative F	7,315,000	1%	8,908,000	<1%
Proposed Plan	7,291,000	<1%	8,938,000	<1%
Acres Identified for Disposal				
Alternative A	67,000	65%	160,000	3%
Alternative B	24,000	0%	160,000	3%
Alternative C	24,000	0%	156,000	0%
Alternative D	24,000	0%	156,000	0%
Alternative E	65,000	63%	162,000	4%
Alternative F	24,000	0%	160,000	3%
Proposed Plan	24,000	0%	156,000	0%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA identified for retention and disposal in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

Over the analysis period, conversion to agriculture is expected to increase (**Section 5.1.12**), though state and private conservation efforts as well as other BLM and Forest Service proposed plans in MZs II/VII would reduce the threat. These conservation actions would result in net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management within the Idaho and southwestern Montana sub-region.

***Wildfire***

Nature and Type of Effects. The impacts of fire on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Fire risk is generally low across MZs II/VII, though areas in the northern and southern portions of the MZs have a higher fire

risk (Manier et al. 2013, p. 131). Within the MZs, 10 percent of priority habitat and general habitat have a high risk for fire (Manier et al. 2013, p. 85).

Impact Analysis. Given the small acreage of the Idaho and southwestern Montana sub-region within MZs II/VII, it is unlikely that the alternatives in the Idaho and southwestern Montana LUPA would have a measurable contribution to cumulative effects from fire management within MZs II/VII.

Recognition of the importance of sagebrush habitat during interagency wildfire response would benefit GRSG in the event of an unplanned fire. The Montana Executive Order emphasizes fire suppression in Core Population Areas, while recognizing other suppression priorities may take precedent. This would benefit GRSG during wildfire planning and response, particularly on lands not administered by the BLM or Forest Service.

The Interagency Standards for Fire and Fire Aviation Operations “Red Book” includes a BMP for GRSG habitat conservation for wildlife and fuels management (BLM 2013b). This document is a supplemental policy or guidance for the BLM, the Forest Service, and the USFWS. This BMP would benefit the GRSG during interagency wildland fire operations. It would do this by using spatial habitat data and predictive services to prioritize and preposition firefighting resources in critical habitat areas. In January 2015, Secretarial Order 3336 “Rangeland Fire Prevention, Management and Restoration” was signed by the Secretary of the Interior. The order sets forth strategies for preventing and suppressing rangeland wildfire and for restoring sagebrush landscapes impacted by wildfire across the West. The order will improve coordination with local, state, tribal, and regional efforts to address rangeland wildfire at a landscape level. Coordination with rural fire districts to manage wildfires in GRSG habitat will further reduce this threat across land ownership types and improve the quality and quantity of habitat.

Reasonably foreseeable wildland fire management efforts are projected to increase (**Section 5.1.12**), especially through increased coordination of federal, state, and local fire prevention actions and the implementation of other BLM and Forest Service LUPAs in MZs II/VII. These conservation actions would result in a net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management within the Idaho and southwestern Montana sub-region.

### ***Recreation***

Nature and Type of Effects. The impacts of recreation on GRSG are described in **Section 4.2** and above in **Section 5.1.6**.

Conditions in the Sub-region and in MZs II/VII. Human populations have increased and expanded, primarily over the past century and in the western portion of the sagebrush distribution. Within MZs II/VII, population densities have increased 31 percent on the Colorado Plateau and 19 percent in the Wyoming Basin (Knick et al. 2011, p. 212). With these expanding populations come greater human impacts (Leu et al. 2008).

The COT report objectives for recreation are to maintain healthy native sagebrush communities, based on local ecological conditions, and to manage direct and indirect human disturbance (including noise) to avoid interruption of normal GRSG behavior (USFWS 2013a, p. 49). Limits on road use under the action alternatives and limits on OHVs would help meet these objectives.

In the Idaho and southwestern Montana sub-region, travel management planning is underway to determine specific routes available for closure.

Impact Analysis. **Table 5-23**, Acres of Travel Management Designations in GRSG Habitat in MZ II/VII, shows Acres of Travel Management Designations in GRSG Habitat in MZs II/VII.

Acres open, closed, and limited to motorized vehicles do not vary substantially across alternatives, as the acres in **Table 5-23** represent the Proposed Plans from other BLM and Forest Service sub-regions and planning areas in MZs II/VII combined with the management in the MZs II/VII portion of the Idaho and southwestern Montana sub-region. Since the Idaho and southwestern Montana sub-region has so few acres within MZs II/VII, alternatives in this sub-region would have a relatively small influence on total acres open, closed or limited. As shown in **Table 5-23**, any alternative for travel management in the Idaho and southwestern Montana LUPA would affect 1 percent or less of GRSG habitat within MZs II/VII.

Reasonably foreseeable recreation in MZs II/VII is expected to increase over the 20-year analysis period (**Section 5.1.12**). However, state and private GRSG conservation efforts as well as other BLM and Forest Service proposed plans in MZs II/VII would reduce the threat by providing additional protections such as disturbance caps and limitations on National Forest System lands. These conservation actions would result in a net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management within the Idaho and southwestern Montana sub-region.

### ***Conifer Encroachment***

Nature and Type of Effects. Conifer woodlands, especially juniper (*Juniperus* spp.) and in some regions pinyon pine (*Pinus edulis*), may expand into sagebrush habitat and reduce availability of habitat for GRSG. Conifer expansion may be encouraged by human activities, including fire suppression and grazing (Miller et al. 2011). If woodland development is sufficient to restrict shrub and herbaceous understory growth, habitat quality for GRSG will be reduced (Connelly et al. 2004). Mature trees offer perch sites for raptors; thus, woodland expansion may also increase the threat of predation, as with powerlines (Manier et al. 2013). Locations within approximately 1,000 yards of current pinyon-juniper woodlands are at highest risk of expansion (Bradley 2010). The greatest risks from conifer encroachment are thought to be in the Great Basin, with smaller risks (6 to 7 percent of priority and general habitat) in the Wyoming Basin (Connelly et al. 2004; Manier et al. 2013). Studies have shown that GRSG incur population-level impacts at very low levels of conifer encroachment (Baruch-Mordo et al. 2013).



**Table 5-23**  
**Acres of Travel Management Designations in GRSG Habitat in MZ II/VII**

	Priority Habitat Management Areas		General Habitat Management Areas <sup>1</sup>	
	MZ II/VII	<i>Percent Within Sub-Region</i>	MZ II/VII	<i>Percent Within Sub-Region</i>
Open				
Alternative A	5,000	0%	58,000	100%
Alternative B	5,000	0%	5,000	0%
Alternative C	5,000	0%	5,000	0%
Alternative D	5,000	0%	5,000	0%
Alternative E	5,000	0%	5,000	0%
Alternative F	5,000	0%	5,000	0%
Proposed Plan	5,000	0%	58,000	72%
Limited				
Alternative A	8,876,000	1%	9,338,000	<1%
Alternative B	8,876,000	1%	9,315,000	<1%
Alternative C	8,876,000	1%	9,310,000	0%
Alternative D	8,876,000	1%	9,338,000	<1%
Alternative E	8,873,000	<1%	9,317,000	<1%
Alternative F	8,876,000	1%	9,315,000	<1%
Proposed Plan	8,861,000	<1%	9,331,000	<1%
Closed				
Alternative A	112,000	0%	366,000	0%
Alternative B	112,000	0%	366,000	0%
Alternative C	112,000	0%	366,000	0%
Alternative D	112,000	0%	366,000	0%
Alternative E	112,000	0%	366,000	0%
Alternative F	112,000	0%	366,000	0%
Proposed Plan	112,000	0%	366,000	0%

Source: BLM 2015

<sup>1</sup> Includes IHMA

This table displays the acres of PHMA and GHMA within travel management designations of open, limited and closed in MZ II/VII; it also displays the percentage of those acres that are found within the sub-region.

Conditions in MZs II/VII. Approximately 46 percent of conifer encroachment risk in priority habitat (and 43 percent in general habitat) occur on BLM-administered lands within MZs II/VII (Manier et al. 2013). Therefore, BLM actions are likely to have a greater potential to ameliorate the effects of conifer encroachment on GRSG than any other single land management entity.

Impact Analysis. Specific required design features common to all BLM and Forest Service plans in MZs II/VII include removal of standing and encroaching trees within 100 meters of occupied leks and other habitats (e.g., nesting, wintering, and brood rearing). Additionally, reintroduction of appropriate fire regimes would limit conifer encroachment into the sagebrush plant communities. These actions would benefit GRSG by improving the quality of habitat throughout the MZ.

Additionally, under the Proposed Plan, conifer removal treatments would be prioritized closest to occupied GRSG habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. This action would benefit GRSG by improving the quality of habitat and functionality.

In Colorado, the Colorado Parks and Wildlife has conducted conifer treatments totaling 2,600 acres (Colorado Department of Natural Resources 2013). In addition, SGI has helped reduce the threat of early succession conifer encroachment through mechanical removal on 10,500 acres of private lands within MZs II/VII. The majority of these efforts were located inside PACs (NRCS 2015), helping to preserve historic fire return intervals and important GRSG habitat.

Reasonably foreseeable conifer encroachment management efforts are projected to increase (**Section 5.1.12**), including efforts on private land and implementation of other BLM and Forest Service LUPAs in MZs II/VII. These conservation actions would result in a net conservation gain to GRSG habitats and populations in MZs II/VII regardless of management in the Idaho and southwestern Montana sub-region.

#### **5.1.11 Conclusions**

In addition to BLM and Forest Service management in the Idaho and southwestern Montana sub-region and other planning areas in MZs IV and II/VII, GRSG in these MZs will also be impacted by management and conservation at state, regional, tribal and local levels. This analysis takes into account each alternative in the Idaho and southwestern Montana LUPA in conjunction with state and private initiatives, as well as past, present, and reasonably foreseeable future actions at the federal, state, and local levels. The analysis assumes that the Proposed Plans would be implemented in the other BLM and Forest Service LUPA planning areas in MZs IV and II/VII.

Some of the most important past and present actions benefitting GRSG populations on private land in MZ IV and II/VII are the conservation easements coordinated by federal agencies such as BLM and the Forest Service, individual states, and by NRCS SGI with private ranchers. SGI has also worked with landowners to increase fence marking, seeding of



native vegetation, and conifer removal to improve GRSG habitat quality. Future coordination of private landowners with SGI is expected to provide further benefits to GRSG habitat.

This coordination with private landowners enhances conservation in addition to what BLM and Forest Service management can accomplish on federal lands. Ranchers in Wyoming and Montana are also using Candidate Conservation Agreement with Assurances with the USFWS. Under these instruments, the ranchers voluntarily agree to manage lands to reduce threats to GRSG in exchange for a guarantee that they will not be subject to additional regulations should the species become listed. While ranchers have used these agreements across the GRSG range, thus far the agreements have been applied to only a small number of ranches in Wyoming and Montana.

As discussed in **Sections 5.1.4** and **5.1.8**, both Wyoming and Montana have adopted statewide plans to promote GRSG conservation. Both plans implement a Core Population Area Strategy with well density limitations, timing restrictions, and a uniform 5 percent disturbance cap across all landownership types. These measures would improve GRSG population levels if effectively enforced (Copeland et al. 2013) and would primarily affect MZs II/VII. The limitations on timing and density of energy development along with the disturbance cap, and BLM and Forest Service management on lands with federal mineral estate, would act in concert to promote GRSG conservation and reduce the impacts from energy development on leks, breeding habitat, and wintering habitat.

However, a majority of MZ IV, including the states of Idaho, Oregon, Nevada, and Utah, do not have similar executive orders in place. These states do have GRSG conservation plans, but these plans generally include voluntary guidelines, not regulatory mechanisms. This could allow for more impacts on the 31 percent of GRSG habitat within the MZ that is state or privately owned. Since most GRSG habitat in MZ IV (68 percent) is under federal management, BLM and Forest Service regulatory mechanisms will have a substantial contribution to cumulative effects.

BLM and Forest Service restrictions on ROWs/SUAs, renewable energy, and energy development in GRSG habitat would help reduce loss and disturbance of GRSG populations. The Proposed Plan includes numerous measures to allow development while reducing the likelihood for impacts on GRSG, such as requirements for anthropogenic disturbance criteria, a 3 percent disturbance cap, buffers, mitigation, and RDFs and BMPs.

The more challenging threats to manage in MZ IV are fire, the spread of weeds, and conifer encroachment. Fire regimes are complex and vary tremendously across the sagebrush region and through time; furthermore, the ecological role of fire has changed dramatically since the European settlement era (circa 1850) due to changing fuel and habitat patterns (Manier et al. 2013, p. 79). Fire is exacerbated by invasive weeds, particularly in Wyoming big sagebrush types, where the invasion by exotic annuals has resulted in dramatic increases in number and frequency of fires with widespread, detrimental effects on habitat conditions (Manier et al. 2013, p. 88). Expansion of conifer woodlands, especially juniper (*Juniperus* spp.) do not provide suitable habitat for GRSG, and mature trees displace shrubs, grasses and forbs

through direct competition (Manier et al. 2013, p. 91). These threats are at the landscape scale and are extensive throughout MZ IV; the Proposed Plans within MZ IV include a comprehensive strategy to address these threats.

***Alternative A: Current Management***

Under Alternative A, current management would continue on BLM-administered and National Forest System lands in the Idaho and southwestern Montana sub-region. Several protective measures would not be implemented; for example, the BLM and Forest Service would not designate PHMA or GHMA and would not manage any additional ROW/SUA avoidance or exclusion areas. Alternative A does not include any consistent management prescriptions to protect GRSG across the sub-region, though several individual BLM district offices and National Forests have some protections in place. Appropriate and allowable uses and restrictions with regard to such activities as mineral leasing and development, recreation, utility corridors, and livestock grazing would also remain unchanged.

Under current management, widespread wildfire and subsequent spread of nonnative, invasive species have destroyed and degraded PHMA and PGMA, particularly in MZ IV. This is likely to continue and reinforce the cycle of fire and weed spread. Further, the expansion of conifers, particularly juniper, will continue to reduce the suitability of sagebrush habitats for GRSG.

In the rest of MZs IV and II/VII, other BLM and Forest Service LUPA planning efforts would implement their Proposed Plans to improve protection of GRSG and their habitat. In addition, GRSG conservation strategies would be implemented on state and private lands. As a result, the lack of protections under the Idaho and southwestern Montana LUPA Alternative A would be offset to an extent by more protective management elsewhere in the MZs, particularly within MZs II/VII. In the Idaho and southwestern Montana sub-region, though, continuation of current management would do little to reduce the major threats to GRSG in the sub-region: wildfire, invasive weeds, and conifer encroachment. Current management provides a limited number and extent of regulatory mechanisms to avoid continued degradation of GRSG habitat in MZs IV and II/VII, but it would not meet the COT report objectives for conservation of GRSG.

***Alternative B***

Under Alternative B, the BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems. In conjunction with NRCS and state initiatives on private land, several aspects of BLM and Forest Service management under Alternative B would benefit GRSG conservation at a landscape level. These include implementation of a 3 percent disturbance cap, retention of GRSG habitat, restrictions on resource uses such as managing PHMA as ROW exclusion and closed to mineral development, and prioritizing restoration in GRSG habitat. Implementing these protective measures on BLM-administered and National Forest System lands within the Idaho and southwestern Montana sub-region would help reduce damage to GRSG habitat, minimize loss of connectivity and could also minimize the spread of invasive species by limiting human activities that disturb soil or introduce seeds. However, such restrictions could also risk pushing development onto adjacent, nonfederal lands with less restrictive management. This is particularly a concern



where nonfederal lands have fewer protections (e.g., most of MZ IV). In parts of MZ IV and MZs II/VII, some nonfederal lands have similarly restrictive measures such as in Core Areas in Wyoming and Montana (though Core areas do not cover all existing GRSG populations), which would reduce the likelihood for impacts.

In combination with other past, present, and reasonably foreseeable future actions, Alternative B would likely meet the objectives laid out in the COT report for infrastructure, grazing/free-roaming equids, conversion to agriculture, energy development, and recreation. Without a comprehensive strategy to address fire, invasive weeds, and conifer encroachment, it may not meet the COT objectives for these threats.

### ***Alternative C***

Under Alternative C, the BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would apply management to all occupied GRSG habitats, making it the most restrictive alternative for development in GRSG habitat. In conjunction with NRCS and state initiatives on private land, several aspects of BLM and Forest Service management under Alternative C would benefit GRSG conservation at a landscape level. These include implementation of a 3 percent disturbance cap, removal of livestock grazing from BLM-administered and National Forest System lands, and closure to leasable mineral development. Impacts would be similar to those described for Alternative B, but could be greater due to the larger area over which restrictions would be applied.

Together with other past, present, and reasonably foreseeable future actions, Alternative C would likely meet the objectives laid out in the COT report for infrastructure, conversion to agriculture, energy development, and recreation. Without a comprehensive strategy to address fire, invasive weeds, and conifer encroachment, it may not meet the COT objectives for these threats. Further, it is unknown whether removal of grazing would meet the COT objectives for range management, as analyzed above and in greater detail in **Section 4.2**.

### ***Alternative D***

Under Alternative D, the BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems. Management and impacts would be similar to Alternative B, though Alternative D would incorporate more flexibility and adaptive management applied to resource uses to account for sub-regional conditions. The BLM and Forest Service would require a no net unmitigated loss of PHMA and IHMA and would implement numerous conservation measures to reduce impacts from human activities in PHMA, such as management of GRSG habitat as ROW avoidance areas and closure to some mineral development. Alternative D also includes additional measures and planning for wildfire management.

Under Alternative D, the BLM would increase GRSG habitat protection over current management, but with less restrictive actions than under Alternatives B or C. In conjunction with state and regional planning efforts, implementation of state disturbance caps in GRSG core areas, conservation easements on private lands, implementation of other BLM and Forest Service LUPAs in MZ IV and MZs II/VII, and other past, present, and reasonably foreseeable future actions, Alternative D would likely meet the objectives laid out in the

COT report for fire, infrastructure, grazing/free-roaming equids, conversion to agriculture, energy development, and recreation. Without a comprehensive strategy to address invasive weeds and conifer encroachment, it may not meet the COT objectives for these threats.

### ***Alternative E***

Under Alternative E, the BLM and Forest Service would manage to maintain, conserve, enhance, and restore sagebrush ecosystems. In PHMA and IHMA, the BLM and Forest Service would incorporate management flexibility to permit high value infrastructure with appropriate mitigation and best management practices tailored for the sub-region. Management and impacts are similar to Alternative D, though Alternative E would require less stringent use restrictions and would designate the least amount of PHMA compared to the other alternatives' management area designations. Alternative E also includes additional measures and planning for wildfire management.

Under Alternative E, the BLM would increase GRSG habitat protection over current management, but with less restrictive actions than under Alternatives B C, or D. In conjunction with state and regional planning efforts, implementation of state disturbance caps in GRSG core areas, conservation easements on private lands, implementation of other BLM and Forest Service LUPAs in MZ IV and MZs II/VII, and other past, present, and reasonably foreseeable future actions, Alternative E would likely meet the objectives laid out in the COT report for fire, infrastructure, grazing/free-roaming equids, and recreation. Alternative E imposes fewer restrictions on mining and energy development and does not provide guidance for land tenure decisions, so the alternative may not meet the COT objectives for mining, energy development, and conversion to agriculture. Without a comprehensive strategy to address invasive weeds and conifer encroachment, it also may not meet the COT objectives for these threats.

### ***Alternative F***

Management under Alternative F would be largely similar to that described for Alternative B, though with more stringent guidance and restrictive management in sagebrush ecosystems. Alternative F would implement a 3 percent disturbance cap but all surface disturbances (including human disturbance and fire) would count toward this cap. In addition, grazing would be reduced by 25 percent.

In combination with other past, present, and reasonably foreseeable future actions, Alternative F would likely meet the objectives laid out in the COT report for infrastructure, grazing/free-roaming equids, conversion to agriculture, energy development, and recreation. Without a comprehensive strategy to address fire, invasive weeds, and conifer encroachment, it may not meet the COT objectives for these threats.

