

This is an unofficial prepublication version of this document. The BLM expects that the same or a substantially similar document will be posted in the BLM National NEPA Register. The final document published in the BLM National NEPA Register is the only version of the document that may be relied upon.

Appendix 17

Analysis of Key Research Natural Areas in Oregon

This page intentionally left blank.

This is an unofficial prepublication version of this document. The BLM expects that the same or a substantially similar document will be posted in the BLM National NEPA Register. The final document published in the BLM National NEPA Register is the only version of the document that may be relied upon.

TABLE OF CONTENTS

Chapter Page

APPENDIX 17. ANALYSIS OF KEY RESEARCH NATURAL AREAS IN OREGON..... 17-I

17.1	Introduction and Background	17-1
17.2	2015 Final EIS Excerpts	17-1
17.3	Alternatives	17-2
17.4	Key ACEC and RNA Descriptions.....	17-4
17.4.1	Key ACECs	17-5
17.4.2	Key RNAs (District).....	17-5
	Black Canyon (Vale District).....	17-5
	Dry Creek Bench (Vale District)	17-9
	East Fork Trout Creek (Burns).....	17-13
	Fish Creek Rim (Lakeview)	17-16
	Foley Lake (Lakeview)	17-21
	Foster Flat (Burns).....	17-27
	Guano Creek – Sink Lakes (Lakeview).....	17-29
	Lake Ridge (Vale)	17-31
	Mahogany Ridge (Vale - South Unit Only).....	17-35
	North Ridge Bully Creek (Vale).....	17-38
	South Ridge Bully Creek (Vale).....	17-41
	Rahilly-Gravelly (Lakeview)	17-44
	South Bull Canyon (Vale).....	17-49
	Spring Mountain (Vale)	17-53
	Toppin Creek Butte (Vale).....	17-59
17.5	Literature Citations.....	17-63

MAPS

		Page
1	Key Research Natural Areas in Oregon	17-5
2	Black Canyon Key Research Natural Area.....	17-6
3	Dry Creek Bench Key Research Natural Area	17-10
4	East Fork Trout Creek Key Research Natural Area	17-14
5	Fish Creek Rim Key Research Natural Area	17-17
6	Foley Lake Key Research Natural Area	17-21
7	Foster Flat Key Research Natural Area	17-28
8	Guano Creek-Sink Lakes Key Research Natural Area	17-30
9	Lake Ridge Key Research Natural Area.....	17-32
10	Mahogany Ridge Key Research Natural Area	17-35
11	North Ridge Bully Creek Key Research Natural Area.....	17-39
12	South Ridge Bully Creek Key Research Natural Area.....	17-42
13	Rahilly-Gravelly Key Research Natural Area	17-45
14	South Bull Canyon Key Research Natural Area.....	17-49
15	Spring Mountain Key Research Natural Area.....	17-54
16	Toppin Creek Butte Key Research Natural Area.....	17-60

This page intentionally left blank.

This is an unofficial prepublication version of this document. The BLM expects that the same or a substantially similar document will be posted in the BLM National NEPA Register. The final document published in the BLM National NEPA Register is the only version of the document that may be relied upon.

Appendix 17. Analysis of Key Research Natural Areas in Oregon

17.1 INTRODUCTION AND BACKGROUND

This appendix provides excerpts and background information from the 2015 (and 2019) BLM Oregon Greater Sage-grouse (GRSG) final environmental impact statements (EIS) and plan amendment efforts, as well as newer information about the BLM Oregon Key Research Natural Areas (RNA) needed to support the current planning and analysis process presented in the body of this draft EIS. This current effort is limited to RMP-level actions needed to provide guidance for subsequent implementation-level actions.

The 2015 Oregon GRSG ARMPA allocated all or portions of 13 Key RNAs in Oregon as unavailable to livestock grazing. The 2019 RMPA reversed that decision and made all or portions of those 13 Key RNAs available to livestock grazing. These decisions affected approximately 22,000 acres within 13 existing, district designated, RNAs. The 2019 RMPA was and remains enjoined by the United States District Court for the District of Idaho and the 2015 ARMPA decision for these 13 Key RNAs remains in effect. None of the other BLM state GRSG ARMPAs, either in 2015 or in 2019, included Key RNA designations or change in availability of livestock grazing.

In addition, two existing RNAs were designated as Key RNAs in the 2015 planning process. However, these two additional Key RNAs were previously excluded from livestock grazing and neither the 2015 nor 2019 RMP amendment processes proposed changing these underlying district-level land use plan decisions. Both the Foster Flat Key RNA in the Burns District and Guano Creek-Sink Lakes Key RNA in the Lakeview District were, and will remain, allocated as unavailable for livestock grazing.

The BLM Oregon is addressing Key RNAs in this current planning effort to update Key RNA affected environment and clarify or modify existing GRSG management direction.

The following excerpts from the 2015 EIS provide background, context, and history regarding the intents and purposes of the RNAs.

17.2 2015 FINAL EIS EXCERPTS

The following excerpt from Chapter 3 of the 2015 Oregon GRSG Final EIS describes Research Natural Areas (from Special Designations 3.16.5 Areas of Critical Environmental Concern (ACEC); page 3-134 to 3-135).

RNAs are a unique type of ACEC created to: preserve examples of all significant natural ecosystems for comparison with those influenced by humans; provide educational and nondestructive research for ecological and environmental studies; and preserve gene pools of typical and endangered plants and animals. RNAs are areas that are part of a national network of reserved areas under various ownerships that contain important ecological and scientific values and are managed for minimum human disturbance. RNAs are intended to represent the full array of North American ecosystems with their biological communities, habitats, natural phenomena, and geological and hydrological formations. In RNAs, natural processes are allowed to predominate and are primarily used for nonmanipulative research and baseline data gathering on relatively unaltered plant community types.

Under certain circumstances, deliberate manipulation may be used to maintain the unique features for which the RNA was established. Because natural processes are allowed to dominate, RNAs also make excellent controls for similar communities that are being managed and for long-term vegetation monitoring for climate change. In addition, RNAs provide an essential network of diverse habitat types that will be preserved in their natural state for future generations.

RNAs have important biological or physical attributes that are identified and designated in cooperation with the Pacific Northwest RNA Committee (Forest Service, BLM, and Washington and Oregon) following the Oregon Natural Areas plan (Oregon Natural Heritage Advisory Council 2010).

One of the guiding principles in managing RNAs is to prevent unnatural encroachments or activities that directly or indirectly modify ecological processes or conditions. Permitted activities that could impair scientific or education values of the RNAs (e.g., energy development, logging, road building, livestock grazing, and recreation) are generally limited, restricted, or not allowed to provide areas in the RNA that have intact ecological conditions and processes. These areas can be used for long-term baseline plant community monitoring; they are areas where few management activities have influenced the plant community for which the RNA was established. Management practices necessary to maintain or restore ecosystems can be allowed and perhaps are necessary to maintain the values, especially invasive plant control.

17.3 ALTERNATIVES

Under Alternative 1 all or portions of 13 Key RNAs, approximately 21,931 acres total, would be excluded from livestock grazing as described in the 2015 GRSG ARMPA (Appendix 9, Table 3-25, Oregon Key RNA Acreages). According to the COT report, making these areas unavailable to grazing would provide areas where natural successional processes will proceed for long-term monitoring and research of the plant communities important for GRSG (BLM, 2015 FEIS, p. 4-24). Managing the Key RNAs as unavailable for grazing could increase the ecological protection in areas where livestock grazing is removed, although vulnerability to wildfire may increase as fine fuel loads build in the absence of grazing (BLM, 2015 FEIS, p. 4-100). In addition, RNAs that are excluded from livestock grazing would provide a non-grazed comparison to grazed areas, which could facilitate certain research. The BLM would continue to manage ACECs to protect their relevant and important values (BLM, 2015, FEIS, p. 4-272).

Under Alternative 2 of the following 13 Key RNAs would be available to livestock grazing, subject to applicable laws, regulations, policies, and other BLM Oregon Resource Management Plan decisions: Black Canyon, Dry Creek Bench, East Fork Trout Creek, Fish Creek Rim, Foley Lake, Lake Ridge, Mahogany Ridge, North Ridge Bully Creek, Rahilly-Gravelly, South Bull Canyon, South Ridge Bully Creek, Spring Mountain, and Toppin Creek Butte (BLM 2019a, p. 1-6). Livestock grazing impacts on GRSG would vary depending on the extent of vegetation removal, type of habitat grazed, and duration and timing of the grazing period. Impacts to sage-grouse preferred forbs and insects are uncertain, and that uncertainty would continue. Opportunities for comparison of ungrazed to grazed areas would be fewer (BLM 2018, p. ES-8). The BLM would continue to manage ACECs to protect their relevant and important values (BLM 2015, FEIS, p. 4-272).

Alternatives 3, 4, and 5 are based upon changed habitat management area boundaries. In 2022, ODFW informed BLM that they were going to update core and low density HMAs. Using ODFW's published methodology to estimate core and low density HMA, the BLM drafted maps of what would likely be considered core and low density HMAs.

Under Alternative 3, all proposed PHMA and GHMA from BLM's mapping effort would become PHMA and be excluded from livestock grazing, including all of the 13 Key RNAs.

Under Alternative 4, the proposed PHMA and GHMA from BLM's mapping effort would become the updated PHMA and GHMA. This alternative would retain the 2015 decision that makes all or portions of the 13 Key RNAs unavailable to livestock grazing.

Under Alternative 5, all, some, or none of the Key RNA area would be unavailable to livestock grazing as shown below and described in Chapter 2, Table 2-36. Under Alternative 5, the entirety of the Key RNAs identified in 2015 are Key RNAs and all of these Key RNAs would be retained. Alternative 5 would also update management direction to reflect this interpretation. Special Designation (SD) 4 would be changed to: manage Key RNAs, or large areas within the RNAs, as baseline reference areas for sagebrush plant communities they represent that are important to Greater Sage-grouse. Active or passive restoration actions are allowed within Key RNAs to support maintenance or improvement of identified vegetation communities and to meet GRSG habitat objectives.

Oregon has not proposed any additional ACECs so does not have an Alternative 6.

Under Alternatives 1 and 4 in 13 of the 15 Key RNAs, 21,931 acres would be unavailable to livestock grazing, while under alternative 3, 45,660 additional acres would be unavailable to livestock grazing in the same areas; this would allow plant communities in these areas to undergo natural succession and be available for comparison with other areas that had more human influence for future research needs. Up to an additional 800 acres next to, but outside of, nine Key RNAs and within the existing pasture boundaries would be included in the area unavailable to livestock grazing. The inclusion of these extra acres outside of the Key RNA boundaries would take advantage of existing pasture fencing, reducing the amount of new fence needed. This would reduce or minimize impacts to nearby leks. All other RNAs that are available to livestock grazing would continue to be available. Under these alternatives fencing would be present in and adjacent to Key RNAs. These fences could impact the ability to distribute livestock, at additional cost to livestock operators and leases. Similarly, modifications to existing water improvements and limitations on new water improvements may create additional limitations and costs for livestock operators and lessees; however, the ability to distribute livestock outside of Key RNAs should generally be maintained, and impacts should be limited from these actions ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS, June 2015 \(blm.gov\)](#), p. 4-203). Making portions of RNAs that contain plant communities important to GRSG unavailable to grazing could provide the BLM with areas for baseline vegetation monitoring without the influence of BLM-permitted activities. OHV use would continue to be allowed or restricted as currently designated. This could allow natural succession processes to proceed without the influence of livestock grazing, making these areas available for use as comparative controls to treated areas. Most Key RNAs would not experience adverse impacts from other typical management actions due to the existing restrictions and limitations on other uses that have been previously put into place to protect RNAs. ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS, June 2015 \(blm.gov\)](#), p. 275). Whether removal of grazing would reduce the risk of invasive plant spread into the Key RNAs is uncertain, as there are many vectors for invasive plants besides livestock, but reducing the physical disturbance from grazing is likely to reduce one of those vectors ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS \(blm.gov\)](#), 2018, p. 4-4).

Under Alternative 2, grazing management would be governed by the livestock grazing provisions in the 2019 ARMPA, which changed Objective Livestock Grazing 2 and deleted Management Direction Livestock 1 from the 2015 ARMPA to make all or portions of 13 key Research Natural Areas (Key RNAs) available to livestock grazing. The Key RNAs would be required to meet rangeland health standards and other applicable BLM

regulations and policies ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS \(blm.gov\)](#), 2018, p. 4-6). Grazing impacts would vary within and among the key 13 RNAs, depending on site productivity, timing of grazing, stocking intensity, and duration of grazing within each RNA ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS \(blm.gov\)](#), 2018, p. 4-6) Alternative 2 would result in 21,931 fewer undisturbed acres within Oregon available for research in plant communities important to GRSg to determine the impact of livestock grazing on GRSg and their habitats ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS \(blm.gov\)](#), 2019, p. 4-7). Although the USFWS (2015) has determined improper livestock grazing can have adverse effects on GRSg habitat, properly-managed grazing may benefit the species. Under Alternative 2, the RNAs would remain subject to management, to promote the key characteristics of the RNAs, including regulation of grazing, to maintain and promote the key characteristics of the RNAs. The Key RNAs are so small in size relative to the size of the species' range that any impacts of livestock grazing on GRSg populations using these areas are expected to be minimal and undetectable. Finally, making the Key RNAs unavailable to livestock grazing would not address any threats to GRSg habitat identified in the COT report (USFWS 2013) that may exist within the boundaries of the RNAs. ([Oregon Greater Sage-Grouse Proposed RMPA/Final EIS \(blm.gov\)](#), 2019, p. 4-7).

Effects of Alternative 5 are discussed below. The summarized impact analyses in Chapter 4 for the Key RNAs in Oregon is supported by and based on the more detailed RNA specific information presented in the following section.

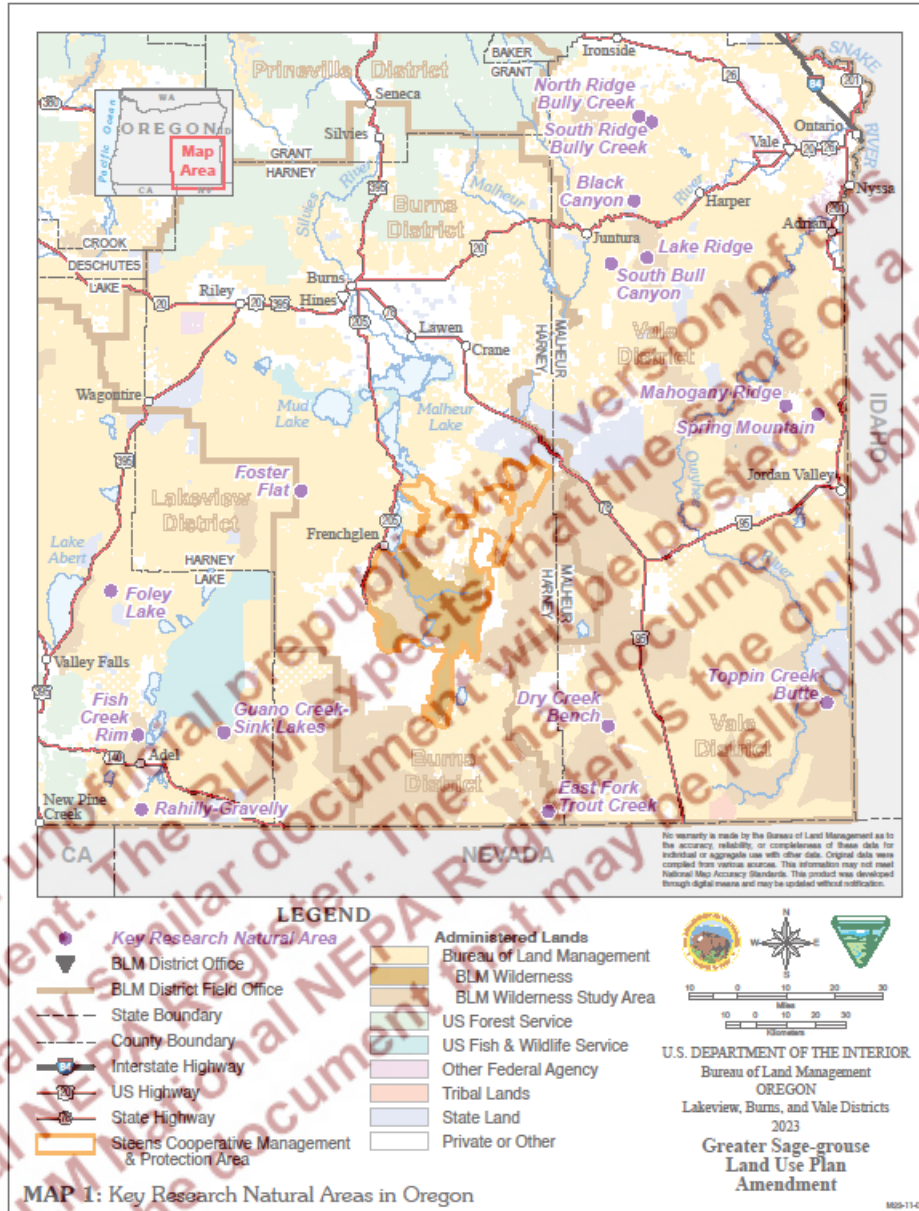
Under all alternatives, the BLM would require changes to livestock grazing/management in the 13 RNAs if a rangeland health assessment identifies livestock grazing as a causal factor in the failure to meet rangeland health standards. BLM may also require changes to livestock grazing/management for various reasons in accordance with its grazing regulations (43 CFR 4100 [2006]).

17.4 KEY ACEC AND RNA DESCRIPTIONS

The key ACEC/RNAs in Oregon were identified as containing native sagebrush (*Artemisia* sp.) shrublands, grasslands, and other habitats that provide plant communities that sage-grouse use for breeding, nesting, brood rearing, foraging, and wintering. The plant community types that the RMPA/FEIS (BLM 2015a, p. 3-138 to 3-139) identified as important for sage-grouse are:

- Mountain big sagebrush (*Artemisia tridentata* spp. *vaseyana*)/grasslands
- Basin big sagebrush (*A. tridentata* spp. *tridentata*)/grasslands
- Wyoming big sagebrush (*A. t.* spp. *wyomingensis*)/grasslands
- Mountain mahogany (*Cercocarpus ledifolius*) and bitterbrush (*Purshia tridentata*) shrublands and grasslands
- Low sagebrush (*Artemisia arbuscula*)/grasslands
- Black sagebrush (*A. nova*)/grasslands
- Rigid sagebrush (*A. rigida*)/grasslands
- Silver sagebrush (*A. cana*)/grasslands
- Three-tip sagebrush (*A. tripartite*)/grasslands
- Shadscale, greasewood, and bud sagebrush (*A. canescens*, *A. confertifolia*, *Sarcobatus vermiculatus*, *Artemisia spinescens*)/desert scrub
- Vernal pools, playas, lake margins
- Black cottonwood (*Populus trichocarpa*), willow (*Salix* sp.) and aspen (*Populus tremuloides*) riparian areas, wet meadows, seeps, and springs

Map 1. Key Research Natural Areas in Oregon



17.4.1 Key ACECs

Three “key” ACECs were identified in the Proposed RMPA/Final EIS, all within the Lakeview Field Office: Abert Rim, High Lakes, and Red Knoll (BLM 2015a, p. 2-45; Table 2-6 of BLM 2015b, p. 2-18). Current livestock grazing management would continue within all three key ACECs under all alternatives.

17.4.2 Key RNAs (District)

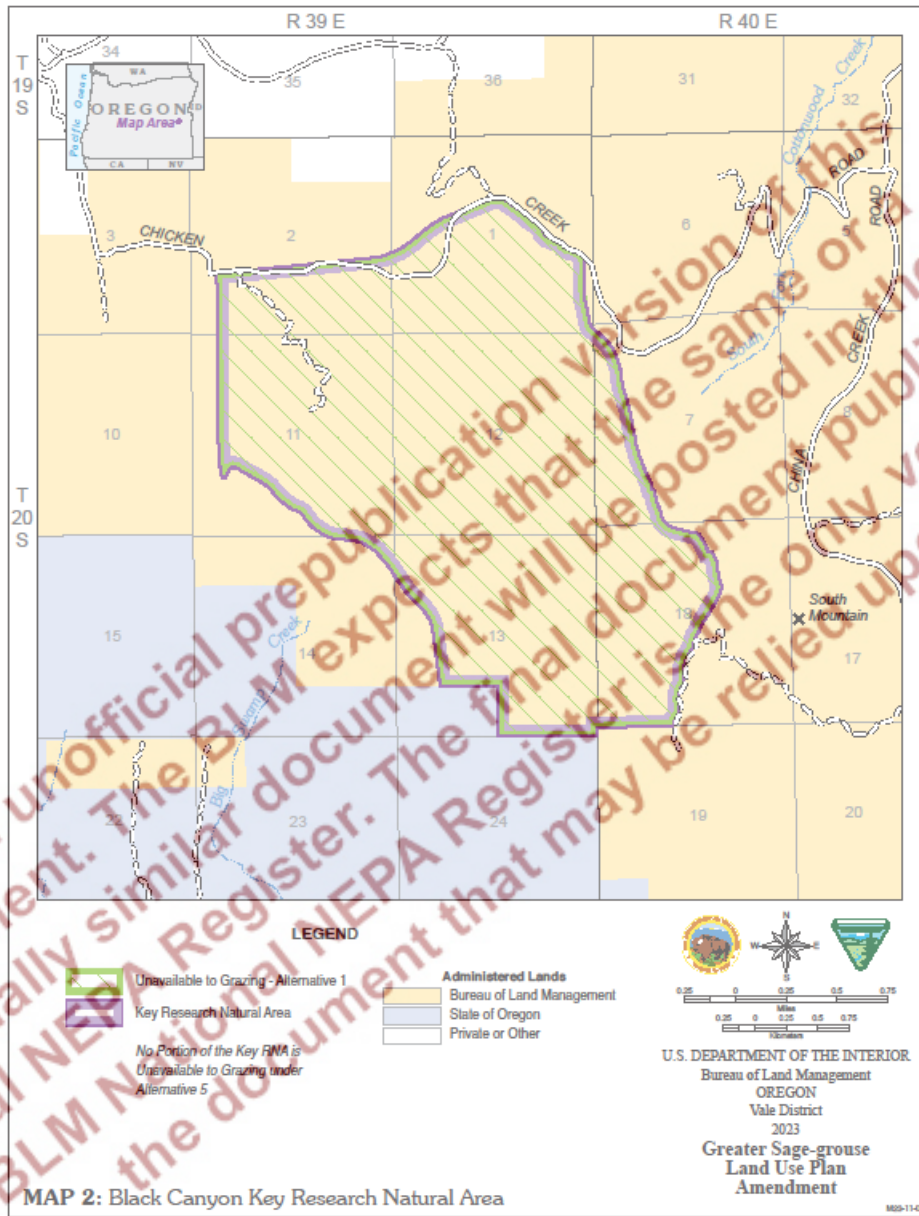
Black Canyon (Vale District)

Alternative 5 Proposed Management Changes

Retain Black Canyon Key RNA designation of the entire ACEC/RNA

Reallocate all portions of the Key RNA as available to grazing.

Map 2. Black Canyon Key Research Natural Area



Affected Environment

The 2,600¹ acre Black Canyon ACEC/RNA, located north of the Malheur River above Jonesboro, Oregon, occupies the drainage of Black Canyon, a steep south-facing canyon that drains the uplands directly above the mainstem of the Malheur River. The drainage consists of an intermittent to perennial stream flowing just enough to develop riparian vegetation in the steep canyon. The uplands surrounding the drainage are sparsely

¹ Updated boundaries of some Key RNAs since publication of the 2015 Oregon ARMPA have resulted in minor change to acreages. No official boundary changes, however have been made.

vegetated due to the shallow soils and dry south-facing aspect. Elevations range from approximately 2,760 to 5,900 feet.

Although there are flat benches conducive to livestock grazing in the upper elevations of the Key RNA, the permittee does not currently push livestock to these areas, resulting in little to no use by livestock within the Key RNA boundaries.

Specific management under the 2002 SEORMP ROD, as amended:

OHV use will be limited to designated roads and trails. The ACEC/RNA is managed as VRM Classes II and III. Plant collecting requires a permit. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if values will be maintained or enhanced. Where adverse impacts are identified, existing livestock use will be adjusted using a variety of methods that could include fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 Southeastern Oregon RMP (SEORMP) ACEC/RNA Designation:

The relevant and important values of the ACEC/RNA are the following vegetation cells identified by the Oregon Natural Heritage Program (ONHP): stiff sagebrush/Sandberg bluegrass, western juniper/big sagebrush/bluebunch wheatgrass, riparian community dominated by coyote willow with Pacific willow, and first to third order stream system in sagebrush zone.

