Appendix W
Biological Assessment

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Biological Assessment
for the

Nevada and Northeastern California

Greater Sage-Grouse
Land Use Plan Amendment and Final Environmental Impact Statement

8 May 2015

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Acronyms

BA	biological assessment
BLM	Bureau of Land Management
BMP	best management practice
COA	condition of approval
EIS	environmental impact statement
ESA	Endangered Species Act
FIAT	Fire and Invasive Assessment
FEIS	final environmental impact statement
GHMA	general habitat management area
GRSG	Greater Sage-Grouse
IPM	integrated pest management
LUP	land use plan
LUPA	land use plan amendment
NEPA	National Environmental Policy Act
NSO	no surface occupancy
OHMA	other habitat management area
ORV	off road vehicle
PCE	primary constituent element
PHMA	priority habitat management area
RDF	required design feature
RMP	resource management plan
SFA	sagebrush focal area
USFWS	US Fish and Wildlife Service

INTRODUCTION

Background

The Bureau of Land Management (BLM) and US Forest Service (Forest Service) have prepared amendments to their respective land use plans (LUPs) to provide direction for the conservation of Greater Sage-Grouse (GRSG; *Centrocercus urophasianus*) in the following locations:

- Alturas Field Office
- Black Rock Field Office
- Caliente Field Office
- Eagle Lake Field Office
- Egan Field Office
- Humboldt River Field Office
- Mt. Lewis Field Office
- Schell Field Office
- Sierra Front Field Office
- Stillwater Field Office
- Surprise Field Office,
- Tuscarora Field Office
- Tonopah Field Office
- Wells Field Office
- Humboldt-Toiyabe National Forest

Also included are portions of Nevada administered by the Idaho Jarbidge and Bruneau Field Offices.

The intent is to analyze the environmental effects that could result from implementing the proposed action. A Draft LUP Amendment Environmental Impact Statement (EIS) was published on November 1, 2013. The Proposed LUP Amendment (LUPA) and Final EIS (FEIS) is a refinement of the Preferred Alternative (Alternative D) from the Draft LUPA, with consideration given to public comments, comments from the States of Nevada and California, corrections made where necessary, and rewording for clarification.

The purpose of this biological assessment (BA) is to review the proposed LUPA to determine the extent that its implementation may affect proposed, threatened, and endangered species and proposed or designated critical habitats in the Planning Area. Because the LUP is a planning document, this BA focuses on the effects of management actions to be implemented as a part of this planning.

Under provisions of the Endangered Species Act (ESA) of 1973, as amended (16 USC, Section 1531 et seq.), federal agencies are directed to conserve threatened and endangered species and their habitats. Section 7(a)(1) states that all federal agencies shall "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species…." Thus, the conservation and recovery of threatened and endangered species is not simply the responsibility of the US Fish and Wildlife Service (USFWS), but of all federal agencies. In order to meet this requirement, the BLM and Forest Service would implement management actions, standards and guidelines, protective stipulations, conditions of approval (COAs), conservation measures, required design features (RDFs), best management practices (BMPs), mitigation, habitat restoration, and protections afforded through the LUP.

Section 7(c) of the ESA requires the BLM to complete a BA to determine the effects of implementing a resource management plan (RMP) on listed species, based on compliance with

Section 102 of the National Environmental Policy Act (NEPA). Federal agencies are required to consider and avoid or prevent adverse impacts on fish and wildlife species. Federal agencies are also required to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or their critical habitat. The ESA requires action agencies, such as the BLM and Forest Service, to not only consult or confer with the USFWS when there is discretionary federal involvement or control over the action, but also to ensure that resources are afforded adequate consideration and protection. Formal consultation becomes necessary when the action agency requests consultation after determining that the proposed action is likely to adversely affect listed species or critical habitat, or the aforementioned federal agencies do not concur with the action agency's finding (USFWS 1998).

This programmatic BA provides documentation and analysis for the proposed action to meet the federal requirements and agreements set forth among the federal agencies. It addresses proposed and federally listed threatened and endangered species, and proposed or designated critical habitat. It has been prepared under the 1973 ESA Section 7 regulations, in accordance with the 1998 procedures set forth by USFWS and the National Marine Fisheries Service. The BLM and Forest Service, in coordination with the USFWS, analyzed the effects of the LUPA on listed species.

Purpose and Need for the GRSG LUPA

The BLM and Forest Service have prepared amendments with associated EISs for LUPs containing GRSG habitat. This responds to the need to inform USFWS's March 2010 "warranted, but precluded" ESA listing petition decision. In its finding on the petition to list the GRSG, the USFWS listed inadequacy of regulatory mechanisms as a significant threat. The need is to ensure that the BLM and Forest Service have adequate regulatory mechanisms in their LUPs for the USFWS to consider a year in advance of its anticipated 2015 listing. The USFWS identified the principal regulatory mechanisms for the BLM and the Forest Service as conservation measures embedded in LUPs. Changes in management of GRSG habitats are necessary to avoid the continued decline of populations that are anticipated across the species' range. These LUP amendments will focus on areas affected by threats to GRSG habitat identified by USFWS in the March 2010 listing decision.

The purpose for the LUP amendments is to identify and incorporate appropriate conservation measures in LUPs to conserve, enhance, or restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat. Because the BLM and the Forest Service administer a large portion of GRSG habitat in the affected states, changes in their management of GRSG habitats are anticipated to have a considerable beneficial impact on present and future GRSG populations. They could reduce the need to list the species as threatened or endangered under the ESA.

Habitat Definitions

The LUP amendment and this BA identify and analyze proposed management actions in the following GRSG habitat types:

- Priority Habitat Management Area (PHMA)—These are areas that have been identified as having the highest conservation value to maintain sustainable GRSG populations, specifically areas for breeding, late brood-rearing, and winter concentration.

- General Habitat Management Area (GHMA)—These are areas outside of PHMA and occupied by GRSG seasonally or year-round.

- Other Habitat Management Area (OHMA)—These are mapped areas outside of PHMA and GHMA where GRSG use has been observed or suspected, areas and habitats that may be necessary to maintain viability of GRSG, or where the activity would affect GRSG or their habitat in PHMA or GHMA.

- Sagebrush Focal Area (SFA)—All federal lands in these areas will be managed as PHMA, with two exceptions: 1) all fluid leasable minerals are no surface occupancy (NSO), with no modification, exceptions or waivers and 2) locatable minerals are recommended for withdrawal from mineral entry.

Description of Planning Area

The planning area is where the BLM and Forest Service will make decisions. Its boundary is all lands, regardless of jurisdiction. For this LUPA/EIS, the planning area is the entire sub-region (Figure 1). Lands addressed in the LUPA are those in BLM- and Forest Service-administered GRSG habitats, including surface and split-estate lands with BLM subsurface mineral rights. Any decisions in the LUPAs would apply only to BLM- and Forest Service-administered lands (the decision area). The LUP amendments would be limited to making land use planning decisions specific to conserving GRSG and their habitat.

There are 11 RMPs that are the subject of the LUPA/EIS, all administered by the BLM district offices of Battle Mountain, Carson City, Elko, Ely, and Winnemucca, Nevada, and the BLM field offices in Alturas, Eagle Lake, and Surprise, California. In addition, the Humboldt-Toiyabe National Forest administers two forest land and resource management plans that would also be affected by this LUPA/EIS. The Nevada and Northeastern California sub-regional GRSG planning area covers all or a portion of 16 counties in northern Nevada and portions of four counties in northeastern California. Of these 20 counties, 12 contain GRSG habitat. Lands in the planning area are a mix of private, federal, and state lands; however, decisions related to this LUPA/EIS apply only to BLM-administered and National Forest System lands.

There are approximately 77,800 acres of public lands in Elko County, Nevada, north of the Humboldt-Toiyabe National Forest and south of the Idaho-Nevada state line, next to the Bruneau and Jarbidge field offices in Idaho. The BLM Nevada and the BLM Idaho state offices signed a memorandum of understanding to transfer administration of those lands to the BLM Idaho State Office. This was because of the lands' remoteness from other BLM-administered lands in Nevada and because they are contiguous with major blocks of public lands in Idaho.

For purposes of the GRSG LUPAs in Idaho and in Nevada, planning for these lands will be done through the Nevada and Northeastern California Greater Sage-Grouse LUPA/EIS. The Jarbidge and Bruneau field offices in Idaho will implement and administer the regulatory measures and decisions that are put in place for the GRSG through the record of decision; therefore, the mapped decision and action area for the Nevada and Northeastern California LUPA/EIS will

include lands administered by the Jarbidge Field Office in Nevada that end at the Nevada state line.

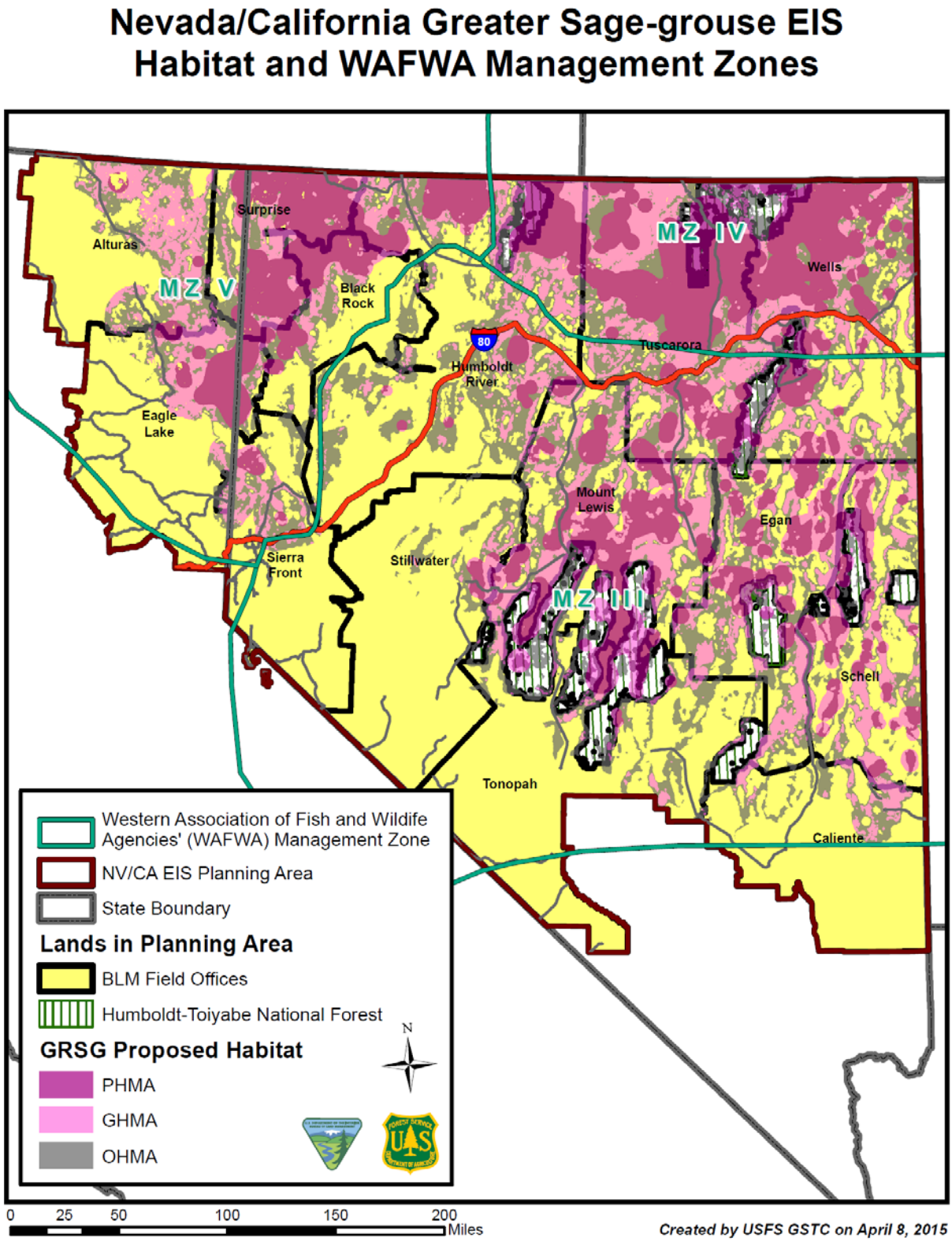


Figure 1. Nevada and Northeastern California Greater Sage-Grouse Planning Area

DESCRIPTION OF THE PROPOSED ACTION

As a result of public comments, best available science, cooperating agency coordination, and internal review of the Draft LUPA/EIS, the BLM and Forest Service have developed the Proposed LUPAs/FEISs.

The proposed plans incorporate the following GRSG goals: Conserve, enhance, and restore the sagebrush ecosystem that GRSG depend on in order to maintain or increase their abundance and distribution, in cooperation with other conservation partners. There are two selected actions, one for the BLM and one for the Forest Service. Largely, the two plans are the same, but there are minor differences, primarily due to land management planning terminology. For the full details of each agency's proposed plan, please refer to Chapter 2 of the FEIS. (For the purposes of the USFWS review, the BLM and Forest Service proposed plan amendments are Appendices B and C, respectively, of this BA.)

The proposed plan amendments seek to allocate resources among competing interests and land uses and the conservation of natural resource values, including GRSG habitat. At the same time, they would sustain and enhance ecological integrity across the landscape, including plant, wildlife, and fish habitat. The plans incorporate adjustments made in response to public comments on the Draft LUPA, as well as cooperating agency input. Conservation measures are focused on PHMAs and GHMAs and active leks (regardless of which type of habitat the active lek is in). Conservation measures are presented in categories of established program areas. The program areas are similar for each agency but not exactly the same.

The BLM program areas are as follows:

- GRSG
- Vegetation
- Wildland fire
- Livestock grazing
- Wild horses and burros
- Lands and realty
- Minerals
- Comprehensive travel and transportation
- Recreation and visitor services
- Tribal interests

The Forest Service program areas are as follows:

- General GRSG
- Adaptive management
- Lands and realty
- Wind and solar
- GRSG habitat
- Livestock grazing
- Fire management
- Wild horses and burros

- Recreation
- Roads/transportation
- Minerals

SPECIES CONSIDERED IN THE ANALYSIS

This BA is a detailed analysis of all federally listed (endangered or threatened) species, proposed species, and designated or proposed critical habitat that may be affected by the actions proposed in the LUPA. Development of this BA was guided by the regulations on Interagency Cooperation (Section 7 of the ESA) in 50 CFR, Part 402, and BLM Manual 6840.

The USFWS's list of threatened, endangered, and proposed species is composed of plants, birds, mammals, amphibians, fish, and invertebrates. The subject of the analysis was those species or the critical habitat that may occur in the action area[1] or be affected by activities associated with the Preferred Alternative in the FEIS.