### ***Proposed Plan***

Under the Proposed Plan, the BLM and Forest Service would manage lands to conserve, enhance and restore GRSG habitat and the sagebrush ecosystem upon which GRSG populations depend. Management and impacts would be similar to Alternatives D and E, though the Proposed Plan would incorporate robust strategies and approaches to GRSG management, including wildfire and invasive species management, conifer removal, adaptive



management, mitigation, a 3 percent disturbance cap, anthropogenic disturbance criteria, buffers, habitat objectives and monitoring. The Proposed Plan provides vegetation treatment acres by decade sufficient to meet desired habitat conditions (70 percent of the analysis area meeting 10 to 30 percent sagebrush cover) (NTT 2011). In addition to habitat management areas, SFAs would also be managed to protect recognized the most important areas for the species.

The Proposed Plan would provide a higher level of GRSG habitat protection compared to current management, while allowing flexibility for resource uses when there would be no impacts to GRSG.

In the rest of MZs II/VII, other BLM and Forest Service LUPAs would implement their Proposed Plans to improve protection of GRSG and their habitat. In addition, other regional GRSG conservation strategies as discussed in **Section 5.1.8**, would be implemented on non-federal lands. Reasonably foreseeable future actions in MZs II/VII such as proposed oil and gas developments, interstate transmission lines, and other land disturbance projects would be subject to the requirements set forth in the BLM and Forest Service Proposed Plans which encompass MZs II/VII, where those projects occur on federal decision area lands. For non-federal lands, reasonably foreseeable future projects may be subject to disturbance caps, buffer restrictions, and other requirements of GRSG state plans, as well as site specific mitigation measures.

In conjunction with state and regional planning efforts, implementation of state disturbance caps in GRSG core areas, conservation easements on private lands, implementation of other BLM and Forest Service LUPAs in MZ IV and MZs II/VII, and other past, present, and reasonably foreseeable future actions, the Proposed Plan would likely meet the objectives laid out in the COT report for fire, infrastructure, grazing/free-roaming equids, mining, energy development, conversion to agriculture, invasive weeds, conifer encroachment, and recreation. Specifically, the following measures which would be implemented under the Proposed LUPA, or are considered reasonably foreseeable future actions, would help meet the COT report objectives:

- Implementation of the FIAT would help meet the COT report objective for fire by prioritizing landscapes for wildfire prevention and suppression, fuels management, and habitat restoration. This would help to retain and restore healthy native sagebrush plant communities within the range of GRSG.
- Managing ROW exclusion and avoidance areas would help meet the COT report objective for infrastructure by limiting ROW/SUA development within PHMA. These actions would also help to meet the COT objectives for non-native, invasive plant species by reducing disturbances that promote the spread of weeds.
- Designating major and moderate oil and gas stipulations would limit development in PHMA, except where pre-existing valid rights apply. In these areas Conditions of Approval would limit disturbance.

- Implementation of state conservation plans and/or state executive orders would help meet all COT report objectives, particularly on non-BLM and non-National Forest System lands. Applying a 5 percent disturbance limit (under the Wyoming and Montana GRSG plans/executive orders) would reduce impacts contributing to population declines and range erosion associated with multiple threats including energy, mining, and infrastructure.
- Removal of standing and encroaching trees within 100 meters (328 feet) of occupied leks and other habitats (e.g., nesting, wintering, and brood-rearing) would reduce the rate of pinyon-juniper incursion and help to maintain health native sagebrush plant communities.
- Continued implementation of the Natural Resource Conservation Service Sage-Grouse Initiative would help meet the COT objective for the threat of agriculture conversion, by securing conservation easements on private lands. Fence marking, implementing prescribed grazing systems, and vegetation seeding would help meet the COT objectives for range management structures, grazing, and non-native, invasive plant species.

### *Summary*

Overall, GRSG populations across MZ IV and MZs II/VII face the greatest pressures from wildfire, invasive weeds, energy development, and infrastructure. BLM and Forest Service actions within the Idaho and southwestern Montana sub-region would have a limited influence on GRSG populations and habitats within MZs II/VII, but would substantially contribute to cumulative effects on populations and habitats within MZ IV.

Infrastructure and energy development are of particular concern in MZs II/VII because they affect the greatest amount of land. Numerous multi-state transmission lines are proposed through GRSG habitat, as are large-scale oil and gas field developments in excess of 100,000 acres. Implementation of the BLM and Forest Service Proposed Plans in MZs II/VII is unlikely to preclude such projects from proceeding, especially Presidential Priority transmission line projects that are not subject to GRSG protective measures in the BLM/USFS planning efforts. However, GRSG protective measures are being considered in the project-specific analysis. The cumulative effect of the conservation measures in the proposed LUPA will result in protection of GRSG populations. In some localized areas small populations may be at continued risk due to the cumulative effect of reasonably foreseeable future infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, or West Nile virus outbreaks. However, restrictions on land use in combination with project-specific BMPs and required design features, and other regional efforts will help mitigate the effects on small at-risk populations.

Of particular concern is that threat reduction for fire is difficult and costly. Given the intensity and widespread distribution of the threat, it may never be fully eliminated (USFWS 2013a, p. 40), but the comprehensive strategies under Alternatives D, E, and the Proposed Plan, may be able to reduce the threat considerably.



The Idaho and southwestern Montana sub-region in MZ IV contains one of the GRSG strongholds with the largest area of habitat rangewide with low similarity to extirpated portions of the range (USFWS 2013a, p. 70). Both MZ IV and MZs II/VII support the two largest populations of GRSG rangewide (USFWS 2013a, p. 75). As such, management within the sub-region and MZs is critical to preserving the species. All action alternatives considered in the Idaho and southwestern Montana LUPA would reduce threats to some degree and via different strategies.

Implementing Alternatives B, E, F, or the Proposed Plan in combination with other regional efforts (such as the Proposed Plans for other BLM and Forest Service planning areas; conservation strategies in state plans; increased land protections via NRCS SGI, and local habitat restoration efforts) would effectively conserve the region-wide population of GRSG in MZs IV and II/VII.

#### **5.1.12 MZ-Wide Reasonably Foreseeable Future Actions Summary Tables**

**Tables 5-24**, Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat, and **Table 5-25**, Reasonably Foreseeable Future Actions in Management Zone II/VII Likely to Impact GRSG Habitat, include a selection of some of the larger projects from the reasonably foreseeable future actions tables in the RMPAs/LUPAs for MZs IV and II/VII, respectively. The full tables can be found in each EIS within each MZ.

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
Energy and Mining						
IV	Idaho and Southwestern Montana	Northern Great Basin	Sawtooth #4 Plan of Operation Modification	Twin Falls District, Idaho	Locatable mineral surface mining over 20 acres.	NEPA in progress.
IV	Idaho and Southwestern Montana	Northern Great Basin	Mineral Extraction	Dillon Field Office, Montana	Approximately 25 notices for locatable mineral extraction covering less than 50 acres.	Ongoing
IV	Idaho and Southwestern Montana	Northern Great Basin	Quarry Expansions	Sawtooth National Forests, Utah and Idaho	Several quarry expansions covering 40 acres total.	Planned for 2016.
IV	Idaho and Southwestern Montana	East Central	Dairy Syncline Phosphate Mine	Soda Springs, Idaho	Phosphate mine on estimated 580 acres (281 acres of open pit) within PGH/PHMA.	Planning phase
IV	Idaho and Southwestern Montana	Northern Great Basin	Oil and gas lease nominations	Rogerson-Brown's Bench, Idaho	Determine whether to offer leases on up to 90,000 acres.	Deferred, pending completion of Jarbidge RMP and GRSG EIS
IV	Idaho and Southwestern Montana	East Central	Oil and gas lease nominations	Payette-Weiser area, Idaho	Determine whether to offer oil and gas leases. Several nominations, totaling an estimated 181,000 acres.	Deferred, pending completion of Four Rivers RMP and GRSG EIS
IV	Oregon	Northern Great Basin	Malheur Queen Placer Project	North-central Malheur County, Oregon	Approximately 800 acres approved for development of placer gold extraction.	Development underway
IV	Oregon	Northern Great Basin	High Bar/Upper and Lower Pine Creek Placer Mining Project	Baker County, Oregon	Up to 250 acres of activity would be disturbed for mineral extraction.	Planning phase
IV	Nevada	Northern Great Basin	Round Mountain Gold Mine			

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
Expansion	Nye County, Nevada	Expansion of existing facilities at the Round Mountain Mine and development of new mining and leaching facilities at the adjacent Gold Hill ore deposit.	Planning phase			
IV	Nevada	Northern Great Basin	Angel Wing Exploration Plan	60 miles northwest of West Wendover, Nevada, on the Utah/Nevada State Line	Expansion of mining exploration activities, including construction of drill pads and access roads and existing road maintenance, from a 3.3 acre Notice to 60 acres. Access to the proposed Plan is through Utah near the town of Grouse Creek.	Planning phase
IV	Nevada	Northern Great Basin	Murdock Mountain Phosphate Prospecting Permit	35 miles northwest of West Wendover, Nevada, and 10 miles southwest of Montello, Nevada	Phosphate exploration drilling and trenching in the Murdock Mountain area. The operator is proposing to construct 31 drill pads with 2 drill holes per pad and 29 exploration trenches measuring 100 feet long by 5 feet wide by 5 feet deep. Exploration roads will also be constructed and existing roads will be utilized. Exploration operations are anticipated to take 200 days to complete.	Planning phase
Lands and Realty						
IV	Idaho and Southwestern Montana	Northern Great Basin; Snake-Salmon-Beaverhead	Gateway West 230/500 Transmission Line Project	Wyoming, Southern Idaho	Authorize ROW for 1,100-mile 500-kV transmission line.	Pending; Scheduled for implementation starting 2016

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
IV	Idaho and Southwestern Montana; Oregon	Baker; Northern Great Basin	Boardman to Hemingway Transmission Line Project	From Boardman, Oregon to Melba, Idaho	A proposal for an approximately 300-mile 500-kV transmission line.	Project under NEPA review.
IV	Oregon	Northern Great Basin	North Steens 230-kV Transmission Line Project	Harney County, Idaho	North Steens is a 29-mile 230-kV transmission line that would convey 104 MW of power generated from wind farms proposed on private land on the north side of Steens Mountain.	Project approved and ROD signed in December 2011; in litigation.
IV	Nevada	Northern Great Basin	China Mountain Wind Project	Northeastern Nevada	Utility-scale wind facility	Temporarily deferred pending NVCA GRSG EIS
IV	Idaho and Southwestern Montana	Northern Great Basin	Owyhee Land Exchange	Western Owyhee County, Idaho	Proposing to dispose of approximately 33,000 acres of non-GRSG habitat and acquiring around 38,000 acres of primarily GRSG habitat	Proposal
<b>Fuels and Vegetation</b>						
IV	Idaho and Southwestern Montana	Northern Great Basin	Juniper Treatments in Pole Creek Allotment	Owyhee Field Office, Idaho	Juniper removal to enhance resource conditions on 24,486 acres of public, private, and state lands.	Decision issued; treatment implementation pending litigation
IV	Idaho and Southwestern Montana	Northern Great Basin	Juniper Treatment in Trout Springs Allotment	Owyhee Field Office, Idaho	Juniper removal to enhance resource conditions on 29,475 acres of public, private, and state lands.	Planning
IV	Idaho and Southwestern Montana	Northern Great Basin	Upper Castle Creek Fuels Project	Bruneau Field Office, Idaho	Juniper control project on approximately 33,000 acres. 25,000 acres implemented; anticipate 2,000-4,000 acres per year for the remaining areas.	Ongoing through 2014

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

<b>MZ</b>	<b>Sub-region</b>	<b>Affected GRSG Population</b>	<b>Project Name</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Project Status</b>
IV	Idaho and Southwestern Montana	Northern Great Basin	Curlew Fuel Breaks and Juniper Reduction Project	Southeast Idaho	Compartmentalize the Curlew area using existing roads to improve wildfire suppression and reduce wildfire growth over 60,000 acres. Efforts will help to retain existing intact Wyoming sagebrush habitat. Remove encroaching junipers from within Wyoming sagebrush.	Planning; project implementation anticipated in 2017.
IV	Idaho and Southwestern Montana	Northern Great Basin	Burley Landscape Sage-Grouse Habitat Restoration	Burley Field Office, Idaho	Treat encroaching juniper on approximately 38,000 acres.	Approximately 8,500 acres already completed; implementation of remaining 29,500 acres expected over the next 7 years
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Paradigm Project	Four Rivers Field Office, Idaho	Fuel break project that would create up to 294 miles of fuel breaks between 50 and 300 feet wide over a 10-year period. Fuel breaks would be associated with roads and other linear disturbances. At the maximum width of 300 feet, up to 10,690 acres would be directly affected. 2,111 acres of PPH/PHMA and 24,667 acres of PGH/GHMA in project area; fuel breaks would affect 61 acres of sagebrush in PPH/PHMA and 606 acres in PGH/GHMA.	Pending
IV	Idaho and Southwestern Montana	Northern Great Basin	South Owyhee Fuel Breaks	Boise District, Idaho	Fuel breaks over 2,000,000 acres, 850 miles.	Draft EA

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

<b>MZ</b>	<b>Sub-region</b>	<b>Affected GRSG Population</b>	<b>Project Name</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Project Status</b>
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Big Desert Fuel Breaks	Idaho Falls and Twin Falls Districts, Idaho	Compartmentalize the Big Desert management area using existing roads to improve wildfire suppression and reduce wildfire growth; efforts will help to retain intact Wyoming sagebrush habitat within the northern portion of the management area. 291 miles of existing desert roads with a footprint of 10,581 acres. Upper Snake Field Office: 245 miles of roads with 8,908 footprint acres. Shoshone Field Office: 46 miles of roads with 1,673 footprint acres.	NEPA is complete and project began in 2012 within the Upper Snake Field Office; those fuel breaks identified within the Shoshone Field Office require further analysis and consultation before NEPA can be finalized.
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Big Desert Noxious Weed Treatments	Idaho Falls District, Idaho	Treating noxious weeds within the Big Desert management area over 600,000 acres. Annual treatment target of 5,000 acres.	Ongoing, began in 2006.
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Cheatgrass Treatments	Idaho Falls District, Idaho	Chemically reduce cheatgrass densities over 7,000 acres to modify fire return intervals and allow for seeded native species to become established.	Planning phase
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Salmon-Challis National Forest Forest-wide Invasive Plant Treatment EIS	Salmon-Challis National Forest	Programmatic noxious weed treatment planning within the nonwilderness portion of the Salmon-Challis National Forest (3.2 million acres)	Planning phase

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
IV	Idaho and Southwestern Montana	Northern Great Basin	Twin Falls District Noxious Weed and Invasive Plant Treatments	Twin Falls District, Idaho	Proposed action is to use prevention, prescribed fire, herbicides, and manual, mechanical, and biological methods to treat areas dominated by annual invasive species to restore perennial grasses, forbs, and shrubs. This is a programmatic planning effort. Estimated annual restoration is 5,000-10,000 acres in Burley Field Office (FO), 10,000-15,000 acres in Shoshone FO, and 10,000-15,000 acres in Jarbidge FO. Ten-year total for each office could approach 100,000 acres in Burley FO, 150,000 acres in Shoshone FO, and 150,000 acres in Jarbidge FO.	Planning phase. Implementation is planned to cover 10 years starting in 2015.
IV	Idaho and Southwestern Montana	Northern Great Basin	Shrub Planting	Twin Falls District, Idaho	Reintroduction of shrub species through hand planting of seedlings; up to 200,000 seedlings (13,000 acres) may be planted annually.	Implementation since 2010 and expected to continue over the next 10 years.
IV	Idaho and Southwestern Montana	Northern Great Basin	Twin Falls District Wildlife Tracts Restoration	Twin Falls District, Idaho	Proposed action is to use prescribed fire, chemical, drill and harrow seeding, shrub seeding, and plantings to establish perennial vegetation and restore native shrub habitat on wildlife tracts. 500-1,000 acres per year, for a cumulative total of 10,000 acres over ten years.	Implementation has been occurring since 2011 and is planned to continue over the next 8 years.
IV	Oregon	Northern Great Basin	Five Creeks Rangeland Restoration Project	Three Rivers and Andrews/Steens Resource Areas, Oregon	A landscape-scale vegetation treatment encompassing approximately 73,500 acres (approximately 26,000 acres in the CMPA) to return vegetation communities to historic compositions and reduce hazardous fuel loads. Various forms of prescribed fire and mechanical treatments have been used to reduce influence of encroaching western juniper.	Ongoing

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
IV	Oregon	Northern Great Basin	Multiple restoration projects	Three Rivers Resource Area, Oregon	Implementation plans include thinning, piling, pile burning, and implementing a forest underburn.	Ongoing
IV	Oregon	Northern Great Basin	District-wide noxious weed treatments	Oregon	Ongoing interagency noxious weed treatment efforts with Oregon Department of Agriculture and Oregon counties.	Ongoing
IV	Oregon	Northern Great Basin	District-wide Vegetation Management (Weed EA)	Harney County, Oregon	Use new chemicals to treat noxious and invasive species.	Planning phase
IV	Oregon	Baker; Northern Great Basin	Baker Habitat Restoration and Fuels Treatment projects	Baker County, Oregon	Multi-year phased hazardous fuels and wildlife habitat restoration project on approximately 45,000 acres.	Planning phase
IV	Utah	Box Elder	Noxious weed treatments	Utah	Treating noxious weeds	Ongoing
IV	Nevada	Northern Great Basin	Santa Rosa Fuels Project	Winnemucca District, Nevada	355,699 acre planning area to reduce fire threat and improve wildlife habitat.	Ongoing
IV	Nevada	Northern Great Basin	North Tuscarora Sage-Grouse Habitat Restoration Project	Elko District Office, Nevada	Restoration of up to 10,000 acres of GRSG habitat. Treatments would improve, protect GRSG habitat, protect PPH/PHMA, protect Lahontan Cutthroat Trout Streams, improve wildlife habitat, reduce invasive weeds, and reduce hazardous fuels.	Planning phase
IV	Nevada	Northern Great Basin	Spruce Mountain Project	Elko District Office, Nevada	Spruce Mountain seeding maintenance over 700 acres. Mastication and seeding to reduce fire threat and improve wildlife habitat.	Ongoing
<b>Livestock Grazing</b>						
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Grazing Permit Renewals	Challis Field Office	Renewing/modifying 2 to 5 grazing permits per year for the next ten years over 770,000 acres	Project under NEPA review.

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

<b>MZ</b>	<b>Sub-region</b>	<b>Affected GRSG Population</b>	<b>Project Name</b>	<b>Project Location</b>	<b>Project Description</b>	<b>Project Status</b>
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Range NEPA for C&H allotments	Boise National Forest, Idaho	Allotments cover over 53,000 acres.	Projects under NEPA review.
IV	Idaho and Southwestern Montana	Northern Great Basin	Allotment Management Plan Updates	Sawtooth National Forest, Idaho and Utah	Cattle and sheep allotment management plan updates on over 350,000 acres.	Ongoing
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Allotment Management Plan Updates	Sawtooth National Forest, Idaho	Cattle and sheep allotment management plan updates on over 140,000 acres.	Ongoing
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Grazing Allotment Management NEPA	Salmon-Challis National Forest	Grazing allotment management NEPA on over 2 million acres.	Ongoing
IV	Idaho and Southwestern Montana	Southwest Montana	Cessation of Lima-Tendoy Sheep Grazing	Beaverhead-Deerlodge National Forest	Permittee waiving sheep permits on 11,700 acres in PPH/PHMA back to Forest Service. Allotments will be closed to future domestic sheep grazing. No new grazing permits for any livestock will be issued for the Indian Creek Allotment. Three-year trial of 100 AUMs fall cattle grazing for Bear Canyon.	Ongoing. NEPA review and new AMP after 2015 grazing season.
IV	Nevada	Northern Great Basin	White Rock Mountain Aspen Exclosures	Northeastern Nevada	Place up to nine exclosures around aspen stands to protect from overgrazing by livestock.	Planning process
IV	Utah	Box Elder	Fence marking	Utah	The NRCS is planning to mark fences within 3.2 miles of leks throughout Utah on private lands.	Ongoing

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
<b>Wild Horses and Burros</b>						
IV	Idaho and Southwestern Montana	Northern Great Basin	Wild horse gathers	Owyhee Field Office, Idaho	Gather, fertility treatment, removal of excess wild horses from HMAs. Covers 128,389 acres of public and other (private and state) land.	EAs and decisions have been approved; gathers and treatment are pending due to funding and other priority treatments within the BLM wild horse program.
IV	Oregon	Northern Great Basin	Wild horse gathers	Oregon	Gather wild horses.	Ongoing
<b>Recreation</b>						
IV	Idaho and Southwestern Montana	Northern Great Basin	Special Recreation Permits	Owyhee Field Office, Idaho	Various motorcycle, foot, and mountain bike races, horse endurance rides, dog trials, pioneer treks, and poker runs on 260,000 acres.	Ongoing
<b>Travel Management</b>						
IV	Idaho and Southwestern Montana	Northern Great Basin	Curlew/Deep Creek Travel Management Plan Implementation	Idaho Falls District, Idaho	Implement Travel Management Plan on 375,000 acres; limit motorized travel to designated routes, prohibit cross-country travel	Ongoing
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	North Highway 20 Travel Plan	Idaho Falls District, Idaho	Designate 127 miles of existing trails; construct 52 miles of new trails, construct 3 acres of parking areas, close and rehabilitate 116 miles of existing routes.	Pending
IV	Utah	Box Elder	Motorized Travel Plan Implementation	Utah	Implementation of motorized route designation plans across the planning region.	Ongoing

**Table 5-24**  
**Reasonably Foreseeable Future Actions in Management Zone IV Likely to Impact GRSG Habitat**

MZ	Sub-region	Affected GRSG Population	Project Name	Project Location	Project Description	Project Status
Land Use Planning						
IV	Idaho and Southwestern Montana	Northern Great Basin	Jarbidge RMP	Jarbidge Field Office, Idaho	Revise the Jarbidge RMP that provides a comprehensive plan for 1,366,000 acres that further restores or maintains resource conditions and provides for the economic needs of local communities over the long term	Ongoing
IV	Idaho and Southwestern Montana	Snake-Salmon-Beaverhead	Craters LUP Amendment	Craters of the Moon National Monument and Preserve, Idaho	Analyze a range of alternatives for livestock grazing in the Craters of the Moon covering 300,000 acres (i.e., identify lands available or unavailable for grazing, identify the amount of forage available, seasons of use, range improvements)	Ongoing

This table includes a selection of some of the larger projects from the reasonably foreseeable future actions tables in the RMPAs/LUPAs for MZ IV. The full tables can be found in each EIS.