2015 GRSG ARMPA:

The Black Canyon ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Site visits indicate that vegetation communities in the Key RNA include old-growth western juniper/Wyoming big sagebrush/bluebunch wheatgrass, Wyoming big sagebrush/Idaho fescue (*Festuca idahoensis*), and stiff sagebrush/Sandberg bluegrass plant associations, as well as riparian community dominated by coyote willow and Pacific willow. Upland areas consist of shale rock outcroppings and steep canyons.

Vegetative communities in this Key RNA that are important to GRSG habitat continue to be present. These are Wyoming big sagebrush/Idaho fescue (*Festuca idahoensis*), and stiff sagebrush/Sandberg bluegrass plant associations and the riparian community. These communities represent the Cool-Moist/Warm Dry sagebrush, Shallow-Dry Sagebrush, and Riparian communities important for GRSG. Use by sage-grouse within the Key RNA has not been documented, nor were signs of GRSG presence observed during site visits in 2023. The Key RNA is within 2015 ARMPA designated GRSG Priority and General Habitat Management Area (PHMA, GHMA); the nearest lek is more than three miles away.

The old-growth western juniper/Wyoming big sagebrush/bluebunch wheatgrass community is not suitable habitat for sage-grouse because the western juniper provides perch opportunities for predators.

Other Resources

The Black Canyon Key RNA is wholly within the Trail Creek lands with wilderness characteristics unit OR-034-031. The 11,890-acre unit possesses naturalness and outstanding opportunities to experience solitude. The entire Black Canyon Creek drainage is within the unit. Some drainages possess varying woody riparian vegetation along portions of their canyon channels, dominated by coyote willow and Pacific willow. Existing human imprints within the unit consists of 5.3 miles of motorized primitive routes, 17.5 miles of rangeland fence, three earthen reservoirs, and four developed springs.

The Key RNA is utilized by deer and pronghorn antelope year-round and is designated as deer and elk winter range.

The Visual Resource Management Class (VRM) in the Key RNA is mostly Class III and some Class II and Class IV.

Rationale supporting proposed management changes:

Rationale for retaining the Key RNA:

The vegetative communities identified as important for GRSG habitat within the Key RNA continue to be in good condition. Management would continue to protect the relevant and important values.

Benches of sagebrush provide suitable nesting and winter habitat for GRSG.

The Key RNA retains the following vegetation types important for GRSG: Ecotone between cool-moist and warm-dry sagebrush, shallow-Dry Sagebrush, and Riparian-Wetlands.

Research opportunities continue to remain due to the remote and rugged nature of the area, as well as limited use by livestock throughout the Key RNA.

Rationale for reallocating the area as available to livestock grazing:

The Key RNA portion of the pasture is largely inaccessible to livestock grazing due to topography. The existing pasture boundary, which encompasses the Key RNA on three sides, includes two areas that remain allocated to grazing. New fence construction to exclude livestock would be in an area identified by the BLM as possessing wilderness characteristics.

Due to the deep canyons and rugged terrain that characterize the Key RNA, the current and historical livestock use is limited. Current conditions are conducive to meeting scientific research objectives without the need to make the area unavailable to grazing, thus eliminating the need for fence construction.

The Key RNA provides opportunities to gather baseline data on relatively unaltered plant community types important to GRSG without additional fencing as it is largely undisturbed. The cost/benefit of constructing a fence (or increased management actions to exclude livestock) relative to the level of livestock use in the pasture is unwarranted.

Environmental Consequences

Rugged and steep terrain, as well as pockets of old growth juniper provide limited suitable habitat for GRSG. The terrain of the Key RNA naturally excludes livestock access from all but the south-eastern boundary. Because of limited livestock presence or use occurring within the Key RNA, vegetative communities that are important to GRSG habitat would continue to be available to provide baseline data on relatively unaltered plant community types important to GRSG.

Allocating the 2600-acre area as available to livestock grazing would avoid the need to either construct fencing or to implement management actions that require the permittee to manage livestock to avoid incursion into the Key RNA in the absence of fence construction. There would be no impacts to wildlife, including sage-grouse, under Alternative 5 from fencing or active livestock management because none would occur. There would be no ground disturbance associated with fencing and no associated potential increase in weeds. There would be no impacts to visual resources because there would be no fencing.

Compared with Alternative 1, Alternative 5 would have similar impacts to livestock grazing due to limited livestock presence or use occurring in the Key RNA boundaries. The wilderness characteristic of Naturalness would not be negatively impacted by the presence of 1.6 miles of new human intrusions (fence) on the landscape. Outstanding Opportunities for Solitude would not be negatively impacted because active management by livestock operators to exclude livestock from an unfenced Key RNA would not occur nor would the short-term disturbance caused by fence construction. Fence related conflicts (e.g. bird collisions and entrapments) would not occur. Furthermore, the additional 330 acres that retained the available to livestock grazing allocation would not be absorbed and co-managed with the Key RNA as unavailable to livestock use. Under Alternative 5, the BLM could focus management responses on actions that maintain or improve GRS habitat conditions outside the Key RNA rather than focusing on actions that ensure livestock do not enter an area already witnessing limited use. Removal of livestock grazing under Alternative 1 is unlikely to improve the habitat quality of the area, as it is currently in good ecological condition based upon professional opinion and site visits.

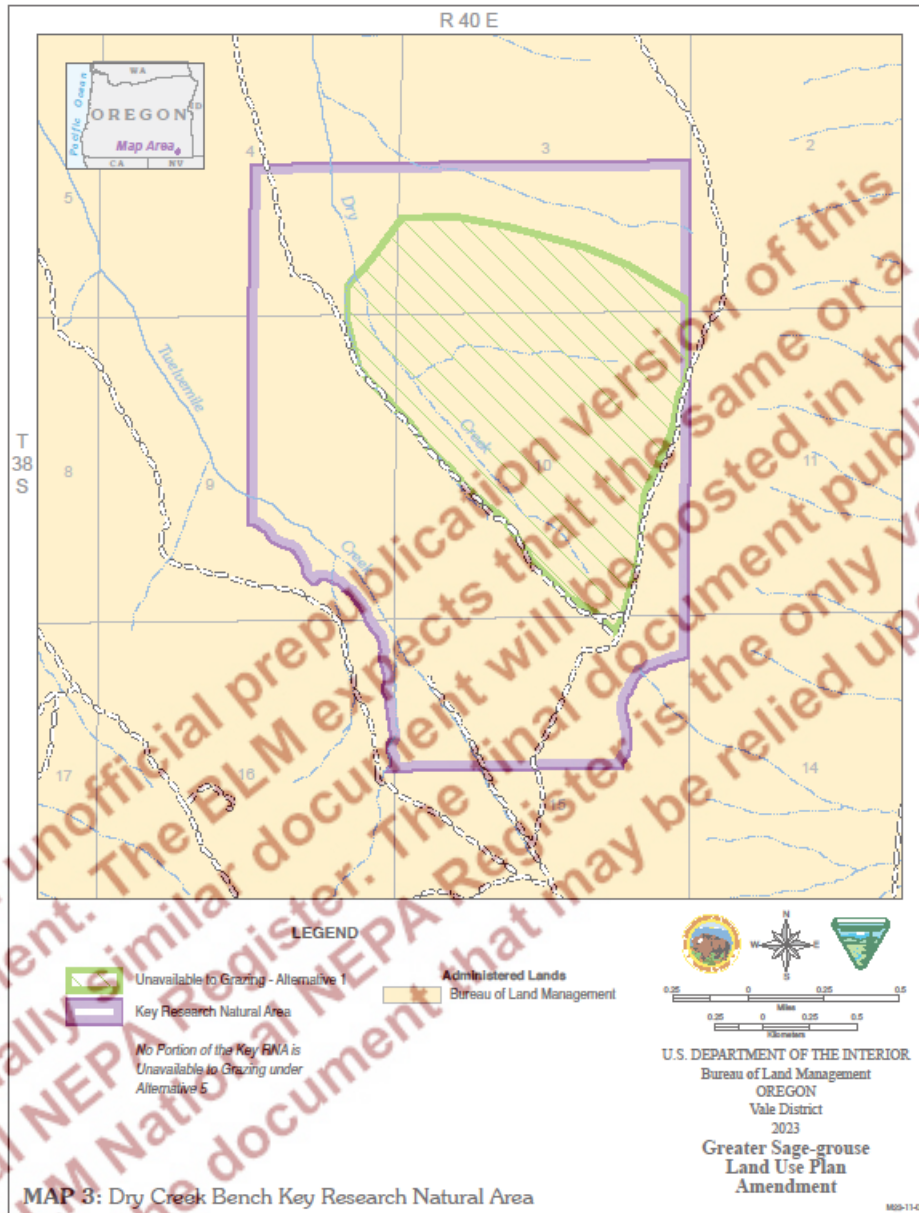
Dry Creek Bench (Vale District)

Alternative 5 Proposed Management Changes

Retain Key RNA designation of the entire ACEC/RNA

Reallocate all portions of the Key RNA as available to grazing

Map 3. Dry Creek Bench Key Research Natural Area



Affected Environment

The 1,635-acre ACEC/RNA is located on the northern edge of the Oregon Canyon Mountains, taking in the upper basin of Dry Creek about 20 miles northwest of McDermitt, Nevada. Terrain of the Key RNA naturally excludes livestock access from all but the south-eastern boundary. The area has sizeable patches of mountain mahogany in relatively good condition in association with Saskatoon serviceberry. The mountain mahogany stands in this area are extensive, compared to other stands in the basin, and cover large areas within the steep drainages as well as on the small plateaus that lie at the edge of the drainages. Use by sage-grouse within the Key RNA has not been documented, nor were signs of GRSG presence observed during site visits in 2023. The ACEC/RNA is located in the Twelvemile Wilderness Study Area, and classified as VRM class I. The area is known big horn sheep habitat and range. The 2012 Holloway Fire burned through

the ACEC/RNA impacting some but not all of the patches of mountain mahogany. The vegetation has been recovering from the fire with grasses and forbs coming back the following year, while mountain mahogany is slower growing and will take time for seedlings to mature.

The 1,635 acre Key RNA, including the 622-acre area excluded from livestock grazing, is in the Green Ponds pasture of the 15-Mile Community allotment (allotment #OR01201). The 15-Mile Community Allotment has seven grazing authorizations associated with it. The allotment currently has a use area agreement in place that formalizes use areas between the livestock operators.

Specific management under the 2002 SEORMP ROD, as amended:

OHV use is limited to existing roads and trails. The ACEC/RNA is managed as VRM Class II. Plant collecting requires a permit. Road maintenance will be limited to the existing roadway, and shoulder/ barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if the values will be maintained or enhanced. Existing livestock use will be adjusted where adverse impacts are identified using a variety of methods, that could include, but is not limited to, fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 SEORMP ACEC/RNA Designation:

The relevant and important values of this ACEC/RNA are the mountain mahogany/whortleleaf snowberry/Idaho fescue and mountain mahogany/big sagebrush/Idaho fescue Basin and Range Province vegetation cells identified by the ONHP.

2015 GRSG ARMPA:

The Dry Creek Bench ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats:

Vegetation communities in this ACEC/RNA include mountain mahogany/mountain big sagebrush woodland with mountain snowberry (*Symphoricarpus oreophilis*) and various bunchgrasses, and mountain mahogany/mountain big sagebrush/Idaho fescue plant associations. Although not mentioned in the 2015 ARMPA as a community present, low sagebrush/Idaho fescue and mountain big sagebrush/bluebunch wheatgrass are present within the proposed Key RNA as observed through site visits. These communities represent the Cool-Moist sagebrush and Shallow-Dry sagebrush communities.

The mountain mahogany plant community does not represent an important GRSG habitat type because the density of mountain mahogany within the Key RNA boundaries and its elevated structure can pose an increased likelihood of predation by raptors. The Key RNA is within GRSG PHMA in SFA; the nearest lek is 1.8 miles away. A total of four pending leks are within four miles of the Key RNA.

Other Resources

The visual resource management is Class I.

The Dry Creek Bench Key RNA is wholly located in the 28,000-acre Twelvemile Creek WSA. It is one of five WSAs that make up the Trout Creek Mountains Group of WSAs. The WSA is located approximately 26 miles Northwest of McDermitt Nevada. The Twelvemile Creek WSA consists of two fault block plateaus, steeply scarped on the east and sloping gently to the northwest. The elevation ranges from 6,000 to 6,800 feet. The predominant plant communities are typical of sagebrush/grass ecosystems, with low sagebrush dominant on the shallower rocky soils, Wyoming big sage dominant on deeper soils. The Twelvemile Creek WSA has outstanding opportunities for experiencing both solitude and primitive and unconfined recreation. Supplemental values include geologic, scenic, archaeological, big game Habitat, and diverse plant community.

Dry Creek Bench Key RNA is utilized by mule deer and pronghorn antelope year-round, designated as deer winter range, and is within bighorn sheep occupied habitat. Rugged topography in the area could constrict wildlife movement between deep drainages and steep terrain, focusing movement on flatter benches.

Rationale Supporting Proposed Management Changes:

Rationale for Retaining Key RNA:

The area continues to be in desirable condition for the vegetative communities identified, and management will continue to protect the relevant and important values. Site visits indicate that mountain mahogany stands that were not impacted by the 2012 Holloway fire are dense and continuous, with mountain big sagebrush on the periphery of the mahogany stands. Mountain mahogany impacted by the 2012 wildfire are standing dead, creating perches for raptor species that may occur in the area. However, the Key RNA boundaries as identified in the 2015 ARMPA allow for recognition of the mountain big sagebrush that occurs within the mountain mahogany community type. Sagebrush communities provide suitable nesting and winter habitat for GRSF.

Retaining the Key RNA designation would continue to recognize the following vegetation types important for GRSF: Cool-moist sagebrush and shallow-dry sagebrush.

Research opportunities continue to remain due to the remote and rugged nature of the area, as well as limited use by livestock throughout the Key RNA.

Rationale for reallocating the area as available to livestock grazing:

The pasture in which the Key RNA is situated has historically received limited use by livestock including the area excluded from livestock grazing; this portion of the pasture's vegetative community is in outstanding condition. Additional actions or disturbance to exclude livestock is not warranted to protect sagebrush habitats or enhance research and monitoring objectives identified under the 2015 ARMPA because there is limited adequate available water and the remote, rugged nature of the area naturally limits livestock use in this Key RNA. Additionally, livestock grazing management prescribed under the 2015 Biological Opinion this pasture currently receives a minimum 2-year rest followed by a maximum 2-year consecutive grazing use, and grazing use is allowed for a maximum of 61 days during the period of May 15 to July 30.

Retaining the Dry Creek Bench Key RNA designation would continue to allow natural processes to predominate and research and baseline data gathering on relatively unaltered plant communities important for GRSF. The cost/benefit of constructing a fence (or increased management actions to exclude livestock) relative to the amount of livestock use in the pasture is unwarranted.

The Key RNA is located in a WSA. Reallocating the area as available to livestock grazing would avoid the potential conflicts fence (exclosure) construction in the WSA would have. Concerns from the public regarding impacts to bighorn sheep were identified through the public scoping process for completing site-

specific analysis (BLM 2023 [Group 3 - WSAs - Key RNA Environmental Assessment - Public Comment \(blm.gov\)](#)) for implementing the removal of grazing from the Key RNA. The area is in pristine condition, and in a seral state that is expected to occur post-wildfire, as indicated by the presence of green rabbitbrush within the big sage communities that were affected by the 2012 Holloway wildfire. Although impacts to vegetation and soils may be short-term in nature with the construction of a potential fence to further aid in deterring livestock from using the area excluded from livestock grazing, the fence would impact the pristine (naturalness) nature of the area.

Environmental Consequences

Fencing

Under both Alternatives 1 and 5, limited livestock presence or use occurring within the Key RNA, vegetative communities that are important to GRSG habitat would continue to be available to provide baseline data on relatively unaltered plant community types important to GRSG.

Reallocating livestock grazing to the Key RNA in Alternative 5 would eliminate the need to either construct fencing or to implement as new terms and conditions of the grazing permit that the permittee manage livestock to avoid incursion into the Key RNA.

Impacts to wildlife, including sage-grouse, of reallocating livestock grazing under Alternative 5 would eliminate the need for additional presence of livestock operators for managing livestock away from unfenced boundaries or the need for additional fence construction that may result in short-term disturbance to individuals and fence related conflicts (e.g. bird collisions and entrapments). Under Alternative 1, the proposed enclosure fencing would be located more than 1.2 miles from occupied/pending leks, would not be considered a high risk for sage-grouse collisions, and would not negatively impact sage-grouse. However, removal of grazing from this area would not likely improve the habitat quality of the area, as it is currently in good ecological condition. In addition, rugged and steep terrain provide limited suitable habitat for GRSG.

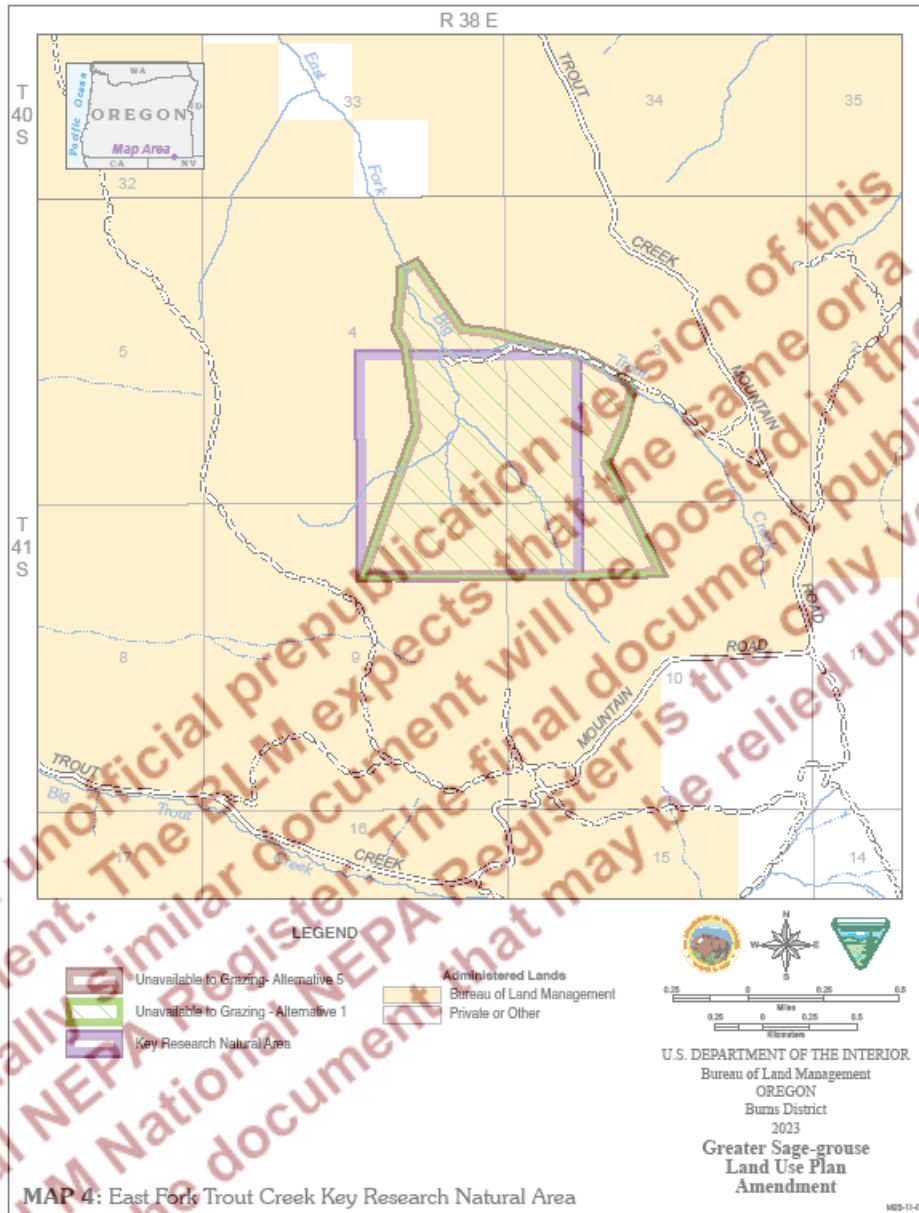
The wilderness characteristic of Naturalness would not be impacted because new fence construction would not occur in Alternative 5. Outstanding Opportunities for Solitude and primitive unconfined recreation would not be impacted as short-term impacts to solitude caused by fence construction and long-term impacts to solitude caused by active management to exclude livestock from Key RNA would not occur. There are no existing unnatural conditions on the landscape attributed to the livestock grazing that has occurred prior to the Key RNA being unallocated to grazing, therefore there would be no additional impacts to wilderness characteristics by reallocating grazing in the KRNA.

East Fork Trout Creek (Burns)

Alternative 5 Proposed Management Changes

No proposed changes from 2015 ARMPA; Key RNA would remain unavailable for livestock grazing through a rangeline agreement, which removed the Key RNA from the Headwaters Pasture and designated it as an area unavailable to livestock grazing.

Map 4. East Fork Trout Creek Key Research Natural Area



Affected Environment

The East Fork Trout Creek RNA is located in Southeast Oregon, about 25 miles southeast of Fields, Oregon and 20 miles east of Denio, Nevada. It is situated at the headwaters of the East Fork of Trout Creek in the Trout Creek Mountains. The East Fork Trout Creek RNA contains 361 acres of BLM managed land. The elevation of the RNA ranges from 7,350 feet to 8,000 feet and the yearly rainfall averages from 16 to 35 inches per year. Temperatures range from a maximum of 90 degrees F in the summer to an occasional low of minus 20 degrees F in the winter. A 4 strand barbed wire fence runs for 0.75 mile through the west part of the RNA, running from north to south. The fence will continue to be maintained because it is a pasture boundary. This fence splits the RNA into two pieces. The piece north-west of the fence is in the East Fork Pasture and is still open to grazing. The portion of the RNA to the south-east of the fence was previously in

the Headwater Pastures, and grazing was limited to 5 days per year. This portion of the RNA has now been made into its own pasture and has been unavailable to grazing through a rangeline agreement with livestock operators. Grazing is still authorized in the Headwaters Pasture which no longer includes the RNA.

Specific management under the 2005 Andrews Management Unit RMP ROD, as amended

OHV use is limited to existing roads and trails.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2005 Andrews Management Unit ROD/RMP ACEC/RNA Designation:

The relevant and important values include several plant community types. The ONHP vegetation cells represented in this area include a riparian community dominated by quaking aspen and Scouler willow, a high-elevation wet meadow dominated by sedges, and a first-to-third order stream system originating in the subalpine zone.

2015 GRSG ARMPA

The East Fork Trout Creek ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse.

Updated Vegetation Communities

The vegetation in the RNA (as described in the 2007 East Fork Trout Creek RNA/ACEC Management Plan) consists of three major plant communities, a riparian community, a mountain big sagebrush (*Artemisia tridentata* s. *vaseyana*) community and a quaking aspen community. The riparian community is made up of two first order streams with associated meadow and willow (*Salix* spp.) types along the stream route. Meadow types are quite extensive in some areas where springs emerge from the ground and saturate the soil. Sedges and Rushes (*Juncus* spp.) dominate these saturated areas with occasional willow patches. Other species that occur in the meadow type include: aspen, alder, false hellebore (*Veratrum californicum*), monkeyflower (*Mimulus guttatus*), clover (*Trifolium longipes*), cinquefoil (*Potentilla gracilis*), willow herb (*Epilobium watsonii*), and buttercup (*Ranunculus macounii*). The mountain big sagebrush community covers the most area within the RNA. This type covers the dryer upland areas around and between the riparian areas and the aspen groves. Portions of this type include late-lying snow accumulation zones where very little sagebrush grows. Mountain big sagebrush is the dominant shrub in this community and needle grass (*Achnatherum* spp.) and mountain brome (*Bromus carinatus*) are the dominant grass species. Other species include wax currant (*Ribes cereum*), service berry (*Amelanchier alnifolia*), Snowberry (*Symphoricarpos rotundifolius*), lupine (*Lupinus* spp.), Idaho fescue (*Festuca idahoensis*), and phlox (*Phlox* spp.).

The quaking aspen community covers nearly one third of the natural area and includes the Scouler willow vegetation type. Much of this community is comprised of very dense canopy cover with poorly vegetated understory. Other areas are more sparsely covered with trees and have well vegetated understories. Some of the species include: yarrow (*Achillea millefolium*), columbine (*Aquilegia formosa*), bedstraw (*Galium triflorum*), miner's lettuce (*Mantia perfoliata*), Solomon's seal (*Smilacina stellata*), stinging nettle (*Urtica dioica*), rose (*Rosa woodsii*), snowberry, and creeping wildrye (*Leymus triticoides*). No special status plant species are known to occur within the natural area.

Other Resources

Some of the common wildlife species found in the RNA include mule deer, pronghorn antelope, cougar, coyote, bobcat, badger, Belding ground squirrel, beaver, weasel, golden eagle, raven, cottontail, snowshoe hare, and spotted frog. The East Fork of Trout Creek supports a population of hybrid rainbow/cutthroat trout up to 10 inches in length. Special status animal species that could be present in the RNA include GRSG,

ferruginous hawk, Northern goshawk and spotted frog. Many species of migratory birds nest in and around the natural area.