Tables 1 and 2 list USFWS threatened, endangered, and proposed species that may be in or are known to be in the planning area and designated or proposed critical habitat for those species. The species and critical habitat in Tables 1 and 2 were considered in this analysis and compared to five criteria. The criteria were used to identify species or proposed or designated critical habitat that would experience "no effect" from the action alternative and could therefore be eliminated from detailed analysis. These criteria, listed below, are referred to as evaluation criteria in the tables:

1. Action area is outside species' range
2. Potential habitat for the species does not exist in GRSG habitat (sagebrush-steppe) or is outside the GRSG elevation range
3. Type or intensity of the activity in the proposed action is expected to have no impact on the species or its habitat
4. No overlap between critical habitat polygons and PHMAs or GHMAs
5. Critical habitat polygons may overlap PHMAs or GHMAs, but primary constituent elements (PCEs) do not overlap; no essential features of critical habitat would be affected

[1]The action area is the BLM- and Forest Service-administered lands within the LUPA boundary.

Table 1. USFWS listed endangered, threatened, and proposed species and critical habitat[2] that may be present in the action area and that may be influenced by the preferred alternative

	Field Office or National Forest																		
Species (Status)[3, 4]	**Alturas**	**Black Rock**	**Caliente**	**Eagle Lake**	**Egan**	**Humboldt River**	**Mt. Lewis**	**Schell**	**Sierra Front**	**Stillwater**	**Surprise**	**Tuscarora**	**Tonopah**	**Wells**	**Humboldt-Toiyabe**	**Jarbidge**	**Bruneau**	**Evaluation Criteria**	**Initial Biological Determination**
Gray wolf (E) *Canis lupus*	D	Y	N	D	N	Y	U	N	N	N	N	Y	N	S	N	Y	N	3	No effect See Appendix A
Western yellow-billed cuckoo (T) *Coccyzus americanus*	N	Y	S	N	N	Y	N	N	D	N	N	Y	N	D	N	Y	U	3	No effect See Appendix A
Western yellow-billed cuckoo proposed critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect
Oregon spotted frog (P-T) *Rana pretiosa*	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	3	No effect See Appendix A
Oregon spotted frog proposed critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect

[2] For habitat description and range, see table 2.

[3] E = Endangered; T = Threatened; P-T = Proposed Threatened

[4] D = Documented; S = Suspected; Y = Suitable habitat present; N = Suitable or critical habitat not present; U = Unknown if suitable habitat is present.

Sources: October 25, 2013 letter from Amy Lueder (Nevada State Director, BLM), James G. Kenna (California State Director, BLM) and William Dunkelberger (Forest Supervisor, Humboldt-Toiyabe National Forest) to Edward Koch (Field Supervisor, Nevada Ecological Services Field Office, USFWS); December 18, 2013, memo from Edward Koch to State Director, Nevada State Office, BLM, Reno; State Director, California State Office, BLM, Sacramento; Forest Supervisor, Humboldt-Toiyabe National Forest, Forest Service, Sparks, Nevada.

Field Office or National Forest																			
Species (Status)[3, 4]	**Alturas**	**Black Rock**	**Caliente**	**Eagle Lake**	**Egan**	**Humboldt River**	**Mt. Lewis**	**Schell**	**Sierra Front**	**Stillwater**	**Surprise**	**Tuscarora**	**Tonopah**	**Wells**	**Humboldt-Toiyabe**	**Jarbidge**	**Bruneau**	**Evaluation Criteria**	**Initial Biological Determination**
Big Spring spinedace (T) *Lepidomeda millispinis pratensis*	N	N	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1, 2	No Effect
Big Spring spinedace critical habitat	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	5	No effect See Appendix A
Bull trout (T) *Salvelinus confluentus*	N	U	N	N	N	U	N	N	N	N	N	D	N	D	D	U	D	3	No effect See Appendix A
Bull trout critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	4	No effect See Appendix A
Clover Valley speckled dace (E) *Rhinichthys osculus oligoporus*	N	N	N	N	N	N	N	N	N	N	N	D	N	D	N	U	N	3	No effect See Appendix A
Cui-ui (E) *Chasmistes cujus*	N	N	N	N	N	N	N	N	D	N	N	N	N	N	N	N	N	3	No effect See Appendix A
Desert dace (T) *Eremichthys acros*	N	D	N	N	N	U	N	N	N	N	N	N	N	N	N	Y	N	3	No effect See Appendix A
Desert dace critical habitat	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect See Appendix A
Hiko White River springfish (E) *Crenichthys baileyi grandis*	N	N	N	N	N	N	N	N	N	D	N	N	N	N	N	N	N	3	No effect See Appendix A
Hiko White River springfish critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect

Field Office or National Forest																			
Species (Status)[3, 4]	**Alturas**	**Black Rock**	**Caliente**	**Eagle Lake**	**Egan**	**Humboldt River**	**Mt. Lewis**	**Schell**	**Sierra Front**	**Stillwater**	**Surprise**	**Tuscarora**	**Tonopah**	**Wells**	**Humboldt-Toiyabe**	**Jarbidge**	**Bruneau**	**Evaluation Criteria**	**Initial Biological Determination**
Independence Valley speckled dace (E) *Rhinichthys osculus*	N	N	N	N	N	N	N	N	N	N	N	D	N	D	N	U	N	3	No Effect See Appendix A
Lahontan cutthroat trout (T) *Oncorhynchus clarkii henshawi*	N	D	N	N	N	D	D	N	D	D	N	D	N	D	D / S	D	N	3	No Effect See Appendix A
Lost River sucker (E) *Deltistes luxatus*	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	No Effect See Appendix A
Lost River sucker critical habitat	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No Effect See Appendix A
Modoc sucker (E) *Catostomus microps*	D	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	No Effect See Appendix A
Modoc sucker critical habitat	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No Effect See Appendix A
Pahrump poolfish (E) *Empetrichthys latos*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1, 2	No Effect
Railroad Valley springfish (T) *Crenichthys nevadae*	N	N	N	N	S	N	N	S	N	D	N	N	D / S	N	N	N	N	3	No Effect See Appendix A
Railroad Valley springfish critical habitat	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	4	No Effect See Appendix A

Field Office or National Forest																			
Species (Status)[3, 4]	**Alturas**	**Black Rock**	**Caliente**	**Eagle Lake**	**Egan**	**Humboldt River**	**Mt. Lewis**	**Schell**	**Sierra Front**	**Stillwater**	**Surprise**	**Tuscarora**	**Tonopah**	**Wells**	**Humboldt-Toiyabe**	**Jarbidge**	**Bruneau**	**Evaluation Criteria**	**Initial Biological Determination**
Shortnose sucker (E) *Chasmistes brevirostris*	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	No effect See Appendix A
Shortnose sucker critical habitat	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect See Appendix A
Warm Springs pupfish (E) *Cyrpinodon nevadensis pectoralis*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1, 2	No Effect
Warner sucker (T) *Catostomus warnerensis*	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	3	No effect See Appendix A
White River spinedace (E) *Lepidomeda albivalis*	N	N	N	N	D / S	N	N	D / S	N	N	N	N	N	N	N	N	N	3	No effect See Appendix A
White River spinedace critical habitat	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	4	No effect See Appendix A
White River springfish (E) *Crenichthys baileyi baileyi*	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	3	No effect See Appendix A
White River springfish critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect

Field Office or National Forest																		
Species (Status)[3, 4]	**Alturas**	**Black Rock**	**Caliente**	**Eagle Lake**	**Egan**	**Humboldt River**	**Mt. Lewis**	**Schell**	**Sierra Front**	**Stillwater**	**Surprise**	**Tuscarora**	**Tonopah**	**Wells**	**Humboldt-Toiyabe**	**Jarbidge**	**Bruneau**	**Evaluation Criteria**	**Initial Biological Determination**
Carson wandering skipper (E) *Pseudocopaeodes eunus obscurus*	U	U	N	S	N	U	N	N	D	N	Y	N	N	N	N	N	N	3	No effect See Appendix A
Vernal pool fairy shrimp (T) *Branchinecta lynchi*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1	No effect
Vernal pool fairy shrimp critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect
Gentner's fritillary (E) *Fritillaria gentneri*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1	No effect
Greene's tuctoria (E) *Tuctoria greenei*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1	No effect
Greene's tuctoria critical Habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect
Slender Orcutt grass (T) *Orcuttia tenuis*	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2	No effect
Slender Orcutt grass critical habitat	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	4	No effect
Webber's ivesia (T) *Ivesia webberi*	N	N	N	D	N	N	N	N	D	N	N	N	N	N	N	N	N	NA	See detailed analysis below
Webber's ivesia critical habitat	N	N	N	D	N	N	N	N	D	N	N	N	N	N	N	N	N	NA	See detailed analysis below

Table 2. Brief description of habitat and range for species listed in table 1 above.

Species	Habitat Description and Range
Mammals	
Gray wolf (E) *Canis lupus*	Located throughout the northern hemisphere; listed as endangered in portions of Colorado, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and all or a portion of Elko County, Nevada, and Modoc and Siskiyou Counties, California. Habitat generalists that require ungulate prey. Suitable habitat is present in remote, Nevada action area lands administered by the BLM Bruneau Field Office.
Birds	
Western yellow-billed cuckoo (T) *Coccyzus americanus*	Requires large blocks of riparian woodlands in low to moderate elevation arid to semiarid landscapes. Historic breeding range in western North America is areas west of the crest of the Rocky Mountains in Canada and the United States, and portions of Mexico.
Western yellow-billed cuckoo proposed critical habitat	PCEs are 1) mixed willow-cottonwood or mesquite-thorn patches > 325 feet X 200 acres; 2) A prey base of large insect fauna and tree frogs in breeding and post-breeding dispersal areas; 3) dynamic riverine processes that allow riparian habitat to regenerate regularly. Proposed critical habitat does not overlap the action area.
Amphibians	
Oregon spotted frog (P-T) *Rana pretiosa*	Found from extreme southwestern British Columbia south through the Puget/Willamette Valley Trough, and in the Cascades Range, from south-central Washington at least to the Klamath Basin in Oregon. May be extirpated in California. Highly aquatic: inhabits emergent wetland habitats in forested landscapes. Breeds in shallow, often temporary, pools of water (seasonal lakes, marshes, meadows).
Oregon spotted frog proposed critical habitat	Portions of Washington and Oregon. PCEs: 1) Ephemeral or permanent bodies of freshwater for nonbreeding, rearing, and overwintering; 2) Ephemeral or permanent bodies of freshwater for movement corridors; 3) Dense vegetation and woody debris that provide refugia from predators. Proposed critical habitat does not overlap the action area.
Fishes	
Big Spring spinedace (T) *Lepidomeda millispinis pratensis*	Only found in Meadow Valley Wash, Lincoln County, Nevada.
Big Spring spinedace critical habitat	Fifty-one acres of critical habitat overlap GHMA in the Caliente Field Office.
Bull trout (T) *Salvelinus confluentus*	Found in cold-water streams. Requires stable flows and stream channels and complex forms of cover, including large woody debris, undercut banks, boulders, and pools.
Bull trout critical habitat	Located in portions of Idaho, Oregon, Montana, Washington, and Nevada; 31 acres (18 miles) of critical habitat overlap OHMA and 3 acres (3 miles) overlap PHMA on the Humboldt-Toiyabe National Forest; 1 acre of critical habitat overlaps OHMA and 1 acre overlaps PHMA in the Wells Field Office.
Clover Valley speckled dace (E) *Rhinichthys osculus oligoporus*	Occurs in Clover Valley Warm Springs, Bradish Springs, and Wright Spring in Clover Valley, Elko County, Nevada.

Species	Habitat Description and Range
Cui-ui (E) *Chasmistes cujus*	Endemic to Pyramid Lake, Nevada, and migrates up the tributary Truckee River to spawn. Currently, can access only the lower 12 miles of the Truckee River and only during the spawning season due to flow and passage issues.
Desert dace (T) *Eremichthys acros*	Restricted to thermal spring habitats in the Soldier Meadows area, western Humboldt County, northwestern Nevada (4,330 to 4,580 feet).
Desert dace (*Eremichthys acros*) critical habitat	Soldier Meadows thermal springs and associated outflows and riparian habitat. GIS analysis shows 874 acres of critical habitat overlap GHMA, 1,253 acres overlap OHMA, and 76 acres of PHMA overlap critical habitat on the Black Rock Field Office.
Hiko White River springfish (E) *Crenichthys baileyi grandis*	Occurs in Hiko Spring and Crystal Spring and its outflow, Pahranagat Valley, Lincoln County, Nevada, and has been introduced into Blue Link Spring in Mineral County, Nevada.
Hiko White River springfish critical habitat	Hiko Spring and Crystal Spring, Lincoln County, Nevada, and associated outflows and riparian habitat.
Independence Valley speckled dace (E) *Rhinichthys osculus*	Occurs only in Independence Valley in northeast Elko County, Nevada.
Lahontan cutthroat trout (T) *Oncorhynchus clarkii henshawi*	Inhabits both lakes and streams, but is an obligatory stream spawner. Requires well-vegetated and stable streambanks, silt-free stream bottoms with gravel/rubble substrate, cool water. Endemic to the Lahontan basin (northern Nevada, eastern California but currently occupies between 155 and 160 streams: 123 to 129 in the Lahontan basin and 32 to 34 outside the basin.
Lost River sucker (E) *Deltistes luxatus*	Upper Klamath Basin of Oregon and California; lake dwelling but spawns in tributary streams and springs.
Lost River sucker critical habitat	Six units: 1) Clear Lake and watershed, 2) Tule Lake, 3) Klamath River, 4) Upper Klamath Lake and watershed, 5) Williamson and 6) Sprague Rivers and Gerber Reservoir and watershed; 22 miles (506 acres) of critical habitat overlap GHMA and 536 acres overlap PHMA in the Alturas Field Office.
Modoc sucker (E) *Catostomus microps*	Inhabits primary and secondary streams in the Turner and Ash Creek sub-systems of the upper Pit River drainage in Modoc and Lassen Counties, California
Modoc sucker critical habitat	Includes Johnson Creek from the confluence with Rush Creek, Rush Creek from the gauging station on Highway 299 upstream to the Upper Rush Creek campground, Turner Creek from its confluence with the Pit River, Washington Creek from the confluence with Turner Creek, and Hulbert Creek from its confluence with Turner Creek; 6 miles of critical habitat overlap OHMA in the Alturas Field Office.
Pahrump poolfish (E) *Empetrichthys latos*	Pahrump Valley, southern Nye County, Nevada; marginal to planning area, extirpated from its natural habitat, now exists only as three introduced populations.
Railroad Valley springfish (T) *Crenichthys nevadae*	Thermal spring systems of Railroad Valley, Nye County, Nevada.
Railroad Valley springfish critical habitat	Big Warm, Little Warm, Big, North, Hay Corral, and Reynolds Springs; 55 acres of critical habitat overlap GHMA, 7 acres overlap OHMA in the Egan Field Office, and 284 acres of overlap OHMA on the Tonopah Field Office.