**Table 5-25**  
**Reasonably Foreseeable Future Actions in Management Zone II/VII Likely to Impact GRSG Habitat**

MZ	Planning Area	Affected GRSG Population	Project Name	Project Location	Project Description, Estimated Footprint	Project Status
<b>Energy and Mining</b>						
II/VII	Northwest Colorado, 9-Plan	Wyoming Basin, Northwest Colorado	Hiawatha Regional Energy Development EIS	Sweetwater County, Wyoming; Moffat County, Colorado	Proposed development of up to 4,208 new natural gas wells on approximately 157,361 acres of mixed federal, state, and private lands. The project area overlaps with lands identified as GRSG Core Areas. 91% of the project area is managed by the BLM.	Proposed
II/VII	9-Plan	Wyoming Basin	LaBarge Platform Exploration & Development Project	Lincoln and Sublette County, Wyoming	Proposed development of up to 838 new oil and gas wells on 218,000 acres of private, state, and federal lands. Approximately 154,000 acres of surface lands are administered by the BLM.	Proposed
II/VII	9-Plan	Wyoming Basin	Continental Divide-Creston Natural Gas Project	Carbon and Sweetwater Counties, Wyoming	Proposed development of up to 8,950 additional natural gas wells on 1.1 million acres of land, including GRSG Core Areas. The proposed facilities would add to the existing network of wells, pipelines, access routes and electrical distribution systems. Approximately 59 percent of the project area is on federally-owned lands.	Proposed
II/VII	Lander, 9-Plan	Wyoming Basin	Moneta Divide Natural Gas and Oil Development Project	Fremont and Natrona Counties, Wyoming	Proposed development of approximately 4,250 natural gas and oil wells on 265,000 acres of land (including approximately 169,500 acres of land administered by the BLM). The project area includes GRSG Core Areas.	Proposed
II/VII	9-Plan	Wyoming Basin	Pinedale Anticline Project	Sublette County, Wyoming	Proposed development of natural gas resources within nearly 200,000 acres of land, of which approximately 80 percent is federal surface ownership. The project area occurs within GRSG Core Areas.	Ongoing
II/VII	9-Plan	Wyoming Basin	Blacks Fork Project (Formerly Moxa Arch Area Infill)	Sweetwater, Uinta, and Lincoln Counties, Wyoming	Proposed infill drilling project, on approximately 7,500 hydrocarbon wells within 633,532 acres of mixed federal, state, and private lands.	Proposed

**Table 5-25**  
**Reasonably Foreseeable Future Actions in Management Zone II/VII Likely to Impact GRSG Habitat**

MZ	Planning Area	Affected GRSG Population	Project Name	Project Location	Project Description, Estimated Footprint	Project Status
II/VII	9-Plan, Northwest Colorado, Utah	Wyoming Basin, Northwest Colorado	Oil Shale and Tar Sands Programmatic EIS	Colorado, Utah, and Wyoming	Amendment of 10 BLM RMPs to designate certain public lands as available for application for leasing and future exploration and development of oil shale and tar sands resources. A ROD was signed in 2013 which made approximately 678,000 acres available for potential development of soil shale, and approximately 132,000 acres available for development of tar sands.	Ongoing
II/VII	9-Plan	Wyoming Basin	Atlantic Rim Natural Gas Field Development Project	Carbon County, Wyoming	Ongoing development of oil gas resources on 270,080 acres of land, of which 173,672 are federal surface estate. A ROD was signed in 2007. The project area includes GRSG Core Areas.	Ongoing
II/VII	9-Plan	Wyoming Basin	Chokecherry/Sierra Madre Wind Farm	Carbon County, Wyoming	Proposed development of approximately 1,000 wind turbines and associated ancillary facilities on 220,000 acres of land. The project area includes private, state, and federally managed lands, and overlaps with GRSG Core Areas	Proposed
II/VII	9-Plan	Wyoming Basin	Normally-Pressured Lance Natural Gas EIS	Sublette County, Wyoming	Proposed development of approximately 3,500 natural gas wells within 141,000 acres of state, private, and BLM-administered lands.	Proposed
II/VII	9-Plan	Wyoming Basin	Bird Canyon Field Infill Project	Sublette and Lincoln Counties, Wyoming	Proposed drilling and production of 348 new natural gas wells within 17,612 acres of BLM-administered land.	Proposed

**Table 5-25**  
**Reasonably Foreseeable Future Actions in Management Zone II/VII Likely to Impact GRSG Habitat**

MZ	Planning Area	Affected GRSG Population	Project Name	Project Location	Project Description, Estimated Footprint	Project Status
<b>Rights-of-way</b>						
II/VII	9-Plan, NW Colorado, Utah	Wyoming Basin, Rich-Summit-Morgan, Uintah, North Park, NWCO, Strawberry Valley, Carbon	Gateway South Transmission Line Project	17 Counties in Wyoming, Colorado, and Utah	Proposed 500 kV transmission line which would begin near Medicine Bow, Wyoming, and would extend south and west to a proposed substation near Mona, Utah. The proposed transmission line would span over 400 miles, with a 250-foot right-of-way, and would cross multiple land jurisdictions including lands administered by the BLM.	Proposed
II/VII	9-Plan, NW Colorado, Utah	Wyoming Basin, Northwest Colorado, Sheeprock, Strawberry Valley, Carbon, Bald Hills.	TransWest Express Transmission Line Project	Wyoming, Colorado, Utah, and Nevada	Proposed 600 kV transmission line extending from south-central Wyoming to southern Nevada. The transmission line corridor would span over 700 miles and would cross private, state, and federally owned lands. The proposed route and alternative routes under consideration would cross PPH and PGH.	Proposed
II/VII	9-Plan, Idaho and Southwest Montana	Wyoming Basin, East Central, Northern Great Basin, Box Elder	Gateway West Transmission Line Project	Wyoming and Idaho	Proposed 230 kV and 500 kV transmission line project between Glenrock, Wyoming, and Melba, Idaho. Approximately 1,000 miles of new high-voltage transmission lines would be constructed. The project would cross multiple land jurisdictions, including sage grouse Core Areas in Wyoming.	Proposed
II/VII	9-Plan	Wyoming Basin	Riley Ridge to Natrona Pipeline Project	Sublette, Sweetwater, Fremont, and Natrona Counties, Wyoming	Proposed 243-mile pipeline from Riley Ridge to Big Piney, Wyoming. The pipeline would consist of a 50-foot right-of-way, and would cross GRSG Core Areas.	Proposed
II/VII	9-Plan	Wyoming Basin	Zephyr Power Line Transmission Project	Wyoming, Colorado, Utah, and Nevada	Proposed 500 kV transmission line spanning between Chugwater, Wyoming to just south of Las Vegas, Nevada.	Proposed

**Table 5-25**  
**Reasonably Foreseeable Future Actions in Management Zone II/VII Likely to Impact GRSG Habitat**

<b>MZ</b>	<b>Planning Area</b>	<b>Affected GRSG Population</b>	<b>Project Name</b>	<b>Project Location</b>	<b>Project Description, Estimated Footprint</b>	<b>Project Status</b>
<b>Weeds</b>						
II/VII	9-Plan, Northwest Colorado	Wyoming Basin, Northwest Colorado, Powder River Basin, North Park	Invasive Plant Management EIS for the Medicine Bow - Routt National Forests, and Thunder Basin National Grassland	Wyoming and Colorado	Proposed treatment of invasive plant species using adaptive and integrated invasive plant treatment methods. These include manual, mechanical, biological, aerial, and ground herbicide applications. Potential treatment areas include GRSG Core Areas.	Proposed

## 5.2 Cumulative Analysis Methodology

The cumulative impacts discussion that follows considers the alternatives in the context of the broader human environment, specifically, actions that occur within and next to the geographic area covered by the planning area.

Because of the programmatic nature of the LUPA and cumulative assessment, the analysis of cumulative effects tends to be broad and generalized. Consequently, this assessment is primarily qualitative for most resources because of lack of detailed information that would result from project-level decisions and other activities or projects.

Quantitative information is used whenever available and as appropriate to portray the magnitude of an impact. The analysis assesses the magnitude of cumulative impacts by comparing the environment in its baseline condition with the expected impacts of the alternatives and other actions in the same geographic area. The magnitude of an impact is determined through a comparison of anticipated conditions against the naturally occurring baseline in the affected environment (see **Chapter 3**) or the long-term sustainability of a resource or social system.

The following factors were considered in this cumulative impact assessment:

- Federal, nonfederal, and private actions
- Potential for combined effects or interaction among or between effects
- Potential for effects across political and administrative boundaries
- Other spatial and temporal characteristics of each affected resource
- Comparative scale of cumulative impacts across alternatives

The geographic scope for the cumulative impact analysis may extend beyond the planning area boundary appropriate to the resource under consideration. For Greater Sage-Grouse (GRSG), the cumulative impact analysis includes an analysis at the WAFWA MZ level, in addition to the planning area analysis. WAFWA MZs are biologically based delineations that were determined by GRSG populations and subpopulations identified within seven floristic provinces. WAFWA MZs II and IV overlap the planning area and are included in the analysis. Analysis at this level enables the decision maker to understand the impacts on GRSG at a biologically meaningful scale.

## 5.3 Past, Present, and Reasonably Foreseeable Future Actions

Past, present, and reasonably foreseeable future actions are considered in the analysis to identify whether and to what extent the environment has been degraded or enhanced and whether ongoing activities are causing impacts (**Table 5-26**, Past, Present, and Reasonably Foreseeable Future Actions). Also considered are trends for activities in and impacts on the



**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
<b>Lands and Realty</b>					
Communication sites renewal – 2	Renewal of existing sites	Owyhee Field Office	Southwest Idaho	Less than 5 acres	Pending
Communication sites renewal – 2	Renewal of existing sites	Four Rivers Field Office	Unknown	No new surface disturbance	Pending
Communication site amendment - 1	Change 199-foot tower to 699-foot tower	Owyhee Field Office	Southwest Idaho	Over 15 acres	Pending
Communication site amendment - 1	Tower replacement	Four Rivers Field Office	Unknown	Less than 1 acre	Pending
Road ROW applications – 10	Construct new roads	Owyhee Field Office	Southwest Idaho	Unknown	Pending
Road ROW applications – 4	New applications for ROW on existing roads	Bruneau Field Office	Southwest Idaho	Less than 20 acres	Pending
Road ROW application – 3	New road application on existing roads	Four Rivers Field Office	Unknown	Less than 20 acres	Pending
Road ROW – renewals – 4	Renewal of existing ROW	Owyhee Field Office	Southwest Idaho	No new surface disturbance	Pending
Road ROW renewal – 1	Renewal of existing road	Four Rivers Field Office	Unknown	No new surface disturbance	Pending
Old Highway 37 Reroute Project	Move highway out of canyon and riparian corridor ½-mile east onto the upland, over a 5-mile stretch	Curlew National Grassland, 8 miles NW of Holbrook, ID	South Side Snake	5 miles	EA; In the planning phase; Decision Notice FONSI expected in 2016
Oil and gas facility – 1	Expand existing facility	Owyhee Field Office	Southwest Idaho	Less than 2 acres	Pending
Oil and gas facility renewal – 1	Renewal of existing ROW	Bruneau Field Office	Southwest Idaho	No new surface disturbance	Pending
Oil and gas facility renewal – 2	Renewal of existing sites	Four Rivers Field Office	Weiser	No new surface disturbance	Pending

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Oil and gas temporary use areas – 3	Temporary use for construction and maintenance	Four Rivers Field Office	Weiser	Less than 5 acres	Pending
Transmission line ROW application – 1	New transmission line	Bruneau Field Office	Southwest Idaho	Less than 5 acres	Pending
Transmission line ROW application – 1	New transmission line	Four Rivers Field Office	Unknown	Less than 15 acres	Pending
Hooper Springs Transmission Line	New transmission line	Soda Springs, Idaho	Southeast Idaho	No direct disturbance of PGH; if southern alternative is selected, line will be within a mile of PGH in Trail Creek/Slug Creek	FEIS 2013
Transmission line ROW renewals – 3	Renewal of existing lines	Owyhee Field Office	Southwest Idaho	No new surface disturbance	Pending
Transmission line ROW renewals – 12	Renewal of existing lines	Four Rivers Field Office	Unknown	No new surface disturbance	Pending
Transmission line ROW upgrade – 1	Add tap, upgrade line	Owyhee Field Office	Southwest Idaho	Less than 2 acres	Pending
Telephone line ROW renewals – 12	Renewal of existing ROW	Owyhee Field Office	Southwest Idaho	No new surface disturbance	Pending
Telephone line ROW renewals – 7	Renewal of existing lines	Four Rivers Field Office	Unknown	No new surface disturbance	Pending
Telephone line ROW renewal - 1	Renewal of existing ROW	Bruneau Field Office	Southwest Idaho	No new surface disturbance	Pending

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Idaho Power - Smith's Prairie SUP renewal	Renewal of power line, which includes some new line and some new access roads	Mountain Home Ranger District – Boise National Forest	North Side Snake	5 miles	NEPA Decision in FY 2014; implementation in FY 2015
King-Moon-Wood River transmission line rebuild	Rebuild of 138 kV transmission line	Twin Falls District	North Side Snake	Unknown	Planning; projected build 2014-2016
Waterline ROW – 1	New buried water pipeline	Owyhee Field Office	Southwest Idaho	Less than 5 acres	Pending
Irrigation facility ditch ROW – 1	Renewal of existing ROW	Owyhee Field Office	Southwest Idaho	No new surface disturbance	Pending
Water facility ROW renewal – 8 (weirs)	Renewals of existing ROWs	Owyhee Field Office	Southwest Idaho	No new surface disturbance	Pending
Water facility ROW renewal – 2	Renewal of existing ROWs	Bruneau Field Office	Southwest Idaho	No new surface disturbance	Pending
Water facility ROW renewal – 1	Renewal of existing pipeline	Four Rivers Field Office	Unknown	Less than 1 acre	Pending
Water facility ROW amendment – 1	Include portions of canal on lands acquired by BLM	Four Rivers Field Office	Unknown	Less than 5 acres	Pending
Symbiotics LLC Hydro Facility	Hydro facility, including a transmission line, substation, dam, penstock, and upper reservoir	Dam located in Idaho, NE of Jackpot, Nevada, Twin Falls District	Southwest Idaho	110 acres	Feasibility study being conducted
New land use Authorizations	Approximately 40 ROW/authorizations/power lines, buried and overhead, roads, communication sites	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	Approximately 100 acres of disturbance. Associated with new ROW	Projected for 10 years based on previous last 5 years in LR2000

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Leases/Permits – 3	Cabins and apiaries	Owyhee Field Office	Southwest Idaho	Less than 10 acres	Pending
Leases/Permits – 8	Agricultural and apiaries	Bruneau Field Office	Southwest Idaho	Less than 25 acres	Pending
Leases and Permits renewal – 3	Occupancy and Trespass Resolution	Four Rivers Field Office	Unknown	Less than 10 acres	Pending
Leases and Permits application – 8	Occupancy and Trespass Resolution	Four Rivers Field Office	Unknown	Less than 15 acres	Pending
Land Use Lease	Lease lands to resolve cabin encroachment on BLM-administered lands	Centennial Valley – PPH in the Dillon Field Office	Southwest Montana	5 acres total	Proposal stage
Owyhee land exchange	Land exchange with the state	Western portion of Owyhee County, Bruneau Field Office	Southwest Idaho	Proposing to dispose of approximately 33,000 acres of non-GRSG habitat and acquiring around 38,000 acres of primarily GRSG habitat	2015
Thompson Creek Mine land exchange	Increase public land acres through a land exchange within PPH	Challis Field Office, Idaho Falls District	Mountain Valleys	Unknown	Project under NEPA review; decision anticipated in 2014
Dairy Syncline land sale	Land sale and tailings pond construction; possible mitigation GRSG habitat land parcel in Stump Creek as exchange	Slug creek watershed, Idaho Falls District	East-Central Idaho	225 acres	Draft EIS to be released early 2015

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Mackay Transfer Station land sale	Sale of land to Custer County for transfer station	T 7N, R 24E, Sec. 22, Idaho Falls District	Mountain Valleys	10 acres	Waiting for completed application from Custer County. Decision anticipated 2014.
Military training	From low-level up to high-altitude flights by military aircraft; military motor vehicle access to emitter sites and use at emitter sites.	Entire Bruneau Field Office and vehicles use roads and emitter sites on the Highway 51/Rowland Road area; military withdrawal site has relatively heavy use.	Southwest Idaho	Unknown	Ongoing
F-35 A Operational Wing Bed Down EIS	Alternative in place to bed down the aircraft at the Mountain Home Air Force Base	Entire Bruneau Field Office	Southwest Idaho	Unknown	Proposed
F-35 A Training Wing Bed Down EIS	Alternative in place to bed down the aircraft at the Gowen Field Military Base	Entire Bruneau Field Office	Southwest Idaho	Unknown	Proposed

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Idaho Power Integrated Resource Plan	Describes the company's projected need for additional electricity and the resources necessary to meet that need while balancing reliability, environmental responsibility, efficiency, and cost.	Entire sub-region	All GRSG population areas	None – planning effort	Completed June 2013
Rocky Mountain Power Integrated Resource Plan	Describes the company's projected need for additional electricity and the resources necessary to meet that need while balancing reliability, environmental responsibility, efficiency, and cost.	Entire sub-region	All GRSG population areas	None – planning effort	Completed April 2013
<b>Major Realty Actions</b>					
Gateway West 230/500 Transmission Line project	Authorize ROW for 1,100-mile 500-KV transmission line	Wyoming, Southern Idaho, Boise District, Curlew National Grassland, Idaho Falls District	Southwest Idaho, North Side Snake	1,100 miles	Pending; final EIS 2013  Scheduled for implementation starting 2016
Boardman to Hemingway	New transmission line	Owyhee Field Office	Southwest Idaho	Unknown	Pending

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
<b>Fuels and Vegetation</b>					
ARS South Mountain Juniper Management Study	Determine the effects of management-driven juniper treatments on the hydrology of four watersheds in the South Mountain Area, including snowpack distribution and drifts, after altering the canopy by removing juniper from the sagebrush-steppe ecosystem. Removal would be through prescribed burning.	South Mountain (T 9S, R 5W, Sect. 2, 3, 10, 11), Owyhee Field Office	Southwest Idaho	603 acres (357 BLM; 246 private)	Scoping complete; NEPA and ROD pending
ARS Reynolds Creek Experimental Watershed Prescribed Fire Research Plan	Study the effects of juniper encroachment and prescribed fire on soil-water balance. Treatments occurred through prescribed burning.	Reynolds Creek Experimental Watershed, Owyhee Field Office	Southwest Idaho	5,549 acres of public and private lands; acreage broken into four treatment areas	Three of the four treatment areas have been implemented as planned. The fourth (Johnson Draw) is pending. Due to topography, the treatment area may be adjusted.
Juniper Treatments in Pole Creek Allotment	Juniper removal to enhance resource conditions	Pole Creek Allotment, Owyhee Field Office	Southwest Idaho	24,486 acres of public, private, and state land	Decision issued; treatment implementation pending litigation

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Juniper Treatment in Trout Springs Allotment	Juniper removal to enhance resource conditions	Trout Springs Allotment, Owyhee Field Office	Southwest Idaho	29,475 acres of public, private, and state lands	Planning; draft EA complete
Upper Castle Creek Fuels Project	Juniper control project on approximately 33,000 acres in the northwestern portion of Upper Castle Creek	Upper Castle Creek, Bruneau Field Office	Southwest Idaho	25,000 acres implemented; of the remaining areas to treat, 2,000-4,000 acres/year	Ongoing through 2014
BOSH Sage-Grouse Juniper	Juniper thinning	Boise District, Owyhee Field Office, Boise Field Office, Owyhee County	Southwest Idaho	1,500,000 acres	Draft EA
Pixley Basin	Juniper treatments (mechanical and prescribed fire)	Boise District, Boise Field Office, Owyhee County, South Oreana	Southwest Idaho	1,933 acres	Ongoing project
West Antelope	Juniper thinning	Boise District, Boise Field Office, Owyhee County	Southwest Idaho	287 acres	Ongoing project
Tex Creek Aspen Health Project	Remove encroaching junipers from within historic aspen clones	Tex Creek WMA east of Idaho Falls, Idaho, Idaho Falls District	East-Central Idaho	70 acres	NEPA is complete; implementation of the project began in 2012.