The fire return interval for the area in and around the RNA could be up to 100 years at the top end but the best estimate is between 35 and 50 years. The fine fuels from perennial grasses have increased in the last 15 years due to the change in livestock use (limited to no more than 5 days per grazing season).

The RNA is located entirely within the Mahogany Ridge Wilderness Study Area (WSA). The area will be managed according to WSA IMP guidelines.

Two separate stream forks form the headwaters of the East Fork Trout Creek. Each fork originates as two first order streams coming together to form a second order stream. When the two second order streams flow together in the lower part of the RNA they form a third order stream. All of the first order streams originate at 7,600 feet or higher in elevation. In all, about 1.2 miles of the East Fork Trout Creek and its tributaries are present within the natural area.

Rationale Supporting Proposed Management Changes

The area is encompassed within the 1.2 mile lek buffer and within a WSA. In addition, there are SSS Flora located adjacent to the RNA. The Key RNA has been removed from the pasture and a fence is not needed to exclude grazing from the area identified as unavailable to livestock grazing as topography and water sources in lower elevations of the Headwaters Pasture typically prevent livestock from grazing within the RNA. By utilizing a rangeline agreement in lieu of a fence, the BLM removed any resource conflicts that fence construction might present.

Environmental Consequences

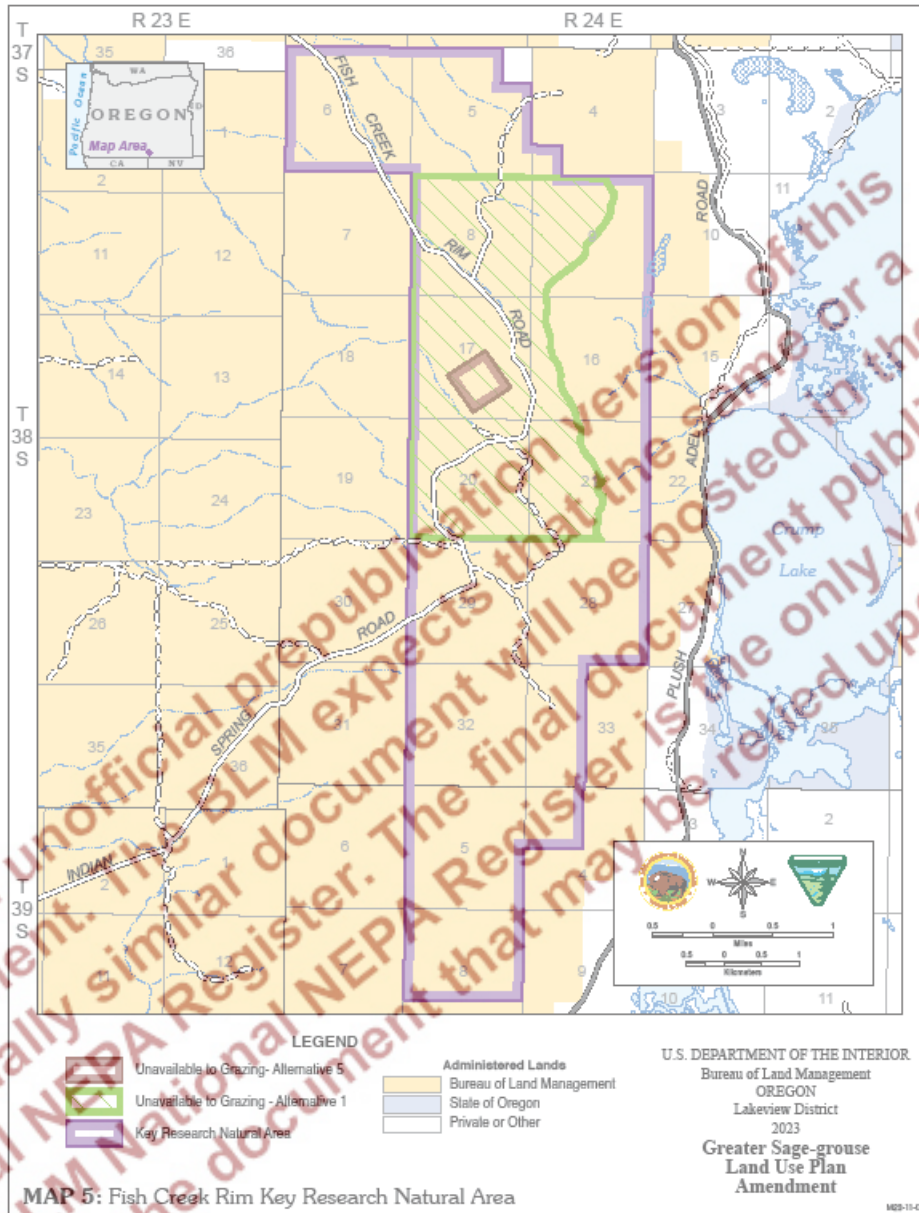
Since there are no changes in grazing management proposed in this planning effort there would be no potential changes in environmental effects when compared to Alternative 1.

Fish Creek Rim (Lakeview)

Alternative 5 Proposed Management Changes

Retain the Key RNA designation for the entire ACEC/RNA but modify/reduce the area unavailable to livestock grazing use to 95 acres within a low sagebrush/grassland community.

Map 5. Fish Creek Rim Key Research Natural Area



Affected Environment

The 8,725-acre Fish Creek Rim ACEC/RNA is located about 22 miles northeast of Lakeview. The 2015 Proposed RMPA/Final EIS described the plant communities of the Fish Creek Rim ACEC/RNA as representing mountain mahogany/mountain big sagebrush, low sagebrush/Idaho fescue, low sagebrush/Sandberg’s bluegrass, mountain big sagebrush/bitterbrush/Idaho fescue, and a snowbrush/bittercherry shrub (*Ceanothus velutinus/Prunus emarginata*) complex (BLM 2015a, p. 3-140). Approximately 2,700 acres of the ACEC/RNA contains these specific plant communities (“cells” identified in Vander Schaaf 1992; BLM 2000, p. III-30). Sage-Grouse use has not been documented in all of these communities. Wyoming big sagebrush, small stands of quaking aspen and white fir (*Abies concolor*), and dense western juniper stands are also found within the ACEC/RNA boundary (BLM 2000, p. III-30). Only Wyoming

big sagebrush, mountain big sagebrush, and low sagebrush communities represent potential sage-grouse habitat.

Specific management under the Lakeview RMP/ROD

OHV use is limited to existing roads and trails.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

Lakeview RMP ACEC/RNA designation

The Fish Creek Rim ACEC/RNA was designated in the Lakeview RMP/ROD to protect relevant/important natural system (plant communities) and cultural resource values (BLM 2000, 2001, 2003b).

During the development of the *Lakeview RMP/ROD* (BLM 2003b), the BLM expanded the Fish Creek Rim ACEC/RNA (from the original 2,700-acre proposal to 8,725 acres) solely to include important cultural values in the added acreage. These values included the presence of stone rings/occupation sites, lithic scatter, rock art sites, and hunting blinds (BLM 2000, p. III-29; 2003a, p. 2-55).

2015 GRSG ARMPA

The 2015 Proposed RMPA/Final EIS described the plant communities of the Fish Creek Rim ACEC/RNA as representing mountain mahogany/mountain big sagebrush, low sagebrush/Idaho fescue, low sagebrush/Sandberg's bluegrass, mountain big sagebrush/bitterbrush/Idaho fescue, and a snowbrush/bittercherry shrub (*Ceanothus velutinus/Prunus emarginata*) complex (BLM 2015a, p. 3-140). Approximately 2,700 acres of the ACEC/RNA contains these specific plant communities ("cells" identified in Vander Schaaf 1992; BLM 2000, p. III-30).

Updated Vegetation Communities

Based on ecological site inventory (ESI) data, the most dominant vegetation communities in the Fish Creek Rim ACEC/RNA include low sagebrush/squirreltail, low sagebrush/Idaho fescue, mountain mahogany/mountain big sagebrush/bluegrass, and juniper-encroached mountain big sagebrush/squirreltail associations.

The Fish Creek Rim ACEC/RNA has extensive current and historical whitetop species (*Lipidium draba*, *L. appelianum*, and *L. chalapense*) weed sites along the road system, Canada thistle (*Cirsium arvense*) near water developments, and scattered patches of cheatgrass (*Bromus tectorum*) throughout the area.

Other Resources or Issues

Small riparian/wetland areas occur around several livestock water developments and within existing enclosures around Cleland and Cox Springs (BLM in Prep).

The Fish Creek Rim ACEC/RNA includes a diversity of wildlife habitats. The area contains occupied bighorn sheep habitat, mule deer winter habitat, year-round antelope habitat. While the Key RNA lies within a sage-grouse PAC (Hagen *et al.* 2011) and includes PHMA and GHMA, there are no known leks within the RNA (BLM 2015a) and documented use within the RNA is limited. Telemetry data collected in the area from 2009-2017 as part of various studies, documented spring, summer, and winter use in portions of the RNA, but the majority of use occurred west of the Key RNA, and no use was documented within the grazing enclosure considered under this Alternative (Olsen *et al.* 2021a, Olsen *et al.* 2021b, and unpublished data).

During the development of the *Lakeview RMP/ROD* (BLM 2003b), the BLM expanded the Fish Creek Rim ACEC/RNA (from the original 2,700-acre proposal to 8,725 acres) to include important cultural values in the surrounding area, which is not sage-grouse habitat. These values included the presence of stone

rings/occupation sites, lithic scatter, rock art sites, and hunting blinds (BLM 2000, p. III-29; 2003a, p. 2-55). A small portion of the Fish Creek Rim Wilderness Study Area (WSA) (OR-I-117; 1,786 acres) overlaps a portion of the Fish Creek Rim Key RNA. A small portion of the Monument Flat wilderness characteristics unit (OR-015-117A) also overlaps a portion of the Fish Creek Rim Key RNA.

Fish Creek Rim ACEC/RNA is managed under two different VRM classifications. The Fish Creek Rim WSA portion is managed as VRM Class I. The remainder of the ACEC/RNA is managed as VRM Class II.

The Fish Creek Rim ACEC/RNA falls within portions of the 22,011-acre Lynch-Flynn (00520), 3,548-acre Crump Individual (00201), 3,054-acre Lane Individual (00524), and 8,073-acre Hickey Individual (00202) Allotments. The proposed grazing enclosure falls within a portion of the East Pasture of the Lynch-Flynn Allotment. A rangeland health assessment was completed for this allotment in 2003 and updated in 2013 (BLM 2003c, 2013c). During these assessments no rangeland health issues were identified within the proposed grazing enclosure area.

Rationale supporting Proposed Management Changes:

Portions of the original enclosure boundary (Alternative 1) traversed terrain/topography where the BLM determined, based on further analysis and field inventory, it would be difficult to construct enclosure fencing. The modified enclosure boundary would reduce amount of fencing needed within sage-grouse habitat from an estimated 4.6 miles to 1.6 miles, none of which would be located within 1.2 miles of any leks. This modification eliminates the need for new fencing within the Fish Creek Rim WSA.

The mountain mahogany plant community does not represent an important sage-grouse habitat type because of the high density and decadent condition of the mountain mahogany stands and lack of sagebrush understory within this portion within the Key RNA boundary. White fir and western juniper stands do not represent important sage-grouse habitats because GRSG are a sagebrush-obligate species and these are forest or woodland habitats rather than sagebrush habitats. In addition, other existing native plant communities within the Key RNA boundary are severely degraded by western juniper encroachment.

Portions of the existing low sagebrush/grassland community would be located outside the modified enclosure creating both grazed and ungrazed (control) sites in the same area suitable for future research related to the effects of grazing.

Environmental Consequences

Making this portion of the Fish Creek Rim ACEC/RNA unavailable to grazing use could help protect the relevant and important values by eliminating soil and vegetation disturbance in a portion of the Key RNA. This would allow natural succession processes to occur in the absence of most human-caused disturbances and provide an area for future baseline monitoring and research purposes.

Native plant communities and soils within the proposed enclosure area would no longer be subject to livestock grazing or trampling effects. However, since there are no water sources currently subject to heavy utilization within the proposed enclosure area, there would be very little change in condition over the long-term.

Fencing

Under Alternative 5, about 1.0 acres total of native plant communities and soils could be impacted by increased trampling/trailing along a new fence. Construction of the enclosure and subsequent livestock trailing along the fence would create new ground disturbance within an area that has been relatively

undisturbed in the past. Any time equipment and people are working in new areas there is a potential risk of introducing new noxious weeds/invasive species into native communities from equipment and people doing the work. However, the risk of weed introduction or expansion would be slightly less than Alternative 1 due to less proposed enclosure fence building, livestock trailing, and associated ground disturbances.

Under this alternative the potential effects of removing livestock would occur on about 95 acres (2,655 acres less than Alternative 1) within low sagebrush/grassland wildlife habitat. Impacts would be limited to the habitat in this area and would not affect other wildlife habitat types present within the Key RNA.

There would be less fencing and associated wildlife impacts compared to Alternative 1. All fencing would pose a low collision risk to sage-grouse and would be constructed with wildlife-friendly specifications.

Unlike Alternative 1, the proposed enclosure fence under Alternative 5 would fall entirely outside of the Fish Creek Rim WSA and, therefore, result in no changes in grazing use or other impacts on WSA values.

This alternative would add about 1.6 miles of new fencing within the Monument Flat wilderness characteristics inventory unit. This new enclosure fence would be noticeable within close proximity but would not be substantially noticeable across the unit as a whole. The removal of grazing under this alternative would have minor positive impacts to vegetation communities and naturalness within the enclosure. This fence would not diminish the size of the unit or cause the unit to no longer meet the minimum wilderness characteristics criteria. For this reason, this alternative would comply with the 2010 Settlement Agreement (BLM 2010b).

No fencing or changes in grazing use would occur within the VRM Class I (Fish Creek Rim WSA) area. As a result, there would be no impacts to scenic values within VRM Class I areas. The enclosure fencing would have minor, negative impacts on the scenic quality in the rest of the Fish Creek Rim ACEC/RNA, but these effects would be consistent with VRM Class II management objectives.

Compared to Alternative 1, the proposed enclosure modification would substantially reduce negative economic effects to affected livestock operators. There would be a loss of about 95 acres available for grazing use and associated available forage. However, this loss would be substantially less than Alternative 1: approximately 4 AUMs from the allotment (compared to the estimated 110 AUMs under Alternative 1). This smaller reduction in AUMs represents less than 1% of the permitted use, could be absorbed by spreading the AUMs across other pastures within the allotment, and would not require reducing the permitted number of AUMs or modifying the existing grazing permit.

Compared to Alternative 1, the permittee would not need to pay for additional forage costs (renting private pasture or feeding additional hay) or experience a loss in livestock production and associated revenue. There would be substantial one-time fence construction costs to the BLM. Currently, fence construction costs are estimated at about \$10,000 per mile (material and labor) or about \$16,000 total. Assuming that local contractors would be hired to construct the fence, there would be a small benefit to the local economy. There would also be additional operational costs to the permittee associated with the annual maintenance of the new enclosure fence.

Compared to Alternative 1, the modified enclosure boundary would avoid all five existing livestock water sources and eliminate the need to mitigate for lost livestock watering sites.

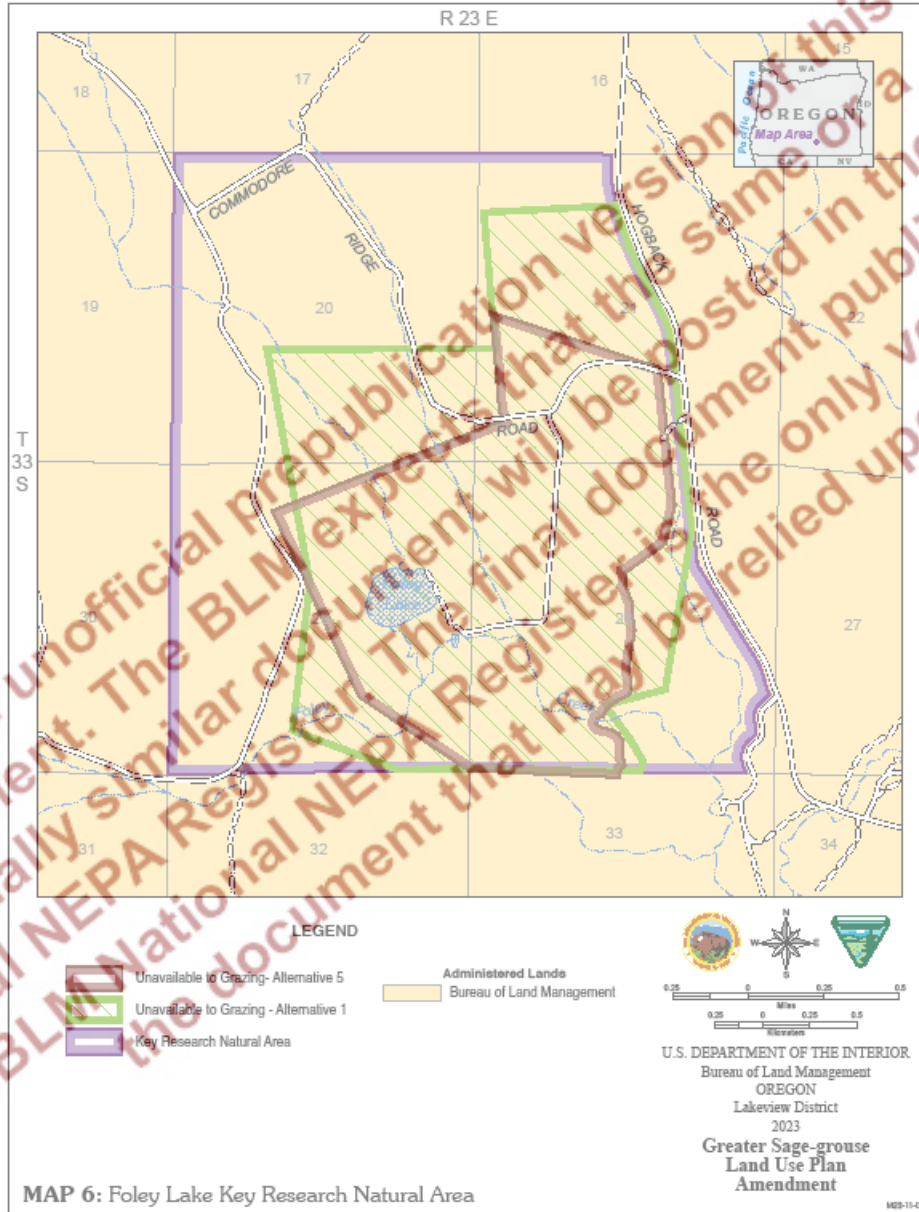
Foley Lake (Lakeview)

Affected Environment

Specific Management under the Lakeview RMP/ROD

OHV use is limited to existing roads and trails.

Map 6. Foley Lake Key Research Natural Area



Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

Lakeview RMP/ROD ACEC/RNA designation

The 2,229-acre Foley Lake ACEC/RNA is located about 37 miles northeast of Lakeview and was designated in the Lakeview RMP/ROD to protect relevant/important natural system (plant communities) and cultural resource values (BLM 2000, 2001, 2003b). In the *Lakeview RMP/ROD* the BLM expanded the original Foley

Lake ACEC/RNA proposal (from 1,035 acres to 2,229 acres) solely to include important cultural resource values in the added acreage. These include the presence of stone rings, rock art, burial sites, rock shelters, and lithic scatters (BLM 2000, p. III-37 to III-38; 2003b, p. 2-56).

2015 GRSG ARMPA

West and East Portions

The Foley Lake ACEC/RNA falls within portions of the 130,345-acre Coyote-Colvin (00517) and 86,518-acre Juniper Mountain (00515) Allotments. There is an existing allotment boundary fence running in a north-south direction through the center of this RNA. Potential management changes would impact two livestock operators. For this reason, the following discussion for Foley Lake RNA is broken out into an eastern and western portion.

West Portion Foley Lake (Coyote Colvin Allotment)

Alternative 5 Proposed Management Changes

Retain the Key RNA designation for the entire RNA but reduce the area unavailable to livestock grazing use in the western portion to 521 acres within the Coyote-Colvin Allotment that contains silver sagebrush/grassland, Wyoming big sagebrush/grassland, and black sagebrush/grassland plant communities. Approximately one mile of the existing allotment boundary fence could be removed from the middle of the Key RNA once the new enclosure fences are completed.

Affected Environment

Updated Vegetation Communities

Foley Lake itself lies in a small basin on the gently sloping backside of the Abert Rim fault within a larger Wyoming big sagebrush/grassland landscape. Black sagebrush is the predominant shrub in the ACEC/RNA with low sagebrush common on lithic soils. Wyoming big sagebrush occurs on deeper soils and silver sagebrush on the large vernal wet playa and (Foley) lake margin. (BLM 2015a, p. 3-140).

The Proposed RMPA/Final EIS described the plant communities of the Foley Lake ACEC/RNA contains a black sagebrush/Sandberg bluegrass shrubland and low sagebrush/bunch grass (Sandberg bluegrass, bottle brush squirreltail, Idaho fescue), silver sagebrush/Sandberg's bluegrass plant associations (BLM 2015a, p. 3-140), however, a smaller portion of this area (approximately 1,035 acres) actually contains those specific plant communities (Vander Schaaf 1992).

Based on ESI data, the most dominant vegetation communities in the western portion of the Foley Lake ACEC/RNA include Wyoming big sagebrush/squirreltail and black sagebrush/field smartweed plant associations. Silver sagebrush associated with the margins of Foley Lake also occur in this portion of the ACEC/RNA.

There are no known noxious weeds documented in the Foley Lake Key RNA. However, cheatgrass has been documented recently in the understory.

Other Resources

The Foley Lake ACEC/RNA provides habitat for a variety of other sagebrush-associated birds, mammals, and reptiles (BLM In Prep.). The western portion of the RNA is pronghorn habitat (BLM 2019b).

While two pygmy rabbit burrows were located near or within the proposed western enclosure area in recent years, the majority of the enclosure area is not typical pygmy rabbit habitat due to the shallow, rocky soils or an area of high pygmy rabbit use (BLM 2019b).

The western portion of the Foley Lake ACEC/RNA is managed as VRM Class III.

The western portion of the Foley Lake Key RNA falls within the Twin Lakes Pasture of the Coyote-Colvin Allotment. A rangeland health assessment was completed for this allotment in 2000 and updated in 2016. No rangeland health issues were identified in the Twin Lakes Pasture during either assessment (BLM 2000c, 2016).

Rationale supporting Proposed Management Changes:

Portions of the original enclosure boundary (Alternative 1) traversed terrain/topography (eg. steep slopes, rocky surfaces). The modified enclosure boundary would reduce amount of fencing needed within sage-grouse habitat from an estimated 3.2 miles under Alternative 1 to 2.4 miles, none of which would be within 1.2 miles of occupied or pending leks.

The modified enclosure boundary would include all of the silver sagebrush/grassland community associated with Foley Lake, most of the surrounding black sagebrush/grassland community, and some of the Wyoming big sagebrush/grassland community. This would allow both grazed and ungrazed (control) sites located in the same area for future research related to the effects of grazing on black sagebrush and Wyoming big sagebrush communities.

The modified enclosure boundary avoids cultural sites located during field inventories of the original Alternative 1 alignment.

Environmental Consequences

Making the western portion of the Foley Lake ACEC/RNA unavailable to grazing use could help protect the relevant and important values by eliminating soil and vegetation disturbance. This would allow natural succession processes to occur in the absence of most human-caused disturbances and provide an area for future baseline monitoring and research purposes.

Foley Lake waterhole and several existing natural water sources would be included within the enclosure and would no longer be available as livestock water sources for cattle grazing in the Twin Lakes Pasture. Excluding these water sources would change livestock distribution, and grazing use would be less in the area immediately surrounding the enclosure and more concentrated in other areas of the Twin Lakes Pasture with water. Water would need to be hauled (at permittee's expense) to temporary troughs near two existing waterholes in the north end of the Twin Lakes Pasture on years when livestock water is limited which could create expanded disturbances due to increased cattle concentration and semi-truck use. These existing watering sites are located along existing roads and are not within 1.2 miles of leks or other important sage-grouse habitats (BLM 2019b).

Vegetation disturbance would occur from semi-trucks turning around near the water trough sites (outside the Key RNA).

Removal of grazing would remove one potential weed-spreading vector within the enclosure area. However, other vectors (wildlife, vehicles, wind and water) would continue and potentially spread weed species. The lack of spring grazing could allow more invasive annual grasses to flower and produce seed. Monitoring data has shown that removal of livestock from areas where weeds are present (such as riparian areas and enclosures) often leads to more robust weed infestations and allows the invasive species to negatively impact native vegetation (BLM 2019b). There are two special status plant species (Columbia yellowcress and Mesamint) currently located within two existing small enclosures on the west side of Foley Lake RNA. The larger enclosure would eliminate all potential livestock trampling/grazing impacts to these special status plants

within the western portion of the Foley Lake ACEC/RNA. However, most of the Columbia yellowcress and Mesamint populations are located within two smaller existing grazing enclosures, so the larger enclosure proposed under Alternatives 1, 4, and 5 would do little to further remediate this potential threat (BLM 2019b).