Species	Habitat Description and Range
Shortnose sucker (E) *Chasmistes brevirostris*	Upper Klamath Basin of Oregon and California; lake dwelling but spawns in tributary streams and springs
Shortnose sucker critical habitat	Six units: 1) Clear Lake and watershed, 2) Tule Lake, 3) Klamath River, 4) Upper Klamath Lake and watershed, 5) Williamson and 6) Sprague Rivers and Gerber Reservoir and watershed; 41 miles (519 acres) of critical habitat overlap GHMA, 20 miles (150 acres) overlap OHMA, and 536 acres overlap PHMA in the Alturas Field Office.
Warm Springs pupfish (E) *Cyrpinodon nevadensis pectoralis*	Found in six springs west of Devil's Hole, Ash Meadows, and Nye County, Nevada.
Warner sucker (T) *Catostomus warnerensis*	Endemic to the Warner Lake Basin in south-central Oregon, extreme northeastern California, and extreme northwestern Nevada; currently present in only a portion of the permanent lakes, ephemeral lakes, sloughs, canals and tributary streams in this basin. Uses deep waters with abundant food. Limited suitable habitat in the Surprise Field Office.
White River spinedace (E) *Lepidomeda albivalis*	Several populations have been extirpated. Persists only in the Flag Springs complex in the Nevada State Kirch Wildlife Management Area. Habitat in this cool, clear spring and its overflow includes sand and gravel substrate with some interspersed mud.
White River spinedace critical habitat	Includes Preston Big Spring and Lund Spring (White Pine County, Nevada) and Flag Springs (northeastern Nye County, Nevada); 24 acres of critical habitat overlap GHMA in the Egan Field Office and 5 acres overlap GHMA on the Schell Field Office.
White River springfish (E) *Crenichthys baileyi baileyi*	Found only in Ash Springs complex, Lincoln County, Nevada.
White River springfish critical habitat	Ash Spring source spring area and associated outflows and riparian vegetation.
Invertebrates	
Carson wandering skipper (E) *Pseudocopaeodeseunus obscurus*	Inhabits lowland grassland on alkaline substrates characterized by an elevation of less than 5,000 feet, requires *Distichlis spicata* (saltgrass) and nectar sources in open areas near springs or water. Found along the eastern edge of the Sierra Nevada in northern Nevada and California.
Vernal pool fairy shrimp (T) *Branchinecta lynchi*	Inhabits vernal pools and swales in the Central Valley of California and southwestern Oregon.
Vernal pool fairy shrimp critical habitat	Inhabits vernal pools and swales in the Central Valley of California and southwestern Oregon.
Plants	
Gentner's fritillary (E) *Fritillaria gentneri*	Most often occupies grassland and chaparral habitats in, or on the edges of, dry, open, mixed-species woodlands at elevations below 5,000 feet. Highly localized in about a 30-mile radius of Jacksonville, Oregon. The nearest designated GRSG habitat is over 75 miles southeast of Jacksonville.
Greene's tuctoria (E) *Tuctoria greenei*	Annual grass that grows in dried vernal pools mainly on the eastern side of the Sacramento and San Joaquin Valleys. Known occurrences are in Tulare County north to Shasta County, California. No occurrences or suitable habitats exist in designated GRSG habitat. The Shasta County site is over 13 miles west of the nearest designated GRSG habitat, on private and Lassen National Forest lands.

Species	Habitat Description and Range
Greene's tuctoria critical habitat	Designated critical habitat is in the outer boundary of the Alturas Field Office, but not on BLM-administered lands, and there is no overlap designated GRSG habitat. Designated GRSG habitat is over 13 miles from the nearest designated critical habitat, in Shasta County, California, on private and Lassen National Forest lands.
Slender Orcutt grass (T) *Orcuttia tenuis*	Annual grass that grows in dried vernal pools. Occurs from near Sacramento north to Modoc and Shasta Counties, California. Designated GRSG habitat is over 5 miles from the nearest known occurrence, in Lassen County, California, in the Lassen National Forest.
Slender Orcutt grass critical habitat	Designated GRSG habitat is over 5 miles from the nearest critical habitat for this species, in Lassen County, California, on the Lassen National Forest.
Webber's ivesia (T) *Ivesia webberi*	Occupies vernally moist, rocky, clay soils that shrink and swell on drying and wetting in open to sparsely vegetated areas of low sagebrush (USFWS 2014a). Known from Lassen, Plumas, Sierra, Washoe, and Douglas Counties in California and Nevada. Several occurrences (associated with designated critical habitat units) overlap GHMA and OHMA in the Eagle Lake and Sierra Front Field Offices.
Webber's ivesia critical habitat	Designated critical habitat is present in the Eagle Lake and Sierra Front Field Offices, and overlaps GHMA and OHMA in both; 397 acres are in GHMA and 495 acres are in OHMA.

SPECIES INFORMATION AND CRITICAL HABITAT

Plants

Webber's Ivesia (*Ivesia webberi*)

Habitat Description

Webber's ivesia is a perennial, tap-rooted, low spreading herb with bright yellow ball-like flower heads. This distinctive species is not likely to be confused with other similar species (Witham 2000). It occupies vernally moist, shallow, clayey soils with a rocky pavement-like surface. The specialized soils are well-developed, with an argillic horizon that shrinks and swells on drying and wetting. Habitats occur as small inclusions in a larger matrix of sagebrush habitats. It has been found only in relatively open plant associations, where competition for light and moisture with other species is low (NatureServe 2014). Sites are found on mid-elevation flats, benches, or terraces, with no colluvial accumulation from upslope. Generally, it occurs on mountain slopes above large valleys. The habitat supports a sparse to moderately dense vegetation, usually dominated or co-dominated by Webber's ivesia and low sagebrush (*Artemisia arbuscula*) or squirreltail grass, in association with a wide variety of usually dwarfed, cushion-like perennial herbs.

Status and Distribution

The USFWS listed Webber's ivesia as a threatened species, which became effective on July 3, 2014 (USFWS 2014a). The range of Webber's ivesia lies along the transition zone between the eastern edge of the northern Sierra Nevada and the mountain ranges just to the east of and parallel to the Sierra Nevada. It is known from five counties: Lassen, Plumas, and Sierra Counties, California, and Douglas and Washoe Counties, Nevada.

Nine of 16 known occurrences are in GHMA or OHMA in the Eagle Lake and Sierra Front Field Offices. There is no other known overlap with GRSG habitats. Field surveys sponsored in 1990 and 1991 by the Plumas, Tahoe, and Humboldt-Toiyabe National Forests relocated the type population and documented several new occurrences on the rim of Upper Long Valley on the California-Nevada border. Surveys conducted in 1997 and 1998 redocumented all of the known Nevada occurrences and substantiated other historic records, but no additional occurrences were found (Witham 2000).

The shallow claypan sites in the Surprise Field Office have been subject to many botanical surveys with no documented occurrences,[5] and suitable habitat is not likely to occur in the Surprise Field Office. Field surveys indicate that only a very small portion of potentially suitable habitat is actually occupied. Usually a site that looks suitable from a distance ends up being too xeric or lacks the shallow, clayey soils with a rocky surface pavement associated with this species (Witham 2000). Surveys focusing on about 3,955 acres of additional potential habitat in

[5]R. Farschon, Ecologist, BLM Surprise Field Office, Cedarville, California. E-mail correspondence with Arlene Kosic (BLM Wildlife Biologist), and Bruce Davidson (USFS Botanist) on September 16, 2014.

western Washoe County and in the Pine Nut Mountains of Douglas County, Nevada, have revealed no further populations of Webber's ivesia (Witham 2000). Washoe and Douglas Counties (Eagle Lake and Sierra Front Field Offices) have the most likely areas in GRSG habitats to have Webber's ivesia habitat.

A specimen collected on April 30, 1959 from Pyramid Lake, from a "desert area, very sandy hillside" is considered erroneous and likely was collected nearer to Reno on the same day (Witham 2000). In 1991, a focused field survey in the Pyramid Lake area found no potential habitat. Additionally, the described habitat of "desert area" and "very sandy hillside" is completely unlike any of the known populations of Webber's ivesia. Globally, the western rim of Upper Long Valley, Sierra County, California, remains the last unsurveyed area with highly suitable habitat (Witham 2000), and this area is outside the analysis area.

Life History

Generally, Webber's ivesia is a dominant or co-dominant component of a well-developed, climax dwarf perennial herb and shrub community, commonly occurring with low sagebrush (*Artemisia arbuscula*). Pollinators specific to Webber's ivesia have not been identified; however, most *Ivesia* species reproduce from seed with insect-mediated pollination occurring between flowers of the same or different plants (Witham 2000). Absence of the species from numerous apparently suitable sites provides circumstantial evidence that the species' population may have declined at least during prehistoric times, or that it may have limited ability to disperse and to establish new populations in unoccupied habitat (Witham 2000). Seed dispersal for this species is probably low to none. The seeds are relatively large and probably become lodged in the crevices in the rocky pavement-like soils very soon after being shed from the parent plant. This would partially explain the lack of apparent colonization of nearby seemingly suitable but unoccupied areas.

Threats

The primary threat to Webber's ivesia is the combined effects from the encroachment of nonnative, invasive plant species into its community and the modified fire regime resulting from this encroachment (USFWS 2014a). Nonnative invasive plants negatively affect Webber's ivesia through competition, displacement, and degradation of its habitat. In addition, these nonnative invasive species (mainly annual grasses), once established, contribute fuels that increase the frequency and likelihood of wildfire (USFWS 2014a).

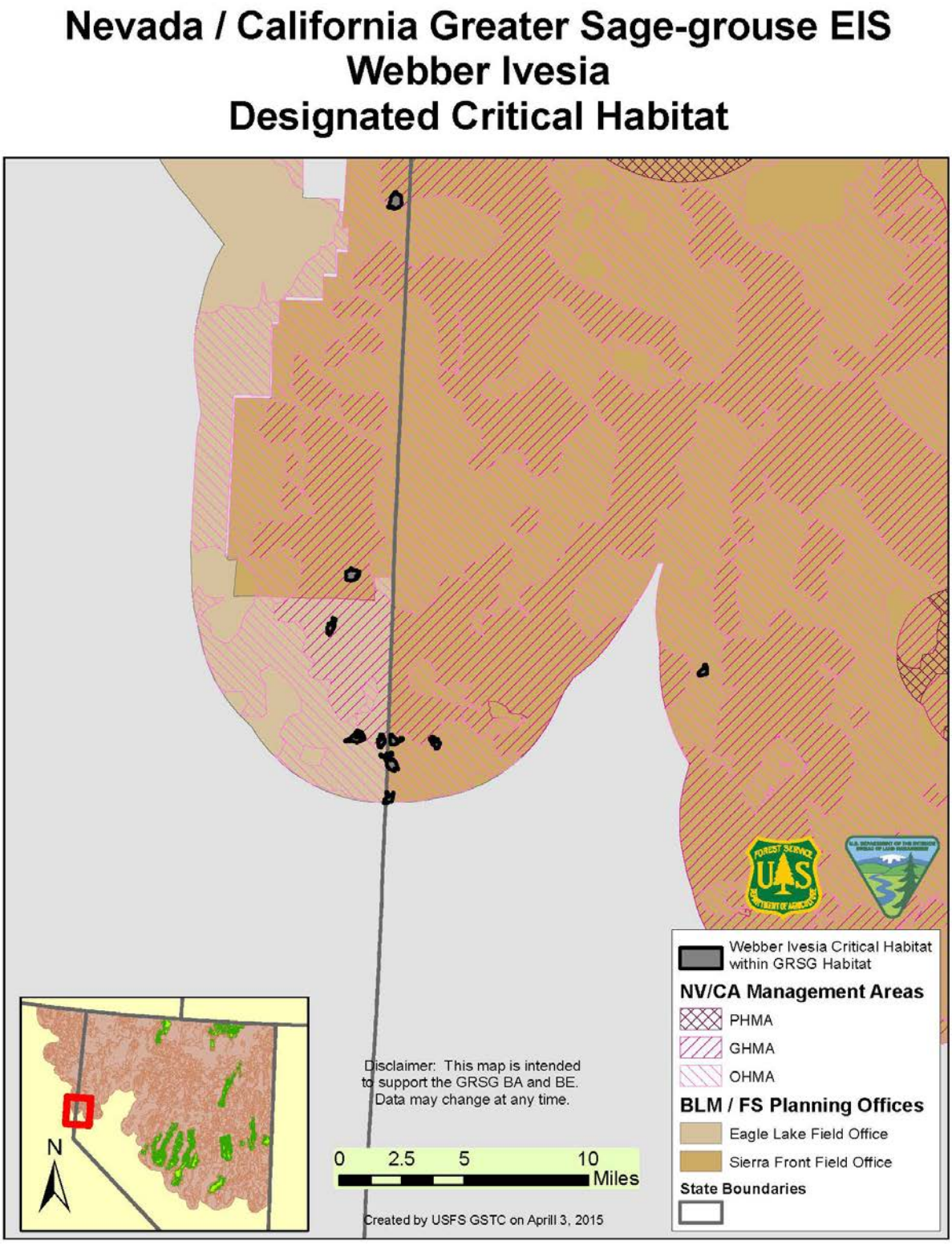
Webber's ivesia is also considered threatened by residential development (especially in the Reno area), road development and maintenance, land conversion to agricultural uses, and off road vehicle (ORV) use. It is also vulnerable to concentrated livestock trampling and fire suppression activities (NatureServe 2014; Witham 2000). It can tolerate some moderate disturbance, as it has been observed in some mildly disturbed sites; however, long-term survival depends on the continued availability of undisturbed mid-elevation benches or saddles, with shallow, very rocky pavement-like soils derived from andesite or similar volcanic material (NatureServe 2014).

Webber's Ivesia Designated Critical Habitat

Also effective on July 3, 2014, the USFWS (2014e) designated critical habitat Webber's ivesia. North of Reno, Nevada, 9 of the 16 designated critical habitat units are in GHMA or OHMA.

Critical habitat units 2, 3, and 4 are in areas mapped as GHMA, and units 6, 7a, 7b, 8, 9, 10, and 11 are mainly in OHMA. Figure 2 below shows the general location and extent of these critical habitat overlaps with GRSG habitats.

Figure 2. Webber's Ivesia designated critical habitat



Overlapping GRSG habitats in the Eagle Lake Field Office are 270 acres of designated critical habitat, including 107 acres of GHMA and 163 acres of OHMA; 622 acres of designated critical habitat overlap GRSG habitats in the Sierra Front Field Office, including 290 acres of GHMA and 332 acres of OHMA.