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Patelzik Creek Aspen Health Project	Remove encroaching conifers from within historic aspen clones and thin remaining conifer stands	Medicine lodge management area within the northern portion of the Upper Snake Field Office, Idaho Falls District	Mountain Valleys	750 acres	NEPA started; implementation slated to begin in 2014
Cedar Butte Juniper Thinning	Remove encroaching junipers from within Wyoming sagebrush and thin remaining stands of juniper	Northern portion of the Big Desert management area west of Idaho Falls, Idaho, Idaho Falls District	North Side Snake	1,000 acres	Planning phase; project implementation anticipated in 2016
Deadman Juniper Thinning	Remove encroaching junipers from within Wyoming sagebrush and thin remaining stands of juniper	Northern portion of the Big Desert management area west of Idaho Falls, Idaho, Idaho Falls District	Mountain Valleys	1,000 acres	Planning phase 1 project implementation anticipated in 2015
Samaria Mountain Fuels Reduction and Restoration Project, Juniper Thinning	Remove encroaching junipers from within Wyoming sagebrush and thin remaining stands of juniper	Southeast Idaho, northern Utah, southwest Wyoming, 15 miles south of Samaria, Idaho, Idaho Falls District	Southwest Idaho	3,000 acres	NEPA complete; approximately 1,000 acres completed, remaining acres to be completed over next 7 years

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Soda Hills Fuels Reduction and Restoration Project, Juniper and Douglas-Fir Thinning	Remove encroaching junipers and Douglas-fir from within Wyoming sagebrush and thin remaining stands of juniper and Douglas-fir	Southeast Idaho, Soda Springs area, Idaho Falls District	East-Central Idaho	3,000 acres	NEPA complete; approximately 1,500 acres completed, remaining acres to be completed over next 5 years
Crystal Springs/Toponce Fuels Reduction and Restoration Project, Juniper and Douglas-Fir Thinning	Remove encroaching junipers and Douglas-fir from within Wyoming sagebrush and thin remaining stands of juniper and Douglas-fir	Southeast Idaho, 20 miles north of Lava Hot Springs, Blackfoot River area, Idaho Falls District	East-central Idaho	2,000 acres	Planning phase; project implementation anticipated in 2014
South Stone Juniper Thinning Project	Remove encroaching junipers from within Wyoming sagebrush	Southeast Idaho, Idaho Falls District	South Side Snake	1,700 acres	In progress; approximately 600 acres completed
Juniper Town Site Juniper Thinning Project	Remove encroaching junipers from within Wyoming sagebrush	Southeast Idaho, Idaho Falls District	South Side Snake	700 Acres	Planning phase; project implementation anticipated in 2020

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Curlw Fuel Breaks and Juniper Reduction Project	Compartmentalize the Curlw area using existing roads to improve wildfire suppression and reduce wildfire growth. Efforts will help to retain existing intact Wyoming sagebrush habitat. Remove encroaching junipers from within Wyoming sagebrush.	Southeast Idaho, north Utah, Idaho Falls District	South Side Snake	60,000 acres	Planning phase; project implementation anticipated in 2017
Bear Lake Fuels Reduction and Restoration Project	Remove encroaching junipers from within Wyoming sagebrush, improve and restore sagebrush habitat	Southeast Idaho, north Utah, Idaho Falls District	Bear Lake	30,000 acres	Planning phase; project implementation anticipated in 2020
Wolverine Fuels Reduction Project	Remove encroaching juniper and Douglas-fir from within Wyoming sagebrush; improve and restore sagebrush habitat	Southeast Idaho, Idaho Falls District	East-central Idaho	2,000 acres	Planning phase; project implementation anticipated in 2021
Trapper Creek Vegetation Project	Reduce conifer encroachment in riparian areas, shrublands, and grasslands; increase the aspen component; slash and jackpot burn; broadcast burn	Wise River Ranger District, Beaverhead-Deerlodge National Forest	Southwest Montana	Approximately 3,200 acres total, less than 1,100 acres in PGH	Project withdrawn per litigation; NEPA supplements underway; ROD anticipated end of 2013

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Sage-Grouse Habitat Improvement	Remove conifer from Phase I-II sagebrush habitat	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	800 acres	Completed
Burley Landscape Sage-Grouse Habitat Restoration	Treat encroaching juniper on approximately 38,000 acres	Various locations throughout the Burley Field Office, Twin Falls District	South Side Snake	38,000	Approximately 8,500 acres already completed; implementation of remaining 29,500 acres expected over the next 7 years
Douglas-fir removal	Mechanically remove Douglas-fir in sagebrush habitat	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	Approximately 50 acres yearly	Complies with NEPA; ongoing
Bruneau Fuel Breaks Project	Fuel breaks, in the form of greenstrips and roadside mowing, will occur in the eastern portion of the Bruneau Field Office. The projects may take 5 years to implement; maintenance is anticipated every 7-10 years.	11 allotments in Bruneau Field Office: Blackstone China Creek Crab Creek East Canyon View Louse Creek Miller Table Seeding Northwest Owens Table Butte West Canyon View	Southwest Idaho	Treatments along 128 miles of roads; 2,836 acres of shrub modification	Project approved; awaiting completion of appeal period before beginning implementation

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Paradigm Project	Fuel break project that would create up to 294 miles of fuel breaks between 50 and 300 feet wide over a 10-year period. Fuel breaks would be associated with roads and other linear disturbances. At the maximum width of 300 feet, up to 10,690 acres would be directly affected. Methods proposed to create fuel breaks include seeding with forage kochia or native/nonnative grass species, disking/bare ground, mechanical thinning and mowing, herbicides, targeted grazing, and prescribed burning.	Ada (eastern) and Elmore (western) Counties between Boise and Glenns Ferry, between the railroad and the base of the foothills (293,891 total acres), in Four Rivers Field Office	North Side Snake	2,111 acres of PPH and 24,667 acres of PGH in project area; five leks within the project boundary, two leks within 0.5 mile, and 17 leks within 10 miles; fuel breaks in PPH would be 50 feet on either side of road and in PGH would be 100 feet on either side of road; would affect 61 acres of sagebrush in PPH and 606 acres in PGH	Pending
Bruneau Mow	Fuel breaks	Boise District, Boise Field Office, Owyhee County, south of Bruneau	Southwest Idaho	130 miles	EA done in 2013; ready for treatments

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
South Owyhee Fuel Breaks	Fuel breaks	Boise District, Owyhee Field Office, Boise Field Office, Owyhee County	Southwest Idaho	2,000,000 acres, 850 miles	Draft EA
I-84	Fuel breaks	Boise District, Four Rivers Field Office, I-84 Oregon – Glens Ferry	North Side Snake	80 miles	Ongoing project
Curlew National Grassland Sagebrush Protection Project	Mechanical mowing of 314 acres of fuel breaks in strategic locations to protect existing stands of sagebrush from wildland fire	Curlew National Grassland	South Side Snake	314 acres	Decision completed; work started in 2012 and will continue through 2014 as funding allows
Curlew Sagebrush Protection Project Upgrade	Fuel break mowing	Westside Ranger District, Curlew Grasslands	South Side Snake	900 acres	Planned for 2017

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Big Desert Fuel Breaks	Compartmentalize the Big Desert management area using existing roads to improve wildfire suppression and reduce wildfire growth; efforts will help to retain intact Wyoming sagebrush habitat within the northern portion of the management area	Big Desert Area in the southwest portion of the Upper Snake Field Office and the eastern portion of the Shoshone Field Office, Idaho Falls and Twin Falls Districts	North Side Snake	291 miles of existing desert roads with a footprint of 10,581 acres  Upper Snake Field Office: 245 miles of roads with 8,908 footprint acres  Shoshone Field Office: 46 miles of roads with 1,673 footprint acres	NEPA is complete and project began in 2012 within the Upper Snake Field Office; those fuel breaks identified within the Shoshone Field Office require further analysis and consultation before NEPA can be finalized.
Blackfoot River Fuel Breaks	Compartmentalize the Blackfoot River Corridor area using existing roads to improve wildfire suppression and reduce wildfire growth; efforts will help to retain existing intact Wyoming sagebrush habitat	Blackfoot River, 20 miles East of Blackfoot Idaho, Idaho Falls District	East-central Idaho	2,000 acres	Planning phase; project implementation anticipated in 2018

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Minidoka Fuel Break	Maintenance treatments of forage kochia fuel breaks	Minidoka desert road network approximately 30 miles northeast of Burley, Idaho, Twin Falls District	North Side Snake	100-foot fuel breaks on each side of multiple roads for 28 miles; approximately 690 acre footprint	Fuel breaks were implemented in 2010 – 2012; maintenance actions are expected within the next 10 years to improve fuel break effectiveness.
Jarbidge Fuel Breaks	Implementation of self-sustaining fuel breaks using prescribed fire, herbicide, mechanical seedbed preparation, broadcast and drill seeding methods	Multiple locations along road corridors within the Jarbidge Field Office, Twin Falls District	South Side Snake	160 miles of 550-foot-wide fuel breaks along existing roads; approximately 10,499-acre footprint	Planned ROD in 2014; implementation is planned to cover a 5- to 10-year period
Pocatello Field Office Noxious Weed Control	Apply chemical treatments for noxious weed control	BLM-administered and National Forest System lands within Bear Lake County, Idaho, Idaho Falls District	Bear Lake	300 acres per year	Ongoing
Challis Field Office weed treatments	Treating weeds across the field office with biological, chemical, and mechanical treatments	Challis Field Office	Mountain Valleys	1,000 acres per year	Ongoing
Big Desert Noxious Weed Treatments	Treating noxious weeds within the Big Desert management area	Big Desert Area in the southwest portion of the Upper Snake Field Office, Idaho Falls District	North Side Snake	Total landmass is 600,000 acres with an annual treatment target of 5,000 acres	NEPA is complete; project began in 2006

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Eastside Sheeptrail Cheatgrass Treatment	Chemically reduce cheatgrass densities to modify fire return intervals and allow for seeded native species to become established	Eastern portion of the Big Desert management area west of Blackfoot, Idaho, Idaho Falls District	North Side Snake	2,000 acres	Planning phase; project implementation anticipated in 2016
Rock Corral Cheatgrass Treatment	Chemically reduce cheatgrass densities to modify fire return intervals and allow for seeded native species to become established	Eastern portion of the Big Desert management area west of Blackfoot, Idaho, Idaho Falls District	North Side Snake	2,000 acres	Planning phase; project implementation anticipated in 2018
Stage Road Cheatgrass Treatment	Chemically reduce cheatgrass densities to modify fire return intervals and allow for seeded native species to become established	Eastern portion of the Big Desert management area west of Blackfoot, Idaho, Idaho Falls District	North Side Snake	3,000 acres	Planning phase; project implementation anticipated in 2017

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Birch Willow Lost EIS Vegetation Management EIS	Vegetation management treatments to meet Forest Plan desired conditions including removing encroaching conifers in Sagebrush, Aspen, Mountain Mahogany, thinning Douglas-fir, daylighting Whitebark Pine.	Dillon Ranger District Southern portion of East Pioneers	No population overlap.	Unknown at this time Possible slight overlap of PGH	EIS on hold
Salmon-Challis National Forest Forest-wide Invasive Plant Treatment EIS	Programmatic Noxious Weed Management EIS and ROD	Salmon-Challis National Forest	Mountain Valleys	Project area is nonwilderness portion of the Salmon-Challis National Forest (3.2 million acres)	NEPA anticipated to be completed by September 2014

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Clear Creek Restoration	Treat cheatgrass-dominated site and restore to perennial grasses and shrubs	15 miles east of Almo, Idaho, Twin Falls District	South Side Snake	1,000 acres	Planned implementation within the next 3 years
Twin Falls District Noxious Weed and Invasive Plant Treatments	Proposed action is to use prevention, prescribed fire, herbicides, and manual, mechanical, and biological methods to treat areas dominated by annual invasive species to restore perennial grasses, forbs, and shrubs.	Various locations throughout the Shoshone, Jarbidge, and Burley Field Offices, Twin Falls District	South Side Snake	This is a programmatic planning effort. Estimated annual restoration is 5,000-10,000 acres in Burley, 10,000-15,000 acres in Shoshone, and 10,000-15,000 acres in Jarbidge. Ten-year total for each office could approach 100,000 acres in Burley, 150,000 acres in Shoshone, and 150,000 acres in Jarbidge.	Programmatic EA with planned ROD in 2014. Implementation is planned to cover 10 years starting in 2015.

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Noxious weeds treatment	Treat noxious weeds across the Dillon Field Office	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	Approximately 1,500 acres yearly	Ongoing
Rock Creek Riparian Restoration Project	In association with the Old Highway 37 Reroute Project, once the highway is moved, remove road materials and restore hydrologic function to Rock Creek	Curlew National Grassland, 8 miles northwest of Holbrook, Idaho	South Side Snake	5 miles	In the planning phase; expected EA in 2014 once a decision is made on highway project (above)
Rock Creek Fuels EA	Fuels reduction and vegetation improvement adjacent to sagebrush communities	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth NF	South Side Snake	7,959 acres	Planned for 2016
Pocatello Field Office Seedling plantings	Seedling planting of sagebrush and antelope bitterbrush	BLM-administered and National Forest System lands within Bear lake County, Idaho, Idaho Falls District	Bear Lake	20 acres per year	Ongoing, includes Fish and Game habitat restoration projects
Pocatello Field Office Curlew Seedling plantings	Seedling planting of sagebrush and antelope bitterbrush	BLM-administered and National Forest System lands within Oneida County, Idaho – Curlew and South Stone areas, Idaho Falls District	South Side Snake	20 acres per year	Ongoing, includes Fish and Game habitat restoration projects

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Pahsimeroi Sagebrush Restoration	Treating sagebrush with Lawson aerator and seeding native herbaceous species	West River Flat Pasture of the Upper Pahsimeroi Allotment, Challis Field Office, Idaho Falls District	Mountain Valleys	700 acres	Project under NEPA review; decision date anticipated in 2014
Buckwalter Sage-Grouse Habitat Project	Treating sagebrush cover to increase herbaceous cover to site potential	T 8N.,R 23E., Sec. 36, Challis Field Office, Idaho Falls District	Mountain Valleys	Up to 640 acres	Project under NEPA review; decision date anticipated in 2014
Pocatello Shrub Planting Programmatic EA	Reintroduction of shrub species through hand planting of seedlings	Various locations throughout southeast Idaho, Idaho Falls District	Bear Lake, South Side Snake, east-central Idaho	Up to 500 acres annually	NEPA complete; implementation has been occurring since 2011 and is expected to continue for next 5-10 years.
Burley Shrub Planting	Reintroduction of shrub species through hand planting of seedlings; up to 150,000 seedlings may be planted annually.	Various locations throughout the Burley Field Office, Twin Falls District	South Side Snake	Up to approximately 8,000 acres annually	Implementation has been occurring since 2010 and is expected to continue over the next 7-10 years.
Jarbidge Shrub Planting	Reintroduction of shrub species through hand planting of seedlings; up to 50,000 seedlings may be planted annually.	Various locations throughout the Jarbidge Field Office, Twin Falls District	South Side Snake	Up to approximately 5,000 acres annually	Implementation has been occurring since 2012 and is expected to continue over the next 10 years.

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Twin Falls District Wildlife Tracts Restoration	Proposed action is to use prescribed fire, chemical, drill and harrow seeding, shrub seeding, and plantings to establish perennial vegetation and restore native shrub habitat on wildlife tracts.	Multiple wildlife tracts throughout the Shoshone, Burley, and Jarbidge Field Offices, Twin Falls District	South Side Snake	500-1,000 acres per year, for a cumulative total of 10,000 acres over ten years	Implementation has been occurring since 2011 and is planned to continue over the next 8 years.
Upper Horse Prairie Crested Wheatgrass Sagebrush Restoration	Reseeding crested wheatgrass with native grasses and forbs	Upper Horse Prairie watershed in the Dillon Field Office	Southwest Montana	500 acres total over the life of the RMP	NEPA completed 2012, anticipate implementation beginning in 2014
Sublett Prescribed Fire - Aspen	Prescribed fire in aspen; sagebrush surrounds the project	Minidoka Ranger District, Sublett Division, Idaho, Sawtooth National Forest	South Side Snake	1,000 acres	Planned for 2015
Jeff Creek Prescribed Burn	Prescribed fire	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	4,035-acre project area; 90 acres of project area in GRSG habitat but not planning to burn in this area	Planned for 2014
Prescribed Fire	Used prescribed fire to restore sagebrush habitat by removing Douglas-fir colonization	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	Approximately 600 acres yearly	NEPA compliant and ongoing

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Woodcutting Permits	Woodcutting permits would continue to be issued. Each permit allows a minimum of 10 cords and a maximum of 20 cords to be purchased. Stipulations regarding distance from perennial streams, diameter of trees, and distance from paved roads are included.	Within the Owyhee Field Office jurisdiction. Cutting in Wilderness areas, ACECs, Mud Flat Scenic By-Way, a corridor to Silver City, and within rock outcroppings is not allowed.	Southwest Idaho	Unknown	Permitting process is approved and being implemented.
Ramey Creek Reforestation Project	Restoring healthy lodgepole and Douglas fir communities through thinning, removal of dead, and burning in Ramey Creek watershed	Lost River Ranger District	Mountain Valleys	3,000 acres	Decision planned in next two years
Canyon Creek Stream Restoration Project	Instream Habitat Restoration & Willow Cutting Plantings	Leadore Ranger District	Mountain Valleys	4.0 miles stream restored	Decision & implementation in 2015, implementation in 2016-2019
Sawmill Canyon Aspen Regeneration	Removing conifer trees from aspen stands for aspen regeneration	Lost River Ranger District	Mountain Valleys	40 acres	Continuing implementation

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
<b>Range</b>					
Permit Renewals	Will complete environmental assessments before making decisions regarding grazing permit renewals	Allotments: Owens, East Castle Creek, Battle Creek, Big Springs, Bruneau Canyon, in Bruneau Field Office	Southwest Idaho	Unknown	Ongoing
Grazing Permit Renewals	Renewing/modifying 2 to 5 grazing permits per year for the next ten years	Challis Field Office	Mountain Valleys	770,000 acres	Project under NEPA review; decision dates 2014-2024
North Little Camas Allotment	Range NEPA for on-off C&H allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	1,377 acres	NEPA decision in FY 2014
South Little Camas Allotment	Range NEPA for on-off C&H allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	1,790 acres	NEPA decision in FY 2014
Bennett Mountain Allotment	Range NEPA for C&H allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	7,076 acres	Planned within the next 10 years
Dixie Allotment	Range NEPA for C&H allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	20,046 acres	Planned within the next 10 years
Granite Allotment	Range NEPA for S&G allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	6,351 acres	Planned within the next 10 years
Lake Creek Allotment	Range NEPA for C&H allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	3,147 acres	Planned within the next 10 years