In the absence of spring grazing within the proposed enclosure, areas with high amounts of annual grasses would continue to degrade the landscape and create a less fire-resistant landscape. There would be an increase in fine fuels and a potential increase in the risk of catastrophic wildfire occurrence within this enclosure (BLM 2019b) when compared to Alternative 2. Should a wildfire occur and impact the proposed grazing enclosure, the enclosure area could be subject to increased cheatgrass dominance and could require active vegetation management such as herbicide treatment or native grass seeding.

Fencing

There would be some surface disturbance to upland native vegetation communities, soils and biological crusts from vehicle traffic during fence construction and removal and future maintenance of the proposed enclosure fence. The new fence would create approximately 1.5 acres of additional vegetation disturbance in the Key RNA associated with construction and subsequent livestock trailing (BLM 2019b).

Under Alternative 5, enclosure fencing would be located more than 1.2 miles from occupied/pending leks, would not be considered a high risk for sage-grouse collisions, and would not negatively impact sage-grouse or its habitat. Removal of grazing from this area would not likely improve the habitat quality of the area, as it is currently in good ecological condition and is meeting applicable rangeland health standards (BLM 2000c, 2016, BLM 2019b).

Closure of the western portion of the RNA would not prevent the use of Foley Lake as a water source by mule deer, pronghorn, bighorn sheep, or other wildlife. An enclosure fence could alter behavior and use patterns of big game species, but those effects would be mitigated to the extent feasible by building the fence to standard wildlife passage specifications (BLM 2019b).

Construction of an enclosure fence would not impact pygmy rabbits at a population level and would not improve pygmy rabbit habitat or encourage movement of more pygmy rabbits into the enclosure area (BLM 2019b).

Visual Resources and SocioEconomics

The proposed enclosure fence would negatively affect the existing visual quality within the area, but would meet the existing visual resource management (VRM Class III) objectives for the surrounding area.

Excluding the western portion of the Foley Lake RNA would remove approximately 21 AUMs of forage available for livestock grazing use in the Twin Lakes Pasture of the Coyote-Colvin Allotment compared to 31 AUMs under Alternative 1. The modified enclosure boundary would reduce negative socio-economic effects to the permittee compared to Alternative 1. This would represent about a 0.41% reduction in total AUMs in the allotment which could be absorbed by transferring the use to other pastures within the allotment without the need to change the authorized level of grazing use, change the grazing permit, or reduce livestock production. Compared to Alternative 1, the permittee would not need to pay for additional forage costs or experience a loss in livestock production and associated revenue.

However, there would be additional annual operational costs to the permittee associated with future fence maintenance (estimated at \$300-600 per year) and water hauling. There would also be additional one-time costs to the BLM associated with enclosure fence construction (about \$10,000 per mile) totaling about

\$24,000. Assuming that local contractors would be hired to construct the fence, there would be a small benefit to the local economy.

East Portion Foley Lake (Juniper Mountain Allotment)

Alternative 5 Proposed Management Changes

Retain the Key RNA designation for the entire ACEC/RNA but reduce the area unavailable to livestock grazing use in the eastern portion to 276 acres within the Juniper Mountain Allotment that contains black sagebrush/grassland and Wyoming big sagebrush/grassland plant communities. Approximately one mile of the existing allotment boundary fence could be removed from the middle of the Key RNA once the new exclosure fences are completed.

Affected Environment

Updated Vegetation Communities

Foley Lake itself lies in a small basin on the gently sloping backside of the Abert Rim fault within a larger Wyoming big sagebrush/grassland landscape. Black sagebrush is the predominant shrub in the ACEC/RNA with low sagebrush common on lithic soils. Wyoming big sagebrush occurs on deeper soils and silver sagebrush on the large vernal wet playa and (Foley) lake margin. Bud sagebrush (*Artemisia spinescens*) is also present (BLM 2015a, p. 3-140).

The 2015 Proposed RMPA/Final EIS described the plant communities of the Foley Lake ACEC/RNA as representing black sagebrush/Sandberg bluegrass shrubland and low sagebrush/bunch grass (Sandberg bluegrass, bottle brush squirreltail, Idaho fescue), silver sagebrush/Sandberg's bluegrass plant associations (BLM 2015a, p. 3-140), however, a smaller portion of this area (approximately 1,035 acres) actually contains those specific plant communities (Vander Schaaf 1992).

Based on ESI data, the most dominant vegetation communities in the eastern portion of the Foley Lake ACEC/RNA include Wyoming big sagebrush/squirreltail and black sagebrush/squirreltail and smartweed plant associations. No wetland or riparian areas occur within the east half of the Foley Lake ACEC/RNA (BLM In Prep).

There are no known noxious weeds documented in the Foley Lake Key RNA. However, cheatgrass has been documented recently in the understory. No special status plants occur within the east half of the Foley Lake ACEC/RNA.

The eastern portion of the ACEC/RNA lies within sage-grouse Warners PAC, mid-scale HAF (Warner-Meizner), and fine-scale HAF (Warner) boundaries. The entire ACEC/RNA area is classified as PHMA and as seasonal breeding, summer, and winter sage-grouse habitat. However, there are no documented leks located within the Key RNA boundary. Telemetry data collected from 2009-2017 for various studies failed to document sage-grouse use in the Foley Lake RNA, though summer usage was documented to the northwest and southwest of the RNA. Usage of the RNA has been observed indirectly in recent years (e.g. fecal pellets) (unpublished data).

Other Resources

The eastern portion of the Foley Lake ACEC/RNA provides habitat for a variety of other sagebrush-associated birds, mammals, and reptiles (BLM In Prep.).

The proposed exclosure fence alignment was surveyed for cultural/historic resources. During survey, three isolated artifacts were identified that were not considered to be significant.

The eastern portion of the Foley Lake ACEC/RNA is managed as VRM Class III.

The eastern portion of the Foley Lake Key RNA falls within the Flint Hills Pasture of the Juniper Mountain Allotment. A rangeland health assessment was completed for this allotment in 2004 (BLM 2004). No rangeland health issues were identified in the assessment for the Flint Hills Pasture of the allotment which contains the proposed grazing enclosure area.

Rationale supporting Proposed Management Changes:

The proposed enclosure fence would be at least 1.2 miles from nearest (unoccupied) lek on the north and avoid creating a livestock trailing safety problem along County Road 3-10 (Hogback Road), a main, well-traveled county road on the east. The proposed boundary also takes advantage of existing topographic features (steep rim) on the south which would reduce the total amount of fencing needed. Overall, the enclosure boundary would require 1.3 miles of fencing within sage-grouse habitat, as compared to an estimated 2.3 miles (under Alternative 1).

The proposed enclosure boundary includes some of the black sagebrush/grassland and Wyoming big sagebrush/grassland communities. This would allow both grazed and ungrazed (control) sites to be located in same area for future research related to the effects of grazing on black sagebrush/ grassland and Wyoming big sagebrush/grassland communities.

Environmental Consequences

Making the eastern portion of the Foley Lake ACEC/RNA unavailable to grazing use could help protect the relevant and important values by eliminating soil and vegetation disturbances. This would allow natural succession processes to occur in the absence of most human-caused disturbances and provide an area for future baseline monitoring and research purposes.

Native plant communities and soils within the proposed enclosure would no longer be subject to livestock grazing or trampling effects. Since there are no water sources within the proposed enclosure area subject to heavy utilization or compaction, most of this change would occur along the existing 1.5 miles of fence along the western boundary of the Key RNA and along the 1 mile of the Hogback Road on the eastern boundary. There would be a net reduction in cattle trailing/trampling effects on native plant communities and soils on about 0.8 acres.

While the disturbance along the proposed enclosure fence would represent an area of increased risk of potential cheatgrass invasion/expansion that could impact special status plants over the long-term, no special status plants were located within any of the proposed fence alignment that would be directly impacted.

The effects of removing livestock grazing would occur on about 279 acres of upland shrubland/grassland wildlife habitat (218 less acres than Alternative 1). The proposed new fencing and associated wildlife impacts would be less than Alternative 1. All of the proposed enclosure fencing would be located more than 1.2 miles from leks. The collision risk posed by this proposed fencing would be comparable to Alternative 1.

Based on cultural resource field inventory, the proposed enclosure fence would avoid impacting significant cultural sites.

This proposed enclosure would negatively affect the existing visual quality within the area, but would meet the VRM Class III management objectives.

Under this alternative there would be a loss of about 279 acres available for grazing use and an associated loss of available forage. This loss would be about 12 AUMs (compared to 20 AUMs under Alternative 1). This smaller reduction in AUMs represents about 0.5% of the permitted use, could be absorbed by spreading the AUMs across other pastures within the Juniper Mountain Allotment, and would not require reducing the permitted number of AUMs or modifying the existing grazing permit. Compared to Alternative 1, the permittee would not need to pay for additional forage costs or experience a loss in livestock production and associated revenue.

However, there would be additional annual operating costs to the permittee associated with the future maintenance of about 1.3 miles of new enclosure fence (estimated at \$300-600 per year). There would also be additional one-time costs to the BLM associated with enclosure fence construction (about \$10,000 per mile) totaling about \$13,000. Assuming that local contractors would be hired to construct the fence, there would be a small benefit to the local economy.

Foster Flat (Burns)

Alternative 5 Proposed Management Changes

The Foster Flat Key RNA was allocated as unavailable for livestock grazing prior to the 2015 OR GRSG ARMPA via the underlying 1992 Three Rivers Resource Management Plan ROD/RMP. Neither the 2015 nor the 2019 RMP amendment processes proposed nor made any changes to the prior district decision. Alternative 5 would not make any changes to management of this RNA, and it would remain unavailable to grazing.

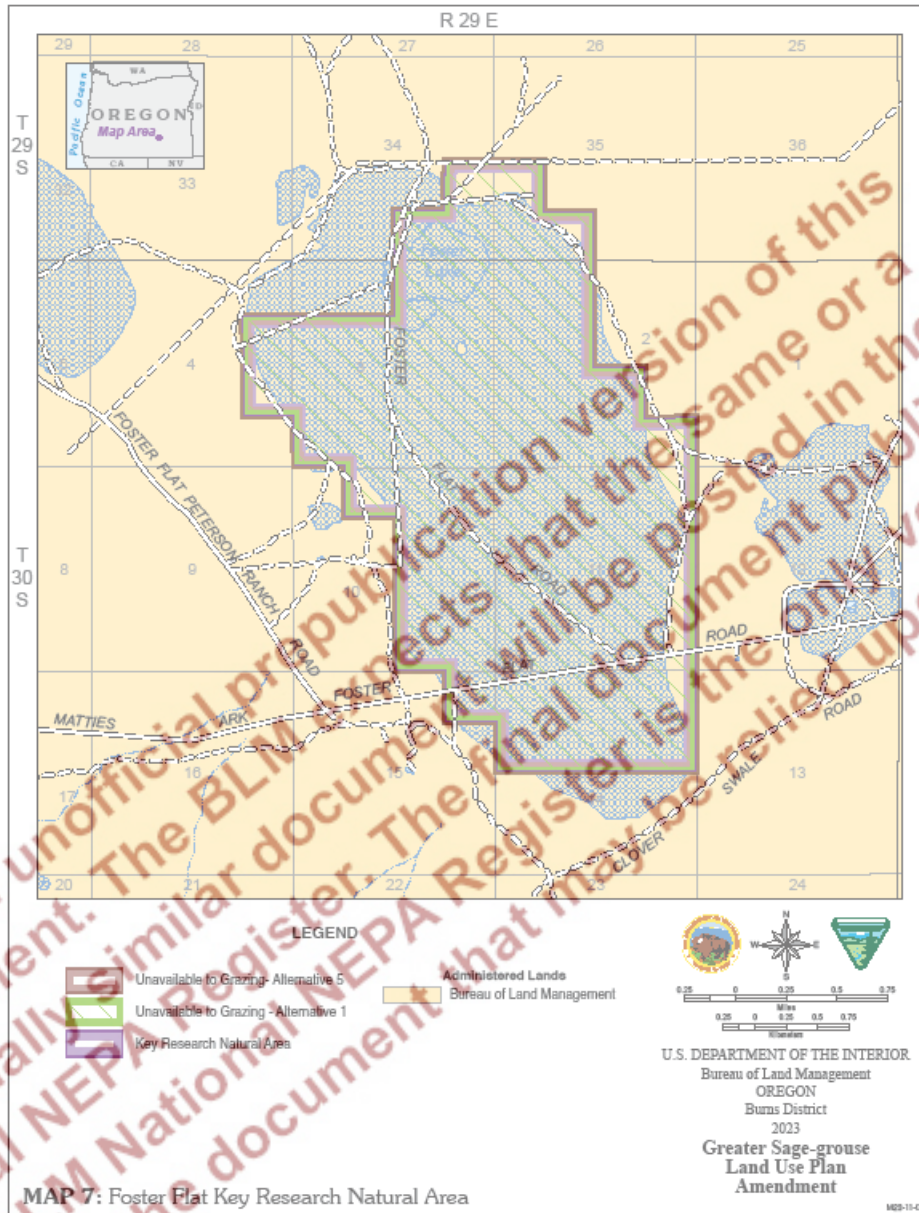
Affected Environment

Foster Flat RNA/ACEC is located in Harney County approximately 42 miles south of Burns, Oregon, and 20 miles west of Highway 205 near the Burns District boundary with Lakeview District. The proposed Foster Flat RNA/ACEC is 2,690 acres in size. It is in East Warm Springs Allotment (No. 7001) and in the Warm Springs HMA. The elevation of the RNA/ACEC is approximately 5,000 feet.

Specific management under the 1992 Three Rivers Resource Management Plan ROD/RMP

The primary management goal of the Foster Flat RNA/ACEC is to manage the area to preserve the characteristics of the ecosystem and to provide areas for ecological studies, monitoring and research, and education. The primary management action undertaken was construction of perimeter boundary fencing. The perimeter boundary fence excluded livestock and wild horse access the water source and vegetation in the northwestern corner of Foster Flat. The area is open to OHV use.

Map 7. Foster Flat Key Research Natural Area



Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

Foster Flat RNA/ACEC was designated to represent silver sagebrush/Nevada bluegrass communities and provide an area for ecological studies, monitoring and research, and education opportunities.

1992 Three Rivers Resource Management Plan ROD/RMP

ACEC/RNA designation

Foster Flat RNA/ACEC was designated to represent silver sagebrush/Nevada bluegrass communities. This community is found in playas throughout the Great Basin in sites which are flooded for a period of months during the winter and early spring, but which dry up rapidly as the weather warms. Foster Flat covers a large area that is essentially devoid of topographic relief and is dominated by silver sagebrush. The silver

sagebrush/Nevada bluegrass community covers approximately 800 acres in the central portion of the playa area. At slightly lower elevation on the playa is a silver sagebrush/rush community which stays wetter longer than the Nevada bluegrass association. The slightly higher elevation areas of the playa contain silver sagebrush/green rabbitbrush. There are also areas of basin wildrye, creeping wildrye or silver sagebrush with no understory. It is ringed by a slightly raised rim that is dominated by greasewood and big sagebrush.

2015 GRSG ARMPA

The Foster Flat RNA, was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities

Large playa (dry lakebed) containing silver sagebrush/Baltic rush (*Juncus balticus*), silver sagebrush/Sandberg's blue grass, low sagebrush/Sandberg's bluegrass associations, grading into slightly higher areas and hummocks of basin or Wyoming big sagebrush/bluebunch wheatgrass associations.

Rationale Supporting Proposed Management Changes

No management changes are proposed.

Environmental Consequences

Since there are no changes in grazing management proposed in this planning effort there would be no potential changes in environmental effects when compared to Alternative 1.

Guano Creek – Sink Lakes (Lakeview)

Alternative 5 Proposed Management Changes

The Guano Creek-Sink Lakes ACEC/RNA falls within the much larger Guano Creek wilderness study area (WSA), the majority of which was made unavailable to livestock grazing use through an Act of Congress in 1998. For this reason, no changes in grazing use are proposed under Alternative 5.

Affected Environment

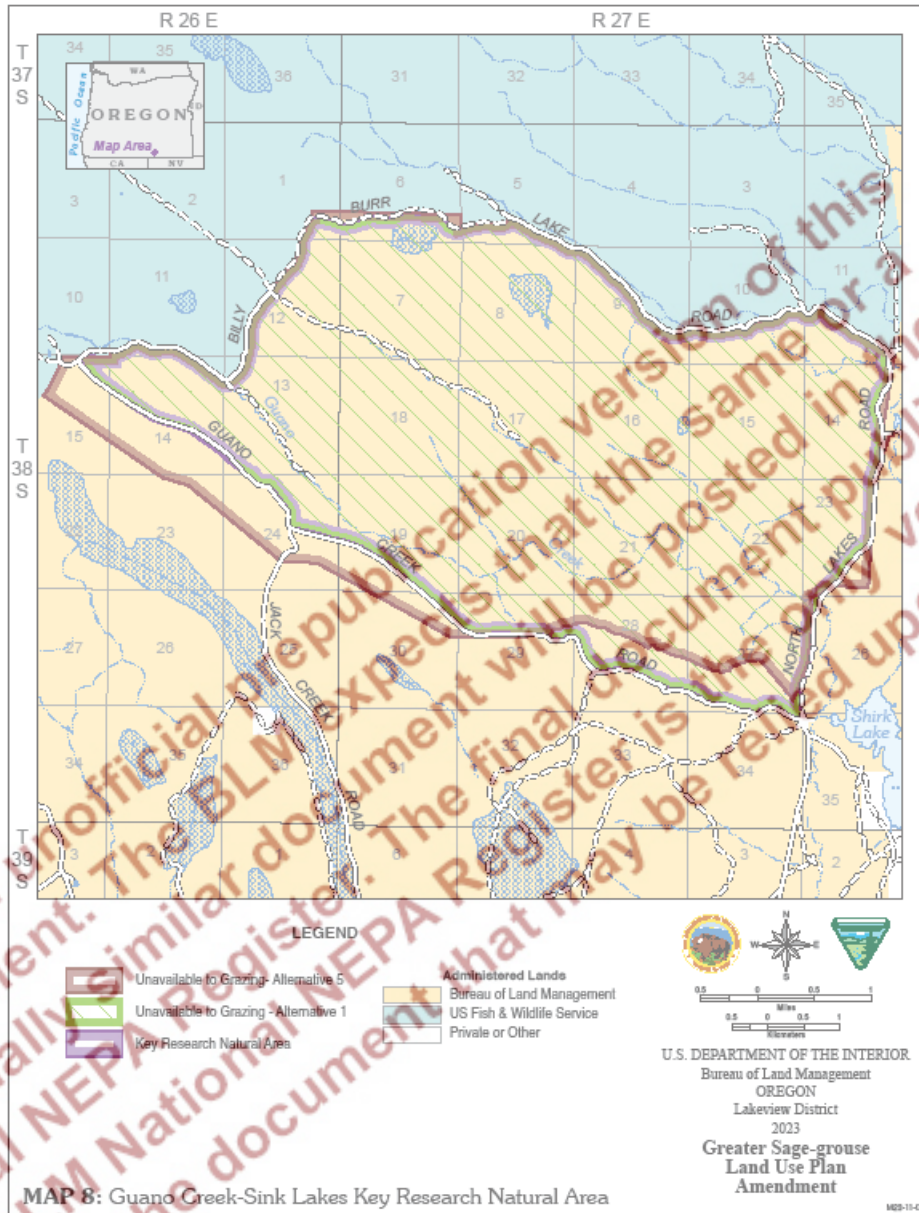
Specific management under the Lakeview RMP/ROD

OHV use is limited to existing roads and trails.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

The 11,823-acre Guano Creek-Sink Lakes ACEC/RNA complex is located about 39 miles northeast of Lakeview and was designated in the Lakeview RMP/ROD to protect relevant/important natural system (plant communities) values (BLM 2000, 2001, 2003b).

Map 8. Guano Creek-Sink Lakes Key Research Natural Area



Lakeview RMP/ROD

2015 GRSG ARMPA

Updated Vegetation Communities

The Guano Creek-Sink Lakes ACEC/RNA complex contains Wyoming big sagebrush/needle-and-thread (*Hesperostipa comata*) and low sagebrush/Sandburg's bluegrass scabland communities, as well as low elevation vernal ponds (aquatic ecosystem). Three vernal ponds (including Billy Burr Lake), which are dry playas in drought years and vernal pools during wet years, are present. The playas are ringed by silver sagebrush and the surrounding uplands contain low sagebrush/grasslands. The dry playa lake beds differ in their vegetative composition and may be dominated by tansy-leaf evening primrose (*Camissonia tanacetifolia*). The middle lake

is characterized as a silver sagebrush/Nevada bluegrass (*Poa nevadensis*) playa community. Common riparian vegetation occurs along portions of Guano Creek (BLM 2000, 2001, Vanderschaff 1992).

Rationale Supporting Proposed Management Changes

No management changes are proposed.

Environmental Consequences

Since there are no changes in grazing management proposed in this planning effort there would be no potential changes in environmental effects when compared to the Alternatives 1 and 2.

Lake Ridge (Vale)

Alternative 5 Proposed Management Changes

Retain Key RNA designation of the entire ACEC/RNA

Reduce the area excluded from grazing to 13 acres.

Affected Environment

The 3,857-acre Lake Ridge ACEC/RNA is located southeast of Juntura, Oregon, along Tim's Peak Road on a broad plateau dissected by steep canyons, with Tim's Peak rising to the north. A naturally occurring waterhole provides a perennial source of water. The ACEC/RNA is dominated by low sagebrush plant communities with both low sagebrush/bluebunch wheatgrass and low sagebrush/Idaho fescue present. Much of the ACEC/RNA is located in portions of both the Gold Creek and Camp Creek WSAs, where surface disturbing activities requiring reclamation are generally precluded until Congress makes a decision on Wilderness designation.

The Key RNA and area excluded from livestock grazing is in the Simmons Gulch pasture (55,402 acres) of the Harper allotment. There are six grazing authorizations (grazing permits) for the Harper allotment.

Specific management under the 2002 SEORMP ROD, as amended:

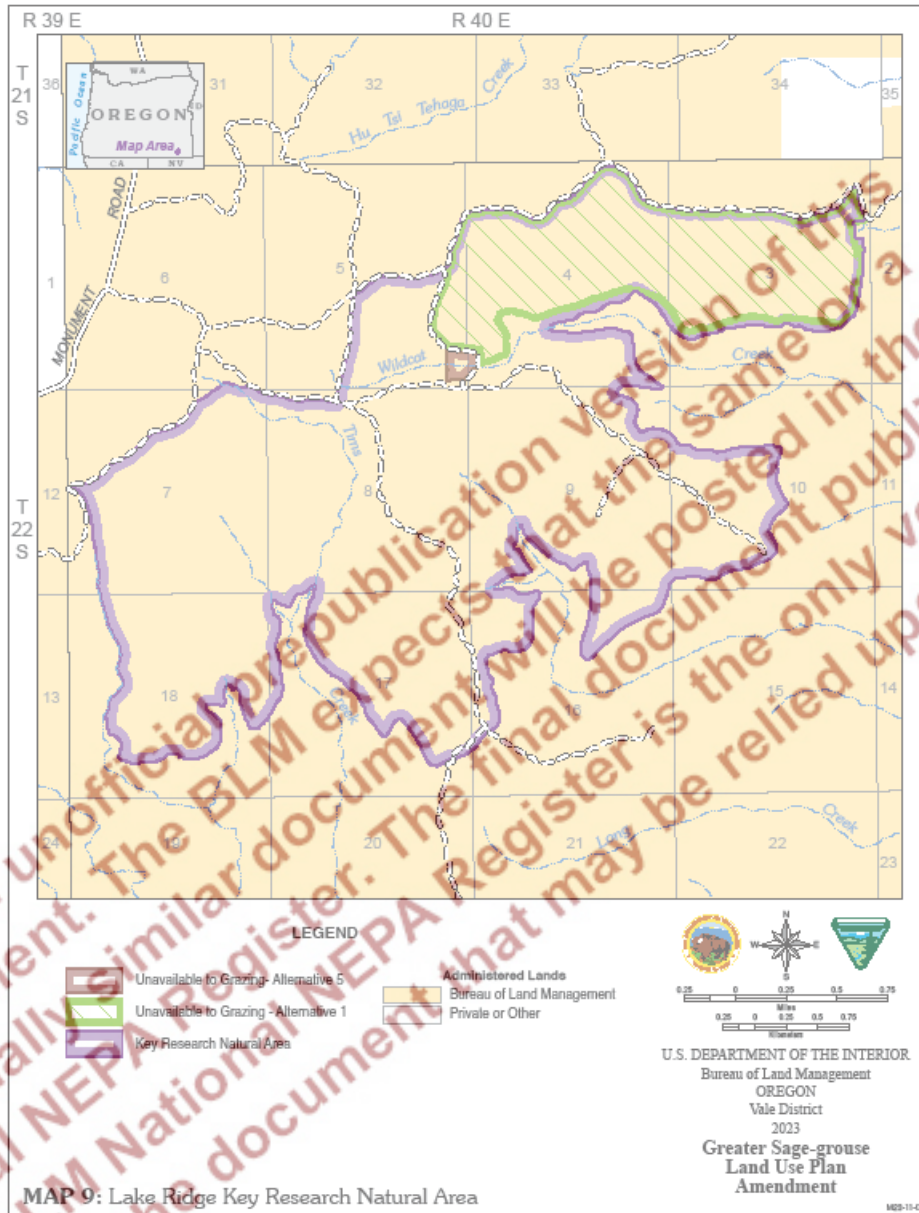
OHV use is limited to existing roads and trails. Plant collecting requires a permit. The entire area is managed under VRM Class I. Road maintenance will be limited to the existing roadway, and shoulder/barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. Leasable minerals activities will be open with special stipulations subject to seasonal/timing restrictions, restricted or no uses in avoidance areas for sage grouse. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if values will be maintained or enhanced. Existing livestock use will be adjusted where adverse impacts are identified using a variety of methods, that could include, but is not limited to, fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 SEORMP ACEC/RNA Designation:

The relevant and important values identified in this ACEC/RNA are the low sagebrush/bluebunch wheatgrass community and low sagebrush/Idaho fescue community vegetation cells identified by ONHP.