The PCEs of Webber's ivesia critical habitat are as follows (USFWS 2014e):

- Plant community
  - Open to sparsely vegetated areas composed of generally short-statured associated plant species
  - Presence of appropriate associated species that can include *Antennaria dimorpha*, *Artemisia arbuscula*, *Balsamorhiza hookeri*, *Elymus elymoides*, *Erigeron bloomeri*, *Lewisia rediviva*, *Poa secunda*, and *Viola beckwithii*
  - An intact assemblage of appropriate associated species to attract the floral visitors that may be acting as pollinators
- Topography
  - Flats, benches, or terraces that are generally above or next to large valleys; occupied sites vary from slightly concave to slightly convex or gently sloped (0 to 15°) and occur on all aspects
- Elevation
  - Elevations between 4,475 and 6,237 feet
- Suitable soils and hydrology
  - Vernally moist soils with an argillic horizon that shrink and swell on drying and wetting; these soil conditions are characteristic of known *Ivesia webberi* populations and are likely important in the maintenance of the seedbank and population recruitment
  - Suitable soils that can include Reno, a fine, smectitic, mesic Abruptic Xeric Argidurid; Xman, a clayey, smectitic, mesic, shallow Xeric Haplargid; Aldi, a clayey, smectitic, frigid Lithic Ultic Argixeroll; and Barshaad, a fine, smectitic, mesic Aridic Palexeroll

Threats to Webber's Ivesia's critical habitat are human-caused modifications from the introduction and spread of nonnative invasive species, including *Bromus tectorum*, *Poa bulbosa*, and *Taeniatherum caputmedusae*; modified wildfire regime; increased access and fragmentation of habitat by new roads and ORVs; agricultural, residential, and commercial development; and soil and seedbank disturbance by livestock (USFWS 2014f).

ANALYSIS OF EFFECTS OF THE PROPOSED ACTION BY SPECIES

Plants

Webber's Ivesia (*Ivesia webberi*)

Nine of 16 known occurrences are in GHMA or OHMA in the Eagle Lake and Sierra Front Field Offices. Additional suitable habitat may exist in GRSG habitats in the Eagle Lake and Sierra Front Field Offices.

Direct and Indirect Effects

Threats to Webber's ivesia on federal lands are modification of fire behavior in its habitat due to nonnative invasive plants, competition from nonnative invasive plants, road development, ORV use, concentrated livestock trampling, and fire suppression activities.

Nonnative invasive plants can negatively affect Webber's ivesia through competition, displacement, and degradation of its habitat. Invasive annual grasses can also contribute fuels that increase the frequency and likelihood of wildfire in its habitats. The proposed conservation measures include a focus on invasive species management, as follows:

Action VEG 3 states to "*utilize BLM habitat maps, habitat objectives, and concepts of resistance and resilience to prioritize habitat restoration projects… including restoration in areas affected by wildfire and the continuing invasive annual fire cycle to meet greater sage-grouse habitat objectives.*"

Action VEG-ISM 1 says to "*prevent the establishment of invasive species into uninvaded areas in PHMAs and GHMAs through properly managed grazing and by conducting systematic and strategic detection surveys, data collection, mapping of these areas, and engagement in early response efforts to contain and eradicate if invasion occurs.*"

Action VEG-ISM 2 states to "*control the spread and introduction of Nevada Department of Agriculture and California Department of Food and Agriculture listed noxious weeds and undesirable nonnative plant species."*

Action VEG-ISM 6 directs to "*assess invasive annual grass presence and distribution before implementing vegetation restoration projects to determine if treatments are required to treat invasive annual grasses.*"

Action VEG-ISM 7 says to "*treat sites in PHMAs and GHMAs that contain invasive species infestations through an Integrated Pest Management (IPM) approach using fire, chemical, mechanical, and biological methods based on site potential in accordance with Fire and Invasive Assessment (FIAT) matrix.*"

Any increase in invasive species control as a result of the proposed LUPA may benefit Webber's ivesia habitat by reducing the spread and competition from invasive species. In addition, there is potential for adverse effects on Webber's ivesia individuals from herbicide application and other treatment methods if plants are present. The amount and location of possible increases in invasive species treatments due to the proposed LUPA is unknown, and the current proposed action does not authorize site-specific actions. Although impacts from invasive species treatments are possible from these actions, the extent of effects and likelihood of treatment occurrence in Webber's ivesia habitats are unknown; they are too speculative to quantify at this planning level. Future site-specific analysis of possible effects from invasive species treatments

would occur at the project level, including ESA Section 7 consultations if needed, when the details of such actions become available.

ORV use is a threat to Webber's ivesia because direct contact can damage or kill individuals; the associated soil disturbance can increase erosion and disturb the well-developed soil horizons that are a key component to its habitat. With this action, no additional travel or vehicle uses are proposed.

In this proposal, Action CTTM 2 states that "*in travel management plans that have been completed and are being implemented (e.g., Northeastern California plans), continue to limit motorized travel to designated routes in PHMAs and GHMAs. In areas where travel planning has not been completed, limit motorized travel to existing routes in PHMAs and GHMAs until subsequent implementation level travel planning is completed and a designated route system is established."*

Thus, if any areas of occupied or suitable habitat for Webber's ivesia in PHMA or GHMA are currently open to ORVs, and travel management plans are not completed, vehicles would be restricted to existing routes. This would provide a small but contemporaneous beneficial effect on Webber's ivesia by reducing the likelihood of damage from ORVs.

With this action, no new site-specific road development, livestock uses, or fire suppression activities are proposed. The proposed conservation measures would only limit these uses for the benefit of GRSG. Several measures would change current grazing operations if they are not meeting GRSG habitat objectives. Examples are as follows:

Objective LG 1 states to "*manage permitted livestock grazing to maintain and/or enhance PHMAs and GHMAs to meet all GRSG life cycle requirements and habitat objectives, based on site potential*."

Action LG 1 states, "*When renewing term grazing permits or leases, or when revising or developing new allotment management plans in PHMAs and GHMAs, if not meeting, or making progress towards meeting Land Health Standards, as associated with not meeting GRSG habitat objectives, and grazing is a significant causal factor, adjust permits and take actions before the start of the next grazing season by implementing management strategies, including the addition of one or more of the following (not in priority order): season or timing of use; numbers of livestock; intensity of use; type of livestock; extended rest or temporary closure from grazing through BLM administrative actions; make allotment unavailable to grazing.*"

Action LG 7 says "*In pastures where post livestock removal use monitoring results in utilization levels that exceed allowable use levels, and livestock are identified as an influencing factor, reduce AUMs grazed the following year accordingly. AUMs cannot be applied to another pasture.*"

And Action LG 10 states, "*In any allotment where Land Health Standards were not met, and livestock grazing was found to be a significant causal factor, compliance monitoring will be conducted annually until GRSG habitat objectives are met.*"

Changes in livestock grazing may occur as a result of this decision, depending on whether current management is meeting or making progress toward GRSG habitat objectives. Therefore, whether such modifications would take place is unknown and if so, when, where, or how modifications would occur. Beneficial effects from reduced grazing impacts are possible from these measures, but the extent of benefit and likelihood of occurrence are too speculative to quantify at this programmatic level.

There is the potential for future site-specific ground-disturbing actions to have additional indirect effects—those caused by the action but at a later time. However, at this programmatic planning level, these future project actions are currently unknown; it is not reasonably certain that they would occur, and any possible effects are too speculative to evaluate at this time.

All future site-specific projects would include an environmental analysis through the NEPA process and ESA Section 7 consultations. Potential adverse effects on Webber's ivesia would be avoided, minimized, or mitigated through site-specific analysis at the project level.

Cumulative Effects

To evaluate cumulative effects, the future state, tribal, local, or private actions that are reasonably certain to occur in the action area are identified and their effects are added to the anticipated effects of the current proposal. The action area for the current proposal is limited to PHMA, GHMA, OHMA, and SFA on BLM-administered and National Forest system lands. No state, tribal, local, or private lands exist in the action area; only federal actions are expected. Therefore, no cumulative effects are expected.

Summary Determination of Effects on Webber's Ivesia

Adverse effects from the LUPAs are highly unlikely, due to the focus on protection and enhancement of GRSG habitats and because additional site-specific analysis and mitigation would occur at the project level. A potential beneficial effect on Webber's ivesia may result in PHMA/GHMA from Action CTTM 2, restricting vehicle use to existing routes.

The Nevada and Northeastern California Greater Sage-Grouse Land Use Plan Amendment and Environmental Impact Statement may affect, but would not likely adversely affect, Webber's ivesia. This is because the anticipated effects on occurrences and potentially suitable habitat that may occur in PHMA and GHMA in the Eagle Lake and Sierra Front Field Offices would be beneficial due to the reduced impacts from ORVs. In addition, any possible adverse effects from future ground-disturbing actions would likely be avoided because site-specific analysis would occur at the project level when the details of such actions become available. Because no suitable habitats are expected in PHMA, GHMA, OHMA, or SFA in the Alturas, Black Rock, Caliente, Egan, Humboldt River, Mt. Lewis, Schell, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or the Humboldt-Toiyabe National Forest, there would be no effects on Webber's ivesia in these areas.

Webber's Ivesia Designated Critical Habitat

Direct and Indirect Effects

Threats to Webber's Ivesia critical habitat are as follows (USFWS 2014f):

- Human-caused modifications from the introduction and spread of nonnative invasive species (Bromus tectorum, Poa bulbosa, and Taeniatherum caputmedusae)
- Modified wildfire regime
- Increased access and fragmentation of habitat by new roads and ORVs
- Agricultural, residential, and commercial development
- Soil and seedbank disturbance by livestock

Management activities that could ameliorate these threats include the following (USFWS 2014e):

- Treatment of nonnative, invasive plant species
- Minimization of ORV access and placement of new roads away from the species and its habitat
- Regulations or agreements to minimize the effects of development in areas where the species resides
- Minimization of livestock use or other disturbances that disturb the soil or seeds
- Minimization of habitat fragmentation

Of the four PCEs of Webber's ivesia critical habitat, topography, and elevation are site characteristics that would not be affected by the proposed LUPA. However, the plant community and soils and hydrology elements can be altered by management activities addressed in the proposed LUPA, including the spread of nonnative, invasive plant species, ORV use, livestock grazing, and surface development.

As described below, only beneficial effects are anticipated for Webber's ivesia critical habitat components.

Nonnative, invasive plant species can affect the plant communities in Webber's ivesia critical habitat through competition and displacement of appropriate associated species, including those plants that attract pollinators. Invasive annual grasses can also contribute fuels that increase the frequency and likelihood of wildfire in Webber's ivesia habitats. However, as described above for effects on Webber's ivesia, the proposed LUPAs include a focus on invasive species management.

Actions VEG 3, VEG-ISM 1, VEG-ISM 2, VEG-ISM 6, and VEG-ISM 7 are presented as substantial conservation measures that may benefit Webber's ivesia habitat by reducing the spread and competition from invasive species. In addition, there is potential for adverse effects

on Webber's ivesia critical habitat (associated species) from herbicide application and other treatments.

The amount and location of possible increases in invasive species treatments due to the proposed LUPA are unknown, and the current proposed action does not authorize site-specific actions. Beneficial and adverse impacts from invasive species treatments are possible from these actions; however, the extent of effects and likelihood of treatment in Webber's ivesia habitats are unknown and are too speculative to quantify at this planning level. Future site-specific analyses of possible effects from invasive species treatments would occur at the project level, including ESA Section 7 consultation if needed, when the details of such actions become available.

ORV use is a threat to Webber's ivesia critical habitat because direct contact can damage or kill associated species. The accompanying soil disturbance can increase erosion and disturb the well-developed argillic horizons that are important in maintaining the seedbank and population recruitment.

With this action, no additional travel or vehicle uses are proposed. In fact, Action CTTM 2 states that "*in travel management plans that have been completed and are being implemented (e.g., Northeastern California plans), continue to limit motorized travel to designated routes in PHMAs and GHMAs. In areas where travel planning has not been completed, limit motorized travel to existing routes in PHMAs and GHMAs until subsequent implementation level travel planning is completed and a designated route system is established.*"

Thus, if any areas of critical habitat for Webber's ivesia in PHMA or GHMA are currently open to ORV use and travel management plans are not completed, vehicles would be restricted to existing routes. This would have a small but contemporaneous beneficial effect on Webber's ivesia critical habitat by reducing the likelihood of damage from ORVs. The benefit from this conservation measure would be realized only in the critical habitat in GHMA (107 acres in the Eagle Lake Field Office and 290 acres in the Sierra Front Field Office). This is because this critical habitat does not exist in PHMA, and the ORV restriction does not apply to OHMA.

Livestock could disturb the argillic soil horizons by trampling designated critical habitats. Grazing can also affect the presence and composition of associated plant species because preferred forage species are generally consumed in greater quantities than those that are not preferred. The proposed LUPA does not include additional livestock uses; it would affect the currently authorized livestock grazing only if GRSG habitat objectives could not be met by current practices.

As described above for effects on Webber's ivesia, several conservation measures could direct changes to grazing operations: Objective LG 1 and Actions LG 1, LG 7, and LG 10. If triggered for implementation, these measures would only reduce the extent of livestock grazing.

However, changes in livestock grazing may not occur as a result of this decision, depending on whether current management is meeting or making progress toward GRSG habitat objectives. Therefore, whether such modifications would take place is unknown and if so, when, where, or how modifications would occur. Beneficial effects from reduced grazing impacts are possible

from these measures, but the extent of benefit and likelihood of occurrence are too speculative to quantify at this programmatic level.

The potential for additional surface development in GRSG habitats is also only expected to decrease as a result of the proposed LUPAs. It is unknown if the restrictions would actually prevent any future developments in Webber's ivesia designated critical habitat, of course, because the locations of future potential developments are unknown. Although beneficial effects are possible from proposed restrictions on additional surface development, the extent of benefit and likelihood of beneficial restrictions are too speculative to quantify at this programmatic level.

There is the potential for future site-specific ground-disturbing actions to have additional indirect effects—those caused by the action but at a later time. However, at this programmatic planning level, these future project actions are currently unknown; it is not reasonably certain that they would occur, and any possible effects are too speculative to evaluate at this time.

All future site-specific projects would include an environmental analysis through the NEPA process and ESA Section 7 consultations. Potential adverse effects on Webber's ivesia would be avoided, minimized, or mitigated through site-specific analysis at the project level.

Cumulative Effects

To evaluate cumulative effects, the future state, tribal, local, or private actions that are reasonably certain to occur in the action area are identified and their effects are added to the anticipated effects of the current proposal. The action area for the current proposal is limited to PHMA, GHMA, OHMA, and SFA on BLM-administered and National Forest system lands. No state, tribal, local, or private lands exist in the action area; only federal actions are expected. Therefore, no cumulative effects are expected.

Summary Determination of Effects on Webber's Ivesia

Adverse effects from the proposed LUPA are highly unlikely. This is due to the focus on protection and enhancement of GRSG habitats, and because additional site-specific analysis and mitigation would occur at the project level. Mostly beneficial effects may result from increased control treatments for nonnative, invasive species and the potential reductions in livestock grazing and surface development. The locations and extent of these actions are unknown, so any possible effects are too speculative to quantify at this programmatic level. Reducing damage to soils and vegetation by restricting vehicles to existing routes (Action CTTM 2) is likely to benefit Webber's ivesia designated critical habitat in GHMA where ORV use is currently allowed.