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Mennecke Creek Allotment	Range NEPA for C&H allotment	Mountain Home Ranger District – Boise National Forest	North Side Snake	13,272 acres	Planned within the next 10 years
Almo Park C&H Allotment	Cattle allotment management plan (AMP) update	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	11,990 acres	2017
Conner Creek C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	5,609 acres	2017
Goose Creek C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	66,872 acres	2021
Oakley Valley C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	30,674 acres	2025
Coal Pit C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	32,454 acres	2025

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Big Hollow C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	7,958 acres	2025
Third Fork S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	9,041 acres	2033
Buckbrush S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	19,937 acres	2033
Little Fork S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	5,360 acres	2033
Deadline S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	8,625 acres	2033

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Little Piney S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	7,658 acres	2033
Trout Creek S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	10,261 acres	2033
Badger S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	7,535 acres	2033
Trapper Creek S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	11,403 acres	2033
Ridgeline C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	9,583 acres	2025

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Fall-Swanty C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	Unknown	2025
Albion C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	11,991 acres	2017
Barnes Canyon C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	2,841 acres	2029
Basin C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	8,220 acres	2017
Cross Creek C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	322 acres	2017

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
East End C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	7,777 acres	2029
East Park Valley C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	1,625 acres	2029
Elba C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	19,488 acres	2017
Land Creek C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	2,017 acres	2017
Pine Hollow C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	340 acres	2017

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Pothole/Bedke C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	3,744 acres	2017
Rosette C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	11,503 acres	2029
West Park Valley C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	3,942 acres	2029
Willow Creek C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	18,854 acres	2017
Clear Creek C&H Allotment	Cattle allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	10,237 acres	2029

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Clark's Basin S&G	Sheep allotment AMP renewal	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	8,499 acres	2029
East Dry Pole S&G Allotment	Sheep allotment AMP renewal	Minidoka Ranger District, Black Pine Division, Idaho, Sawtooth NF	South Side Snake	9,571 acres	2045
Walters Creek	Cattle allotment AMP update	Minidoka Ranger District, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	1,062 acres	2017
Deer Creek/Curran S&G Allotment	Sheep allotment AMP renewal	Ketchum Ranger District, Idaho, Sawtooth National Forest	North Side Snake	21,119 acres	2022
Greenhorn – Kelly Mountain C&H Allotment	Cattle allotment AMP renewal	Ketchum Ranger District, Idaho, Sawtooth National Forest	North Side Snake	6,880 acres	2013
Cove Creek S&G Allotment	Sheep allotment AMP renewal	Ketchum Ranger District, Idaho, Sawtooth National Forest	North Side Snake	8,942 acres	2020

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Stanley Basin C&H, Alpine Way On/Off, Goat Creek On/Off, Anderson On/Off	Cattle allotment AMP renewal	Sawtooth NRA, Idaho, Sawtooth NF	Sawtooth	31,530 acres	2016
Williams Creek C&H	Cattle allotment AMP renewal	Sawtooth NRA, Idaho, Sawtooth National Forest	Sawtooth	466 acres	2021
Soldier C&H Allotment	Cattle allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	23,406 acres	2021
Bremner-Middle Fork S&G Allotment	Sheep allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	17,207 acres	2016
Hunter Creek C&H Allotment	Cattle allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	4,973 acres	2017
Wardrop C&H Allotment	Cattle allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	10,383 acres	2021
Corral Creek S&G Allotment	Sheep allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	4,014 acres	2018

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
North Fork Lime Creek S&G Allotment	Sheep allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	15,145 acres	2016
Deer Creek C&H Allotment	Cattle allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	1,225 acres	2020
Sheep Basin C&H Allotment	Cattle allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	7,068 acres	2017
Cherry Creek S&G Allotment	Sheep allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	2,461 acres	2020
Willow C&H Allotment	Cattle allotment AMP renewal	Fairfield Ranger District, Idaho, Sawtooth National Forest	North Side Snake	18,554 acres	2021
Spud and Marco Creek Allotments	Grazing Allotment Management NEPA	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	7,131 acres	Decision planned in 1 year
Antelope Grazing Management Project	Grazing Allotment Management NEPA	Lost River Ranger District, Salmon-Challis National Forest	Mountain Valleys	49,269 acres	Decision planned in 2016

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Morgan Creek Allotment and Sleeping Deer Unit of Eddy Creek	Grazing Allotment Management NEPA	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	44,050 acres	Decision planned in 2 years
Lee Creek to Cove Creek Allotments	Grazing Allotment Management NEPA	Leadore Ranger District, Salmon-Challis National Forest	Mountain Valleys	71,826 acres	Decision planned in 2 years
Pahsimeroi and Upper Pahsimeroi Allotments (3)	Grazing Allotment Management NEPA	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	75,159 acres	Decision planned in 3-4 years
Gilmore to Nez Perce Allotments	Grazing Allotment Management NEPA	Leadore Ranger District, Salmon-Challis National Forest	Mountain Valleys	27,414 acres	Decision planned in 3-4 years
Sandy to Agency and Twelvemile	Grazing Allotment Management NEPA	Leadore and Salmon-Cobalt Ranger Districts, Salmon-Challis National Forest	Mountain Valleys	44,790 acres	Decision planned in 3-4 years
Hawley Creek Allotment	Grazing Allotment Management NEPA	Leadore Ranger District, Salmon-Challis National Forest	Mountain Valleys	31,472 acres	Decision planned in 3-4 years
Pass Creek Allotment	Grazing Allotment Management NEPA	Lost River Ranger District, Salmon-Challis National Forest	Mountain Valleys	43,412 acres	Decision planned in 4 years

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Little Lost Allotments	Grazing Allotment Management NEPA	Lost River Ranger District, Salmon-Challis National Forest	Mountain Valleys	129,312 acres	Decision planned in 4 years
Upper Salmon Allotments	Grazing Allotment Management NEPA	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	217,150 acres	Decision planned in 4-5 years
Hayden Allotments (up to 3)	Grazing Allotment Management NEPA	Leadore Ranger District, Salmon-Challis National Forest	Mountain Valleys	63,575 acres	Decision planned in 4-5 years
North Fork Allotments	Grazing Allotment Management NEPA	North Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	116, 254 acres	Decision planned in 4-5 years
Middle Salmon Allotments	Grazing Allotment Management NEPA	Salmon-Cobalt Ranger District, Salmon-Challis National Forest	Mountain Valleys	98,343 acres	Decision planned in 4-5 years
Various Sheep Allotments	Grazing Allotment Management NEPA	Lost River and Middle Fork Ranger Districts, Salmon-Challis National Forest	Mountain Valleys	56,226 acres	Decision within the reasonably foreseeable time frame (by 2023)
White Knob Cattle Allotments	Grazing Allotment Management NEPA	Lost River Ranger District, Salmon-Challis National Forest	Mountain Valleys	54,997 acres	Decision possible within the reasonably foreseeable time frame (by 2023)

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Little Eightmile and Grizzly Hill	Grazing Allotment Management NEPA	Leadore Ranger District, Salmon-Challis National Forest	Mountain Valleys	46,086 acres	Decision possible within the reasonably foreseeable time frame (by 2023)
Middle Fork Allotments	Grazing Allotment Management NEPA	Middle Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	52,905 acres	Decision possible within the reasonably foreseeable time frame (by 2023)
Pioneer Cattle Allotments	Grazing Allotment Management NEPA	Lost River Ranger District, Salmon-Challis National Forest	Mountain Valleys	246,179 acres	Decision planned in 6-7 years
Lost River Allotments	Grazing Allotment Management NEPA	Lost River Ranger District, Salmon-Challis National Forest	Mountain Valleys	113,122 acres	Decision planned in 4-7 years
Lemhi/Salmon Allotments	Grazing Allotment Management NEPA	Leadore Ranger District, Salmon-Challis National Forest	Mountain Valleys	52,661 acres	Decision planned in 6-10 years
North Lost River Allotments	Grazing Allotment Management NEPA	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	71,492 acres	Decision planned in 6-10 years
Lower Salmon/Panther Allotments	Grazing Allotment Management NEPA	Salmon-Cobalt Ranger District, Salmon-Challis National Forest	Mountain Valleys	297,730 acres	Decision planned in 8-10 years

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
NW Lemhi Allotments	Grazing Allotment Management NEPA	Challis-Yankee Fork Ranger District, Salmon-Challis National Forest	Mountain Valleys	57,782 acres	Decision planned in 8-10 years
Kelly Canyon-Indian Creek Grazing Analysis Project	Grazing re-authorization	Dubois Ranger District	Mountain Valleys	53,220 acres	Planned for 2018
South Soda Sheep AMP revisions	Grazing re-authorization	Soda Spring Ranger District	East-Central Idaho	132,000 acres	Planned for 2016
NW Big Hole AMP Revision	Cattle allotment management plan revision (7 cattle allotments)	Wisdom Ranger District, Beaverhead-Deerlodge National Forest	Southwest Montana, Wisdom sub-population (P37)	4 allotments overlapping 687 acres of PGH	NEPA underway; ROD in late 2015

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Cessation Lima-Tendoy Sheep Grazing	Indian Creek and Bear Canyon Allotments	Dillon Ranger District, Beaverhead-Deerlodge National Forest	Southwest Montana, Red Rocks sub-population (P24)	11,700 acres in PPH	Permittee waiving sheep permits back to Forest Service (pending receipt of waiver of term grazing permit-2013). Allotments will be closed to future domestic sheep grazing. No new grazing permits for any livestock will be issued for Indian Creek. Three-year trial of 100 AUMs fall cattle grazing for Bear Canyon. NEPA review and new AMP after 2015 grazing season
Range Improvement Construction	Construction or maintenance of fencing (allotment boundary, pasture or enclosure fencing), water developments (water hauls, pipelines and troughs)	Owyhee Field Office jurisdiction.	Southwest Idaho	Approximately 25 miles of new fence to be constructed; approximately 5 miles of pipelines and associated troughs; approximately 30 water haul sites	Various; projects either waiting for available funding or in the planning stages; maintenance of existing projects is ongoing

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Range Water Developments	40 new spring developments and associated pipeline and drinkers	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	20 miles of pipeline estimated 20 acres disturbance.	NEPA compliant and ongoing
Fence Removal	Removal of approximately 5 miles of old fences yearly	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	50 miles removed in next ten years	Ongoing
New Fence Construction	Approximately 5 miles of new fence construction per year	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	50 miles of new fence in the next ten years	NEPA compliant and ongoing
Pocatello Field Office – Fence Flagging	Install GRSG fence reflectors	BLM-administered and National Forest System lands throughout southeast Idaho, Pocatello Field Office	Bear Lake, South Side Snake	10 miles per year	Ongoing
Grouse Creek Fences	Construct 1 mile of fence to protect 2 springs and ½ mile of Sulphur Creek	Section 30, T13N, R23E; Section 13, T.14N., R.21E., W½SW¼, Challis Field Office, Idaho Falls District	Mountain Valleys	1 mile	NEPA completed; construction in 2014
Upper Pahsimeroi/Burnt Creek Fences	Construct 2.5 miles of fence	at T.10N., R.24E; Challis Field Office, Idaho Falls District	Mountain Valleys	2.5 miles	Project under NEPA review, decision date anticipated 2014

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Rock Springs Pipeline Extension Reconstruct with Two New Troughs	Extending an existing pipeline 4 miles and adding two additional troughs	T.13N., R.22E., Section 27 E½ and the other in T.13N., R.22E., Section 15 SE¼SW¼, Challis Field Office, Idaho Falls District	Mountain Valleys	4 miles, 1.4 acres of disturbance	NEPA completed; construction in 2014
Rattlesnake Pipeline	Reconstruct Rattlesnake Pipeline, which includes 3 troughs	Sections 30 and 19 of T.13N., R.22E., Challis Field Office, Idaho Falls District	Mountain Valleys	1.5 miles	NEPA completed; construction in 2014
Upper Pahsimeroi/Burnt Creek Pipeline	Construct additional water sources within the Burnt Creek and Upper Pahsimeroi Allotments	T. 10N., R.24E.; T.11N., R.23E., sec. 10 NW¼SE¼, Challis Field Office, Idaho Falls District	Mountain Valleys	2.5 miles	Project under NEPA review; decision date anticipated in 2014
Upper Pahsimeroi/Burnt Creek Troughs	Adding three additional troughs in the Burnt Creek and Upper Pahsimeroi Allotments	T.10N.,R.24E.; T.11N., R.23E., sec. 10 NW¼SE¼, Challis Field Office, Idaho Falls District	Mountain Valleys	2.1 acres	Project under NEPA review; decision date anticipated in 2014
Mill Creek Reconnect Project	To reconnect Mill Creek to Big Creek; this would involve public and private lands to restore the historic channel alignment of Mill Creek.	T.14N., R.23E. Sec. 35; T. 13N.,R.23E., Sec. 2, Challis Field Office, Idaho Falls District	Mountain Valleys	640 acres, 3 miles of stream	Project under NEPA review; decision date anticipated in 2014

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Spring Hill Spring Restoration	Fence springs and move troughs to uplands; CE or EA	Challis-Yankee Fork Ranger District-Pahsimeroi allotment, Salmon-Challis National Forest	Mountain Valleys	Approximately 10 acres	Planning stage, but implementation likely in 2014
Lost River Small Batch Fences	Road/Ramey, North Fork, and Kane Lake Fences to manage livestock	Lost River Ranger District - 30 miles west of Mackay, Idaho, Salmon-Challis National Forest	Mountain Valleys	1.25 miles	Environmental analysis ongoing; ROD 2016
Warm Creek Habitat Improvement Fence	Fence to keep cattle off Warm Creek	Lost River Ranger District - on Warm Creek at mouth of Sawmill Canyon, Salmon-Challis National Forest	Mountain Valleys	0.25 miles	Environmental analysis ongoing; ROD 2013
Mud Lake Fence Modification	Convert electric fence to permanent with slight adjustment in location	Lost River Ranger District - Pass Creek, Salmon-Challis National Forest	Mountain Valleys	3 miles	Environmental analysis anticipated in 2015
Copper Basin Swamps Troughs	Add one to two troughs to pipeline in Swamps pasture of Copper Basin Allotment	Lost River Ranger District - Copper Basin, Salmon-Challis National Forest	Mountain Valleys	600 acres	Environmental analysis anticipated in 2015

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
<b>Minerals</b>					
Western Standard Metals - Almaden Exploration Mining Notice Revision	IDI-37044 Addition of 16 drill sites requiring approximately 4,270 linear feet of constructed roads and approximately 350 linear feet of overland travel for mineral exploration.	Boise Meridian, T. 10 N., R. 3 W., Sections 4 & 5 and T. 11 N., R. 3 W., Section 32 in Washington County, Idaho, Four Rivers Field Office	Weiser	Approximately 3.74 acres	Authorization of this revised notice activity is pending receipt and acceptance of required additional reclamation bond.
Western Standard Metals - Nutmeg Mountain Exploration Mining Notice	IDI-37444 Proposed construction of nine drill sites and 8,455 linear feet of new road for condemnation drilling.	Boise Meridian, T. 10 N., R. 3 W, Sections 3 & 4, and T. 11 N., R. 3 W., Section 33 in Washington County, Idaho, Four Rivers Field Office	Weiser	Approximately 4.21 acres	Authorization of this mining notice is pending receipt and acceptance of required reclamation bond.
Sawtooth #4 Plan of Operation Modification	Locatable mineral surface mining	Middle Mountain, West of Elba, Idaho, Twin Falls District  T 14 S R 22 E Section 34	South Side Snake	20 acres	NEPA in progress

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Mineral Extraction	Approximately 25 notices	Throughout PPH and PGH in the Dillon Field Office	Southwest Montana	Less than 50 acres	Ongoing
Otis Gold Exploratory Drilling Notice of Intent	Exploratory drilling	South of Oakley, Idaho, Twin Falls District  T 16 S R 22 E Section 20	South Side Snake	1 acre	Pending
Prudent Man Mining	Hand excavations	Lost River Ranger District-Alder Creek, Salmon-Challis National Forest	Mountain Valleys	5 acres	Ongoing next 5 years
Geothermal drilling and development	Drilling of up to 26 production/injection wells on federal leases and adjacent private lands. Construction of pipelines, access roads, and on-lease infrastructure proposed. Power plant proposed on private lands.	Raft River area (southeast end of Jim Sage Mountain).	South Side Snake	Total of up to 275 acres on leased public lands and adjacent private lands.	Pending NEPA analysis and approval. Drilling anticipated to begin fall 2015.
Oakley Stone quarries	Development of quarries (43 CFR 3809)	Middle Mountain, Raft River Mountains in Utah	South Side Snake	Approximately 60 acres	Ongoing

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Goat Springs Quarry	Proposal for surface mining of sand and gravel material	South Hills, south of Twin Falls, Idaho, Twin Falls District  T 13S, R 17E, Section 18	South Side Snake	17 acres	NEPA in progress
Lynn Springs Quarry	Plan of Operations-Quarry Expansion	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	20 acres	Planned for 2017-2018
Fish Creek Quarry	Plan of Operations Amendment-Quarry Expansion	Minidoka Ranger District, Burley, Idaho, Albion Division, Idaho, Sawtooth National Forest	South Side Snake	10 acres	Planned for 2017-2018
Dove Creek Quarry	Plan of Operations-Amendment-Expansion	Minidoka Ranger District, Raft River Division, Utah, Sawtooth National Forest	South Side Snake	10 acres	Planned for 2018
Paris Hills Phosphate Project	Underground phosphate mine	Paris, Idaho, not on BLM-administered or National Forest System lands	Southeast Idaho	Unknown	Company announced it was ceasing activity on this project for the foreseeable future.
Phosphate mine development	Develop mine, mostly on private and state surface, federal minerals	Trail Creek/Caldwell Canyon	East-central Idaho	Approximately 600 acres	Anticipate submission of a mine plan in 2015

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Oil and Gas	Application for permit to drill	Dillon Ranger District, Beaverhead-Deerlodge National Forest	Southwest Montana - Red Rocks subpopulation (P24)	Unknown, but Forest Service PPH totals approximately 84,800 acres, less than 8,500 acres PPH in moderate potential for development.	NO current APDs; Beaverhead-Deerlodge National Forest Update to Beaverhead-Deerlodge National Forest Oil and Gas ROD on hold pending outcome of GRSG EIS; likely less than 10 APDs over the next 10-15 years.
Oil and gas lease nominations	Determine whether to offer leases	Bear Lake Plateau	Bear Lake	Two nominations, totaling an estimated 59,700 acres	Deferred, pending completion of GRSG EIS
Oil and gas lease nominations	Determine whether to offer leases	Rogerson-Brown's Bench	South Side Snake	90,000 acres	Deferred, pending completion of Jarbidge RMP and GRSG EIS
Oil and gas lease nominations	Determine whether to offer leases	Payette-Weiser area	East-central Idaho	Several nominations, totaling an estimated 181,000 acres	Deferred, pending completion of Four Rivers RMP and GRSG EIS

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Mineral Gulch Plan of Operation	Exploration drilling plan of operations	Minidoka Ranger District, Idaho, Black Pine Division, Idaho, Sawtooth National Forest	South Side Snake	16 acres	Authorized 2012; not yet implemented. Authorization expires December 31, 2016 (all reclamation required to be completed by this date)
Great Western Exploration Drilling	Core drilling	Lost River Ranger District - Camp Creek area, Salmon-Challis National Forest	Mountain Valleys	1 acre	NEPA; implementation fall 2013
Gold Star Exploration Drilling	Mineral exploration	Salmon-Cobalt Ranger District – Tower Creek Drainage, Salmon-Challis National Forest	Mountain Valleys	Fewer than 5 acres	Planned in 2014
Flume Creek Exploration Drilling	Mineral exploration	Leadore Ranger District – Flume Creek Drainage, Salmon-Challis National Forest	Mountain Valleys	Fewer than 5 acres	Planned in 2013

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
<b>Wild Horses and Burros</b>					
Wild horse gathers	Gather, fertility treatment, removal of excess wild horses from HMAs	Sands Basin, Hardtrigger, and Black Mountain HMAs, Owyhee Field Office	Southwest Idaho	128,389 acres of public and other (private and state) land	EAs and decisions have been approved; gathers and treatment are pending due to funding and other priority treatments within the BLM wild horse program.
<b>Recreation</b>					
Special Recreation Permits	Various motorcycle, foot, and mountain bike races, horse endurance rides, dog trials, pioneer treks, and poker runs	Owyhee Front; all motorized activities occur within the designated competitive use area of the Murphy Sub-regional Travel Management Area, Owyhee Field Office	Southwest Idaho	260,000 acres; most activities occur within the Murphy and Wilson Creek travel management areas; approximately 900 miles of designated routes; dog trials occur within the Blackstock SRMA (6,149 acres of BLM-administered land)	Future applications and permitting are expected annually.