Map 9. Lake Ridge Key Research Natural Area



2015 GRSG ARMPA:

The Lake Ridge ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Vegetation communities represented in this ACEC/RNA include low sagebrush/bluebunch wheatgrass, low sagebrush/Idaho fescue, and silver sagebrush/Sandberg bluegrass plant associations.

Plant community types important for GRSG habitat continue to be present. These plant communities in this Key RNA are low sagebrush/bluebunch wheatgrass, low sagebrush/Idaho fescue, and silver

sagebrush/Sandberg bluegrass plant associations, and were observed to be present during site visits in 2023. These plant associations represent the Shallow-Dry Sagebrush community.

Other Resources or Issues

The visual resource management is Class I.

All but approximately 5% (180 acres) of the Key RNA overlaps WSAs. The remainder of the Key RNA (approximately 3,677 acres) is located within an area identified by BLM as possessing wilderness characteristics. The 2023 Proposed SEORMP Amendment (June, 2023) would prioritize the protection of the Prava Peak wilderness characteristics unit, which is contiguous with two adjacent WSAs.

The proposed 13-acre enclosure is wholly within the Prava Peak lands with wilderness characteristics unit OR-034-042. The 20,654-ac unit possesses naturalness and is contiguous with three WSAs, and shares their outstanding opportunities to experience solitude, and primitive unconfined recreation. Elevations range from about 4,140 to 5,690 feet (Monument Peak). Existing human imprints in the unit are: 14 earthen reservoirs, four developed springs, 23.2 miles of rangeland fence, one rangeland fenced enclosure, and 43.5 miles of 22 primitive route segments, all which appear substantially unnoticeable to the average visitor. Supplemental values in the unit include GRSG leks and their habitat. The Prava Peak OR-034-042 inventory documentation can be found at <https://www.blm.gov/programs/planning-and-nepa/plans-in-development/oregon-washington/vale-wci>.

The Camp Creek WSA consists of 19,200 acres. The northwestern portion of the WSA is characterized by tableland, while the rest of the WSA is dissected by steep canyons. The elevation ranges from 2,700 to 5,300 feet. The dominant vegetation on the tablelands is low sagebrush and bluebunch wheatgrass, with some bitterbrush and Idaho fescue. The canyon bottoms support pockets of riparian vegetation. The Key RNA is within GRSG PHMA and four occupied leks are within 4 miles, two of which are within 1.2 miles of the Key RNA.

The Key RNA is utilized by deer during spring and summer, pronghorn antelope year-round, and is designated as elk winter range.

Rationale Supporting Proposed Management Changes

Rationale for Retaining Key RNA:

The area continues to be in a desirable condition for the vegetative communities identified under the 2002 SEORMP and 2015 ARMPA; management will continue to protect the relevant and important values.

The Key RNA as identified in the 2015 ARMPA is predominately comprised of low sagebrush communities that provide suitable nesting and winter habitat for GRSG.

Values associated with the Shallow-Dry vegetation type would be retained.

Rationale for modifying the area excluded from grazing

A 13-acre enclosure area that would be excluded from livestock use is within the Key RNA but is located outside the WSA. The proposed enclosure is located and designed to avoid resource conflicts while still providing an undisturbed baseline reference area for the plant communities present. The enclosure would be located more than 1.2 miles from occupied or pending GRSG leks, and avoid potential conflicts resulting from fence construction within a WSA that could occur under Alternative 1.

Fence construction within a WSA requires careful consideration. Reallocating the area as available to livestock grazing would avoid impacts to wilderness characteristics in the Camp Creek WSA. Under Alternative 5, BLM proposes to allocate as unavailable to grazing a 13-acre area in the existing Key RNA, but to the west of the WSAs to meet the 2015 objectives for an undisturbed reference area. Construction of a new fence enclosure would be one way of achieving these objectives. The proposed area excluded from grazing and potential fence would be located in a Wilderness Characteristic unit that is prioritized for protection under the 2023 Proposed SEORMP Amendment; fencing would be constructed to limit or avoid impacts to the protected unit.

Environmental Consequences

Retaining the Lake Ridge Key RNA designation would continue to achieve the 2015 ARMPA objectives to monitor and – as a component of BLM’s 2002 SEORMP designation of the ACEC/RNA – provide opportunities to conduct appropriate research on the plant communities important for GRSG.

Fencing and potentially affected wildlife, including GRSG

If the enclosure is fenced, such fencing would be located more than 1.2 miles from occupied/pending leks, would not be considered a high risk for sage-grouse collisions, and would not negatively impact sage-grouse. However, removal of grazing from the 13-acre enclosure would not likely improve the habitat quality of the area, as it is currently in good ecological condition. Due to limited livestock presence or use occurring in the Key RNA boundary, vegetative communities that are important to GRSG habitat would continue to be present under both Alternatives 1 and 5. When compared to Alternative 1, impacts to wildlife, including sage-grouse, of reallocating livestock grazing under Alternative 5 would eliminate the need for additional presence of livestock operators for managing livestock away from unfenced boundaries.

Lands with Wilderness Characteristics

Because the 13-acre enclosure would be outside of the WSA under Alternative 5, the short-term and long-term impacts to the wilderness characteristics of naturalness, solitude, and primitive and unconfined recreation would be eliminated when compared with Alternative 1.

The proposed 13-acre enclosure that would be excluded from livestock grazing would be located in the Prava Peak wilderness characteristics unit which, under the 2023 Southeastern Oregon Proposed RMP Amendment (PRMPA) and Final Environmental Impact Statement (FEIS) is proposed for prioritized protection. Approximately one-half mile of new fence would be constructed in the Prava Peak wilderness inventory unit to create a 13-acre enclosure. If an enclosure fence is constructed, short term negative impacts to naturalness could be caused by the soil surface and vegetative disturbance associated with the construction. These impacts would be expected to fade within one to three years with new vegetation growth. Long-term negative impacts to naturalness would be the additional human imprint of the completed fence in the Prava Peak unit. However, design features to minimize impacts to lands with wilderness characteristics would be implemented. The addition of an enclosure fence would result in a minimal, long-term additional impact to the characteristic of naturalness within the Prava Peak unit. The extent of the additional fence—individually and collectively with the other existing human imprints present in the Prava Peak unit—would result in the Prava Peak unit, overall, still being affected primarily by the forces of nature with the imprint of man’s work being substantially unnoticeable to the average visitor.

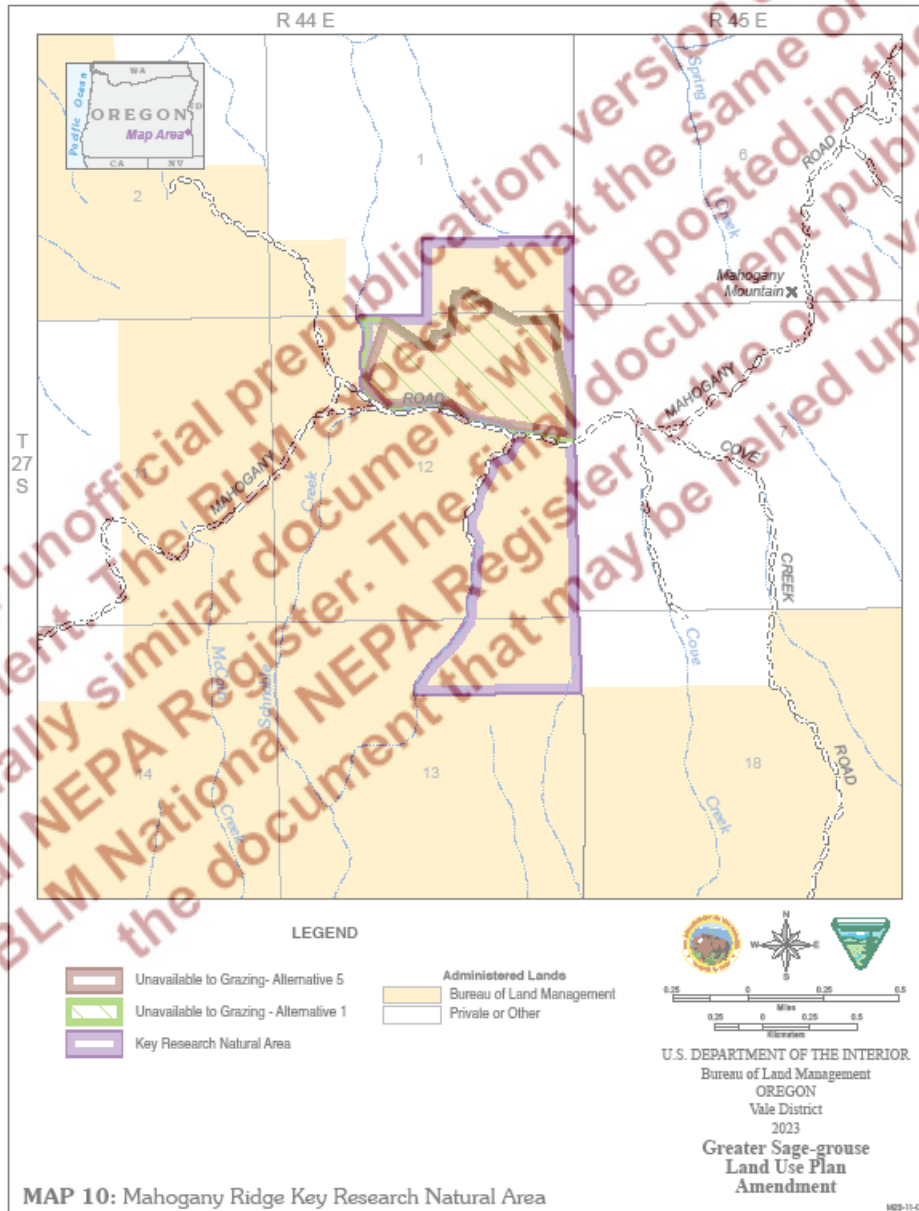
Mahogany Ridge (Vale - South Unit Only)

Alternative 5 Proposed Management Changes

Retain the Mahogany Ridge Key RNA boundary.

Reduce the area excluded from grazing from 155 acres to 140 acres. The 155-acre area excluded from grazing under the 2015 ARMPA would be modified to 140 acres to facilitate implementation of the grazing enclosure area.

Map 10. Mahogany Ridge Key Research Natural Area



Affected Environment

The 682-acre Mahogany Ridge ACEC/RNA is comprised of two areas; the Key RNA is limited to the southern unit (444 acres) and is located on the slope of Mahogany Mountain, west of U.S. Highway 95 and north of Jordan Valley, Oregon. The ACEC/RNA includes undisturbed stands of mountain mahogany on parcels of the northern and western slopes of Mahogany Ridge. It fills a vegetation cell need for mountain mahogany-sagebrush and mountain mahogany-Oregon grape complex identified by ONHP and includes a higher-elevation mountain big sagebrush mountain mahogany/slender wheatgrass-bluebunch wheatgrass community. The unit is bounded on the east and north by private land ownership.

The Mahogany Ridge ACEC/RNA is located within the East Mahogany pasture of the Mahogany Mountain Allotment.

Specific management under the 2002 SEORMP ROD, as amended:

OHV use will be limited to designated roads and trails. Road maintenance will be limited to the existing roadway, and shoulder/barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. The area is VRM Class II. Plant collecting requires a permit. Development of leasable minerals is subject to the No Surface Occupancy stipulation. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing use, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if values will be maintained or enhanced. Where adverse impacts are identified, existing livestock use will be managed using a variety of methods, including fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 Southeastern Oregon RMP (SEORMP) ACEC/RNA Designation:

The relevant and important values in the ACEC/RNA include habitat for the broad-tailed hummingbird and other neotropical migratory birds, a special status plant species (Owyhee clover), and the mountain mahogany-big sagebrush vegetation communities identified by ONHP.

2015 GRSG ARMPA:

The Mahogany Ridge ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Mountain mahogany/mountain big sagebrush woodland and lesser amounts of a mountain mahogany/Oregon grape (*Mahonia repens*) plant community are present on northerly slopes. Areas with mountain big sagebrush/Idaho fescue associations also occur in the Key RNA.

Vegetation communities represented in this Key RNA, that are important to GRSG habitat, continue to be present. These communities are mountain big sagebrush/Idaho fescue associations. These communities represent the Cool-Moist sagebrush community.

The mountain mahogany/mountain big sagebrush woodland and lesser amounts of a mountain mahogany/Oregon grape (*Mahonia repens*) plant communities in this Key RNA are not suitable habitat for sage-grouse because the dominant growth structure of mountain mahogany is more tree like, providing no

understory cover and providing perch opportunities for predators. These represent the Mountain Shrub vegetation community. However, no adjustments in the Key RNA boundaries, and only minor changes to the area excluded from grazing are proposed at this time.

The Key RNA is within PHMA and is part of the Cow Lakes Priority Area of Conservation. It is included within the boundary of sage-grouse spring nesting, summer brood-rearing, and winter habitat. The nearest occupied or pending lek and the only lek within 4 miles of the Key RNA is approximately 3.4 miles away.

Other Resources or Issues

The visual resource management category of the Key RNA is Class II.

With the exception of a boundary road between two wilderness characteristics units (The Tongue (OR-034-054) and Schnable Creek (OR-034-057)) the southern portion (444 acres) of the Mahogany Ridge Key RNA is within an area possessing wilderness characteristics. The area excluded from grazing under the 2015 ARMPA is wholly in The Tongue wilderness characteristics unit. Neither wilderness characteristics unit is proposed for prioritized protection under the 2023 Southeastern Oregon PRMPA and Final Environmental Impact Statement (FEIS).

The Mahogany Ridge Key RNA is located on the edge of bighorn sheep core herd range and is winter range for deer. It is utilized by deer and elk year-round. ODFW's Oregon Connectivity Assessment and Mapping Project (OCAMP) categorized this area as a Priority Wildlife Connectivity Area (PWCA) – Region. Regions are the top 1% of connectivity priorities and represent the highest-value habitat for facilitating species movement. In addition, this area has a priority Recommended Conservation Action of 'Protect', the strongest conservation measure for maintaining wildlife connectivity. Because of the limited number of mountain mahogany stands in southeast Oregon among an abundance of shrublands and grasslands, this KRNA is important nesting and migration habitat for neotropical migratory birds, as is highlighted in the relevant and important values identified in the 2002 ACEC/RNA designation.

Rationale Supporting Proposed Management Changes:

Rationale for Retaining Key RNA:

The area continues to be in a desirable condition for the updated vegetative communities identified under the 2015 ARMPA. Management will continue to protect the relevant and important values.

Sagebrush communities of the Key RNA provide for suitable nesting, brood-rearing and winter habitat for GRSG.

Site visits indicate that the vegetation types identified for the Key RNA designation in 2015 are present. The area retains the Cool-Moist Sagebrush and Mountain Shrub Vegetation Type.

Rationale for modifying the area excluded from grazing:

Under Alternative 5, 140 acres would be excluded from grazing to avoid or reduce resource conflicts, including Bighorn sheep migration and use, and to establish an administratively manageable location for a potential new fenceline. The location of the fenceline is proposed to facilitate construction and maintenance of the fence, limit the number of gates by avoiding road crossings, and minimize disturbance to resources.

Environmental Consequences

Fencing and GRSG

Construction of an enclosure fence could disturb nesting sage-grouse if construction occurs during the breeding season. However, the nearest pending or occupied lek is 3.4 miles away. Restricting activity during

the breeding season to 2 hours after sunrise to 2 hours before sunset would minimize any disturbance to any sage-grouse that may be present in the area. The location of the proposed fence was not modeled for sage-grouse collision risk since it is more than 1.2 miles from any leks. While sagebrush is present for nesting and forage, the Key RNA is in a V-shaped valley with rock outcrops and mountain mahogany stands that present perching locations for raptors, decreasing security for sage-grouse. Abundant habitat to the south and west of the Key RNA provides higher quality nesting and brood-rearing habitat, which is not represented in the area designed as a “Key RNA” under this and other alternatives. Thus sage-grouse collision risk in this valley is minimal.

Fencing and other potentially affected wildlife

Due to the physical location within the pasture of the Mahogany Ridge Key RNA and area allocated as unavailable to grazing, avoidance of excluding important water sources for livestock management and distribution, there would be no impacts to grazing as a result of retaining the Key RNA or the modification to the area that is unavailable to grazing.

The 1.0-mile fence surrounding the proposed enclosure area would have minor effects on the movement of big game through the area. The risk to big game movement would be minimized by using wildlife-friendly fence designs; big game would be able to move more easily under, over, and through the fence. Since this is an ODFW high priority PWCA, the addition of both white and black fence markers could increase fence visibility and reduce collision risk for both big game and birds. Constructing the fence would cause temporary disturbance to approximately 0.73 acres of upland habitat important to migratory birds. Minor damage to sagebrush within the disturbance area could destroy nesting habitat for a variety of birds, including sage-grouse and migratory birds. However, if a fence were constructed, it would be built by hand, which generally does not damage much vegetation, particularly with the modified boundary being adjacent to existing roads. If constructed during nesting season, some individuals could be displaced at the time, but the effects of 0.73 acres of temporary minor habitat disturbance to the overall population of migratory birds would be negligible.

Lands with Wilderness Characteristics

The modified location of the boundary of the area that is unavailable to grazing facilitates livestock grazing management and reduces impacts to wilderness characteristics. Impacts to wilderness characteristics in The Tongue units would be reduced with the smaller enclosure. Impacts to naturalness would occur, but be limited to near boundary roads or internal primitive trails. If management actions (e.g., herding) other than fence construction were employed to exclude livestock from the unavailable area, there would be no impact to naturalness. Outstanding Opportunities for Solitude would not be impacted as short-term impacts to solitude caused by fence construction and long-term impacts to solitude caused by active management to exclude livestock from Key RNA would not occur.

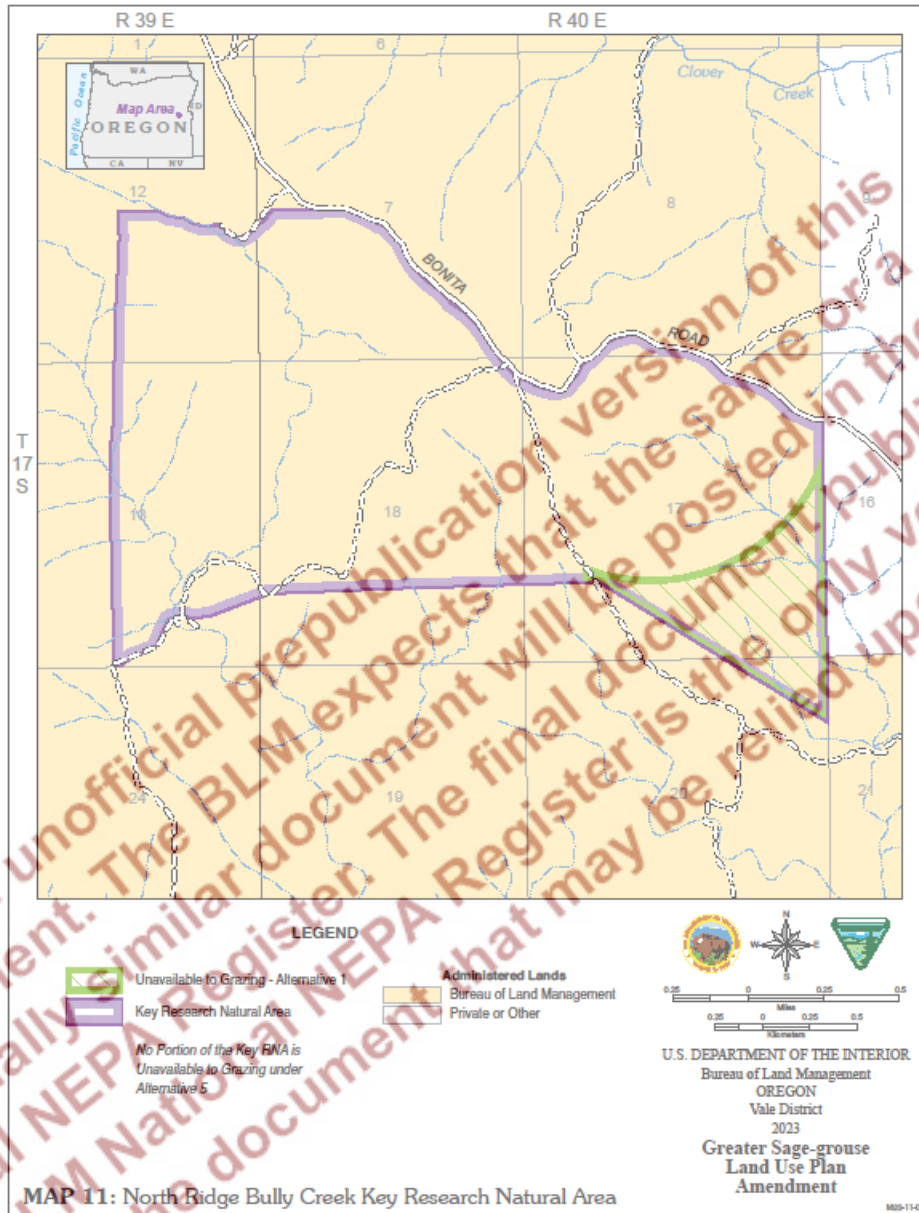
North Ridge Bully Creek (Vale)

Alternative 5 Proposed Management Changes

Retain the area designated as a Key RNA.

Reallocate all portions of the Key RNA as available to grazing

Map 11. North Ridge Bully Creek Key Research Natural Area



MAP 11: North Ridge Bully Creek Key Research Natural Area

Affected Environment

The 1,569-acre North Ridge Bully Creek ACEC/RNA is located west of Westfall, Oregon, along the ridge that separates Clover Creek drainage to the north and Bully Creek drainage to the south. The ACEC/RNA encompasses a number of grassland communities that occur both as distinct communities as well as intermixed within a larger mosaic of types.

A 164-acre area of the Key RNA is allocated as unavailable to livestock grazing. The Key RNA is wholly within the North Ridge pasture of the Richie Flat allotment.

Specific management under the 2002 SEORMP ROD, as amended:

OHV use is limited to existing roads and trails. Plant collecting requires a permit. The ACEC/RNA is VRM Class III. Road maintenance will be limited to the existing roadway, and shoulder/barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing outside of the current authorization, including time and intensity of use, would be analyzed through the appropriate process. Such analysis would evaluate impacts on the associated relevant and important values so that, if permitted, values would be maintained or enhanced. Existing livestock use will be adjusted where adverse impacts are identified using a variety of methods, including, but not limited to, fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation2002 Southeastern Oregon RMP (SEORMP) ACEC/RNA Designation:

The relevant and important values identified in this ACEC/RNA are the Wyoming big sagebrush/Thurber needlegrass community and big sagebrush-threetip sagebrush/Idaho fescue community vegetation cells identified by ONHP.

2015 GRSG ARMPA:

The North Ridge Bully Creek ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Wyoming big sagebrush/Thurber's needlegrass, Wyoming big sagebrush/wild crab apple (*Peraphyllum ramosissimum*)/bluebunch wheatgrass, and threetip sagebrush/bluebunch wheatgrass are common plant communities throughout the RNA.