The Nevada and northeastern California Greater Sage-Grouse Land Use Plan Amendment and Environmental Impact Statement may affect, but would not likely adversely affect, Webber's ivesia designated critical habitat in GHMA in the Eagle Lake and Sierra Front Field Offices. This is because the anticipated effects on the PCEs would be beneficial due to reduced impacts from ORVs on 397 acres. In addition, any possible adverse effects from future ground-disturbing actions would likely be avoided because site-specific analysis would occur at the project level when the details of such actions become available.

There would be no effects on Webber's ivesia designated critical habitat in these areas. This is because no designated critical habitat exists in PHMA, GHMA, OHMA, or SFA in the Alturas, Black Rock, Caliente, Egan, Humboldt River, Mt. Lewis, Schell, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or the Humboldt-Toiyabe National Forest.

DETERMINATIONS OF EFFECTS SUMMARY BY SPECIES

Species	Status[6]	Determination[7]	Rationale
Gray wolf *Canis lupus*	E	NE	The gray wolf would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Caliente, Egan, Schell, Sierra Front, Stillwater, Surprise, Tonopah, or Jarbidge Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest are either outside the range of or are not known to contain suitable habitat for the gray wolf. Similar actions occurring in the Alturas, Eagle Lake, Wells, Black Rock, Humboldt River, Mt. Lewis, and Tuscarora Field Offices or in remote portions of the action area administered by the Bruneau Field Office would not affect the gray wolf or its habitat. This is because there is no evidence indicating the presence of gray wolf populations in or next to the action area. Moreover, none of the conservation measures proposed in the Nevada and Northeastern California GRSG LUPA/EIS would impact wolf-ungulate interactions or the potential for wolf-human interactions. In addition, site-specific NEPA analysis conducted at the project level would provide a determination of effects for gray wolf at that time.

[6] E = Endangered; T = Threatened; P-T = Proposed Threatened

[7] NE = No Effect (would not affect the species); NLJ = Not likely to jeopardize the continued existence of the species; NLAA = May affect, but is not likely to adversely affect; NLDAM = Not likely to result in destruction or adverse modification of proposed critical habitat

Species	Status[6]	Determination[7]	Rationale
Western yellow-billed cuckoo *Coccyzus americanus*	T	NE	The western yellow-billed cuckoo or its habitat would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Eagle Lake, Egan, Mt. Lewis, Schell, Surprise, or Tonopah Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest are either outside the range of or are not known to contain suitable habitat for the western yellow-billed cuckoo. Similar actions in the Black Rock, Caliente, Humboldt River, Sierra Front, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices would not affect the western yellow-billed cuckoo or its habitat. This is because it is unlikely that western yellow-billed cuckoos are breeding in the action area, and the LUPA/EIS contains no actions that would adversely impact riparian areas. Moreover, a site-specific analysis would be conducted at the project level and a determination of effects for the yellow-billed cuckoo would be made at that time.
Western yellow-billed cuckoo critical habitat	Proposed	NLDAM	The Nevada and Northeastern California GRSG LUPA/EIS is not likely to destroy or adversely modify yellow-billed cuckoo proposed critical habitat. This is because there is no overlap between yellow-billed cuckoo proposed critical habitat polygons and PHMA or GHMA in the portions of the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Jarbidge, Bruneau, or Wells Field Offices or in the Humboldt-Toiyabe National Forest occurring in the action area.
Oregon spotted frog *Rana pretiosa*	T	NE	The Oregon spotted frog or its habitat would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest are either outside the range of or are not known to contain suitable habitat for the Oregon spotted frog. Similar actions occurring in the Alturas Field Office or Surprise Field Office would not affect Oregon spotted frog or its habitat because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level; additional determinations of the effects on Oregon spotted frog would be made at that time (see Appendix A).
Oregon spotted frog critical habitat	Proposed	NLDAM	The Nevada and Northeastern California GRSG LUPA/EIS is not likely to destroy or adversely modify Oregon spotted frog proposed critical habitat. This is because there is no overlap between Oregon spotted frog proposed critical habitat polygons and PHMA or GHMA in action area of the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.

Species	Status[6]	Determination[7]	Rationale
Big Spring spinedace *Lepidomeda millispinis pratensis*	T	NE	The Big Spring spinedace would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest are either outside of the range of or are not known to contain suitable habitat for the Big Spring spinedace. Similar actions occurring in the Caliente Field Office would not affect Big Spring spinedace or its habitat. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analysis would occur at the project level. and additional determinations of effects for Big Spring spinedace would be made at that time (see Appendix A).
Big Spring spinedace critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Big Spring spinedace designated critical habitat. Although 50 acres of critical habitat overlap GHMA in the Caliente Field Office, there are no actions in this LUPA decision that would impact aquatic habitat or deplete water in these critical habitats. In addition, site-specific analysis would be conducted at the project level and the effects of Big Spring spinedace critical habitat would be determined at that time. Furthermore, Big Spring spinedace critical habitat does not overlap GRSG habitat on the Alturas, Black Rock, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or the Humboldt-Toiyabe National Forest.
Bull trout *Salvelinus confluentus*	T	NE	The bull trout would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Caliente, Eagle Lake, Egan, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, or Tonopah Field Offices. This is because these field offices do not contain suitable habitat for bull trout. Similar actions in the Black Rock, Humboldt River, Tuscarora, Wells, Jarbidge, or Bruneau Field Office or the Humboldt-Toiyabe National Forest would not affect bull trout. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level and any additional effects for bull trout would be determined at that time (see Appendix A).
Bull trout critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect bull trout designated critical habitat. Three miles of critical habitat overlap PHMA/SFA and 31 miles overlap OHMA (18 miles of which are in SFA) in the Humboldt-Toiyabe National Forest; one acre of critical habitat overlaps OHMA and one acre of critical habitat overlaps PHMA in the Wells Field Office. Nevertheless, there are no actions in this LUPA decision that would impact aquatic habitat or deplete water

Species	Status[6]	Determination[7]	Rationale
			in these critical habitats. In addition, site-specific analysis would be conducted at the project level and the effects for bull trout critical habitat would be determined at that time. Furthermore, there is no designated critical habitat for bull trout in the action area of the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Jarbidge, or Bruneau Field Offices.
Clover Valley speckled dace *Rhinichthys osculus oligoporus*	E	NE	The Clover Valley speckled dace would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for the species. Similar actions in the Tuscarora, Wells, or Jarbidge Field Offices would not affect the Clover Valley speckled dace. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for the Clover Valley speckled dace would be determined at that time (see Appendix A).
Cui-ui *Chasmistes cujus*	E	NE	The cui-ui would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for the cui-ui. Similar actions in the Sierra Front Field Office would not affect cui-ui because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level and additional determinations of effects for cui-ui would be made at that time (see Appendix A).
Desert dace *Eremichthys acros*	T	NE	The desert dace would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS or associated actions in the Alturas, Caliente, Eagle Lake, Egan, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for desert dace. Similar actions occurring in the Black Rock, Jarbidge, or Humboldt River Field Offices would not affect desert dace or its habitat because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and additional the effects for the desert dace would be determined at that time (see Appendix A).
Desert dace critical habitat	Designated		The desert dace's critical habitat would not be affected by the Nevada and

Species	Status[6]	Determination[7]	Rationale
			Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because the portion of the action area in these field offices and national forest does not contain critical habitat for desert dace. Similar actions in the Black Rock Field Office would not affect desert dace critical habitat because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. This is despite there being 874 acres of critical habitat that overlap GHMA, 1,253 acres of critical habitat that overlap OHMA, and 76 acres of critical habitat that overlap PHMA in the Black Rock Field Office. In addition, site-specific analysis would occur at the project level and additional determinations of effects for desert dace critical habitat would be made at that time (see Appendix A).
Hiko White River springfish *Crenichthys baileyi grandis*	E	NE	The Hiko White River springfish would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Surprise, Tonopah, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for desert dace. Similar actions in the Tuscarora Field Office would not affect Hiko White River springfish in the Stillwater Field Office because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and effects for Hiko White River springfish would be determined at that time (see Appendix A).
Hiko White River springfish critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Hiko White River springfish designated critical habitat. This is because there is no designated critical habitat in the action area or in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Independence Valley speckled dace *Rhinichthys osculus*	E	NE	The Independence Valley speckled dace would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for Independence Valley speckled dace. Similar actions in the Tuscarora, Wells, or Jarbidge Field Offices would not affect Independence Valley speckled dace. This is because there are no actions in this LUPA decision

Species	Status[6]	Determination[7]	Rationale
			that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for Independence Valley speckled dace would be determined at that time (see Appendix A).
Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*	T	NE	The Lahontan cutthroat trout would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions on the Alturas, Caliente, Eagle Lake, Egan, Schell, Surprise, Tonopah or Bruneau Field Offices. This is because these field offices do not contain suitable habitat for Lahontan cutthroat trout. Similar actions in the Black Rock, Humboldt River, Mt. Lewis, Sierra Front, Stillwater, Tuscarora, Wells, or Jarbidge or in the Humboldt-Toiyabe National Forest would not affect Lahontan cutthroat trout. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for Lahontan cutthroat trout would be determined at that time (see Appendix A).
Lost River sucker *Deltistes luxatus*	E	NE	The Lost River sucker would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for the Lost River sucker. Similar actions in the Alturas Field would not affect Lost River sucker because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for Lost River sucker would be determined at that time (see Appendix A).
Lost River sucker critical habitat		NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Lost River sucker designated critical habitat in the Alturas Field Office because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. This is in spite of there being 22 miles (506 acres) of Lost River sucker critical habitat overlapping GHMA and 536 acres of critical habitat overlapping PHMA on the Alturas Field Office. In addition, site-specific analyses would occur at the project level, and any effects for Lost River sucker would be determined at that time (see Appendix A). There is no designated critical habitat for the Lost River sucker in the action area in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Modoc sucker *Catostomus microps*	E	NE	The Modoc sucker would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Black Rock, Caliente, Eagle Lake,

Species	Status[6]	Determination[7]	Rationale
			Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah, Tuscarora, Jarbidge, or Wells Field Offices or in the Humboldt-Toiyabe National Forest. This is because the portion of the action area overlapping these field offices and national forest does not contain suitable habitat for Modoc sucker. Similar actions in the Alturas Field Office would not affect Modoc sucker. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for Modoc sucker would be determined at that time (see Appendix A).
Modoc sucker critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Modoc sucker designated critical habitat in the Alturas Field Office because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. This is despite there being 6 miles of Modoc sucker critical habitat overlapping OHMA in the Alturas Field Office. In addition, site-specific analyses would occur at the project level, and the effects for Lost River sucker critical habitat would be determined at that time (see Appendix A). Furthermore, there is no designated critical habitat for the Modoc sucker in the action area in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Pahrump poolfish *Empetrichthys latos*	E	NE	The Pahrump poolfish would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest are either outside the range of or do not contain suitable habitat for the Pahrump poolfish.
Railroad Valley springfish *Crenichthys nevadae*	T	NE	The Railroad Valley springfish would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Humboldt River, Mt. Lewis, Sierra Front, Surprise, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for Railroad Valley springfish. Similar actions in the Egan Field Office, Schell Field Office, Stillwater Field Office, or Tonopah Field Office would not affect Railroad Valley springfish. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for Railroad Valley springfish would be determined at that time (see

Species	Status[6]	Determination[7]	Rationale
			Appendix A).
Railroad Valley springfish critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Railroad Valley springfish designated critical habitat in the Egan and Tonopah Field Offices. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. This is despite there being 55 acres of Railroad Valley springfish critical habitat overlapping GHMA, 7 acres of critical habitat overlapping OHMA on the Egan Field Office, and 284 acres of critical habitat overlapping OHMA in the Tonopah Field Office. In addition, site-specific analysis would occur at the project level, and the effects for Railroad Valley springfish critical habitat would be determined at that time (See Appendix A). Furthermore, there is no designated critical habitat for Railroad Valley springfish in the action area in the Alturas, Black Rock, Caliente, Eagle Lake, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Wells, Jarbidge or Bruneau Field Offices, or the Humboldt-Toiyabe National Forest.
Shortnose sucker *Chasmistes brevirostris*	E	NE	The shortnose sucker would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for shortnose sucker. Similar actions in the Alturas Field Office would not affect shortnose sucker because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for shortnose sucker would be determined at that time (see Appendix A).
Shortnose sucker critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect shortnose sucker designated critical habitat in the Alturas Field Office because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. This is despite there being 41 miles (519 acres) of shortnose sucker critical habitat overlapping GHMA, 20 miles (150 acres) of critical habitat overlapping OHMA, and 536 acres of critical habitat overlapping PHMA in the Alturas Field Office. In addition, site-specific analysis would occur at the project level and additional determinations of effects for shortnose sucker critical habitat would be made at that time (See Appendix A). Furthermore, there is no designated critical habitat for shortnose sucker in the action area in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Warm Springs pupfish *Cyrpinodon*	E	NE	The Warm Springs pupfish would not be affected by the Nevada and Northeastern

Species	Status[6]	Determination[7]	Rationale
nevadensis pectoralis			California GRSG LUPA/EIS and associated actions occurring in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest are either outside the range of or do not contain suitable habitat for the Warm Springs pupfish.
Warner sucker *Catostomus warnerensis*	T	NE	The Warner sucker would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Tonopah, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for Warner sucker. Similar actions in the Surprise Field Office would not affect Warner sucker because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for Warner sucker would be determined at that time (see Appendix A).
White River spinedace *Lepidomeda albivalis*	E	NE	The White River spinedace would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions on the Alturas, Black Rock, Caliente, Eagle Lake, Humboldt River, Mt. Lewis, Sierra Front, Stillwater, Surprise, Tonopah, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for White River spinedace. Similar actions in the Egan and Schell Field Offices would not affect White River spinedace because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for White River spinedace would be determined at that time (see Appendix A).
White River spinedace critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect White River spinedace designated critical habitat in the Egan and Schell Field offices. This is because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. This is despite there being 24 acres of White River spinedace critical habitat overlapping GHMA in the Egan Field Office and 5 acres of critical habitat overlapping GHMA in the Schell Field Office. In addition, site-specific analysis would occur at the project level; the effects for the White River spinedace critical habitat would be determined at that time (see Appendix A). Furthermore, there is no designated critical habitat for the White River spinedace in the action area in the Alturas, Black Rock, Caliente, Eagle Lake, Humboldt River, Mt. Lewis, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge