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Special Recreation Permits	Typical applications each year include: <ul style="list-style-type: none"> <li>• 2 motorcycle races</li> <li>• 1-2 bighorn sheep guided hunts, 1 wildlife viewing trip, and 1 group hiking trip</li> </ul>	Motorcycle races in East/West Castle Creek Allotments, Bruneau Field Office  Other SRPs typically are in or near Wilderness	Southwest Idaho	Unsure	Ongoing
Willow Springs Trail	Single-track motorized trail	Palisades Ranger District in Fall Creek watershed	East-central Idaho	3 miles	Planned for 2015
Indian Spring Trail Plan	Construct new trails and maintain/relocate existing trails for use by mountain bikes	South Hills, south of Kimberly, Idaho, Twin Falls District	South Side Snake	60 miles	Working on NEPA
Horse Endurance Race	Special use permit for horse endurance race	Castle Rocks/City of Rocks west of Almo, Idaho, Twin Falls District	South Side Snake	14 miles	Pending
BORE SRP Jackpot 200	Special use permit for motorcycle race	Shoshone Basin Idaho, North of Jackpot, Nevada, Twin Falls District	South Side Snake	90 miles	Working on NEPA
Recreation Trail Reroutes	Possible addition of one motorcycle trail – Fawn Springs	Minidoka Ranger District, Cassia Division, Idaho, Sawtooth National Forest	South Side Snake	1 mile	Planned for 2016

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Stanley Bunkhouses	Install 3 modular bunkhouses	Sawtooth NRA, Redfish Lake Recreation Complex, Idaho, Sawtooth National Forest	Sawtooth	1 acre	Planned activity 2014-2016
<b>Travel Management</b>					
Bear Lake Travel Management Plan Implementation	Implement Bear Lake Travel Management Plan; limit motorized travel to designated routes, prohibit cross-country travel	BLM-administered and National Forest System lands within Bear Lake County, Idaho, Idaho Falls District	Bear Lake	50,000 acres	Travel plan approved 2012; implementation ongoing
Curlew/Deep Creek Travel Management Plan Implementation	Implement Bear Lake Travel Management Plan; limit motorized travel to designated routes, prohibit cross-country travel	BLM-administered and National Forest System lands within Oneida and Power Counties, as well as small portions of Cassia and Bannock Counties, Idaho, Idaho Falls District	South Side Snake	375,000 acres	Proposed decision out for review, June 2013; anticipated decision September 2013; implementation on-going
North Highway 20 Travel Plan	Designate routes and types of use, parking areas/trailheads and future trail construction corridors	North of HWY 20 in the Shoshone Field Office, Twin Falls District	North Side Snake	Designate 127 miles of existing trails; construct 52 miles of new trails, construct 3 acres of parking areas, close and rehabilitate 116 miles of existing routes.	Pending

**Table 5-26  
Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Dillon, Wisdom, Wise River Ranger Districts Travel Management Project EA	Analysis for designating wheeled motorized use on the Dillon, Wisdom and Wise River ranger districts of the Beaverhead-Deerlodge NF.	Dillon, Wisdom, Wise River Ranger Districts	Unknown at this time	Unknown at this time	NEPA On Hold
Madison Ranger District Road Decommissioning as Identified in the Madison MVUM Decision CE	Road 1237B, (0.5 miles) will require complete obliteration. Road closure devices, water bars, tread scarification and re-contouring will discourage motorized use and promote re-vegetation. Road 9677, (1.6 miles) will require only a closed sign.	Madison RD	Road 1237B-No population overlap, no PGH or PPH Road 9677 slight overlap on north end of Pop 24 polygon. Slight overlap of PGH no PPH	Road 9677 slight overlap on north end of Pop 24 polygon. Slight overlap of PGH no PPH. 1.6 miles closed by signing. No earthwork	Expected implementation 8/2015
Road Decommissioning	Road decommissioning associated with travel plan	Minidoka Ranger District, Cassia and Sublett Division, Idaho, Sawtooth National Forest	South Side Snake	30 miles per year	Planned 2016
Redfish Lake Road and Bridges – Phase 1	Road and bridge construction	Sawtooth NRA, Redfish Lake Recreation Complex, Idaho, Sawtooth National Forest	Sawtooth	3 acres	Activity during next 2 field seasons

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

<b>Name</b>	<b>Description</b>	<b>Location</b>	<b>Sage-Grouse Population Area</b>	<b>Estimated Footprint (Acres or Miles)</b>	<b>Status of Action</b>
Redfish Lake Road and Bridges – Phases 2 and 3	Road construction	Sawtooth NRA, Redfish Lake Recreation Complex, Idaho, Sawtooth National Forest	Sawtooth	3 acres	Planned in 5 years
Stanley-Redfish trail	Trail construction	Sawtooth NRA, Redfish Lake Recreation Complex, Idaho, Sawtooth National Forest	Sawtooth	Approximately 2 acres (3 miles) of trail construction	Planned in 3 years
Iron Creek Road	Road reconstruction	Sawtooth NRA, Redfish Lake Recreation Complex, Idaho, Sawtooth National Forest	Sawtooth	3 acres	Planned in 4 years
Pole Creek Travel Management	ATV trail construction and unauthorized road obliteration	Sawtooth National Recreation Area, Idaho, Sawtooth National Forest	Sawtooth	4.6 acres of rehabilitation; 1.1 acres (1.75 miles) of trail construction	Implementation started in 2012 and continuing in 2013
<b>Land Use Planning</b>					
Jarbidge RMP	Revise the Jarbidge RMP that provides a comprehensive plan that further restores or maintains resource conditions and provides for the economic needs of local communities over the long term	Jarbidge Field Office, Twin Falls District	South Side Snake	1,366,000 acres	Finalizing the EIS

**Table 5-26**  
**Past, Present, and Reasonably Foreseeable Future Actions**

Name	Description	Location	Sage-Grouse Population Area	Estimated Footprint (Acres or Miles)	Status of Action
Craters LUP Amendment	Analyze a range of alternatives for livestock grazing in the Craters of the Moon (i.e., identify lands available or unavailable for grazing, identify the amount of forage available, seasons of use, range improvements)	Craters of the Moon National Monument and Preserve, Twin Falls District	North Side Snake	300,000 acres	Working on scoping package and planning public meetings

area. Projects and activities are evaluated on the basis of proximity, connection to the same environmental systems, potential for subsequent impacts or activity, similar impacts, the likelihood a project will occur, and whether the project is reasonably foreseeable.

Projects and activities considered in the cumulative analysis were identified by BLM and Forest Service employees with knowledge of the area. Each was asked to provide information on the most influential past, present, or reasonably foreseeable future actions. Additional information was obtained through discussions with agency officials and a review of publicly available materials and websites.

Effects of past actions and activities are manifested in the current condition of the resources, as described in the affected environment (**Chapter 3**). Reasonably foreseeable future actions are those that have been committed to or known proposals that would take place within a 20-year planning period.

Reasonably foreseeable future action scenarios are projections made to predict future impacts; they are not actual planning decisions or resource commitments. Projections, which have been developed for analysis only, are based on current conditions and trends and represent a best professional estimate. Unforeseen changes in such factors as economics, demand, and federal, state, and local laws and policies could result in different outcomes than those projected in this analysis.

Other potential future actions have been considered and eliminated from further analysis because there is a small likelihood these actions would be pursued and implemented within the life of the plan or because so little is known about the potential action that formulating an analysis of impacts is premature.

In addition, potential future actions protective of the environment (such as new regulations related to fugitive dust emissions) have less likelihood of creating major environmental consequences alone, or in combination with this planning effort. Federal actions such as species listing would require the BLM and Forest Service to reconsider decisions created from this action. This is because the consultations and relative impacts might no longer be appropriate. These potential future actions may have greater capacity to affect resource uses within the planning area; however, until more information is developed, no reasonable estimation of impacts could be developed.

Data on the precise locations and overall extent of resources within the planning area are considerable, although the information varies according to resource type and locale. Furthermore, understanding of the impacts on and the interplay among these resources is evolving. As knowledge improves, management measures (adaptive or otherwise) would be considered to reduce potential cumulative impacts, in accordance with law, regulations, and current LUPs.

Projects and activities identified as having the greatest likelihood to generate potential cumulative impacts when added to the Idaho and Southwestern Montana Greater Sage-Grouse EIS/Plan Amendment alternatives are displayed in **Table 5-26**.

### 5.3.1 Vegetation

Past, present, and reasonably foreseeable future actions and conditions that affect vegetation are vegetation and habitat management and improvement projects, noxious weed control, wildfire management, livestock grazing management, lands and realty management, mineral extraction and development, and travel management planning.

Sagebrush-promoting and conifer-removing vegetation and habitat treatments would retain and enhance sagebrush vegetation and overall ecosystem productivity, while reducing the distribution of invasive weeds and woody conifer species. Given the limited distribution of suitable sagebrush habitats and the cost of habitat restoration, management plans that protect intact sagebrush acreage and restore impacted areas strategically to improve habitat connectivity have the best chance of increasing the amount and quality of sagebrush cover (Manier et al. 2013).

An assortment of nonnative annuals and perennials and native conifers is invading sagebrush ecosystems. Many areas throughout the range of GRSG are at high risk from invasive plants; the most concentrated areas of risk include the Intermountain West and Great Basin (Manier et al. 2013). Invasive plants can alter plant community structure and composition, productivity, nutrient cycling, and hydrology and may competitively exclude native plant populations. Invasive plant spread may result in habitat loss and fragmentation and may also increase the risk of wildfire. The spread of invasive plants such as cheatgrass has increased the frequency and intensity of fires in some areas (Balch et al. 2012). Treatments designed to prevent encroachment of shrubs, nonnative species, or woody vegetation would alter the condition of native vegetation communities by changing the density, composition, and frequency of species within plant communities. The intent of these management programs is to improve rangeland condition and enhance sagebrush ecosystems.

Slow rates of regrowth and recovery of vegetation after disturbances (driven by low water availability and other constraints) coupled with high rates of disturbance and conversion to introduced plant cover have contributed to the accumulating displacement and degradation of the sagebrush ecosystem (Beck et al. 2009). Big sagebrush does not resprout after a fire but is replenished by wind-dispersed seed from adjacent unburned stands or seeds in the soil. Depending on the species and the size of a burn, a return to pre-burn community cover can take 13 to 100 years (Connelly et al. 2000). When management reduces wildfire frequency by suppressing natural ignitions, the indirect impact is that vegetation ages across the landscape, and early successional vegetation communities are diminished.

Fire suppression may preserve the condition and connectivity of some vegetation communities. This is particularly important in areas where fire frequency has increased as a result of weed invasion or where landscapes are highly fragmented. Fire suppression can also lead to increased fuel loads, which can lead to more damaging or larger fires in the long term. Fire also increases opportunities for invasive species such as cheatgrass to spread, so fire suppression can indirectly limit this expansion.



Controlled burning may be prescribed to treat fuel buildup and to assist in the recovery of sagebrush habitat in some vegetation types. Reseeding with native plants and long-term monitoring to ensure the production of cover and forage plants would assist vegetation recovery (NTT 2011).

Livestock grazing may have both beneficial and detrimental aspects on rangeland vegetation, depending on site-specific management (USFWS 2010). At higher levels, grazing can lead to loss of vegetative cover, degraded riparian habitats, increases in invasive weeds, decreased plant litter, increased soil erosion, and reduced habitat quality for wildlife (Belsky et al. 1999; Reisner et al. 2013; Knick 2011; Connelly et al. 2004). However, in some habitats, targeted livestock grazing may be useful for reducing fine fuels produced by annual grasses (Boyd et al. 2014). In areas meeting BLM Idaho Standards for Rangeland Health or similar Forest Service standards, grazing practices coexist with healthy vegetation communities, providing wildlife habitat.

Grazing systems that aim to protect sagebrush and riparian ecosystems would allow more plant growth and reduce trampling and introduction of exotic species. Reducing or removing grazing in habitats would also reduce these effects but could have unintended consequences of increasing fuel buildup. Range improvement projects often can be used to improve livestock distribution and set aside areas for rest from grazing, which would reduce the likelihood of impacts described above.

As described in **Section 4.3**, Vegetation, mineral extraction and development impacts sagebrush habitats directly by disturbance and removal from well pad and access construction, seismic surveys, roads, power lines, and pipeline corridors. It impacts sagebrush habitats indirectly by gaseous emissions, changes in water availability and quality, and human disturbance. The interaction and intensity of effects could cumulatively or individually lead to habitat fragmentation in the long term (Connelly et al. 2004; Holloran 2005).

The BLM uses travel management planning to designate and close routes and to balance the demands for motorized recreation and access with protection of sensitive resources. By planning at the landscape scale, the BLM would be able to retain large expanses of sagebrush and manage impacts on vegetation from motorized vehicles (discussed in **Section 4.3**, Vegetation) through route designations and closures.

### ***Alternatives Analysis***

Under Alternative A, current management would continue on BLM-administered and National Forest System lands in the planning area. There would be no PHMA, IHMA or GHMA designated, and most land use plans would not implement use restrictions (e.g., ROW exclusion and closure to mineral leasing and development) to protect GRSG habitat. Seasonal restrictions and lek buffers would continue to be applied as stipulations to oil and gas and geothermal leases, in accordance with existing land use plan direction. Grazing management would not specifically consider GRSG habitat needs, and vegetation management would not prioritize sagebrush. Prescribed fires in sagebrush communities

could be harmful to sagebrush, which is slow to regrow and susceptible to weed invasion post-fire.

Planned ROW construction could increase fragmentation of vegetation, and new mineral extraction would increase loss of sagebrush vegetation until sites are reclaimed. However, some use restrictions would be implemented, which would protect vegetation in these areas from degradation or removal. Vegetation management and noxious weed control projects would benefit sagebrush ecosystems by removing invasive plants and promoting healthy vegetation communities. Overall, Alternative A would lack the landscape-level management tools to reduce cumulative effects from past, present, and reasonably foreseeable future actions.

Under Alternative B, PHMA and GHMA would be designated and ROW exclusion and avoidance areas would be established over larger areas, compared to Alternative A. Grazing management would be improved, which would reduce impacts on sagebrush vegetation. No ACECs would be established, but land disposals and acquisitions would focus on maintaining sagebrush acreage and connectivity. ROWs, access roads, and associated infrastructure planned according to **Table 5-26** would be sited outside PHMA under Alternative B. Planned mineral exploration and development would be sited outside PHMA in unleased areas, and RDFs would be applied to post-lease actions on existing leases. The vegetation management and restoration projects mentioned above would benefit the planning area in discrete locations. Prescribed fire areas would be reseeded and monitored to prevent invasive plants from becoming established. As a result, the cumulative effects from past, present, and reasonably foreseeable future actions under Alternative B would be reduced, compared to Alternative A.

Cumulative impacts under Alternative C are similar to those described for Alternative B, though with fewer restrictions on resource uses. Under Alternative C, grazing would be removed from occupied habitat, which would allow for greater herbaceous growth but could increase fuel loading and risk of wildfire. This could degrade vegetation quality over the long term. Given the uncertain effects of removing livestock grazing, it is not known whether cumulative effects from past, present, and reasonably foreseeable future actions would be reduced, compared to Alternative A.

Alternative D is intended to preserve management flexibility and provide increased implementation guidance, while protecting GRSG habitat. Management under Alternative D would increase vegetation protection, compared to current management, but with more limited actions than Alternatives B or F. Alternative D would establish ROW avoidance but not exclusion areas, thereby reducing but not eliminating impacts from ROW development.

Restrictions on mineral leasing and development under Alternative D would be greater than under Alternative A but less stringent than Alternatives B and F. Prescribed burning and fuels management would take sagebrush vegetation into account. As under the other alternatives, the vegetation management and weed control plans listed in **Table 5-26** would benefit vegetation health. Development restrictions in occupied habitat would retain vegetation, and rangeland improvements would improve vegetation quality on sagebrush



acreage. As a result, the cumulative effects from past, present, and reasonably foreseeable future actions under Alternative D would be reduced, compared to Alternative A, but to a lesser extent than Alternatives B and F.

Cumulative impacts from Alternative E are similar to those described for Alternative D, though Alternative E would require less stringent use restrictions and would designate the least amount of CHZ (compared to PHMA) of all the action alternatives. As a result, the cumulative impacts from past, present, and reasonably foreseeable future actions would be reduced, compared to Alternative A, but to a lesser extent than the other action alternatives.

Alternative F would provide more protection to GRSG habitat on BLM-administered and National Forest System lands but would reduce management flexibility. Alternative F would establish ACECs and ZAs in occupied habitat, and occupied habitat would become ROW exclusion areas and closed to mineral development and leasing. These provisions would protect vegetation from loss, fragmentation, and disturbance associated with surface-disturbing activities. Reduced management flexibility could lead to inefficient or ineffective management at the site-specific scale, when conditions may require alterations in management. As under the other alternatives, the vegetation management and weed prevention projects listed in **Table 5-26** would benefit vegetation health.

Alternative F would impose the most stringent restrictions on development of GRSG habitat, potentially restricting the ROW and mineral developments in **Table 5-26** thereby retaining the greatest extent of sagebrush vegetation. Alternative F would result in the greatest reduction in cumulative effects from past, present, and reasonably foreseeable future actions, compared to all alternatives.

Cumulative impacts from the Proposed Plan are similar to those described for Alternative D, though the Proposed Plan would have additional measures that would afford protections to vegetation and would further reduce cumulative impacts. These include managing to attain GRSG habitat objectives; management of SFAs where restrictions on uses would be greater than in PHMA; a comprehensive mitigation strategy that would avoid, minimize and apply compensatory mitigation for GRSG habitat impacts; and specified acres of vegetation treatments. In addition, the Fire and Invasives Assessment Tool would be implemented, which would increase the effectiveness of management activities and is anticipated to maintain and improve habitat. On National Forest System lands, grazing use guidelines would be implemented that limit the amount of allowable use on perennial grass, shrubs, upland herbaceous species, and herbaceous riparian/wet meadow vegetation. These guidelines would reduce grazing impacts on vegetation over time. Together, these would reduce cumulative effects from past, present, and reasonably foreseeable future actions compared to Alternative A, but to a lesser extent than Alternatives B and F.

### **5.3.2 Wild Horses and Burros**

The cumulative impact analysis area used to analyze cumulative impacts on wild horse management includes the planning area. This is because impacts are expected to be limited to those actions originating within the planning area.

Past, present, and reasonably foreseeable actions and conditions within the cumulative impact analysis area that have affected and will likely continue to affect wild horse management are actions that change forage and water availability, access to water sources, range conditions, and barriers to movement and population control (such as removing excess animals and repressing population).

Reasonably foreseeable projects in the project area include extensive vegetation treatment and fuels reduction projects. These could result in short-term impacts on horses, but they are likely to improve rangeland health in the long term. Population control gathers would continue in the area to keep wild horses at appropriate population levels and to support maintenance or improvement of land health in the area overall. In addition, actions that disturb wild horses are recreation and development for transmission, as well as the exploration for energy and mineral development.

Under all alternatives, no direct change would occur on areas allocated as HMAs for wild horses. Under Alternative A, AML would continue to be adjusted as needed, based on rangeland conditions. Populations would be controlled to support land health within the constraints of national priorities and budgets. Under Alternatives B, C, D, E, and the Proposed Plan there could be long-term reduction of AMLs. This would occur if management for wild horses conflicts with GRSG management objectives, resulting in a cumulative addition to the management needs and associated costs of wild horse and burro management in the planning area. Under Alternative F, a direct 25 percent reduction in AMLs is proposed, resulting in a cumulative addition to costs and time for management of the wild horse and burro program due to the need for increased gathers. This could strain available resources in the region.

In addition, should management resources be concentrated in GRSG habitat due to priorities for management under the action alternatives, HMAs outside of GRSG habitat may be allotted fewer resources. In general, actions to improve land health for GRSG are also likely to improve rangelands for wild horses, resulting in a cumulative improvement in the ability to meet AMLs.