Vegetative communities in this Key RNA and that are important to GRSG habitat continue to be present. These are Wyoming big sagebrush/Thurber's needlegrass, Wyoming big sagebrush/wild crab apple (*Peraphyllum ramosissimum*)/bluebunch wheatgrass, and threetip sagebrush/bluebunch wheatgrass. These communities represent the Cool-Moist/Warm-Dry Sagebrush Communities. The Key RNA is within GRSG PHMA and four occupied or pending leks are within 1.2 miles of the Key RNA boundary. The North Ridge Bully Creek ACEC/RNA burned in the 2012 Bonita Fire and the 2015 Bendire Fire removing much of the sagebrush present. The North Ridge Bully Creek ACEC/RNA was aerially sprayed with the preemergent herbicide imazapic in October 2015, after the Bendire, fire to reduce invasive annual grasses in the area.

Other Resources

The visual resource management is Class III.

The Key RNA is utilized by deer during spring and summer, pronghorn antelope year-round, and is designated as elk winter range.

*Rationale Supporting Proposed Management Changes:*Rationale for Retaining Key RNA:

The area continues to be in desirable conditions for the vegetative communities identified, and management will continue to protect the relevant and important values. Vegetative communities important to GRSG are present within the Key RNA boundaries, although shrub components have been impacted by past wildfires.

Management would retain identified vegetation community for research purposes.

Sagebrush communities of the Key RNA provide for suitable nesting, brood-rearing and winter habitat for Greater Sage-grouse.

Continued management would retain the Ecotone between Cool-Moist/Warm-Dry vegetation types.

Research opportunities continue to remain due to the remote and rugged nature of the area, as well as limited use by livestock throughout the Key RNA.

Rationale for reallocating the area as available to livestock grazing:

Implementation of a constructed boundary (e.g., fencing) to exclude livestock grazing or strategic placement of supplements to focus livestock use away from the area allocated as unavailable to livestock grazing under the 2015 ARMPA conflict with RDFs identified in Appendix C of the 2015 ARMPA (1.2 miles to occupied and pending lek for construction of new infrastructure and placement of supplement greater than 1.2 miles from an occupied lek, Livestock Grazing RDFs 1 and 7). Nor would such actions provide equal or better protection for GRSG or its habitat (BLM 2015b, Appendix C, p. C-1).

Allocating the area as available to livestock grazing would allow for the continuation of proper livestock distribution throughout the North Ridge pasture of the Richie Flat allotment. Livestock management prior to the 2015 ARMPA (Alternative 1) has not had a negative impact on the relative and important values identified for the RNA.

Environmental Consequences

Under Alternative 5, allocating the area as “available to livestock grazing” would allow for the continuation of proper livestock distribution throughout the North Ridge pasture of the Richie Flat allotment. Livestock management prior to the 2015 ARMPA has not had a negative impact on the relative and important values identified for the RNA. Compared to Alternative 1, increased presence and time and resources for managing livestock in the area would not be necessary and the potential impacts to other resource values and livestock grazing management for the area reallocated as available for livestock grazing would not occur.

Fencing and potentially affected wildlife, including GRSG

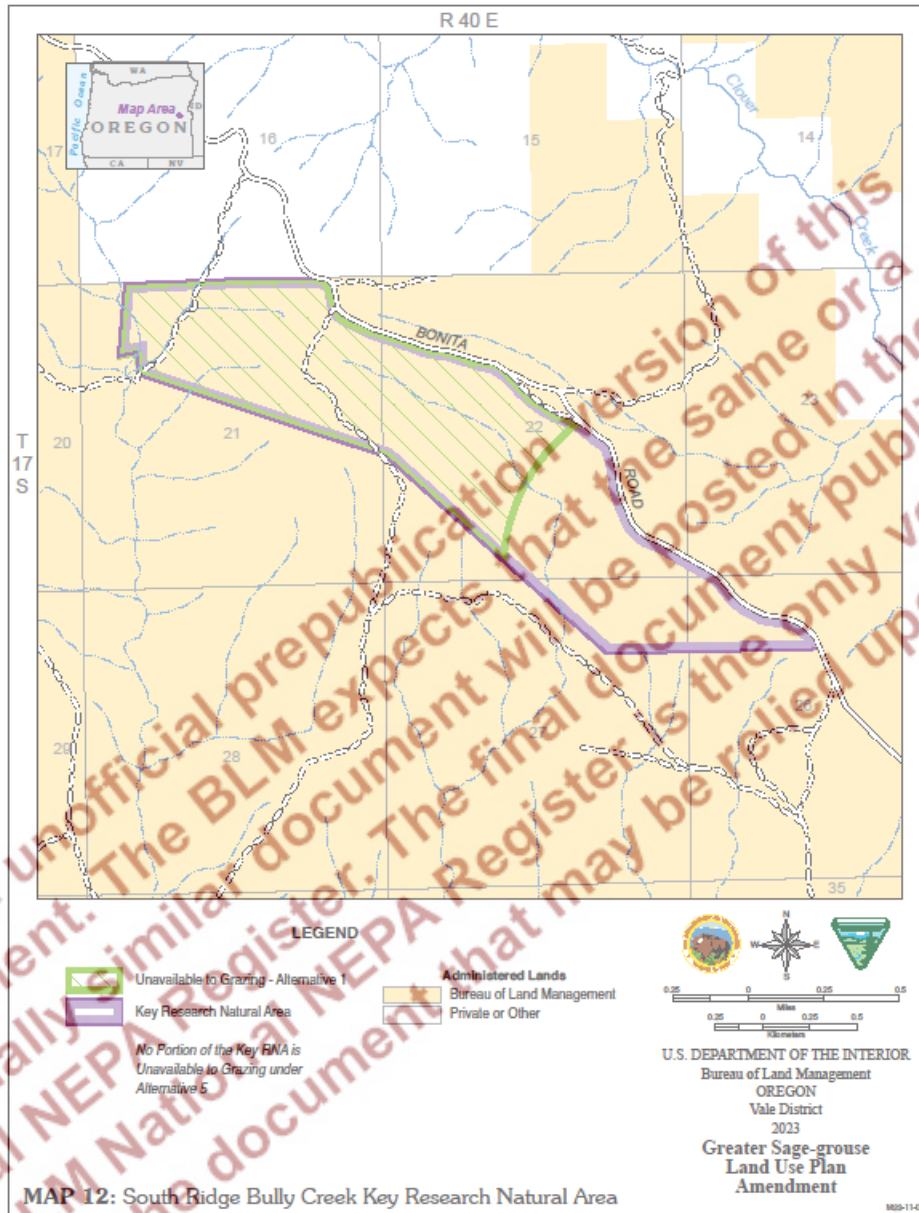
Impacts to wildlife, including sage-grouse, of reallocating livestock grazing under Alternative 5 would eliminate the need for additional presence of livestock operators for managing livestock away from unfenced boundaries. Vegetative communities that are important to GRSG habitat would continue to be present under both Alternative 1 and Alternative 5.

South Ridge Bully Creek (Vale)*Alternative 5 Proposed Management Changes*

Retain the area designated as a Key RNA.

Reallocate all portions of the Key RNA as available to grazing.

Map 12. South Ridge Bully Creek Key Research Natural Area



Affected Environment

The 621-acre South Ridge Bully Creek ACEC/RNA is located west of Westfall, Oregon, along the ridge that separates Clover Creek drainage to the north and Bully Creek drainage to the south. The ACEC/RNA encompasses a number of grassland communities that occur as distinct entities intermixed within a larger mosaic of types in excellent ecological condition.

The South Ridge Bully Creek Key RNA and 397-acre area excluded from livestock grazing occurs within the South Ridge pasture of the Richie Flat allotment. The Key RNA is adjacent to the North Ridge Bully Creek Key RNA and North Ridge Bully Creek pasture.

Specific management under the 2002 SEORMP ROD, as amended:

OHV use will be limited to existing roads and trails. Plant collecting requires a permit. The ACEC/RNA is managed as VRM Class III. Road maintenance will be limited to the existing roadway, and shoulder/barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if values will be maintained or enhanced. Where adverse impacts are identified, existing livestock use will be adjusted using a variety of methods that could include fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation2002 Southeastern Oregon RMP (SEORMP) ACEC/RNA Designation:

The relevant and important values of the ACEC/RNA are the Wyoming big sagebrush/Thurber needlegrass community and Wyoming big sagebrush- wild crab apple (*Peraphyllum ramosissimum*)/Idaho fescue community vegetation cells identified by ONHP.

2015 GRSG ARMPA:

The South Ridge Bully Creek ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Vegetation communities represented in this Key RNA include Wyoming big sagebrush/Thurber's needlegrass, a Wyoming big sagebrush/wild crab apple/Idaho fescue, and threetip sagebrush/blue bunch wheatgrass (Idaho fescue) plant association.

Vegetative communities in this Key RNA and that are important to GRSG habitat continue to be present. These are Wyoming big sagebrush/Thurber's needlegrass, a Wyoming big sagebrush/wild crab apple/Idaho fescue, and threetip sagebrush/blue bunch wheatgrass (Idaho fescue) plant association. These communities represent the Cool-Moist/Warm-Dry Sagebrush Communities. The Key RNA is within GRSG PHMA and two occupied or pending leks are within 1.2 miles of the Key RNA boundary. The South Ridge Bully Creek ACEC/RNA burned in the 2012 Bonita Fire and the 2015 Bendire Fire removing much of the sagebrush present. The South Ridge Bully Creek ACEC/RNA was aerially sprayed with the preemergent herbicide imazapic in October 2015 after the Bendire fire to reduce invasive annual grasses in the area.

Other Resources

The visual resource management is Class III.

The Key RNA is utilized by deer during spring and summer, pronghorn antelope year-round, and is designated as elk winter range.

Rationale Supporting Proposed Management Changes:Rationale for Retaining Key RNA:

The area continues to be in a desirable condition for the vegetative communities identified; management will continue to protect the relevant and important values. Vegetative communities important to GRSG are present, although shrub components have been impacted by past wildfires.

Retain identified vegetation community Key RNA designation for research purposes.

Sagebrush communities of the Key RNA provide for suitable nesting, brood-rearing and winter habitat for GRSG.

Continued management would retain the Ecotone between Cool-Moist/Warm-Dry vegetation types.

Rationale for reallocating the area as available to livestock grazing:

Allocating the area as available to livestock grazing would allow for the continuation of management practices which resulted in proper livestock management throughout the South Ridge pasture of the Richie Flat allotment, while continuing to allow for research opportunities.

Implementation of a constructed boundary (e.g., fencing) to exclude livestock grazing or strategic placement of supplements to focus livestock use away from the area allocated as unavailable to livestock grazing under the 2015 ARMPA conflict with RDFs identified in Appendix C of the 2015 ARMPA (1.2 miles to occupied and pending lek for construction of new infrastructure and placement of supplement greater than 1.2 miles from an occupied lek, Livestock Grazing RDFs 1 and 7). Nor would such actions provide equal or better protection for GRSG or its habitat (BLM 2015b, Appendix C, p. C-1). Limited livestock access is expected to occur without construction of new fencing, which would not be in conformance with the 2015 ARMPA.

Environmental Consequences

Under Alternative 5, allocating the area as “available to livestock grazing” would allow for the continuation of management practices prior to 2023, which resulted in proper livestock management for throughout the South Ridge pasture of the Richie Flat allotment, while continuing to allow for research opportunities. Compared to Alternative 1, livestock operators would not need to increase their presence in the area where livestock use would no longer be allocated.

Fencing and potentially affected wildlife, including GRSG

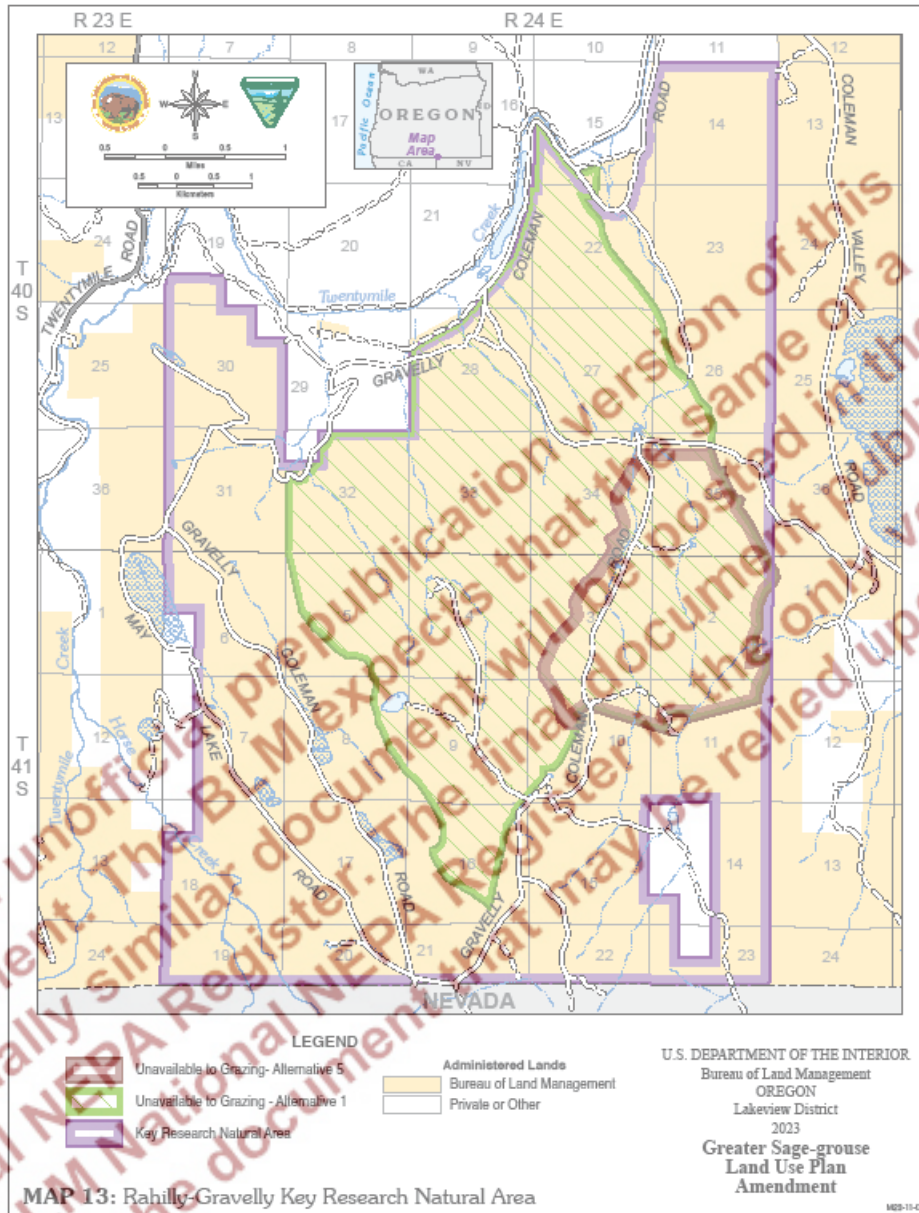
Impacts to wildlife, including sage-grouse, of reallocating livestock grazing under Alternative 5 would eliminate the need for additional presence of livestock operators for managing livestock away from unfenced boundaries. No additional fencing would be constructed that may result in short-term disturbance to individuals and fence related conflicts (e.g. bird collisions and entrapments). Vegetative communities that are important to GRSG habitat would continue to be present under both Alternatives 1 and 5.

Rahilly-Gravelly (Lakeview)

Alternative 5 Proposed Management Changes

Retain the Key RNA designation for the entire ACEC/RNA but reduce the area excluded from livestock grazing to 2,025 acres within a portion of the Sucker Creek Pasture (Rahilly-Gravelly Allotment) that contains low sagebrush/Sandberg's bluegrass grassland and Wyoming big sagebrush/bluebunch wheatgrass grassland plant communities.

Map 13. Rahilly-Gravelly Key Research Natural Area



Affected Environment

The 18,734-acre Rahilly-Gravelly ACEC/RNA is located about 24 miles southeast of Lakeview.

Specific management under the Lakeview RMP/ROD

OHV use is limited to existing roads and trails.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

Lakeview RMP/ROD

The 18,734-acre Rahilly-Gravelly ACEC/RNA was designated in the Lakeview RMP/ROD to protect relevant/important natural system (plant communities) and cultural resource values (BLM 2000, 2001, 2003b).

During the development of the *Lakeview RMP/ROD* (BLM 2003b), the BLM expanded the Rahilly-Gravelly ACEC/RNA (from the original 1,400-acre proposal to over 18,700 acres solely to include significant cultural values in the added acreage. These site types included stone rings, rock art, lithic scatters, rock cairns, hunting blinds, and occupation sites (BLM 2000, p. III-33 to III-34; 2003a, p. 2-55).

2015 GRSG ARMPA

The Proposed RMPA/Final EIS described the plant communities of the Rahilly-Gravelly ACEC/RNA as containing important sage-grouse plant communities including western juniper/Wyoming big sagebrush-bitterbrush woodland and some unusual shrublands described by the Oregon Biodiversity Information Center (ORBIC), such as a mountain big sagebrush/bitterbrush/wild crab apple and a mountain big sagebrush/bitterbrush/mountain snowberry/Thurber's needlegrass shrubland. The ACEC/RNA also contains Wyoming big sagebrush/bunchgrass, bluebunch wheatgrass, Thurber's needlegrass, and Sandberg's bluegrass associations, as well as areas of low sagebrush/grassland vegetation types (BLM 2015a, p. 3-142).

Updated Vegetation Communities

Approximately 1,400 acres of this ACEC/RNA contains the plant communities identified in the 2015 ARMPA and they are located within the Nevada Pasture (Vander Schaaf 1992; BLM 2000, p. III-33), not within the original (Alternative I) exclosure area in the Sucker Creek Pasture. The Sucker Creek Pasture is the portion of the RNA with GRSG habitat and documented GRSG use.

Based on ESI data, the most dominant vegetation communities in the Rahilly-Gravelly ACEC/RNA include low sagebrush/Sandberg bluegrass, big sagebrush/cheatgrass, big sagebrush/Sandberg bluegrass, big sagebrush with no understory, and mountain big sagebrush/bluegrass. However, no mountain big sagebrush/bitterbrush/mountain snowberry/Thurber's needlegrass shrubland communities are present. In addition, western juniper is encroaching into, and degrading the habitat quality of the Wyoming big sagebrush/bitterbrush, big sagebrush, and some of the low sagebrush communities within the ACEC/RNA.

There are some cocklebur species (*Xanthium* sp.) and Canada thistle located around spring and water developments in the Rahilly-Gravelly Key RNA. Many of these sites are located in areas that already exclude livestock grazing. This RNA also has a documented site of Mediterranean sage (*Mediterranean sage*) that is a high management priority for containment/control.

The BLM sensitive plant species, Cooper's goldflower (*Hymenoxys cooperi* var *canescens* ~ *H. lemmonii*), occurs in four places within the ACEC/RNA (BLM 2000a). Cooper's goldflower grows in rocky soils in arid regions from southern California to New Mexico, north as far as Idaho and Oregon. Not much is known about the life history requirements of this species.

Other Resources

Small riparian/wetland areas occur around Terry Spring, Spearpoint Spring, several livestock water developments, and short reaches of Sucker Creek (BLM In Prep).

The Rahilly-Gravelly Key RNA lies within the Warner-Meizner mid-scale HAF, and the Warner fine-scale HAF boundaries, but is part of the Beaty PAC. The entire RNA is classified as PHMA and nearly all the area is mapped as seasonal breeding, summer, and winter sage-grouse habitat. Telemetry data collected across several years has documented spring, summer, and winter use within much of the Key RNA including the Sucker Creek Pasture (unpublished data). As of 2022 lek surveys, there were 3 occupied and 4 unoccupied leks within the Sucker Creek Pasture.

Juniper areas provide habitat for woodland nesting species and cover for big game, while the shrubland/grassland areas provide habitat and forage for sage-steppe associated species. The area includes mule deer winter range, bighorn sheep occupied habitat, and pronghorn winter range and migration (BLM In Prep.).

The Twelvemile-Horse Creek (OR-015-157 and CA-020-1005; 24,081 acres) and Sucker Creek (OR-015-120A; 7,118 acres) wilderness characteristics units overlap portions of the Key RNA.

The Rahilly Gravelly ACEC/RNA is managed as VRM Class III.

The Rahilly-Gravelly ACEC/RNA falls within the 33,571-acre Rahilly-Gravelly (00212) Allotment.

Rationale supporting Proposed Management Changes:

Portions of the original enclosure boundary (Alternative 1) were based on property lines that traversed terrain/topography (e.g., steep slopes, rocky surfaces) where the BLM determined, based on further analysis and field inventory, it would be difficult to construct enclosure fencing. The modified enclosure boundary would take advantage of existing topographic barriers (e.g. steep rims) and reduce the amount of fencing needed within sage-grouse habitat from an estimated 4.7 miles (under Alternative 1) to about 2.5 miles and move fencing further away from two occupied leks.

During the development of the *Lakeview RMP/ROD* (BLM 2003b), the BLM expanded the Rahilly-Gravelly ACEC/RNA (from the original 1,400-acre proposal to over 18,700 acres to include significant cultural values in the surrounding area. Not all of the plant communities described in 2015 ARMPA occur within the (Alternative 1) area excluded from grazing (Sucker Creek Pasture) or represent plant communities that are important Sage-Grouse habitat. There is no data supporting presence of a mountain big sagebrush/bitterbrush/mountain snowberry/Thurber's needlegrass shrubland anywhere in the Key RNA. The proposed enclosure area in the Sucker Creek Pasture contains Wyoming big sagebrush and low sagebrush plant communities.

Environmental Consequences

Alternative 5 would add about 2.5 miles of new fencing within two wilderness characteristics inventory units. This new fence would be noticeable within close proximity but would not be substantially noticeable across the units as a whole. The removal of grazing under this alternative would have minor positive impacts to vegetation communities and naturalness within the enclosure. This fence would not diminish the size of the units or cause the units to no longer meet the minimum wilderness characteristics criteria. For this reason, this alternative would comply with the 2010 Settlement Agreement (BLM 2010b) (BLM In prep.).

Making the Rahilly-Gravelly ACEC/RNA unavailable to grazing use could help protect the relevant and important values by eliminating soil and vegetation disturbance in a portion of the Key RNA. This would allow natural succession processes to occur in the absence of most human-caused disturbances and provide an area for future baseline monitoring and research purposes.

Native plant communities and soils within the proposed enclosure would no longer be subject to livestock grazing or trampling effects. The effects of heavy cattle grazing and trampling/compaction around five existing livestock water sources (100 acres) could be removed and the native vegetation and soils would improve in these areas over the long-term. However, the 2.5 miles of new enclosure fence would result in additional cattle trampling/trailing along the new fence. About 1.5 acres of native plant communities and soils would be impacted. In total there would be about 100 acres of improvement in native vegetation and soils offset by about 1.5 acres of new disturbance within the Key RNA.

If an enclosure fence were constructed, subsequent livestock trailing along the fence would create new ground disturbance within an area that has been relatively undisturbed in the past. There would be an increased potential risk of introducing new noxious weeds/invasive species into native communities during fence construction. However, the risk of weed introduction or expansion would be slightly less than Alternative 1 due to less proposed enclosure fence building, livestock trailing, and associated ground disturbances. While no special status plants were located within the proposed enclosure fence alignment and there would be no direct impacts to such species, the new disturbance would represent an area of potential cheatgrass invasion/expansion that could potentially impact the Cooper's goldflower in some portion of the enclosure over the long-term.

There would be less total fencing and less high-risk fence and associated wildlife impacts than under Alternative 1 as portions of natural rim rock would be used as part of the barrier. The western and northern portions of the fence would be moved further away from two occupied leks and the western fence would not be located in open terrain. High-risk fencing would include anti-strike markers and appropriate fence post spacing to reduce the potential collision risk. All of these design measures would decrease the risk of future collision by sage-grouse when compared to Alternative 1. There would be a loss of about 2,025 acres available for grazing use in the Sucker Creek Pasture, representing an estimated reduction of 144 AUMs. While this reduction in AUMs would be less than the amount proposed under Alternative 1 (586 AUMs), it would represent about 8.7% of the permitted AUMs for the Rahilly Gravelly Allotment, and could not be absorbed by spreading the AUMs across the other pastures of the allotment.

Visual Resources

A fenced enclosure would negatively affect existing visual quality, but would meet VRM Class III objectives.

The loss of AUMs from the pasture would likely represent a direct negative impact to the permittee, as they would have to reduce the number of cattle they could graze on the allotment (reduce herd size), find alternative pasture (if available and economically feasible), increase the amount of time they provide feed on their base property, or some combination of the three (BLM 2018, p 4-19). There may be additional costs involved with these alternatives that would also adversely impact the permittee.

Compared to Alternative 1 the permittee would not experience as much additional forage costs or experience as high a loss in livestock production and associated revenue but these effects may still be significant to the individual permittee's operation.

The proposed enclosure boundary would avoid several existing livestock water sources and reduce the need to mitigate for lost livestock watering sites when compared to Alternative 1 (BLM In prep.).