Species	Status[6]	Determination[7]	Rationale
			or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
White River springfish *Crenichthys baileyi baileyi*	E	NE	The White River springfish would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Surprise, Tonopah, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for White River springfish. Similar actions in the Stillwater Field Office would not affect White River springfish because there are no actions in this LUPA decision that would divert water to or otherwise impact aquatic habitat. In addition, site-specific analyses would occur at the project level, and any effects for White River springfish would be determined at that time (see Appendix A).
White River springfish critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect White River springfish designated critical habitat. This is because there is no designated critical habitat for White River springfish in the action area in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Carson wandering skipper *Pseudocopaeodeseunus obscurus*	E	NE	The Carson wandering skipper would not be affected by the Nevada and Northeastern California GRSG LUPA/EIS and associated actions in the Caliente, Egan, Mt. Lewis, Schell, Stillwater, Tuscarora, Wells, Jarbidge, and Bruneau Field Offices and in the Humboldt-Toiyabe National Forest. This is because these field offices and national forest do not contain suitable habitat for the Carson wandering skipper. Similar actions in the Sierra Front, Stillwater, Eagle Lake, Surprise Alturas, Black Rock, or Humboldt River Field Offices would not affect the Carson wandering skipper or its habitat. This is because there are no actions in this LUPA that would impact riparian or mesic habitat or cause water depletions to affect the vegetation around such habitat. In addition, site-specific analyses would occur at the project level, and any effects for Carson wandering skipper would be determined at that time (see Appendix A).
Vernal pool fairy shrimp *Branchinecta lynchi*	T	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect vernal pool fairy shrimp because it does not occur in the action area or in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbridge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Vernal pool fairy shrimp critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect vernal pool fairy shrimp designated critical habitat because there is no designated critical habitat for it in the action area or in the Alturas, Black Rock, Caliente, Eagle Lake,

Species	Status[6]	Determination[7]	Rationale
			Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbridge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.
Gentner's fritillary *Fritillaria gentneri*	E	NE	The range of Gentner's fritillary is limited to in about a 30-mile radius of Jacksonville, Oregon. Because PHMA, GHMA, OHMA, and SFA are at least 75 miles away, Gentner's fritillary is not suspected to occur in the action area, and therefore the Nevada and Northeastern California GRSG LUPA/EIS Statement would not affect Gentner's fritillary.
Greene's tuctoria *Tuctoria greenei*	E	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Greene's tuctoria because there are no occurrences or suitable habitat for it in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. There is no overlap between Greene's tuctoria occurrences or suitable habitat and PHMA, GHMA, OHMA, or SFA in the Alturas Field Office in the action area.
Greene's tuctoria critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect Greene's tuctoria designated critical habitat. This is because there is no designated critical habitat for it in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. There is no overlap between Greene's tuctoria critical habitat and PHMA, GHMA, OHMA, and SFA in the Alturas Field Office in the action area.
Slender Orcutt grass *Orcuttia tenuis*	T	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect slender orcutt grass because there are no occurrences or suitable habitat for it in the Black Rock, Caliente, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. There is no overlap between slender orcutt grass or suitable habitat and PHMA, GHMA, OHMA, or SFA in the Alturas or Eagle Lake Field Offices in the action area.
Slender Orcutt grass critical habitat	Designated	NE	The Nevada and Northeastern California GRSG LUPA/EIS would not affect slender orcutt grass designated critical habitat because there is no designated critical habitat for it in the Black Rock, Caliente, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. There is no overlap between slender orcutt grass critical habitat and PHMA, GHMA, OHMA, or SFA in the portions of the Alturas or Eagle Lake Field Offices occurring in the action area.
Webber's ivesia *Ivesia webberi*	T	NLAA	The Nevada and Northeastern California GRSG LUPA/EIS may affect, but would not likely adversely affect, Webber's ivesia. This is because the anticipated effects

Species	Status[6]	Determination[7]	Rationale
			on the species and potentially suitable habitat in PHMA, GHMA, OHMA, or SFA in the Eagle Lake and Sierra Front Field Offices would be beneficial, due to the reduced impacts from ORVs. In addition, any possible adverse effects from future ground-disturbing actions would likely be avoided. This is because site-specific analysis would occur at the project level when the details of such actions become available. Because no suitable habitat is suspected to occur in PHMA, GHMA, OHMA, or SFA in the Alturas, Black Rock, Caliente, Egan, Humboldt River, Mt. Lewis, Schell, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices, or the Humboldt-Toiyabe National Forest, there would be no effects on Webber's ivesia.
Webber's ivesia critical habitat	Designated	NLAA	The Nevada and Northeastern California GRSG LUPA/EIS may affect, but would not likely adversely affect, Webber's ivesia designated critical habitat in GHMA in the Eagle Lake and Sierra Front Field Offices. This is because the anticipated effects on the PCEs would be beneficial due to reduced impacts from ORVs on 397 acres. In addition, any possible adverse effects from future ground-disturbing actions would likely be avoided because site-specific analysis would occur at the project level when the details of such actions become available. There would be no effects on Webber's ivesia designated critical habitat in these areas. This is because no designated critical habitat exists in PHMA, GHMA, OHMA, or SFA in the Alturas, Black Rock, Caliente, Egan, Humboldt River, Mt. Lewis, Schell, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.

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APPENDIX A: ADDITIONAL RATIONALE BEHIND NO EFFECT DETERMINATIONS FOR SELECT SPECIES OREGON GROUPS OF SPECIES IN TABLES 1 AND 2

Gray Wolf

Environmental baseline, proposed critical habitat, and threats

The gray wolf has been documented in the Alturas and Eagle Lake Field Offices. Based on anecdotal information alone, it is suspected to occur in the Wells Field Office. Suitable habitat is present on the Black Rock, Humboldt River, and Tuscarora Field Offices, and in remote, Nevada action area lands administered by the Bruneau Field Office. Suitable habitat may be present in the Mt. Lewis Field Office.

The gray wolf is listed as endangered in the California and Nevada, although critical habitat has not been proposed or designated for the species. On December 28, 2011, a 2 ½-year old male gray wolf, referred to as Oregon-7, entered California from northeast Oregon; however, the gray wolf uses areas primarily in northeastern Oregon. This dispersal behavior was typical of wolves the age of Oregon-7. Wolves historically inhabited California before extirpation. The last confirmed sighting in California, before Oregon-7, was in 1924. Oregon-7 traveled through several northern California counties, including Modoc and Lassen, where the Alturas and Eagle Lake BLM Field Offices are located, between December 2011 and April 2013, before returning to Oregon on April 23, 2013.

In June, the Oregon USFWS confirmed the existence of two gray wolf pups in the Cascade Mountains of southwestern Oregon. A month later, remote trail cameras captured Oregon-7, his mate, and the growing pups.

The USFWS has proposed removing the gray wolf from the threatened and endangered species list (USFWS 2013c).

Discussion and determination

The Nevada and Northeastern California GRSG LUPA/EIS would not affect the gray wolf. Key things to consider when evaluating effects on wolves are those on wolf populations, wolf-ungulate interactions, and the potential for wolf-human interactions. Recent wolf sightings in California are limited to dispersing individuals. No den or rendezvous sites indicating the presence of breeding pairs[8] or packs[9] have been identified to date in or near the action area. Therefore, there is no evidence indicating the presence of gray wolf populations in or next to the action area.

[8]An adult male and an adult female wolf that have produced at least two pups that survived to December 31 of the year of their birth, during the previous breeding season.

[9]A group of wolves, usually consisting of a male, female and their offspring from one or more generations. For purposes of monitoring, a pack may be defined as a group of four or more wolves traveling together in winter. Ongoing and future wolf research may refine this definition for monitoring purposes.

> The US Court of Appeals for the Tenth Circuit found that "by definition lone dispersers do not constitute a population or even part of a population, since they are not 'in common spatial arrangement' sufficient to interbreed with other members of a population" (Wyoming Farm Bureau Federation v. Babbitt, 199 F.3d 1224, 1234 [10th Cir. 2000]). The Court of Appeals for the Ninth Circuit held that, despite "sporadic sightings of isolated indigenous wolves in the release area [a gray wolf reintroduction site], lone wolves, or 'dispersers,' do not constitute a population" under the Endangered Species Act (US v. McKittrick, 142 F. 3d 1170, 1175 (9th Cir.), cert. denied, 525 US 1072[(1999]). Thus, the courts have upheld our interpretation that a "population" must include two or more breeding pairs (USFWS 2013c).

None of the conservation measures proposed in the Nevada and Northeastern California GRSG LUPA/EIS would impact wolf-ungulate interactions or the potential for wolf-human interactions. Because gray wolves are highly mobile and population expansion continues in Oregon and Idaho, there is potential for future occurrence of the species in the action area. In the event that future wolf distribution overlaps sage-grouse PHMA and GHMA in the action area, site-specific NEPA analysis conducted at the project level would provide a determination of effects for gray wolf at that time.

Western yellow-billed cuckoo and proposed critical habitat

Environmental baseline, proposed critical habitat, and threats

The western distinct population segment (DPS) of the yellow-billed cuckoo (*Coccyzus americanus*) was federally listed as threatened by the USFWS on October 3, 2014; the ruling became effective November 3, 2014 (USFWS 2014d). Critical habitat for the western DPS of the yellow-billed cuckoo was proposed on August 15, 2014 (USFWS 2014c); the Nevada and Northeastern California GRSG LUPA/EIS action area does not contain proposed critical habitat for the western yellow-billed cuckoo. The species requires large blocks of riparian woodlands in low to moderate elevation arid to semiarid landscapes.

The western yellow-billed cuckoo is not known in or suspected to be present in the following units in the action area: Alturas Field Office, Eagle Lake Field Office, Egan Field Office, Mt. Lewis Field Office, Schell Field Office, Surprise Field Office, and Tonopah Field Office and in the Humboldt-Toiyabe National Forest. The Stillwater Field Office includes portions of Mineral and Lyon Counties. There are no Nevada Department of Wildlife or Nevada Natural Heritage Program records of yellow-billed cuckoo sightings in Mineral County, and there is no known suitable habitat. Yellow-billed cuckoo has been documented on Bureau of Reclamation-administered land along the Carson River in Lyon County, Nevada, but there are no known occurrences or suitable habitat for BLM-administered lands in Lyon County.[10] The western yellow-billed cuckoo is not known in or suspected to be present in the Black Rock and Humboldt River Field Offices. However, gallery cottonwood forests may be present at high elevations.

[10]Chris Kula, Stillwater Field Office Wildlife Biologist, personal communication with Katherine Malengo (USFS Wildlife Biologist), August 18, 2014.

There is one documented sighting, on June 24, 1986, on the adjacent Sheldon National Wildlife Refuge.

The western yellow-billed cuckoo is documented in the Sierra Front Field Office. Based on the USFWS Proposed Rule, Nevada Natural Heritage Program data, and discussions with the Great Basin Bird Observatory, the only recent persistent sightings in the Sierra Front Field Office have been in the Lahontan Reservoir area.[11]

Suitable habitat for the yellow-billed cuckoo is present in the Tuscarora and Wells Field Offices (Elko District Office), but preferred cottonwood gallery habitat is absent. In the District Office, the species is considered a seasonal migrant. An accidental sighting (in ornamental trees near the office) is known from the adjacent Ruby National Wildlife Refuge, but there are no recorded observations in the Elko District Office.[12]

The yellow-billed cuckoo is suspected to be present in the Caliente Field Office. Based on information contained in the biological opinion for the 2008 Ely District Office RMP (USFWS 2008), western yellow-billed cuckoos are known to occur in Pahranagat Valley and along the Meadow Valley Wash in Lincoln County. Nesting has not been documented, but comprehensive surveys, particularly in Pahranagat Valley, are limited by inaccessibility to private lands where much of the habitat occurs. Yellow-billed cuckoos have been detected north of Elgin along the Meadow Valley Wash, on the Pahranagat National Wildlife Refuge, and on private lands north of the refuge in Pahranagat Valley.

The existing biological opinion contains the following proposed management actions that may benefit the western yellow-billed cuckoo:

VEG-23: Promote vegetation structure and diversity that is appropriate and effective in controlling erosion, stabilizing stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy, in order to provide for stable water flow and bank stability.
VEG-24: Focus management actions on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat.
WL-1: Emphasize management of priority habitats for priority species.
WL-4: Mitigate all discretionary permitted activities that result in the loss of aquatic and priority wildlife habitats by improving 2 acres of comparable habitat for every 1 acre of lost habitat as determined on a project-by-project basis.
WL-16: When planning projects, consider migratory birds, as appropriate, to minimize take and limit impacts.
WL-17: Work with the Service, NDOW, and other partners (e.g., Great Basin Bird Observatory, Partners in Flight) to conduct breeding bird surveys to document the population status and trends of those migratory bird species of concern.

11Pilar Ziegler, Sierra Front Field Office Wildlife Biologist, personal communication with Katherine Malengo (USFS Wildlife Biologist), August 5, 2014.

[12]Cam Collins, Wells Field Office Wildlife Biologist, personal communication with Katherine Malengo (USFS Wildlife Biologist), August 31, 2014.

SS-2: Develop and implement an interagency inventory and monitoring program for species status plant and animal species.
SS-20: Limit livestock grazing in the Lower Meadow Valley Wash area of critical environmental concern (ACEC) through terms and conditions and/or season-of-use restrictions on grazing permits in accordance with a site-specific ACEC plan.
LR-2: Retain lands in ACECs.

Additional management recommendations for the western yellow-billed cuckoo in the biological opinion are the following:

1. Avoid the authorization of actions that would promote or contribute to declines in surface and ground water resources.
2. Avoid disposal of BLM-administered lands that contain riparian areas.
3. On completion of salt cedar removal projects in the Meadow Valley Wash, revegetate project sites with native riparian plant species to ensure no net loss of large woody riparian vegetation.

In the northern portion of Nevada administered by the Jarbidge Field Office, suitable habitat for the yellow-billed cuckoo is present on private land just north of the forest boundary on the Jarbidge River north of Jarbidge, Nevada. A single observation is reported from near Murphy Hot Springs, Idaho, just north of the action area, in late summer. Nesting is undocumented on BLM-administered lands in the action area; cottonwood gallery forests are very limited on BLM-administered lands.

It is unknown if there is suitable habitat for the yellow-billed cuckoo in the Bruneau Field Office, but it is expected to be absent. There is one documented sighting of a pair on Battle Creek on June 23, 1996; otherwise, the next nearest observations are along Snake River, which is not in Bruneau Field Office.

The primary threats to the yellow-billed cuckoo result from habitat destruction, modification, and degradation from dam construction and operations; water diversions; river flow management; stream channelization and stabilization; land conversion to agriculture; urban and transportation infrastructure; and increased incidence of wildfire (USFWS 2013b).

Discussion and Determination

The Nevada and Northeastern California GRSG LUPA/EIS decision would not affect the yellow-billed cuckoo or its proposed critical habitat; based on known habitat affinities and PCEs, it is unlikely that western yellow-billed cuckoos are breeding in the action area. In addition, the following BLM objectives and actions in the Proposed Plan are consistent with the proposed management actions in the biological opinion for the 2008 Ely District Office RMP (USFWS 2008):

- Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g., range, wildlife, and riparian).
- Manage riparian areas in PHMAs and GHMAs for vegetation composition and structure consistent with ecological site potential and to achieve GRSG habitat objectives.