### **5.3.3 Wildland Fire**

Past, present, and reasonably foreseeable future actions and conditions within the cumulative impact analysis area that have affected and will likely continue to affect wildfire are fuels and vegetation management projects, ROW and energy development, projects that impact the agencies' abilities to respond to wildfire, and projects that would increase the risk of human-caused ignitions.

Wildfires in the planning area have been frequent in the past, with over 9,600 wildfire starts occurring on or threatening to spread to BLM and FS-administered lands in the planning area between 1980 and 2012. Approximately 54 percent of these wildfires were attributed to human-caused ignition. Wildfires are expected to increase in the future due to increasingly severe drought conditions caused in part by climate change. This could impact wildland fire



management through increased personnel requirements and need for fire suppression and resultant increased costs.

A variety of fuels treatments, including hazardous fuels reduction, prescribed fires, chemical and mechanical treatment, and seeding, would likely continue to be used. At least 80 reasonably foreseeable fuels and vegetation management projects have been identified within the planning area (see **Table 5-26**).

ROWs and the associated development may increase the risk of human-caused ignitions due to vehicular travel to and from the site, construction, maintenance, and operation of the facilities. The development allowed under these authorizations would result in surface disturbance, which would generally contribute to the modification of the composition and structure of vegetation communities in the vicinity of developed areas, which could then be more likely to fuel high-intensity fires.

Similarly, energy and mineral development has contributed to human-caused ignitions in the planning area and would do so in the future.

As the global effects of climate change continue, the likelihood of natural unplanned ignitions and large fires within the planning area may increase due to the irregular weather patterns, increased likelihood of storms, and drought.

### ***Alternatives Analysis***

Under Alternative A, the trends described above would continue to affect wildland fire management in the planning area.

Under Alternative B, restrictions on land uses and development may reduce new sources of ignition and decrease the risk of human-caused ignitions. However, this alternative may restrict the ability of the wildland fire management program to suppress and preventatively treat fires.

Under Alternative C, responses to wildfire or appropriate treatments to prevent wildfire may be prohibited. As a result, there may be changes in fuel levels and management options for fuels treatments and wildfire suppression. Drought may cause vegetation to be more vulnerable to wildfires. In addition, the exclusion of livestock grazing on BLM-administered lands could increase fine fuels and associated risk of wildfire. These cumulative effects would create a need for greater flexibility in fire suppression, but stringent controls on the wildland fire management program under Alternative C would inhibit responses to and preventative treatments for wildfire.

Under Alternative D, the emphasis on fire risk reduction in the GRSG habitat and efforts to coordinate with local and state governments would cumulatively reduce fire risk across all landownership types in the planning area.

Under Alternative E, impacts in Montana are the same as under Alternative A. In Idaho, guidance to reduce wildfire response time, create fuel breaks, and improve the wildfire suppression baseline would provide the wildland fire management program with the tools

necessary to manage fuel levels and decrease the risk of catastrophic wildfire in the planning area.

Alternative F places the greatest restrictions on land uses and development. It also includes the greatest restrictions on the wildland fire management program, limiting wildfire response options and fire and fuels treatments. As a result, there would be less risk of human-caused ignition, but the lack of proactive fire prevention activities (e.g., fuels treatments) may mean that wildfires would be more severe. Drought may cause vegetation to be more vulnerable to wildfires, exacerbating these effects. The management actions under Alternative F that inhibit responses to and preventative treatments for wildfire may be insufficient to meet the growing need for wildland fire management flexibility over the long term.

Under the Proposed Plan, interagency coordination and strategic deployment of resources via the GRSG Fire and Invasive Species Assessments, restrictions on anthropogenic development in GRSG habitat, and site-specific monitoring and implementation measures for fire operations and fuels management would result in improved vegetation and reduced cumulative fire risk in the sub-region.

#### **5.3.4 Livestock Grazing**

Past, present, and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect livestock grazing are those that reduce available grazing acreage and the level of forage production in those areas or that inhibit livestock improvements, such as water development or fences.

In the planning area, relevant past and present actions include human-caused surface disturbances, such as those associated with minerals, transmission and energy development, recreation, and current and historic grazing practices. In addition, changes in habitat due to historic fire suppression and climate change have resulted in juniper and other trees encroaching onto grasslands, decreasing available forage.

Reasonably foreseeable future actions affecting livestock grazing are similar to the present actions and include numerous permit/lease renewals, over 75 allotment NEPA assessments, and additional AMP reviews, as detailed in **Table 5-26**. These actions could cumulatively reduce permitted AUMs or restrict management options when allotments are found to be inconsistent with land health standards due to livestock use. Furthermore, proposed fencing projects may impact ability to distribute livestock. Conversely, the development of 40 springs and associated pipelines, as well as additional water troughs, would provide additional watering sources and may allow for better distribution of livestock, resulting in decreased time and costs for permittees to manage livestock.

Cumulative projects that increase human disturbance in grazing areas could also indirectly impact grazing, by increasing weeds and the spread of invasive species. As stated above, weed invasion can reduce preferred livestock and wildlife forage and increase the chance of weeds being dispersed by roaming cattle. Cumulative projects that increase human disturbance in grazing areas could also directly impact grazing by displacing, injuring, or



killing animals. Such projects include drilling and road construction for mineral development operations.

Conversely, planned vegetation improvement and fuels reduction and restoration projects in the planning area, as described in **Table 5-26**, may exclude grazing from site-specific areas temporarily. However, these projects would generally improve rangeland conditions in the long term by reducing juniper encroaching into grasslands and, potentially, by improving vegetation condition. In addition to foreseeable actions, vegetation may change due to continued drought or climate change. While these changes are difficult to quantify, they are likely to include reduced forage availability.

### ***Alternatives Analysis***

The contribution of the project to cumulative impacts would parallel the impacts of the alternatives, as described in **Section 4.5**, Livestock Grazing/Range Management.

Under Alternative A, permitted active use would likely decline to some extent over time, following observed trends. Alternative A would allow the highest level of surface disturbance of all alternatives, with the highest cumulative contribution to decrease forage availability in the planning area.

Under Alternative B, while no direct reduction to permitted AUMs would occur, compared to Alternative A, permitted active use would decline to a greater extent over time. This is because of the implementation of grazing management changes to meet GRSG habitat objectives. These include potential grazing management changes and restrictions on structural improvements and water developments. As a result forage availability may increase in GRSG habitat, although this forage would generally not be available for livestock use.

Surface-disturbing activities would be sited in lower priority habitats and mainly in nonhabitats, increasing cumulative impacts in these areas.

The greatest impacts on livestock grazing in the planning area would be seen under Alternative C, due to the elimination of all AUMs within occupied habitat. The elimination of grazing in occupied habitat may reduce livestock grazing overall, both inside and outside the planning area. Many livestock operations that rely on BLM-administered and National Forest System lands also incorporate private and leased lands in their operations. Grazing on private lands is often limited and may not be able to absorb the grazing use that is eliminated from BLM-administered and National Forest System lands.

Eliminating grazing in occupied habitat would likely result in operations going out of business. In other cases, greater reliance on private lands could also put additional pressure on forage resources and may accelerate the conversion of private native range at a local level, potentially including GRSG habitat, to agricultural or introduced grass production.

Cumulative impacts under Alternative D are similar to those described under Alternative B. Impacts from the project would be focused on the highest quality GRSG habitat limit any

impacts of disturbance from development in these areas but may shift disturbance and related forage loss to nonhabitat on BLM-administered and other lands.

The contribution to cumulative impacts on grazing in Alternative E would be slightly decreased, compared to other action alternatives. This would be due to increased flexibility in application of restrictions to account for site-specific habitat needs.

Under Alternative F, the contribution to cumulative impacts would be similar to that described under Alternative B. In addition, prohibiting structural range improvements and new water developments under Alternative F would further decrease grazing in the area for both BLM-administered lands and in the area overall. This would increase forage availability but could lead to closures/reductions of grazing should operators go out of business.

Under the Proposed Plan, the contribution to cumulative impacts would be similar to that described under Alternative B and D. Changes to grazing management would be focused on PHMA, particularly in areas currently not meeting land health standards. On NFS lands implementation of the grazing use guidelines would have greater impacts to livestock management on allotments within nesting habitat. This could include the reduction of AUMs on these allotments over time. Management changes focused on achieving specific vegetation objectives based on site conditions would improve vegetation and forage conditions for livestock and wildlife in the long term within GRSG habitat. There would be potential for development and related forage loss to shift to non-GRSG habitat.

### **5.3.5 Travel and Transportation**

Past, present and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect travel and transportation are the result of management actions to obtain the following:

- Limit motorized travel to existing or designated routes
- Designate types of uses and seasonal restrictions for designated routes
- Limit the construction or expansion of roads in GRSG habitat

#### ***Alternatives Analysis***

Under all alternatives, unauthorized cross-country motorized travel will continue to impact comprehensive travel and transportation management. Cumulative impacts from cross-country travel include the creation of new linear features and the need for additional management, such as enforcement, signs, and education. Unauthorized travel could result in seasonal or permanent closures of areas or designated routes. Staff in several BLM field offices and National Forests in the planning area are developing travel management plans to address the need for closures and designate routes. For example, the Minidoka Ranger District in the Sawtooth National Forest is decommissioning 30 miles of roads per year as part of its travel plan (see **Table 5-26**).



Under Alternative A, only travel management planning being carried out by BLM Field Offices and Forest Service Ranger Districts under separate planning efforts would impact travel management. Currently on National Forest System lands, travel is limited to designated roads and trails. Under Alternative B, the BLM would additionally limit motorized travel to existing roads and trails in PHMAs, thereby reducing cross-country access in those areas. Reducing access would be greatest under Alternative C, due to BLM management that would prohibit new road construction within 4 miles (6.4 km) of active leks and preclude upgrading of existing routes in PHMAs. Cumulative impacts on travel and transportation management as a result of the limitations under Alternative C could include congestion on the existing travel route network in and next to the planning area, particularly where routes provide access to multiple resource uses.

Impacts on travel and transportation management under Alternatives D, F and the Proposed Plan are the same as under Alternative B, while impacts under Alternative E are the same as under Alternative A.

Reasonably foreseeable trends that would result in cumulative impacts on travel and transportation are continued growth patterns in demand for OHV recreation experiences, continued and increased visitation from a growing regional population, and increased popularity of adjacent BLM-administered and National Forest System lands.

The Proposed Plan, which would implement a 3 percent disturbance cap for new surface disturbing activities, would limit new route construction in a BSU where future disturbance exceeds the cap. However, proposed RDFs would enhance the long-term condition of routes available for public and/or permitted use.

### **5.3.6 Lands and Realty**

Past, present and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect lands and realty are land use authorizations, including foreseeable demand for ROWs associated with transmission lines, roads, and expanded communication infrastructure (see **Table 5-26**). They also include land tenure adjustments and withdrawals necessary to meet various public needs.

Land use authorizations in the planning area place the largest demand on the BLM-administered and National Forest System Lands and realty programs. Past authorizations include those for linear features, such as roads, power lines, and water canals, pipelines, and site ROW features, such as communication towers and temporary permits for oil and gas facilities. There will be a steady increase in demand for ROWs to accommodate new power, water, and telecommunication lines, roadways, pipelines, and communication sites. Two major realty actions being considered in the sub-region are the Gateway West and Boardman to Hemmingway transmission line projects. These projects would add more than 1,000 miles (600 km) of new ROWs across southern Idaho. The Proposed Plan identifies the Boardman to Hemmingway line as a high-priority project and considers limited exemptions to the proposed ROW for the project. Since all but 300 acres of the proposed alignment are within a designated corridor, exemption from the avoidance designation would apply only those acres. Cumulative impacts from the development of this line would include increased ability

to accommodate electrical transmission infrastructure demand in the short-term. However, in the longer-term, placement of the large Boardman to Hemingway line in one of the few designated corridors managed as open, could exclude future development from occurring in those corridors due to technical (i.e., spacing and design) constraints. On the other hand, if technically feasible, the developed line could provide an opportunity for the co-location of future infrastructure to accommodate longer-term demand.

Land tenure and landownership adjustments allow the BLM and Forest Service to effectively manage BLM-administered and National Forest System lands over time. Exchanges may consolidate BLM-administered and National Forest System lands and improve management efficiency. Land exchanges are pending in the Bruneau and Challis BLM Field Offices. In the Bruneau Field Office, the BLM would dispose of 33,000 acres of non-GRSG habitat and would acquire 38,000 acres of mostly GRSG habitat. In the BLM Idaho Falls District, there are 235 acres of pending land sales. Management prescriptions that limit land tenure adjustments could result in cumulative impacts on lands and realty and other resources and uses.

Land withdrawals are used to preserve sensitive environmental values, protect major federal investments in facilities, support national security, and provide for public health and safety. There are several pending land withdrawals, for which jurisdiction would be transferred to the Department of Defense for military use or to Idaho Power as part of a state-wide Integrated Resource Plan for power development.

### *Alternatives Analysis*

Impacts on lands and realty across alternatives depend largely on the number of acres where the BLM or Forest Service would exclude or avoid new ROW development. A prohibition on ROW development, particularly electrical transmission lines, over a large area would prevent the BLM and Forest Service from accommodating demand for new ROWs. Potential ROW applicants could choose to develop on land not administered by the BLM or Forest Service outside the planning area. This could increase environmental impacts on sensitive lands and permitting times and decrease the overall effectiveness of the power grid, telecommunication system, or roadway network. Development on adjacent lands could also result in indirect effects on BLM-administered and National Forest System lands via increased vehicle traffic or requests for ROW authorizations for transmission lines.

Under Alternative A, the BLM and Forest Service would continue to authorize ROW development and temporary surface disturbance on a case-by-case basis. There would continue to be 1,010,900 acres designated as ROW exclusion and 1,903,400 as ROW avoidance. Land tenure adjustments would be subject to current LUP criteria without further limitations. As a result, cumulative impacts on lands and realty would occur as new ROWs or land tenure adjustments are proposed. Alternative A would not affect the BLM's or Forest Service's ability to accommodate new ROW development or to improve management efficiency through land tenure decisions or withdrawals.

Under Alternatives B, C, D, E, F and the Proposed Plan, BLM and Forest Service management would include increased levels of ROW restrictions, when compared to



Alternative A. Designations of areas as avoidance or exclusion would not impact existing ROW authorizations. The ROW restrictions would, however, impact future ROW authorizations. Alternative C would restrict ROW development the most by designating PHMAs and GHMAs as ROW exclusion. Alternative B would exclude ROW development in PHMAs, while Alternative D would exclude electrical transmission lines greater than 50kV on 6,135,200 acres. Similar to Alternatives B, C, D, E, and F, the Proposed Plan would result in more complex project reviews and increased project costs. Management of PHMA and IHMA as avoidance, combined with GRSG net conservation gain requirements such as RDFs, buffers, and tall structure limitations, could discourage future development in PHMA and IHMA. The long-term cumulative effect would entail future ROW/SUA demand being accommodated in GHMA and non-habitat areas.

Limitations on land tenure adjustments, which allow the BLM and Forest Service to sell, exchange, withdraw, or acquire lands to increase effective management, would be the most restrictive under Alternative C and the least restrictive under Alternatives A, E, and F. Alternatives B and D would allow land sales under certain conditions. Under the Proposed Plan, the BLM and Forest Service could carry out land tenure actions where they would result in a cumulative net conservation gain to GRSG and its habitat. Land exchanges that result in a consolidated land ownership pattern would over time increase BLM and Forest Service management efficiency, including GRSG conservation.

National policies to mitigate climate change through the expansion of renewable energy production could contribute to direct and indirect long-term cumulative impacts on the lands and realty program and be affected by management under Alternatives B through F and the Proposed Plan.

As part of the 2013 Climate Action Plan, President Obama set a new energy goal of 10 new gigawatts of new renewable energy permitted on DOI lands by 2020 (The White House 2013). Despite wind energy potential in the planning area being moderate (NREL 2009) and solar resources being moderate to low (NREL 2005), the President's plan is expected to increase the demand for renewable energy ROWs.

The potential for cumulative impacts on wind energy ROW development in the planning area would be greatest under Alternative C, which would restrict renewable energy ROW development in PHMAs and GHMAs. Impacts on wind and solar ROWs under Alternatives B, D, F and the Proposed Plan would be less than under Alternative C but greater than under Alternatives A and E. Alternatives A, B, C, F and the Proposed Plan would force wind energy ROWs outside GRSG habitat, thereby increasing the potential for indirect effects to wind energy development in the planning areas, such as denial of requests for new transmission line ROWs and access roads. The Proposed Plan would redirect future wind energy development outside of PHMA and restrict wind energy development in IHMA.

GRSG conservation measures under the Proposed Plan, such as RDFs, lek buffers, tall structure limitations, mitigation, and a disturbance cap, would cumulatively increase the project costs and complexity of project reviews. Overtime, new technology could minimize cost impacts; however, for some projects, the increased costs and mitigation requirements

(**Appendix J**) could preclude development. In any BSU or proposed project analysis area, where future development results in an exceedance of the disturbance cap, future disturbance, including ROW development, would be excluded from that BSU or proposed project analysis area.

### 5.3.7 Leasable Minerals

#### *Fluid Minerals*

Past, present and reasonably foreseeable future actions and conditions within the sub-region that have affected and will likely continue to affect fluid minerals include existing and planned oil and gas development projects on nonfederal mineral estate within the planning area.

#### *Alternatives Analysis*

The management actions proposed under this LUPA/EIS would cumulatively impact mineral development through surface use restrictions (e.g., closures and NSO, CSU, and TL stipulations). This ultimately would decrease the amount of oil and gas development in the planning area during the planning period. Surface use restrictions, such as NSO restrictions, could also cause an operator to move to nearby private or state land with no such restrictions.

Reasonably foreseeable oil and gas activities that are anticipated to occur in the planning area over the next 20 years include offering parcels of lands in five parts of the planning area for oil and gas leasing (**Appendix O**). Expressions of Interest have been made by the public for lands in the Four Rivers Field Office near Payette; lands near Brown’s Bench/China Mountain primarily in the Jarbidge Field Office; and lands on the Bear Lake Plateau in southeast Idaho (**Appendix O**). Also included in the RFDS analysis are lands on the Caribou National Forest and in the Dillon Field Office, because the RFDSs for those land use plans forecast oil and gas activity. **Table 5-27**, Number of Wells and Permanent Disturbance Predicted, by Alternative, shows the number of exploratory and production wells forecast over the next 20 years:

**Table 5-27**  
**Number of Wells and Permanent Disturbance Predicted, by Alternative**

<b>ALTERNATIVE</b>	<b># Exploratory Wells predicted</b>	<b># Discovery Wells</b>	<b># Step-out wells</b>	<b>Total Permanent Disturbance</b>
Alternative A	25 wells	4 wells	12 wells	156 acres
Alternative B	13 wells	2 wells	6 wells	73.5 acres
Alternative C	13 wells	2 wells	6 wells	73.5 acres
Alternative D	23 wells	4 wells	12 wells	156 acres
Alternative E	19 wells	4 wells	10 wells	128.5 acres
Alternative F	13 wells	2 wells	6 wells	73.5 acres
Proposed Plan	15 wells	2 wells	6 wells	63 acres



Under Alternative A, it is predicted that up to 25 exploratory wells would be drilled over the next 20 years in the planning area, and that four well fields would be developed. Fields would be located in the Four Rivers Field Office area (one field), the Bear Lake area (one field), and in the Dillon Field Office (two fields). Under Alternatives B, C, and F, no leasing would occur on the Bear Lake Plateau or in the Jarbidge area, so wells would not be drilled there, and only half the Dillon Field Office wells would be drilled. Under Alternative D, no leasing or development would be allowed in low potential areas, including the Jarbidge area. Under Alternative E, the same number of wells would be drilled as under Alternatives B, C, and F, but wells in Montana could be drilled. Under the Proposed Plan, only wells in the Four Rivers Field Office, Caribou National Forest, and half the wells in the Dillon Field Office would be drilled.

Under Alternative A, 83,650 acres with medium development potential (8 percent of the federal oil and gas estate with medium development potential) would remain closed to oil and gas leasing, and approximately 400,600 acres of federal oil and gas estate with medium development potential (41 percent of the federal oil and gas estate with medium development potential) would remain open to leasing subject to NSO stipulations. Management under Alternatives B and F would close 344,300 acres with medium potential (35 percent of the medium potential acres in the decision area), and 330,400 acres with medium potential would be subject to NSO stipulations.