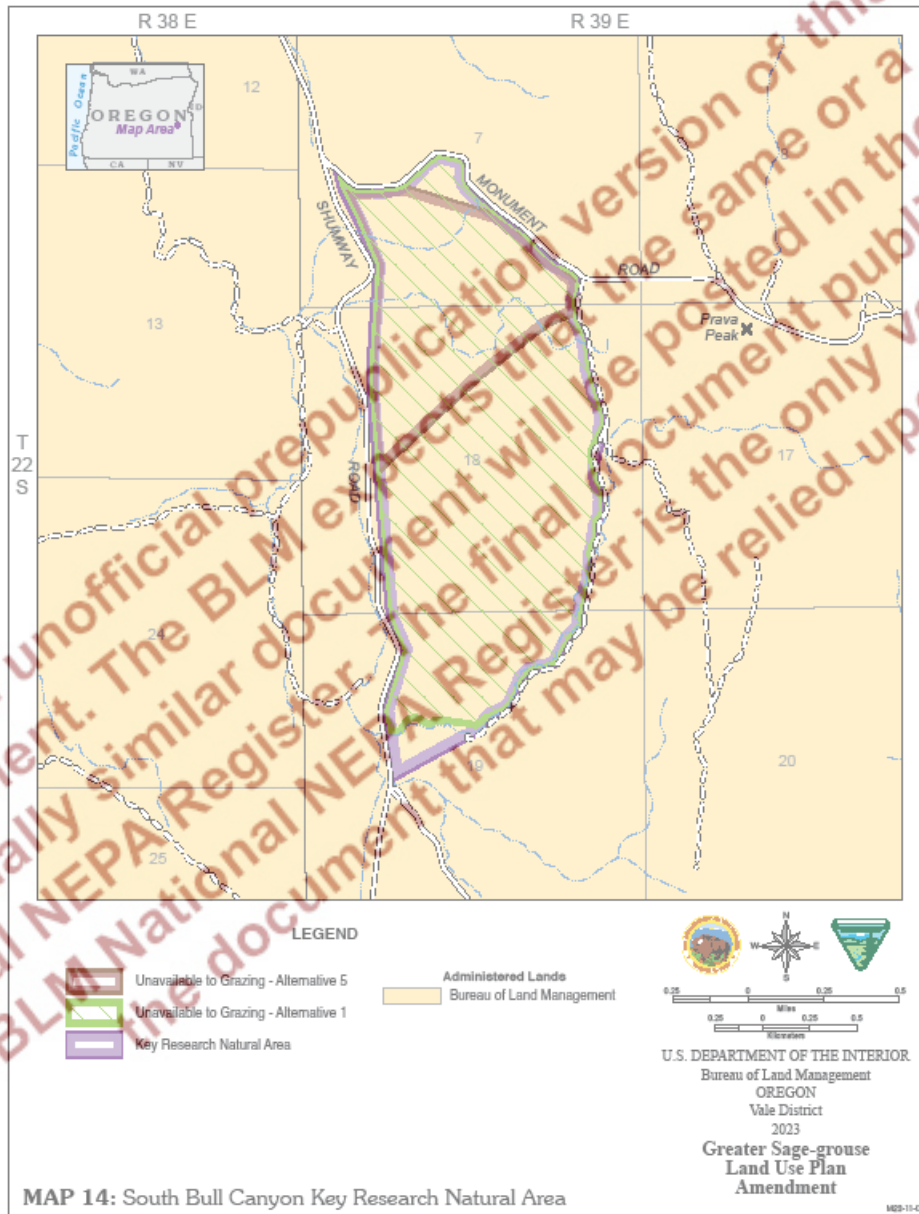
South Bull Canyon (Vale)

Alternative 5 Proposed Management Changes

Retain the designated Key RNA.

Reduce the area excluded from grazing to 257 acres.

Map 14. South Bull Canyon Key Research Natural Area



Affected Environment

The 770-acre South Bull Canyon ACEC/RNA is located south of the Malheur River, approximately six miles to the southeast of Juntura, Oregon, along the road that leads to Creston and Turnbull lakebeds. The landscape consists of a series of small drainages off of a low north-south ridge with relatively deep soils and

large surface rocks. The gently sloped hills are covered by a mix of plant communities in generally late seral conditions. The ACEC/RNA includes a range of vegetation communities and their subtle variations across the landscape. The Key RNA is located wholly within the 20,315-acre Prava Peak wilderness characteristics unit that is proposed for prioritized protection of those wilderness values under the Southeastern Oregon Proposed RMP Amendment (2023). South Bull Canyon ACEC/RNA is managed for visual resources as VRM Class III, but may become VRM Class II under the Southeast Oregon Proposed RMP Amendment.

The South Bull Canyon Key RNA and 749-acre area² excluded from livestock grazing occurs within the Upper Field pasture of the Boney Basin allotment. The terrain in the South Bull Canyon Key RNA has a number of hills and drainage features scattered throughout the 749 acres allocated as unavailable for livestock use. There are two livestock watering developments within the portion of the Key RNA excluded from livestock grazing, and another three water developments bordering on or directly adjacent to that unavailable area.

Specific management under the 2002 SEORMP ROD, as amended:

The area is VRM Class III. OHV use will be limited to designated roads and trails. Road maintenance will be limited to the existing roadway, and shoulder/barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. The area will be closed to saleable minerals development, while remaining open for leasable and locatable minerals. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if values will be maintained or enhanced. Existing livestock use will be adjusted where adverse impacts are identified using a variety of methods, including but is not limited to, fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 SEORMP ACEC/RNA Designation:

The relevant and important value of the ACEC/RNA is the big sagebrush-antelope bitterbrush/Idaho fescue vegetation cell as identified by ONHP.

2015 GRSG ARMPA

The South Bull Canyon ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Wyoming big sagebrush-antelope bitterbrush/Idaho fescue plant association is represented in the South Bull Canyon ACEC/RNA.

² The South Bull Canyon ACEC/RNA was originally identified in the 2002 SEORMP ROD as containing 792 acres of public lands in the Malheur Field Office; the entire RNA was designated in the 2015 ARMPA as a Key RNA, of which 747 acres were allocated as unavailable to grazing. The original boundary was updated on the west to the existing pasture boundary (fenceline) and on the north and east to the existing primitive route. This adjustment resulted corrected the total acres in the ACEC/RNA to 770 acres. The adjustment also increased by two acres to 749 the area allocated as unavailable to grazing.

Vegetative communities in this Key RNA that are important to GRSG habitat continue to be present. These are Wyoming big sagebrush-antelope bitterbrush/Idaho fescue plant association. This community represents the Cool-Moist Sagebrush community. The southern portion of the South Bull Canyon ACEC/RNA burned in the 2016 Sheep Rock Fire. Due to the reduced abundance of these species post fire, 176 acres in the burned area was planted in the fall of 2017 with sagebrush and bitterbrush seedlings during Emergency Stabilization and Rehabilitation efforts. The entire South Bull Canyon ACEC/RNA was aerially treated with the preemergent herbicide imazapic in 2022 to reduce invasive annual grasses in the area.

The Key RNA is within PHMA and is in the Crowley Priority Area of Conservation. There are two occupied leks within 1.2 miles of the Key RNA; seven occupied leks within two miles; and nine occupied and one pending lek within four miles of the Key RNA.

Other Resources

The South Bull Canyon Key RNA is wholly within the Prava Peak (OR-034-042) lands with wilderness characteristics unit and is located in the northwest corner of the Prava Peak unit. The 20,654-acre unit possesses naturalness and is contiguous with three WSAs, and shares their outstanding opportunities to experience solitude, and primitive unconfined recreation. Elevations range from about 4,140 to 5,690 feet (Monument Peak). Existing human imprints in the unit are: 14 earthen reservoirs, four developed springs, 23.2 miles of rangeland fence, one rangeland fenced enclosure, and 43.5 miles of 22 primitive route segments, all of which appear substantially unnoticeable to the average visitor. Supplemental values in the unit include GRSG leks and their habitat. The Prava Peak unit may be prioritized for protection of the wilderness characteristics under the 2023 Southeastern Oregon PRMPA.

The visual resource management designation of the Key RNA is Class III under existing management, but may be designated as Class II under the Southeastern Oregon PRMPA.

The Key RNA is utilized by mule deer during spring and summer, pronghorn antelope year-round, and is designated as elk winter range. This area is not classified as an ODFW PWCA. Many migratory birds nest in the area, including many sagebrush obligates such as Brewer's sparrow and sagebrush sparrow, as well as other sagebrush-associated species such as golden eagles and loggerhead shrikes. Many more bird species move through the area during migration. Although habitat potential exists for pygmy rabbits, no known populations exist here.

Rationale Supporting Proposed Management Changes:

Rationale for Retaining Key RNA:

The area continues to be in a desirable condition for the vegetative communities identified; management would continue to protect the relevant and important values. Vegetative communities important to GRSG are present, although shrub components have been impacted by past wildfires.

Allocating the 513-acre area as available to livestock grazing would allow for the continuation of proper livestock distribution in the Upper Field pasture of the Boney Basin allotment.

Management would retain the ONHP-identified vegetations communities identified as relevant and important and the cool/moist vegetation communities identified under the 2015 ARMPA that are important for sage-grouse and for research purposes.

Sagebrush communities of the Key RNA provide for suitable nesting, brood-rearing and winter habitat for GRSG.

Rationale for modifying the area excluded from grazing:

The proposed, 257-acre livestock enclosure, still within the Key RNA, would locate fencing greater than 1.2 miles from occupied or pending GRSG leks. This fencing would be constructed by hand.

The enclosure would also reduce the amount of fencing in the wilderness characteristics unit. Reallocating livestock grazing to the remaining, unenclosed area of the Key RNA would reduce the impacts to wilderness characteristics from fence construction or non-infrastructure methods (e.g., new terms and conditions of the grazing permit that the permittee manage livestock to avoid incursion). Naturalness would not be impacted because new fence construction would not occur. Outstanding Opportunities for Solitude and unconfined primitive recreation would not be impacted as short-term impacts to solitude caused by fence construction and long-term impacts to solitude and primitive unconfined recreation caused by active management to exclude livestock from Key RNA would not occur. Either means of excluding livestock from the 257-acre enclosure area would comply with the 2023 SEOR PRMPA. The enclosure would enable the BLM to exclude livestock while retaining opportunities for research designs that include control areas where livestock grazing is removed. Research opportunities would continue to remain due to the remote and rugged nature of the area, as well as limited use by livestock throughout the Key RNA. This Key RNA has one vegetation community present Wyoming big sagebrush-antelope bitterbrush/Idaho fescue plant association, this community is present in the smaller enclosure area. The smaller enclosure excludes the portion of the Key RNA that burned in 2016 and was planted with bitterbrush and sagebrush. The seed source for the plants is not from the vegetation within or directly adjacent to the Key RNA. The genetics are therefore different and may not represent the local genetics and could impact a research study.

Environmental ConsequencesFencing and other potentially affected wildlife, including GRSG

Under Alternative 5, allocating a portion of the area as “available to livestock grazing” would allow grazing on 513 acres of the Key RNA and allow for the continuation of proper livestock distribution in the Upper Field pasture of the Boney Basin allotment. If the 257-acre area identified to be unavailable for livestock grazing is fenced, impacts to livestock management would be minimized as available water sources would remain available for use, which allows for proper livestock distribution throughout the remaining portions of the Upper Field pasture. If the area is not fenced, then livestock management would be negatively affected as additional presence and resources of the grazing operator would be required in order to keep livestock out of the unfenced area. Impacts of increased management as a result of not fencing the 257-acre area unavailable to livestock grazing would be similar to Alternative 1.

A 1.85-mile fence surrounding the proposed enclosure would have minor effects on the movement of big game through the area. The Oregon Conservation Assessment Mapping Program did not consider this area a high priority for wildlife movement, and therefore it was not designated as a PWCA. The risk to big game movement would be minimized by using wildlife-friendly fence design, as big game would be able to move more easily under, over, and through the fence. Constructing the fence would cause temporary disturbance to approximately 1.34 acres of migratory bird habitat. Minor damage to sagebrush within the disturbance area could destroy nesting habitat, but fence construction by hand – particularly where the new fence construction is along the existing boundary road for the Key RNA - generally doesn’t damage much vegetation. If constructed during nesting season, some individuals could be displaced at the time, but the effects of approximately 1.34 acres of temporary minor habitat disturbance to the overall population of migratory birds would be negligible.

Similar to migratory birds, if a fence is constructed during breeding or nesting season it could disturb sage-grouse nesting habitat or temporarily displace nesting sage-grouse. Minor damage to sagebrush could occur but fence construction by hand generally doesn't damage much vegetation. Restricting activity during those months to 2 hours after sunrise to 2 hours before sunset would minimize this disturbance. The proposed fence is not modeled as high collision risk for sage-grouse. However, if monitoring suggests collisions could occur, anti-strike fence markers would be added to further reduce the risk.

Returning grazing to the remaining 513 acres of the Key RNA would not cause measurable impacts to big game or migratory birds. No sage-grouse leks are located within the reallocated area and therefore this would not contribute to more livestock presence on leks.

The Long-term negative effects to naturalness caused by the addition of 1.85 miles of fence would be the additional human intrusions in the Prava Peak wilderness characteristics unit. If encounters with visitors occur during construction of the proposed fence, they may be temporarily disruptive to visitors who may be in the proximity, but this adverse impact would be brief.

The VRM in the project area is Class III. As a result of no fencing, there would be no impacts to scenic values within VRM Class III areas.

The Vale District BLM does not anticipate that there would be any loss or reduction to AUMs within the pasture due to the 257-acre enclosure. The majority of forage available to livestock, as well as reliable watering sources, are located outside of the fenced area and will continue to facilitate desired livestock distribution within the pasture.

Lands with Wilderness Characteristics

The proposed enclosure would reduce the amount of fencing in the wilderness characteristics unit compared to Alternative 1. Reallocating livestock grazing to the 513-acre unenclosed area of the Key RNA would avoid impacts to wilderness characteristics, including naturalness, from fence construction or non-infrastructure methods (e.g., new terms and conditions of the grazing permit that the permittee manage livestock to avoid incursion) in that area. Outstanding Opportunities for Solitude and unconfined primitive recreation would also not be impacted in the 513-acre area as short-term impacts to solitude caused by fence construction and long-term impacts to solitude and primitive unconfined recreation caused by active management to exclude livestock from Key RNA would not occur.

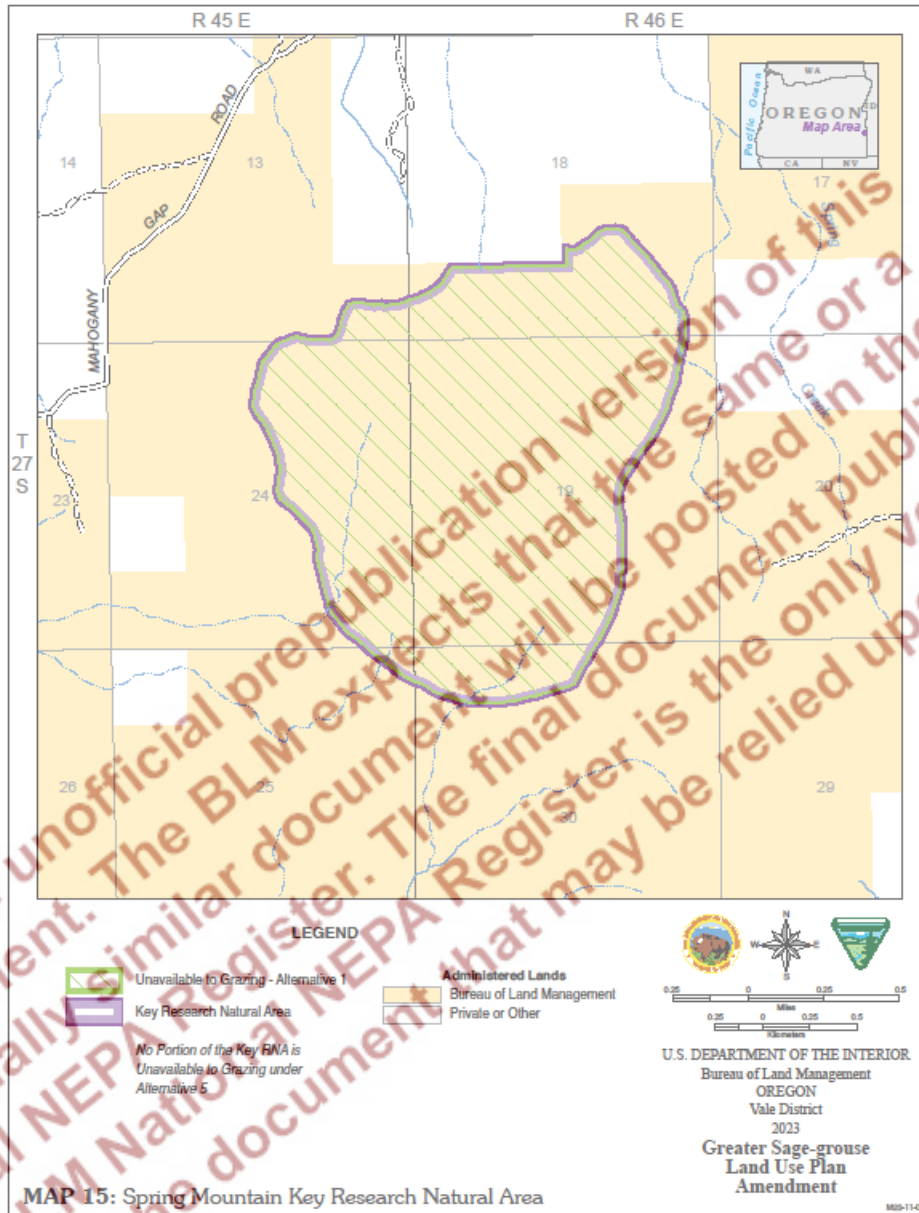
Spring Mountain (Vale)

Alternative 5 Proposed Management Changes

Retain the area designated as Key RNA.

Reallocate all portions of the Key RNA as available to grazing.

Map 15. Spring Mountain Key Research Natural Area



Affected Environment

The 996-acre Spring Mountain ACEC/RNA is located west of U.S. Highway 95 and north of Jordan Valley, covering a portion of the top of Spring Mountain east of Mahogany Mountain. The top of the mountain is a mix of mountain big sagebrush/Idaho fescue steppe in areas with deep soils. The northern portion of the ACEC/RNA is composed of steep, talus scree. This area supports stands of western chokecherry, whortleleaf snowberry, Saskatoon serviceberry, and Lewis’ mockorange. The scree tops out to a larger, relatively flat tableland dominated by diverse, large low sagebrush scablands.

The Spring Mountain Key RNA is located in the Spring Mountain Native Range pasture of the Spring Mountain allotment. This area contains the majority of the access routes for livestock from one side of the

pasture to the other in the upper elevations. The developed Aspen Grove Spring is a critical water source along these routes for livestock. Steep and extremely rocky slopes descend over 1000 feet in elevation to the lower pasture boundaries. Access and travel along the steep rocky slopes are limited to livestock/wildlife and are extremely difficult. The north and east sides of the pasture have fenced private land inholdings that are either partially or entirely within the pasture boundary, further compounding access and travel issues. The Key RNA is centrally located in the northern portion of the “top” of Spring Mountain, creating numerous issues with access and travel routes for livestock.

The Key RNA occurs within the highest elevations of the Spring Mountain Native Range pasture, and in an area where topography allows for feasible movement of livestock within the Spring Mountain Native Range pasture, as well as to other pastures within the Spring Mountain allotment. Fencing in the Key RNA area would require maintenance on at least a semi-annual basis due to high elevation snow accumulation, big game presence and migration. To achieve the orderly administration of grazing management, throughout that season of use, livestock operators are authorized to move livestock through the Key RNA, utilizing existing trailing routes. Trailing occurs to access to BLM pastures within both the Spring Mountain and adjacent allotments, as well as private lands within the Spring Mountain allotment boundary.

Specific management under the 2002 SEORMP ROD, as amended:

The area is closed to OHV use. Plant collecting requires a permit. VRM class is Class III. Livestock use will continue based on existing permit stipulations and approved AMP's, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if values will be maintained or enhanced. Existing livestock use will be adjusted where adverse impacts are identified using a variety of methods, including but not limited to, fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced.

Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 SEORMP ACEC/RNA Designation:

The relevant and important values of the ACEC/RNA are the mountain big sagebrush/Idaho fescue, low sagebrush/bluebunch wheatgrass, and riparian community dominated by peachleaf willow and coyote willow with quaking aspen/whortleleaf snowberry vegetation cells identified by ONHP. There are several quaking aspen patches associated with springs and north-facing talus slopes within the ACEC/RNA.

2015 GRSG ARMPA:

The Spring Mountain ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Vegetation communities represented in this Key RNA include mountain big sagebrush/Idaho fescue community, mountain big sagebrush/mountain snowberry/Idaho fescue, mountain mahogany/chokecherry scrub (*Prunus virginiana*), and relatively flat tableland, dominated by low sagebrush/bunchgrass scabland community. Quaking aspen and bitter cherry communities dominate the springs.

Vegetation communities represented in this Key RNA that are important to GRSG habitat continue to be present. These communities are Mountain big sagebrush/Idaho fescue community, mountain big sagebrush/mountain snowberry/Idaho fescue, relatively flat tableland, dominated by low

sagebrush/bunchgrass scabland community. These communities represent the Cool-Moist Sagebrush, Dry-Shallow Sagebrush, and Riparian communities.

The mountain mahogany/chokecherry scrub (*Prunus virginiana*) plant community in this Key RNA is not suitable habitat for sage-grouse because the growth structure of the dominant species is more tree like, providing no understory cover and providing perch opportunities for predators. This represents the Mountain Shrub community. The entirety of Spring Mountain ACEC/RNA burned in the 2007 Old Maid Fire. While there are some islands of sagebrush that did not burn in the fire, the majority of the ACEC/RNA lost the sagebrush component due to the fire. Monitoring shows a strong component of native grasses and forbs present in the ACEC/RNA.

Other Resources

The Spring Mountain Key RNA is wholly within the Spring Mountain lands with wilderness characteristics unit and is located in the northern portion of the Spring Mountain unit. The 18,311-acre Spring Mountain unit possesses naturalness, and outstanding opportunities to experience solitude. Elevations range from 4,565 to 5,987 feet within the unit. The unit contains the 5,987-foot tabletop mountain known as Spring Mountain. Existing human imprints in the unit include 10.9 miles of rangeland fence, 11.2 miles of 10 primitive routes, 19 developed springs, 2 pipelines totaling 2.7 miles and an associated trough, all of which appears substantially unnoticeable to the average visitor. Supplemental values include the Spring Mountain ACEC/RNA.

The visual resource management is Class II.

The Key RNA is within PHMA and is part of the Cow Lakes Priority Area of Concentration. It is included within the boundary of GRSG spring nesting, summer brood-rearing, and winter habitat. One site within the Key RNA has been evaluated using the GRSG Habitat Assessment Framework (HAF). It had an abundance of perennial grasses but almost no sagebrush. The site was determined to be marginally suitable for spring nesting habitat and unsuitable for winter habitat. There are two pending leks approximately 1.2 miles from the Key RNA boundary; and 11 occupied and 4 total pending leks within 4 miles of the KRNA.

The Spring Mountain KRNA is essential year-round range for pronghorn. It is utilized by deer, elk, and pronghorn throughout the year. ODFW's Oregon Connectivity Assessment and Mapping Project (OCAMP) categorized this area as a Priority Wildlife Connectivity Area (PWCA) – Region. Regions are the top 1% of connectivity priorities and represent the highest-value habitat for facilitating species movement. In addition, this area has a priority Recommended Conservation Action of 'Protect,' the strongest conservation measure for maintaining wildlife connectivity.

Aspen Grove Spring is the only flowing spring within the Key RNA. It is developed with a trough for livestock water. Outside the Key RNA, the nearest springs include several developed springs, including Old Maid Spring to the southeast, Gap Spring the northwest, and Lunch and Chukar Spring to the northeast. Several undeveloped springs occur in the vicinity as well, most notably the undeveloped Old Maids Basin Spring Complex just south of the Key RNA. This spring complex was rated as Functioning-at-risk (FAR) using the Proper Functioning Condition protocol, with the main compromising characteristics being hummocks in spring heads, eroded banks, and a large headcut in the lotic portion. Even though it is rated FAR, the GRSG HAF site-scale evaluation of the spring complex rated it as suitable late brood-rearing habitat based on a high diversity and abundance of sage-grouse preferred forbs, and high perennial herbaceous plant cover mixed with areas of sagebrush and other shrubs in the uplands for shelter.

Rationale Supporting Proposed Management Changes:

Rationale for Retaining Key RNA:

The area continues to be in a desirable condition, notwithstanding being burned by wildfire in 2007. The area continues to recover and provides opportunities for research where natural recovery post-fire is occurring.