- Manage upland habitat associated with riparian areas to promote cover relative to site potential to facilitate GRSG brood-rearing habitat.
- Manage to restore riparian function and meet GRSG habitat where riparian function has been compromised or lost.
- Inventory, monitor, and control invasive species in riparian and wet meadow areas in PHMAs and GHMAs.
- Design and implement vegetation treatments in PHMAs and GHMAs to restore, enhance, and maintain riparian areas.
- Consider an array of vegetation treatments to increase edge and expand mesic areas in PHMAs and GHMAs where riparian extent is limited by shrub encroachment.
- Manage lotic riparian habitats in conjunction with adjacent terraces and valley bottoms as natural fuel breaks to reduce size and frequency of wildfires in PHMAs and GHMAs.
- The BLM would prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary before renewal, and (2) the processing of grazing permits/leases in SFAs followed by PHMAs outside of the SFAs. In setting workload priorities, precedence would be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. If results from a land health assessment indicate that GRSG habitat objectives are not met in SFAs, PHMAs and GHMAs, and grazing is a contributing factor, and until appropriate modifications are incorporated through the permit renewal process, implement management strategies that may include but are not limited to: Considering no grazing from May 15 – Sept. 15 in riparian areas and wet meadows; Removing livestock in 3-7 days for the remainder of the grazing year once the allowable use levels are reached [In riparian areas and wet meadows the allowable percent utilization is 35 percent woody species, and a minimum stubble height of 4-6 inches (10-15 cm) for herbaceous riparian vegetation based on site].
- Allotments in SFAs, followed by those in PHMAs, and focusing on those containing riparian areas, including wet meadows, would be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.
- Grazing management strategies for riparian areas and wet meadows would, at a minimum, maintain or achieve Proper Functioning Condition (PFC) and promote GRSG brood-rearing habitat objectives in PHMAs and GHMAs.
- Existing water development projects would be modified to ensure riparian habitats in PHMAs and GHMAs are being maintained or improved in compliance with valid existing rights and in accordance with state water law.
- Salting and supplemental feeding locations, temporary or mobile watering, and new handling facilities (e.g., corrals and chutes) would be located at least 1 mile from riparian areas, springs, and meadows.
- Livestock ponds built in perennial channels that are negatively impacting riparian habitats, either directly or indirectly, would be removed unless riparian access is able to be controlled and negative impacts effectively mitigated (e.g.; water gap fence to pond); new ones would not be permitted to be built in these areas subject to valid existing rights. Before pond removal, offsite watering options would be examined and considered.

These objectives and actions would be expected to improve riparian habitat. Additionally, they would include Forest Service desired conditions and guidelines for riparian areas that would ensure the following:

- Sustain forbs in brood rearing habitat, wet meadows, and riparian areas
- Authorize vegetative treatment activities only in lentic riparian areas (i.e., seeps, springs, and wet meadows) in PHMA, GHMA, and SFA that maintain or improve conditions to meet GRSG desired conditions
- Restrict road construction in riparian areas and mesic meadows in PHMA and SFA

However, it is too speculative at this time to determine whether these types of improvements would actually be realized and the degree to which they could benefit the western yellow-billed cuckoo or its habitat.

Also recognized is that cuckoos have been found in habitat considered anomalous, and in order to make certain that these circumstances are appropriately recognized and considered, site-specific analysis would be conducted at the project level and the effects for the yellow-billed cuckoo and its proposed critical habitat would be determined at that time.

Oregon spotted frog and proposed critical habitat

Environmental Baseline, proposed critical habitat, and threats

The USFWS listed the Oregon spotted frog as a threatened species on September 29, 2014 (USFWS 2014b); it proposed critical habitat designation on August 29, 2013a (USFWS 2013). The Nevada and Northeastern California GRSG LUPA/EIS action area does not contain proposed critical habitat for the Oregon spotted frog. Threats to the species are loss of wetland habitat, changes in hydrology due to dam construction and human-related alterations of seasonal flooding, nonnative plant and animal species introduction, vegetation succession and encroachment, poor water quality, livestock grazing (in some circumstances), and residential and commercial development (USFWS 2014b). Livestock graze in Oregon spotted frog habitat, although the effects vary with the site conditions, livestock numbers, timing, and intensity. Livestock (primarily horses and cows) can trample adult frogs and egg masses when livestock are allowed in shallow water habitat when frogs are present. Livestock graze and trample emergent and riparian vegetation, compact soil in riparian and upland areas, and reduce bank stability, which increases sedimentation and pollutes water with urine and feces (USFWS 2014b).

The Alturas and Surprise Field Offices contain suitable habitat for the Oregon spotted frog; suitable habitat is not found in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Tuscarora, Tonopah, Wells, Jarbidge, and Bruneau Field Offices and the Humboldt-Toiyabe National Forest.

Discussion and Determination

The Oregon spotted frog and its proposed critical habitat would not be affected by this project. There are no actions in this LUPA decision that would impact aquatic habitat or deplete water in an action area that contains proposed critical habitat for the Oregon spotted frog. In addition, site-specific analysis would be conducted at the project level and a determination of effects for

Oregon spotted frog would be made at that time. Therefore, the Nevada and Northeastern California GRSG LUPA/EIS would not affect the Oregon spotted frog or its proposed critical habitat.

Fishes (Big Spring spinedace, bull trout, Clover Valley speckled dace, cui-ui, desert dace, Hiko White River springfish, Independence Valley speckled dace, Lahontan cutthroat trout, Lost River sucker, Modoc sucker, Pahrump poolfish, Railroad Valley springfish, shortnose sucker, Warm springs pupfish, Warner sucker, White River spinedace, White River springfish)

Environmental baseline, proposed critical habitat, and threats

Big Spring spinedace are not known in or suspected to be present in the Alturas, Black Rock, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Fifty-one acres of critical habitat overlap GHMA in the Caliente Field Office (Figure 1). Big Spring spinedace are suspected to occur in PHMA or GHMA in the Caliente Field Office, based on the proximity of known populations to PHMA and GHMA and overlap of Big Spring spinedace critical habitat with GHMA.

Bull trout have been documented in the Tuscarora, Wells, and Bruneau Field Offices and the Humboldt-Toiyabe National Forest. They are not known in or suspected to be present in the Alturas, Caliente, Eagle Lake, Egan, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, or Tonopah Field Offices. It is unknown if they occur in or suitable habitat is present in the Black Rock, Humboldt River, and Jarbidge Field Offices. Three miles of bull trout critical habitat overlap PHMA in the Humboldt-Toiyabe National Forest (Figure 2), all of which is in SFA (Figure 3). Thirty-one miles of critical habitat overlap OHMA in the Humboldt-Toiyabe National Forest (Figure 2), 18 miles of which are in SFA (Figure 3). One mile of bull trout critical habitat overlaps PHMA and 1 mile of critical habitat overlaps OHMA in the Wells Field Office (Figure 2).

Clover Valley speckled dace have been documented in the Tuscarora and Wells Field Offices. It is not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. It is unknown if they occur in or suitable habitat is present in the Jarbidge Field Office. Critical habitat has not been designated or proposed for the Clover Valley speckled dace.

Cui-ui have been documented in the Sierra Front Field Office. They are not known or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Critical habitat has not been designated or proposed for cui-ui.

Desert dace have been documented in the Black Rock Field Office and they are suspected to occur in the Jarbidge Field Office. They are not known or suspected to be present on the Alturas, Caliente, Eagle Lake, Egan, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. It is

unknown if they occur in or suitable habitat is present in the Humboldt River Field Office. There is no designated desert dace critical habitat occurring in the action area in the Alturas, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. GIS analysis shows 874 acres of critical habitat overlap GHMA, 1,253 acres of critical habitat overlap OHMA, and 76 acres of PHMA overlap critical habitat in the Black Rock Field Office (Figure 4).

Hiko White River springfish have been documented in the Stillwater Field Office. They are not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. There is no overlap of Hiko White River critical habitat with GRSG habitat in the BLM or Forest Service action area for the LUPA/EIS.

Independence Valley speckled dace have been documented in the Tuscarora and Wells Field Offices. They are not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tonopah, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. It is unknown if the species occurs in or suitable habitat for it is present in the Jarbidge Field Office. Critical habitat has not been designated or proposed for Independence Valley speckled dace.

Lahontan cutthroat trout dace have been documented in the Black Rock, Humboldt River, Mt. Lewis, Sierra Front, Stillwater, Tuscarora, Wells, and Jarbidge Field Offices and in the Humboldt-Toiyabe National Forest. They are not known in or suspected to be present in the Alturas, Caliente, Eagle Lake, Egan, Schell, Surprise, Tonopah, or Bruneau Field Offices. Critical habitat has not been designated or proposed for Lahontan cutthroat trout.

Lost River suckers have been documented in the Alturas Field Office. They are not known in or suspected to be present in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Twenty-two miles (506 acres) of critical habitat overlap GHMA and 536 acres of critical habitat overlap PHMA in the Alturas Field Office (Figure 5).

Modoc suckers have been documented in the Alturas Field Office. They are not known in or suspected to be present in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Six miles of Modoc sucker critical habitat overlap OHMA in the Alturas Field Office (Figure 6).

Pahrump poolfish are not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Critical habitat has not been designated or proposed for Pahrump poolfish.

Railroad Valley springfish have been documented in the Stillwater and Tonopah Field Offices and are suspected to occur in the Egan and Schell Field Offices. They are not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Humboldt River, Mt. Lewis, Sierra Front, Surprise, Tuscarora, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Fifty-five acres of Railroad Valley springfish critical habitat overlap GHMA; 7 acres of critical habitat overlap OHMA in the Egan Field Office (Figure 7); 284 acres of critical habitat overlap OHMA on the Tonopah Field Office (Figure 7).

Shortnose suckers have been documented in the Alturas Field Office. They are not known in or suspected to be present in the Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Forty-one miles (519 acres) of shortnose sucker critical habitat overlap GHMA, 20 miles (150 acres) of critical habitat overlap OHMA, and 536 acres of critical habitat overlap PHMA in the Alturas Field Office (Figure 8).

Warm Springs pupfish is not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Critical habitat has not been designated or proposed for Warm Springs pupfish.

Warner suckers have been documented in the Surprise Field Office. The species is not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Critical habitat has not been designated or proposed for the Warner sucker.

White River Spinedace are either documented in or are suspected to occur in the Egan and Schell Field Offices. They are not known or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Humboldt River, Mt. Lewis, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. Twenty-four acres of White River spinedace critical habitat overlap GHMA in the Egan Field Office and 5 acres of critical habitat overlap GHMA in the Schell Field Office (Figure 9).

White River springfish have been documented in the Stillwater Field Office. The species is not known in or suspected to be present in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest. There is no designated critical habitat for White River springfish in the action area or in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.

The primary threat to these species is habitat modification and degradation from water diversion. Secondary threats are competition and predation from exotic aquatic species and riparian habitat degradation from livestock grazing, timber harvest, and road construction.

Discussion and determination

Listed fish species would not be affected by this project. There are no actions in this LUPA decision that would impact aquatic habitat or deplete water. In addition, site-specific analysis would be conducted at the project level, and the effects for each of the listed fish species would be determined at that time. Therefore, the Nevada and Northeastern California GRSG LUPA/EIS would not affect the Big Spring spinedace, bull trout, Clover Valley speckled dace, cui-ui, desert dace, Hiko White River springfish, Independence Valley speckled dace, Lahontan cutthroat trout, Lost River sucker, Modoc sucker, Pahrump poolfish, Railroad Valley springfish, shortnose sucker, Warm Springs pupfish, Warner sucker, White River spinedace, White River springfish, or their habitat.

Big Spring spinedace, bull trout, desert dace, Hiko White River springfish, Lost River sucker, Modoc sucker, Railroad Valley springfish, shortnose sucker, White River spinedace and White River springfish critical habitats

Baseline information is found above in the fishes section for Big Spring spinedace, bull trout, desert dace, Hiko White River springfish, Lost River sucker, Modoc sucker, Railroad Valley springfish, shortnose sucker, White River spinedace, and White River springfish. The Nevada and Northeastern California GRSG LUPA/EIS would not affect critical habitat for Hiko White River springfish or White River springfish because there is no designated critical habitat for these species in the action area or in the Alturas, Black Rock, Caliente, Eagle Lake, Egan, Humboldt River, Mt. Lewis, Schell, Sierra Front, Stillwater, Surprise, Tuscarora, Tonopah, Wells, Jarbidge, or Bruneau Field Offices or in the Humboldt-Toiyabe National Forest.

GRSG habitats overlap critical habitats for Big Spring spinedace, bull trout, desert dace, Lost River sucker, Modoc sucker, Railroad Valley springfish, shortnose sucker, and White River spinedace; however, as noted above, none of the actions in this LUPA decision would impact aquatic habitat or deplete water in these critical habitats. In addition, site-specific analysis would be conducted at the project level, and the effects for critical habitat for each of the listed fish species would be determined at that time. Therefore, the Nevada and Northeastern California GRSG LUPA/EIS would not affect critical habitat for the Big Spring spinedace, bull trout, desert dace, Lost River sucker, Modoc sucker, Railroad Valley springfish, shortnose sucker, or White River spinedace.

Carson wandering skipper

Environmental baseline, proposed critical habitat, and threats

Carson wandering skipper has been recorded in the action area in the Sierra Front Field Office; the Stillwater, Eagle Lake, Surprise Field Offices in northwestern Nevada contain suitable habitat for this species as well. The Stillwater Field Office has an ACEC in Warm Springs Valley for this species, although it is not in GRSG habitat, either PHMA or GHMA. It is unknown whether the Carson wandering skipper or suitable habitat is present in the Alturas, Black Rock, or Humboldt River Field Offices. The Caliente, Egan, Mt. Lewis, Schell, Stillwater,

Tuscarora, Wells, Jarbidge, and Bruneau Field Offices and the Humboldt-Toiyabe National Forest do not contain suitable habitat for the Carson wandering skipper.

This species is known from only two populations, one in Washoe County, Nevada, and one in Lassen County, California. The species is found in lowland grassland habitats on alkaline substrates characterized by an elevation of less than 5,000 feet. Salt grass is its larval host plant, and it occurs where the water table is high enough to keep the roots saturated for most of the year. Indeed, suitable habitat is very likely related to the water table, requiring higher areas during wet years and lower areas during dry years. Available nectar is an important habitat element as well as the density of local conspecifics. Hot springs may be important habitat elements. A nectar source, such as *Thelypodium crispum*, that is tolerant of alkaline soils must be present or nearby (NNHD2014).

Threats are loss of suitably wet habitat to increasing human water demands, exotics, and possibly collecting. The sites where viable populations are still found are at risk because of livestock grazing, ORV use, encroaching development, gas and geothermal development, changes in the water table, pesticide drift, and nonnative plant invasion.

Discussion and determination

Carson wandering skipper would not be affected by this project. There are no actions in this Nevada and Northeastern California GRSG LUPA/EIS decision that would impact riparian or mesic habitat or deplete water to affect the vegetation around such habitat. In addition, site-specific analysis would be conducted at the project level, and the effects for the listed species would be determined at that time. Therefore, the Nevada and Northeastern California GRSG LUPA/EIS would not affect the Carson wandering skipper or its habitat.