Under Alternative C, 513,700 acres (52 percent) of minerals with medium oil and gas potential would be closed, and 222,900 acres (22 percent), would be subject to NSO stipulations. Under Alternative D, 86,000 unleased acres with medium development potential (10 percent of total unleased acres with medium development potential in the oil and gas decision area) would be closed to leasing, and 421,800 acres (47 percent) of unleased areas with medium development potential would be subject to NSO stipulations.

Under Alternative E, 86,000 unleased acres with medium development potential (10 percent of total unleased acres with medium development potential in the oil and gas decision area) would be closed to leasing. Approximately 550,400 acres (62 percent) of unleased areas with medium development potential would be subject to NSO stipulations.

Under the Proposed Plan, 264,400 acres (27 percent) of minerals with medium oil and gas potential in the planning area would be closed to leasing, and 373,800 acres (38 percent) would be subject to NSO stipulations.

Of all the alternatives, Alternative C would close the most acres with medium oil and gas potential to fluid mineral leasing: a 600 percent increase over Alternatives A or E.

### ***Geothermal Resources***

Past, present and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect renewable energy are the construction of existing and proposed roads and transmission lines. This would increase the routing options and possibly reduce project construction or implementation costs. GRSG conservation measures would not

contribute to cumulative impacts since the above-identified effects would benefit renewable energy development.

### *Alternatives Analysis*

The management actions proposed under this LUPA/EIS would cumulatively impact mineral development through surface use restrictions (e.g., closures and NSO, CSU, and TL stipulations). This ultimately would decrease the amount of geothermal development in the planning area during the planning period. Surface use restrictions, such as NSO restrictions, could also cause an operator to move to nearby private or state land with no such restrictions.

Unlike for oil and gas, there are no pending geothermal lease nominations in the planning area. All the areas discussed in the geothermal RFDS have been leased, so the forecasted number of wells and acreages disturbed are the same under all the alternatives. All existing leases in GRSG habitat have stipulations including seasonal restrictions and lek buffers. While post-lease activities are currently proposed on existing leases at Raft River, they have valid existing rights. Conditions of Approval will be attached to drilling permits when they are approved. It is highly likely that COAs that mitigate sage grouse will be included, since applying COAs to a drilling permit is not a land use planning decision.

#### **5.3.8 Locatable Minerals**

Past, present, and reasonably foreseeable future actions and conditions within the cumulative impact analysis area that have affected and will likely continue to affect locatable minerals are existing and planned locatable mineral operations within the planning area but outside of the decision area. Locatable mineral resources are associated with the geological formations or units they are found within, which are typically localized and do not encompass large areas. Additionally, not all geological formations contain mineral resources, or mineral resources could be found only in a portion of a certain geological formation. To provide context for where interest in locatable mineral development is most likely within the planning area, the BLM has assessed the locatable mineral occurrence potential throughout the planning area (see **Section 3.12.1**, Conditions within the Planning Area, Locatable Minerals). Assessment of locatable mineral occurrence potential in the planning area allows impact analysis to focus on those areas withdrawn or recommended for withdrawal from locatable mineral entry that are actually likely to have locatable mineral resources and interest in their development. While areas outside of the Idaho and Southwestern Montana Sub-region may be recommended for withdrawal from locatable mineral entry as a result of decisions in other sub-regional LUPAs, expanding the cumulative impact analysis to include additional sub-regions would both dilute and inflate the impacts on locatable mineral development. Expansion of the cumulative impacts analysis area would dilute the impacts because the acres withdrawn or recommended for withdrawal across the GRSG range under the proposed plan would be minute compared to the total acreage of the range. On the other hand, expansion of the cumulative impacts analysis area would inflate the impacts because many of the acres withdrawn or recommended for withdrawal across the GRSG range do not actually have locatable mineral resources that would be impacted. While data on locatable mineral occurrence potential are available for the planning area, similar data are not



available across the GRSG range. Therefore, adding up areas withdrawn or recommended for withdrawal from locatable mineral entry beyond the planning area without accounting for where such entry is foreseeable would provide a less accurate picture of the cumulative impacts on locatable mineral development.

### ***Alternatives Analysis***

The cumulative impacts analysis area for locatable minerals is the planning area.

Less than 250 acres are forecasted to be disturbed in the planning area as a result of locatable mineral development over the next 20 years. Approximately half this disturbance is predicted to occur in Cassia County, where Oakley Stone, a micaceous quartzite prized for its durability as a building stone, is mined. Most of the proposed activity involves expanding the existing quarries. Several exploratory drilling operations are anticipated in different parts of the planning area, including on the Salmon-Challis National Forest, Dillon Field Office, and in the extreme southern part of the Burley Field Office. Alternatives A, D, and E would continue to manage 5,380,200 acres, 18 percent, of locatable mineral estate in the planning area as withdrawn from locatable mineral entry. Alternative B would withdraw or recommend for withdrawal 237,400 acres (10 percent) of minerals in the planning area with a high likelihood of interest. The increase from Alternative A would represent 8 percent of the planning area. Alternative C would withdraw or recommend for withdrawal 369,600 acres (16 percent) of minerals in the planning area with a high likelihood of interest. The increase from Alternative A to Alternative C would represent 14 percent of the planning area. The Proposed Plan would withdraw or recommend for withdrawal 94,600 acres (5 percent) of minerals in the planning area with a high likelihood of interest. The increase from Alternative A to the Proposed Plan would represent 3 percent of the planning area. Alternative C would withdraw or recommend for withdrawal more acres than any other alternative. Since all areas (250 acres) that are forecast to be disturbed in the next 20 years are on claims with valid existing rights which are exempt from the proposed withdrawals, cumulative impacts on locatable minerals are expected to be negligible.

### **5.3.9 Mineral Materials**

Past, present and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect mineral materials include existing and planned mineral material development projects on nonfederal mineral estate within the planning area. There are five planned mineral materials projects in the planning area, all of which are on federal minerals.

### ***Alternatives Analysis***

The cumulative impacts analysis area for mineral materials is the planning area. It covers 52,000,000 acres total, regardless of surface or mineral ownership. Under Alternative A, 10,707,600 acres in the planning area would remain closed to mineral material disposal (21 percent of the planning area). Under Alternative B, 18,517,500 acres would be closed to mineral material disposal (36 percent of the planning area). Under Alternative C, 21,102,200 acres (41 percent of the planning area); under Alternative D, 13,202,200 acres (25 percent); under Alternative E, 10,707,600 acres (21 percent); and under Alternative F, 18,517,500 acres (36 percent). Under the Proposed Plan, 15,529,000 acres in the sub-region would be closed to mineral material disposal (30 percent of the planning area). Alternative C would close the

most acres to mineral material disposal out of all the alternatives. The increase in closed acres from Alternative A (which would close the fewest acres) represents 20 percent of the planning area.

### **5.3.10 Nonenergy Leasable Minerals**

Past, present and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect nonenergy leasable minerals include existing and planned nonenergy leasable development projects on nonfederal mineral estate. There are three existing mines currently in operation and four proposed mines in the planning/NEPA analysis stages. Two proposed mines, at Caldwell Canyon and Trail Creek, have some GRSG habitat in the proposed disturbance area. An underground mine has been proposed a few miles west of Paris, Idaho, however the company announced in late 2014 that it was suspending its development plans for the foreseeable future.

#### ***Alternatives Analysis***

The cumulative impacts analysis area for nonenergy leasable minerals is the planning area. It contains 34,000 acres of unleased known phosphate leasing areas (KPLAs). Since all the currently proposed mining would occur on existing federal leases, management actions proposing to close lands under the alternatives would not affect these operations, or any operations on existing leases, due to valid existing rights. BLM and the Forest Service have already begun requiring compensatory mitigation for newly proposed mines, and this trend is expected to continue. Under Alternative E 4,870 acres (14 percent) of unleased minerals in the planning area within KPLAs, would be closed to nonenergy solid mineral leasing.

Under Alternatives B and F, 5,350 acres (16 percent) would be closed; under Alternative C, 5,870 acres (17 percent) would be closed.

Of all the alternatives, Alternative C represents the largest closure of unleased KPLAs. However, the increase in acres closed compared with Alternatives A, D, and E and the Proposed Plan (which would have the fewest acres closed) would make up only three percent of the total KPLAs in the planning area.

### **5.3.11 Special Designations**

Past, present and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect ACECs include any action that would impact the relevant and important values for which the ACEC is established (e.g., GRSG habitat health). Such actions include surface-disturbing activities, wildfires, increased recreation demands, and climate change.

Cumulative impacts on existing ACECs under the various alternatives could result from non-BLM actions and decisions on lands next to ACECs. While protections exist within the ACECs, population growth, development, and recreation throughout the planning area could, over time, encroach on these areas. This could degrade the ACEC values, such as unauthorized off-route travel and trash dumping and increased noise and air and light pollution. Other impacts include species displacement, habitat fragmentation, and changes to



the visual landscape that could affect resources within ACECs. Impacts are greater where recreation areas or development are next to an ACEC.

There are several ROW road applications and new transmission lines pending within the planning area. If these roads, transmission lines, or facilities were to run through, or be next to, any of the ACECs, this could damage the relevant and important values for which these ACECs are designated. Future road ROW applications, transmission line construction, and energy development in the planning area could cumulatively impact existing ACECs. Examples of long-term impacts on the ACEC from these activities are noise, heavy vehicle traffic, and dust.

Climate change could also pose a long-term threat of cumulative impacts on the relevant and important values of ACECs. Cumulative impacts on GRSG habitat and, consequently, on the ACEC from climate change are vegetation regime changes (e.g., from sagebrush to grasslands) and increased wildfire potential due to drought (Connelly et al. 2004).

### ***Alternatives Analysis***

All action alternatives and the Proposed Plan would restrict such activities as ROW development, grazing, mineral entry, and new road construction, which could provide indirect protections to ACECs. However, existing and future ROWs, oil and gas development, and travel routes could result in cumulative impacts on ACECs.

ACECs for which GRSG is an important and relevant value could experience more protections and could have more restrictions on resource uses and surface-disturbing activities than ACECs that do not identify GRSG as an important and relevant value. No existing ACECs identify GRSG as an important and relevant value, and under Alternatives C and F, new ACECs (and ZAs under Alternative F) would be created for the important and relevant value of GRSG. The ACECs under Alternatives C and F (and ZAs under Alternative F) would be less likely to experience cumulative degradation to their important and relevant values due to management actions focused on GRSG conservation.

The BLM would adaptively manage to protect ACEC values and minimize impacts where applicable and feasible.

### **5.3.12 Lands with Wilderness Characteristics**

Past, present, and reasonably foreseeable future actions and conditions that have affected and will likely continue to affect lands with wilderness characteristics are wildfires, wildland fire management, energy development, mining, noxious weed invasion, increased recreation demand, and road construction.

Many past, present, and reasonably foreseeable actions have impacted or could impact lands with wilderness characteristics. For example, continued travel management and recreation development in the planning area will likely increase visitor use on BLM-administered lands, including lands with wilderness characteristics. This could impact wilderness characteristics by reducing opportunities for solitude. Development of energy and minerals resources could introduce sights, noises, and infrastructure in or next to lands with wilderness characteristics,

which could impair the feeling of solitude and degrade naturalness. In addition, vegetation management on public and private lands could alter landscape appearance and setting in the short and long term, protecting or degrading wilderness characteristics, depending on the activity. Cumulative impacts on lands with wilderness characteristics would be mitigated where management actions governing other resources threaten wilderness characteristics.

### ***Alternatives Analysis***

Cumulative impacts would be most likely to damage lands with wilderness characteristics under Alternative A. This is because the fewest restrictions on present and future resource uses are in place under this alternative. Management under the action alternatives and the Proposed Plan would protect wilderness characteristics to some degree by restricting development and land uses that could degrade the characteristics. Such restrictions would indirectly limit cumulative impacts on wilderness characteristics. Alternatives C and F place broader and more stringent restrictions on allowable uses of resources in GRSG habitat. Consequently, these alternatives would provide more indirect protections to lands with wilderness characteristics and would be less likely to have cumulative impacts that would degrade those characteristics.

### **5.3.13 Social and Economic Conditions (Including Environmental Justice)**

The cumulative impact analysis area used to analyze potential impacts on social and economic conditions consists of the counties identified as the primary and secondary socioeconomic study area.

Virtually every major government action has some influence on social and economic conditions, as government actions have the power to create or alter incentives for numerous individuals and businesses that make choices that affect employment, earnings, population demographics, and other variables of concern for social and economic conditions. Past, present, and reasonably foreseeable future actions and conditions have affected and will likely continue to affect social and economic conditions, including livestock grazing, recreation, lands and realty, transportation, ROWs, renewable energy development, and mineral development. Changes to social and economic conditions result when individuals, businesses, governments, and other organizations initiate actions. Over the next several decades, millions of decisions will be made by tens of thousands of residents of the counties in the socioeconomic study area and others that will affect trends in employment, income, housing, and property.

Projections published by the Idaho Department of Labor and the Montana Department of Labor and Industry account for these individual decisions in the aggregate, and provide a baseline for comparing effects of alternatives in the future. The projections represent a regional forecast taking a wide range of actions into account, including management actions by the BLM and Forest Service as well as many other government entities, private citizens, and businesses. As a result, these projections incorporate the past, present, and reasonably foreseeable future projects that will form the basis of future economic and social trends in the cumulative impact analysis area. Current and future trends in the cumulative impact



analysis area include population growth, demographic change, changes in recreational demand and availability of recreational opportunities, renewable energy development, livestock grazing, housing development policies, mining, and other activities.

The Idaho Department of Labor provides employment projections from 2010 to 2020, for six regions across the state. Four overlap with the study area:

- Southwest Idaho (includes primary study area counties of Adams, Elmore, Gem, Owyhee, Payette, and Washington; secondary study area counties of Ada, Boise, and Canyon; and also Valley County) – projected increase of 18.6 percent
- South-Central Idaho (includes primary study area counties of Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls, all of which are in the primary study area) – projected increase of 19.7 percent
- Southeast Idaho (includes primary study area counties of Bear Lake, Bingham, Caribou, Oneida and Power; Bannock County in the secondary study area; and also Franklin County) – projected increase of 14.4 percent
- Eastern Idaho (includes primary study area counties of Bonneville, Butte, Clark, Custer, Fremont, Jefferson, Lemhi, and Madison counties, all of which are in the primary study area, and also Teton County) – projected increase of 15.9 percent (Idaho Department of Labor, 2013)

Similarly, the Montana Department of Labor and Industry projects employment growth in upcoming years, with the current projections reflecting forecasted conditions in 2020, for five regions in the state. The relevant region for this EIS is the Southwest Region, which contains Beaverhead and Madison (in the primary study area), Gallatin and Silver Bow (in the secondary study area), and nine other counties: Deer Lodge, Granite, Park, Powell, Lewis and Clark, Broadwater, Sweetgrass, Meagher, and Jefferson. From 2011 to 2020, the Montana Department of Labor and Industry projected employment in that region to increase about 11 percent (Montana Department of Labor and Industry 2011).

To provide information about the cumulative impacts of the alternatives in this draft LUPA/EIS, the BLM compared the projected employment differences associated with the alternatives with the forecasts of the Idaho and Montana labor agencies as described above. As described in **Section 4.15**, the only employment and income effects of the management alternatives that were quantified were those on livestock grazing, where BLM and Forest Service used IMPLAN, a regional economic model, to calculate indirect and induced impacts of these actions.

Error! Reference source not found., Projected Employment by Alternative for Primary Socioeconomic Study Area, provides an overview of how forecasted changes in employment from the alternatives would occur within the context of the ten-year trend of employment to 2020. Because Alternative A represents current management plans, employment would correspond most closely to the existing forecasts. By contrast, employment under

Alternatives C and F would be expected to change from the projections, based on anticipated impacts on livestock grazing. Error! Reference source not found. shows the estimated change in employment for these alternatives, based on modifying the projected future employment by the estimated changes for the socioeconomic study area (from IMPLAN). The table focuses on the primary socioeconomic study area because the great majority of impacts occur in that area, and adding the secondary study area would effectively dilute the magnitude of impacts by adding a large employment base (especially from more urban counties) without adding substantially to the impacts.

Changes in employment in Alternatives C and F, would have a measurable effect on future employment, according to this analysis, but reductions would be relatively small given the size of the study area and the uncertainty associated with a long-term forecast. Long-term trends including changing market conditions, consolidation supported by economies of scale, demographic change, and environmental concerns have resulted in increasingly challenging economic conditions for ranch operators, especially smaller operators. Increased costs due to restrictions on vegetation treatments, range improvements, and other management elements could exacerbate existing trends and create additional, cumulative impacts for the livestock grazing and ranching sector. This could have economic impacts over and above those identified in **Table 5-28**, Projected Employment by Alternative for Primary Socioeconomic Study Area, and could also result in social impacts since the grazing and ranching industry has been relatively influential in terms of establishing community character, identity, and social values, particularly in certain areas within the study area. In terms of geographic regions, the cumulative effects on livestock grazing operators would occur throughout the socioeconomic study area but would be most important in Cassia, Gooding, Jerome, Lincoln, and Owyhee Counties, Idaho, based on the importance of grazing within the economy of those counties.

Of the effects documented in **Section 4.15**, Social and Economic Conditions (Including Environmental Justice), the impact that most exacerbates current economic challenges is the potential for several of the management alternatives to result in increased costs for livestock grazing operators. Long-term trends including changing market conditions, consolidation supported by economies of scale, demographic change, and environmental concerns have resulted in increasingly challenging economic conditions for ranch operators, especially smaller operators.

Increased costs due to restrictions on vegetation treatments, range improvements, OHV travel, and other management elements could exacerbate existing trends and create additional, cumulative impacts for the livestock grazing and ranching sector. This could have economic impacts over and above those identified in Error! Reference source not found. and could also result in social impacts since the grazing and ranching industry has been relatively influential in terms of establishing community character, identity, and social values, particularly in certain areas within the study area.



**Table 5-28**  
**Projected Employment by Alternative for Primary Socioeconomic Study Area**

Item	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. F	Proposed Plan
Employment (2010) <sup>1</sup>	309,620	309,620	309,620	309,620	309,620	309,620	309,620
Average annual change in future employment related to livestock grazing <sup>2</sup>	N/A	0	-1,420	0	0	-310	0
Projected 2020 employment <sup>3</sup>	356,063	356,121	354,643	356,343	356,343	355,753	356,343
% change, 2010 to 2020	15.0%	15.0%	14.5%	15.1%	15.1%	14.9%	15.1%

Source: Idaho Department of Labor (2013) and Montana Department of Labor and Industry (2011) (projected employment data), modified by estimates from IMPLAN reported in Chapter 4, Section 4.15, Social and Economic Impacts (Including Environmental Justice). Changes related to livestock grazing include direct, indirect, and induced effects from IMPLAN; see Appendix R, Economic Impact Analysis Methodology, for a detailed description of this model.

N/A not applicable

<sup>1</sup> Employment in 2010 in the primary socioeconomic study area from Chapter 3, Section 3.22, Social and Economic Conditions (Including Environmental Justice).

<sup>2</sup> The values for livestock grazing are those shown in Chapter 4, Section 4.15, Social and Economic Impacts (Including Environmental Justice).

<sup>3</sup> Based on the projected employment increase for the four Idaho regions and southwest Montana, a conservative (i.e., lower range) estimate for employment growth would be about a 15 percent increase from 2010 to 2020. This results in an estimate of about 356,063 jobs (for Alternative A), which is then modified based on the results of the IMPLAN analysis for each alternative.

All of the alternatives would have some degree of cumulative social and economic impact related to grazing. Although AUMs would be reduced only in Alternatives C and F, Alternatives B, D and E would also entail changes to management that could increase costs or decrease the flexibility of ranchers to manage their animals.

In terms of geographic regions, the cumulative effects on livestock grazing operators would occur throughout the socioeconomic study area but would be most important in Cassia, Gooding, Jefferson, Lincoln, and Owyhee Counties, Idaho, based on the importance of grazing within the economy of those counties.

Another effect identified in **Section 4.15** that could lead to a cumulatively considerable contribution to impacts would be impacts on recreation (in Alternatives C and F), especially in counties where recreation contributes substantially to the local economy, which are identified in **Section 4.15** as Madison County in Montana and Blaine County in Idaho.

Other effects would not be expected to contribute to cumulative effects. From a cumulative effects standpoint the economic and social impacts of these changes would be relatively minor and do not particularly exacerbate existing trends in the study area.

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