The entire Key RNA burned in 2007, eliminating the majority of the sagebrush; nonetheless, the area remains composed of diverse vegetation community types that are important to GRSG, including: Cool-Moist Sagebrush, Shallow-Dry Sagebrush, Mountain Brush/Shrub, and Riparian. Use by sage-grouse within the Key RNA has not been documented, nor were signs of GRSG presence observed during site visits in 2023.

Research opportunities continue to remain due to the remote and rugged nature of the area, as well as limited use by livestock throughout the Key RNA.

Rationale for reallocating the area as available to livestock grazing:

On-the-ground site specific visits revealed complex terrain that is challenging for the construction of new fencing. Fencing would require above-normal (annual) maintenance by BLM due to weather conditions (evidence of natural snowbanks are common) as well as a result of anticipated damage by elk and other big game. The area is reported to have significant use by elk traveling between Oregon and Idaho ranges.

Excluding livestock from the area currently allocated as unavailable to grazing without construction of new physical barriers would be less effective, require higher levels of BLM and permittee management, and result in negative impacts to livestock management beyond the Key RNA as it reduces the ability to allocate resources to other areas.

Reallocation would eliminate increased commitments of management investments (time, materials, etc.) for BLM and the livestock operators in the Key RNA and allotment. Both parties would have improved opportunities to better allocate resources to higher priorities within the allotment. Reallocation of grazing could reduce socio-economic effects to livestock operators by eliminating the potential adjustment of AUMs associated with Alternative I.

The location of the area made unavailable to livestock use under Alternative I impacts trailing routes used for moving livestock between other portions of the Spring Mountain Native Range pasture as well as other pastures within the Spring Mountain allotment. Removing livestock use from this area is expected to have negative impacts to upland and riparian systems due to decreased opportunity to disperse livestock throughout the remainder of the pasture, because of the rugged nature of the areas adjacent to the area made unavailable to livestock grazing. Additional infrastructure (fences and water developments) may be necessary to aid in proper distribution and livestock management under Alternative I. This infrastructure is expected to result in an increased level of disturbance in the short-term, including impacts to vegetation and soils, and long-term impacts to livestock management and upland and riparian resources due to the modified grazing distribution.

Under Alternative I, excluding livestock from the area allocated as unavailable would require the issuance of livestock crossing permits on an annual basis; these permits would also be limited to a one-day crossing on identified routes for each requested application (up to an average of four times annually), depending on the annual grazing schedule and rotation. These limitations would be applied to conform with the objectives of the 2015 ARMPA.

The Alternative 1 allocation as unavailable to grazing eliminates livestock access to an existing critical water source to the grazing system; immediate, additional water development would be necessary. Under Alternative 1, Aspen Grove spring would no longer be available as a livestock water source and displaced livestock would need to find alternative water sources to replace it. This would increase livestock use on nearby developed and undeveloped springs, including Old Maids Basin Spring Complex. This increased livestock use would further damage this spring complex. Under Alternative 5 the increased livestock presence on the spring would not occur as normal livestock distribution and use patterns would be maintained. Reallocating the area as available to grazing would prevent the impacts from the loss of the critical Aspen Grove spring in the Spring Mountain Native Range pasture. If the area is not reallocated to allow livestock grazing, development of additional water sources would be needed to relieve pressure on other existing water sources, riparian resources, and the connected uplands when managing under Alternative 1. Allocating the area as available to livestock grazing would eliminate the need for fencing or other management actions that impact feasible livestock movement and distribution due to the limited number of developed water sources in the area. Research opportunities continue to remain due to the remote and rugged nature of the area, as well as limited use by livestock throughout the Key RNA.

Reallocating livestock grazing to the Key RNA would eliminate the need to either construct fencing or to implement as new terms and conditions of the grazing permit that the permittee manage livestock to avoid incursion into the Key RNA. The wilderness characteristic of Naturalness would not be impacted because new fence construction would not occur. Outstanding Opportunities for Solitude would not be impacted as short-term impacts to solitude caused by fence construction and long-term impacts to solitude caused by active management to exclude livestock from Key RNA would not occur.

Impacts to wildlife, including sage-grouse and large ungulates, of reallocating livestock grazing under Alternative 5 would include avoiding additional fencing or other management actions for livestock exclusion that would result in short-term disturbance to individuals and fence related conflicts (e.g. bird collisions and entrapments). The Oregon Department of Fish and Wildlife identified this area as important habitat for wildlife movement. Under Alternative 1, addition of a fence or increased presence of livestock operators would hinder or alter wildlife movement.

While some sagebrush communities are still present, the majority of the Key RNA is now grassland, which provides limited suitable habitat for GRSG. Livestock using the Key RNA if it were reallocated as available to grazing would concentrate in areas where the best forage is available, which would be the portions of the Key RNA with high perennial grass cover. Thus, the livestock would not concentrate on the remaining islands of sage-grouse habitat. Under Alternative 1, livestock displaced from the Key RNA would disperse to adjacent habitat, increasing livestock concentration in good quality sagebrush and riparian habitat nearby.

The benefit of constructing a fence (or increased management actions to exclude livestock) relative to the amount of additional infrastructure and/or management actions for the areas that remain available to livestock grazing within the Spring Mountain Native Range pasture are unwarranted.

Environmental Consequences

Fencing and other potentially affected wildlife, including GRSG

The area is reported to have significant use by elk traveling between Oregon and Idaho ranges. Alternative 5 would avoid additional fence construction, fence-related conflicts (e.g. bird collisions and entrapments) and other management actions for livestock exclusion that would result in short-term disturbance to wildlife

individuals, including sage-grouse and large ungulates. The Oregon Department of Fish and Wildlife identified this area as important habitat for wildlife movement.

Lands with Wilderness Characteristics

Reallocating livestock grazing to the Key RNA would eliminate the need for fencing or additional active livestock management (e.g., herding) to avoid livestock incursion into the Key RNA. The wilderness characteristic of Naturalness would not be impacted because new fence construction would not occur. Outstanding Opportunities for Solitude would not be impacted as short-term impacts to solitude caused by fence construction and long-term impacts to solitude caused by active management to exclude livestock from Key RNA would not occur.

Toppin Creek Butte (Vale)

Alternative 5 Proposed Management Changes

Retain the area designated as Key RNA.

Reduce the area excluded from grazing in the Key RNA from 2,865 acres to 239 acres.

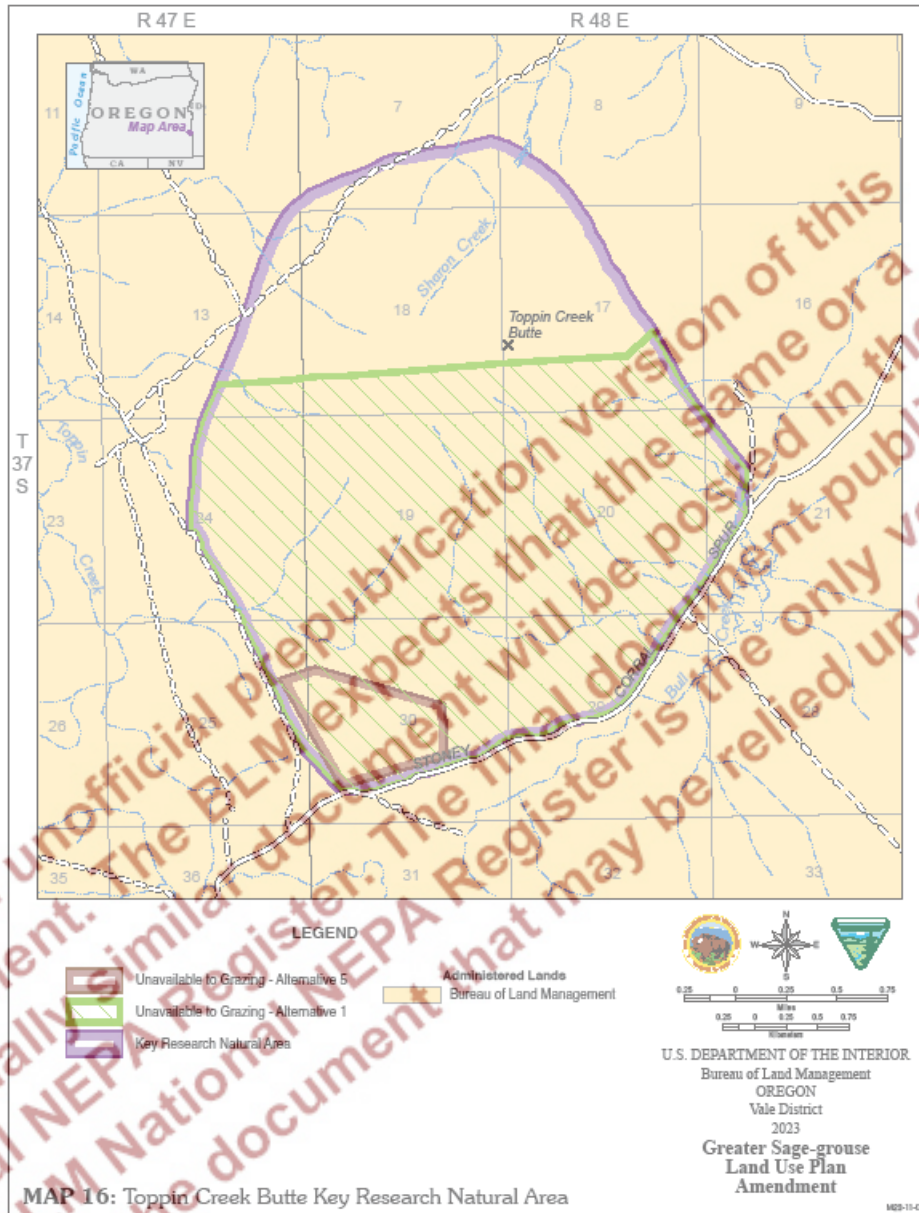
Affected Environment

The 3,996-acre Toppin Butte ACEC/RNA is located 30 miles northeast of McDermitt, Nevada, and adjacent to the Idaho state line. The topography includes a gently sloping hill with a rapidly draining soil. Little water has been available for livestock on the Butte, and the topography still limits livestock use on the upper slopes. Two playas at the base of Toppin Butte contain a bare playa vegetation community and a silver sagebrush community. The Key RNA is located in portions of Owyhee River Canyon WSA. The southern portion (2,865 acres) of the ACEC/RNA is allocated under the 2015 ARMPA as unavailable to grazing.

Specific management under the 2002 SEORMP ROD, as amended:

OHV use is limited to designated roads and trails. The area is VRM Class II. Plant collecting requires a permit. Road maintenance will be limited to the existing roadway, and shoulder/barrow ditch construction will be limited to that necessary to control runoff, minimize soil erosion, and ensure public safety and serviceability of the road. Surface-disturbance will be deferred while soils are wet, and any future rehabilitation will be with local source native plant species. Livestock use will continue based on existing permit stipulations and approved AMPs, unless modified under subsequent land use planning. Any proposed changes in grazing, including time and intensity of use, will be evaluated for impacts on the relevant and important values and will be permitted if the values will be maintained or enhanced. Existing livestock use will be adjusted where adverse impacts are identified using a variety of methods, including but is not limited to, fencing, reduction in livestock numbers, and changes in grazing season. Proposed projects in the area will be evaluated for impacts and permitted where relevant and important values will be maintained or enhanced. Noxious weeds will be aggressively controlled using limited methods, such as backpack hand sprayers, focusing on roads and other disturbed areas in and adjacent to the ACEC/RNA.

Map 16. Toppin Creek Butte Key Research Natural Area



Summary of Key RNA and Relevant and Important values evaluated for ACEC/RNA designation

2002 SEORMP ACEC/RNA Designation:

The relevant and important values of this ACEC/RNA are the low sagebrush/bluebunch wheatgrass community in excellent condition and low sagebrush/Idaho fescue plant community vegetation cells identified by the ONHP. These plant communities will be specially managed for current and future research.

2015 GRSG ARMPA:

The Toppin Creek Butte ACEC/RNA was designated a Key RNA as a reference area for sagebrush plant communities that are important for Sage-grouse. Special Designation (SD4) was to manage the Key RNA for minimum human disturbance, allowing natural succession to proceed.

Updated Vegetation Communities and Sage-Grouse Habitats

Vegetation communities present in this Key RNA include low sagebrush/Idaho fescue, low sagebrush/bluebunch wheatgrass, silver sagebrush/Sandberg's bluegrass plant communities. In addition, bare playa, Wyoming big sagebrush and basin big sagebrush communities are also present in the Key RNA though not identified in the 2015 ARMPA.

Vegetation communities represented in this Key RNA, that are important to GRSG habitat continue to be present. These communities are low sagebrush/Idaho fescue, low sagebrush/bluebunch wheatgrass, and silver sagebrush/Sandberg's bluegrass, and Wyoming sagebrush plant communities. These communities represent the Cool-moist/Warm-Dry Sagebrush, Shallow-Dry Sagebrush and playa communities. The Key RNA is within GRSG Priority Habitat Management Area (PHMA) in Sage-grouse focal area (SFA); two pending leks are within two miles of the Key RNA boundary, one of which is located inside the Key RNA. The western side of Toppin Creek Butte ACEC/RNA burned in the 2013 Sharon Creek Fire. In the burned area there are islands of sagebrush habitat were not burned. Monitoring has indicated invasion of cheatgrass post fire has occurred but is isolated and minimal.

Other Resources

Toppin Creek Butte Key RNA is 3,996 acres and is located wholly within the Owyhee River Canyon WSA. The WSA's outstanding opportunities for solitude are attributed to the isolated, intimate seclusion of canyonlands and the vastness of seemingly undisturbed desert plateau lands and distant mountain ranges. The Main Owyhee River and West Little Owyhee River are designated portions of the National Wild and Scenic River System (NWSRs) and flow through the Owyhee River Canyon WSA. River running opportunities are of exceptionally high quality and considered nationally significant. The scenic natural features and diversity of rugged landforms attract people interested in hunting, fishing, backpacking, sightseeing, outdoor photography, and wildlife viewing.

There is one population of mesamint (*Pogogyne floribunda*), a Bureau sensitive plant, located at the eastern edge of the Key RNA. This population straddles Stoney Corral Spur road.

The Key RNA is designated as bighorn sheep occupied habitat.

The visual resource management is Class I.

Rationale Supporting Proposed Management Changes:

Rationale for Retaining Key RNA:

The area continues to be in a desirable condition for the vegetative communities identified; management will continue to protect the relevant and important values.

Existing management would retain the following vegetation types important to GRSG: Cool-Moist/Warm-Dry Sagebrush, Shallow-Dry Sagebrush, and Playa.

Rationale for modifying the area excluded from grazing:

The Toppin Creek Butte Key RNA grazing use is historically light; the exclusion of livestock under Alternative 1 would not provide research benefits at a level that would warrant the impacts to other values. Under Alternative 5, the plant communities included in the 239-acre enclosure are Wyoming big sagebrush plant communities and bare playas.

The location of the 239-acre enclosure under this alternative is within intact sagebrush communities that are not impacted by wildfire.

Making this area unavailable to livestock grazing would reduce the impacts of fencing or increased management presence in the Owyhee River Canyon WSA to implement the closure. Disturbance in the WSA from fencing would be reduced overall from approximately 5.85 miles to 2.5 miles, with half of this distance along the existing Key RNA road boundary. Naturalness would be impacted, but to a lesser degree than Alternative 1. The potential use of fence construction to exclude the area from livestock grazing would be designed to minimize impacts to naturalness. Outstanding opportunities for solitude and unconfined primitive recreation would be impacted in the short-term during fence construction; there would be no long-term impacts. a

Environmental Consequences

Compared to Alternative 1, Alternative 5 would reduce the area allocated as unavailable to grazing in the Key RNA from 2,865 acres to 239 acres and reduce potential new fence from 5.85 to 2.5 miles.

The fence proposed in Alternative 1 would be located approximately 60 feet from the mesamint (*Pogogyne floribunda*) site, with the plant site being on the side of the fence that would retain livestock grazing. The proximity of the fence to the plant site could potentially directly impact the plants in the short and long term due to livestock walking along the fence line, disturbing the ground. Given the distance from the proposed fence, there may be impacts to individual plants, but the population as a whole is expected to persist. The proposed fence location for Alternative 5 is approximately 1.5 miles from the plant site and would have no impacts on individual plants or the population in the short and long term.

Under Alternative 5, reducing the area allocated as available to livestock grazing would allow livestock grazing to continue under the current authorized use. The management changes of Alternative 1, such as the creation of a corridor between the area where livestock is not allocated and the adjacent pasture, would not occur, therefore limiting impacts to livestock management as well as other natural resource values where the potential for concentrated use is increased under Alternative 1. Livestock management would continue to allow for maintenance of current conditions, which were found to be meeting all standards for rangeland health as documented in the 2017 Standards for Rangeland Health Assessment and Evaluation (BLM 2017 pg. 72-75). A change in AUMs is not anticipated under this alternative due to the location of the enclosure within the pasture. Reducing the area that would be excluded from grazing would reduce the amount of fence or the need to require the permittee to manage livestock to avoid incursion into the unavailable area.

The wilderness characteristic of Naturalness would be impacted less than under Alternative 5 than under Alternative 1 due to the reduced fence mileage. Outstanding Opportunities for Solitude and primitive unconfined recreation would be reduced compared to Alternative 1 as short-term impacts to solitude caused by fence construction and long-term impacts to solitude caused by active management to exclude livestock from Key RNA would not be as extensive.

Compared to Alternative 1, Alternative 5 would have approximately 3.35 fewer miles of fence. The proposed enclosure could still result in wildlife, including sage-grouse, fence collisions, but at a much lower risk due to the location and reduced size compared to Alternative 1. Vegetative communities that are important to GRSG habitat would continue to be present under both Alternatives 1 and 5.

17.5 LITERATURE CITATIONS

- BLM. 1992. Three Rivers Resource Management Plan ROD/RMP
- BLM. 1999. Standards for Rangeland Health Assessment. Rahilly-Gravelly #0212. USDI, Bureau of Land Management, Lakeview District, Lakeview Resource Area, Lakeview, OR.
- BLM. 2000a. Area of Critical Environmental Concern Nomination Report for the Lakeview Resource Area Resource Management Plan. USDI, BLM, Lakeview Resource Area, Lakeview, OR.
- BLM. 2000b. Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement. 3 volumes. USDI, BLM, Vale District, Malheur and Jordan Resource Areas, Vale, OR.
- BLM. 2000c. Rangeland Health Standards Assessment. Coyote-Colvin Allotment (#0517). USDI, BLM, Lakeview Resource Area, Lakeview, OR.
- BLM. 2001. Appendix I – ACEC/RNAs. Draft Lakeview Resource Management Plan and Environmental Impact Statement. 3 volumes. USDI, BLM, Lakeview Resource Area, Lakeview, OR.
- BLM. 2002. Southeastern Oregon Resource Management Plan and Record of Decision. USDI, BLM, Malheur and Jordan Resource Areas, Vale, OR.
- BLM. 2003a. Proposed Lakeview Resource Management Plan and Final Environmental Impact Statement. 4 volumes. USDI, BLM, Lakeview Resource Area, Lakeview, OR.
- BLM. 2003b. Lakeview Resource Management Plan and Record of Decision. USDI, BLM, Lakeview Resource Area, Lakeview, OR.
- BLM 2003c. Rangeland Health Assessment for Lynch-Flynn Allotment (#00520). USDI, Bureau of Land Management, Lakeview District, Lakeview Resource Area, Lakeview, OR.
- BLM. 2004. Big Juniper Mountain Rangeland Health Assessment. USDI, Bureau of Land Management, Lakeview District, Lakeview Resource Area, Lakeview, OR.
- BLM. 2010a. Vegetation Treatments Using Herbicides on BLM Lands in Oregon. Final Environmental Impact Statement. DOI-BLM-ORWA-0000-2008-0001-EIS. USDI, BLM, Oregon State Office, Portland, OR.
- BLM. 2010b. 2010 Settlement Agreement. Southeastern Oregon and Lakeview Resource Management Plan Amendments. https://eplanning.blm.gov/public_projects/lup/87435/116985/142662/20100610_57-1_AmendRemand_SettleAgree_web.pdf
- BLM. 2013a. Rahilly Gravelly Rangeland Health Assessment Update. USDI, Bureau of Land Management, Lakeview District, Lakeview Resource Area, Lakeview, OR.
- BLM. 2013b. Lynch-Flynn Rangeland Health Assessment Update. USDI, Bureau of Land Management, Lakeview District, Lakeview Resource Area, Lakeview, OR.
- BLM. 2015a. Oregon Greater Sage-grouse Proposed Resource Management Plan Amendment and Final Environmental Impact Statement. USDI, Bureau of Land Management, Oregon/Washington State Office, Portland, OR.

- BLM. 2015b. Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-regions of Idaho and Southwestern Montana, Nevada, and Northeastern California, Oregon, Utah. USDI, BLM, Washington Office, Washington, DC.
- BLM. 2015c. Appendix E1: Allotment Management Summaries. USDI, BLM, Lakeview Resource Area. Lakeview, OR. 129 p.
- BLM. 2015d. Table 5 – Forage Allocation and Allotment Summary. USDI, BLM, Lakeview Resource Area. Lakeview, OR. 4 p.
- BLM. 2015e. Integrated Invasive Plant Management for the Lakeview Resource Area. Revised Environmental Assessment. DOI-BLM-OR-L050-2014-0021-EA. USDI, BLM Lakeview Resource Area, Lakeview, OR.
- BLM. 2015f. Decision Record. Integrated Invasive Plant Management for the Lakeview Resource Area Excluding the Warner Basin Area (DOI-BLM-OR-L050-2014-0021-EA). USDI, BLM Lakeview Resource Area, Lakeview, OR. 6 p.
- BLM. 2016. Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington. Update for Coyote-Colvin Allotment (#00517). USDI, BLM Lakeview Resource Area, Lakeview, OR.
- BLM. 2018. Oregon Greater Sage-Grouse Proposed RMPA/Final EIS [Oregon Greater Sage-Grouse Proposed RMPA/Final EIS \(blm.gov\)](#).
- BLM. 2019a. [Oregon Greater Sage-Grouse Record of Decision and Approved Resource Management Plan Amendment](#).
- BLM. 2019b. Grazing Permit Renewal for Coyote-Colvin (00517), Abert Seeding (00522), Shalerock (00435), South Rabbit Hills (00529) and Fitzgerald FFR (00502) Allotments. Environmental Assessment DOI-BLM-ORWA-L050-2016-0014-EA. USDI, BLM, Lakeview Resource Area, Lakeview, OR.
- BLM. 2023. Southeastern Oregon Proposed Resource Management Plan Amendment and Final Environmental Impact Statement. USDI, BLM, Malheur Field Office, Vale District, Vale, OR.
- BLM. In Prep. Key RNA Grazing Closures. Draft Environmental Assessment. USDI, BLM, Lakeview Field Office, Lakeview, OR.
- Hagen, C. 2011. Greater-Sage Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat. Oregon Department of Fish and Wildlife.
- Kentness, L. 2017. Conservation Assessment for *Rorippa columbiae* (Columbia Yellowcress). Native Plant Conservation Program, Oregon Department of Agriculture.
- Olsen, A., J. Severson, B. Allred, M. Jones, J. Maestas, D. Naugle, K. Yates, and C. Hagen. 2021a. Reversing Tree Encroachment Increases Usable Space for Sage-Grouse during the Breeding Season. Wildlife Society Bulletin 1-10. DOI: 10.1002/web.1214.

Olsen, A., J. Severson, J. Maestas, D. Naugle, J. Smith, J. Tack, K. Yates, and C. Hagen. 2021b. Reversing Tree Expansion in Sagebrush Steppe Yields Population-Level Benefit for Imperiled Sage-Grouse. *Ecosphere* 12(6):1-17.

Runge, C., A. Plantings, A. Larsen, D. Naugle, K. Helmstedt, S. Polasky, J. Donnelly, J. Smith, T. Lark, J. Lawler, S. Martinuzzi, and J. Fargione. 2018. Unintended Habitat Loss on Private Land from Grazing Restrictions on Public Land. *Journal of Applied Ecology*. 1-11.

Smith, J. H. Tack, L. Berkeley, M. Szczypinski, and D. Naugle. 2018. Effects of Rotational Grazing Management on Nesting Greater Sage-Grouse. *Journal of Wildlife Management* 82(10):103-112. <https://doi.org/10.1002/jwmg.21344>.

USDA. 2023. Washington-Oregon (Columbia Basin) Direct Hay Report (October 20, 2023).

Vander Schaaf, D. 1992. Final Report. Natural Area Inventory for the Lakeview Resource Area, Lakeview District, Bureau of Land Management. The Nature Conservancy. Portland, OR.

This is an unofficial prepublication version of this document. The BLM expects that the same or a substantially similar document will be posted in the BLM National NEPA Register. The final document published in the BLM National NEPA Register is the only version of the document that may be relied upon.

This page intentionally left blank.

This is an unofficial prepublication version of this document. The BLM expects that the same or a substantially similar document will be posted in the BLM National NEPA Register. The final document published in the BLM National NEPA Register is the only version of the document that may be relied upon.