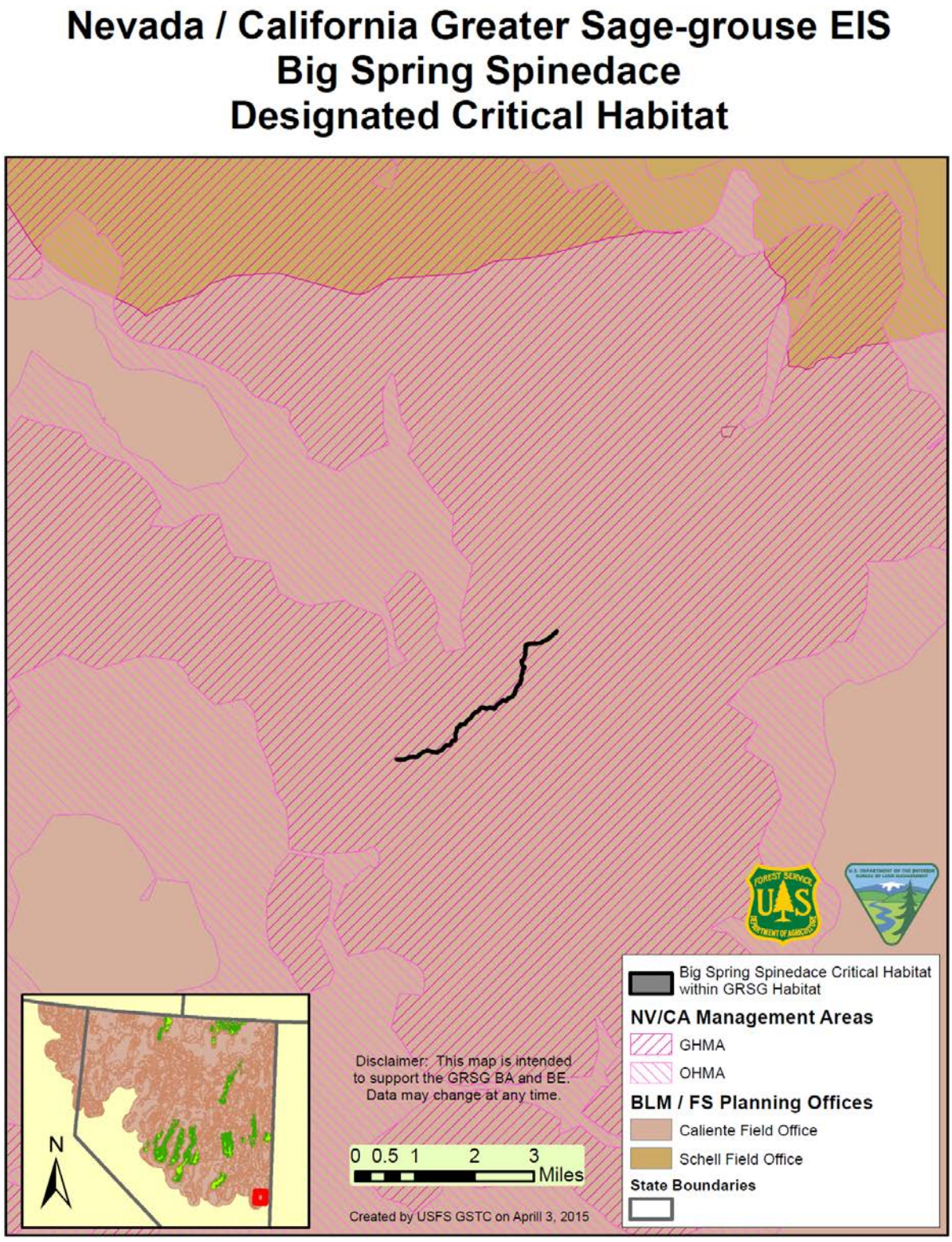

Figure 1. Big Spring spinedace designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

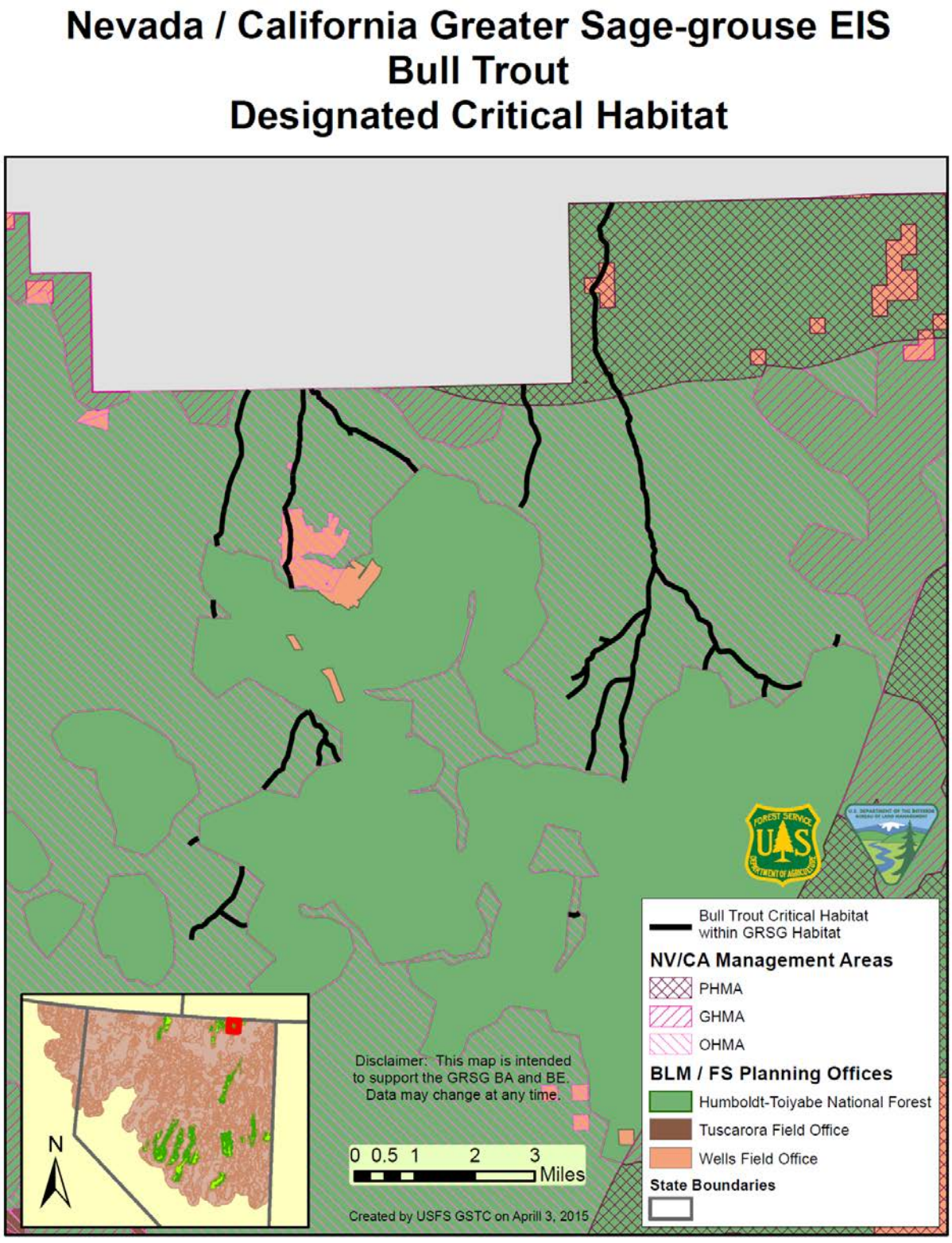

Figure 2. Bull trout designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

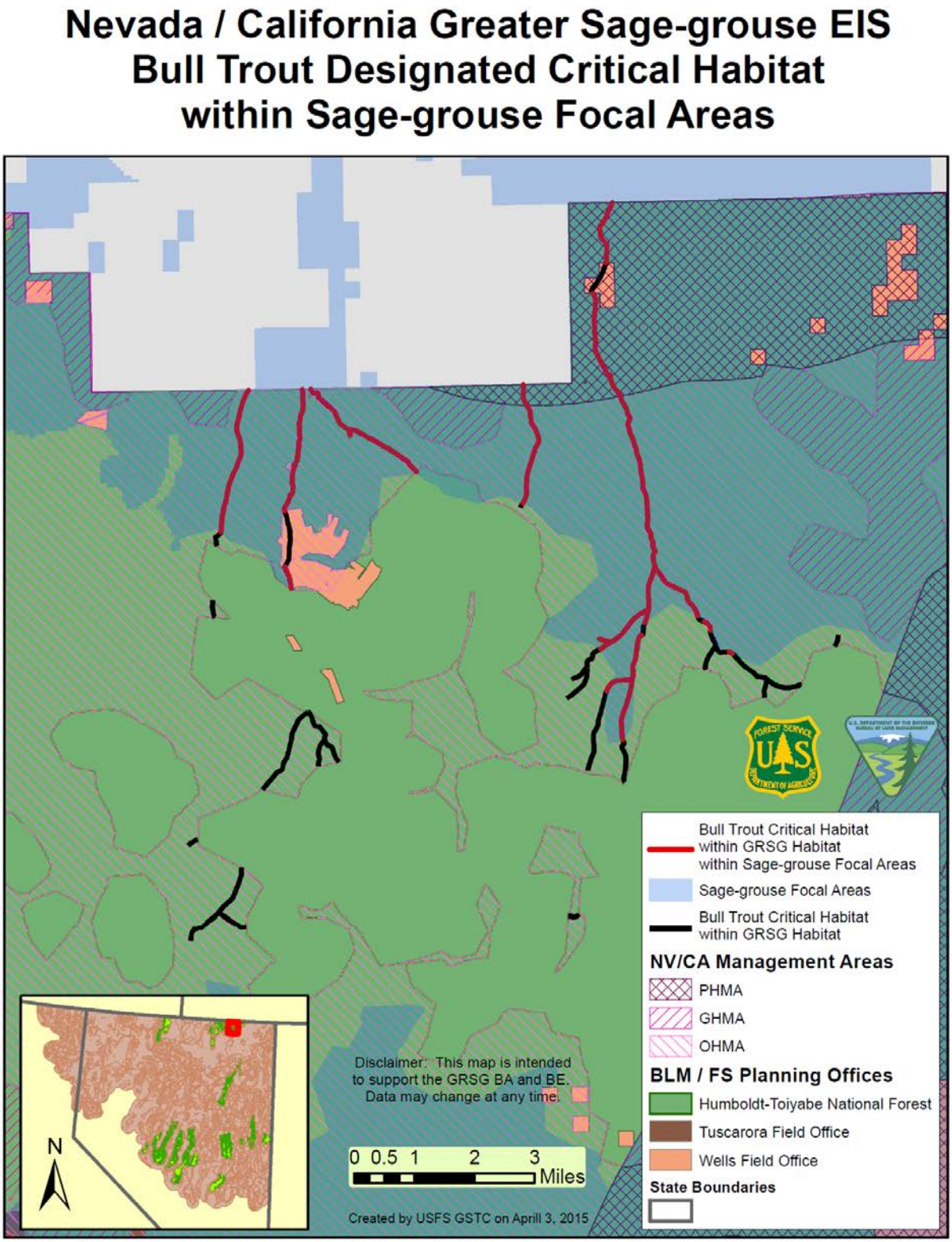

Figure 3. Bull trout designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

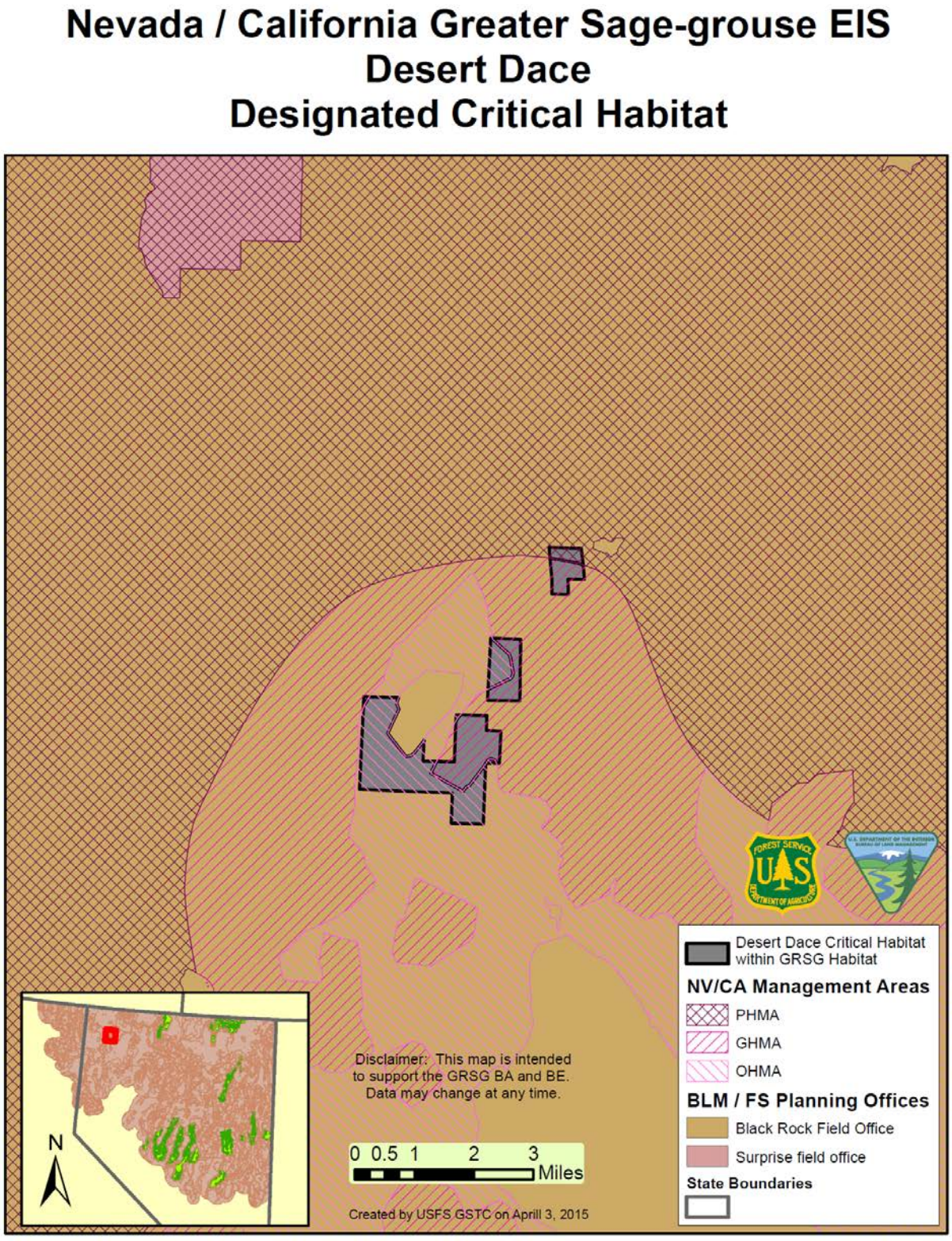

Figure 4. Desert dace designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

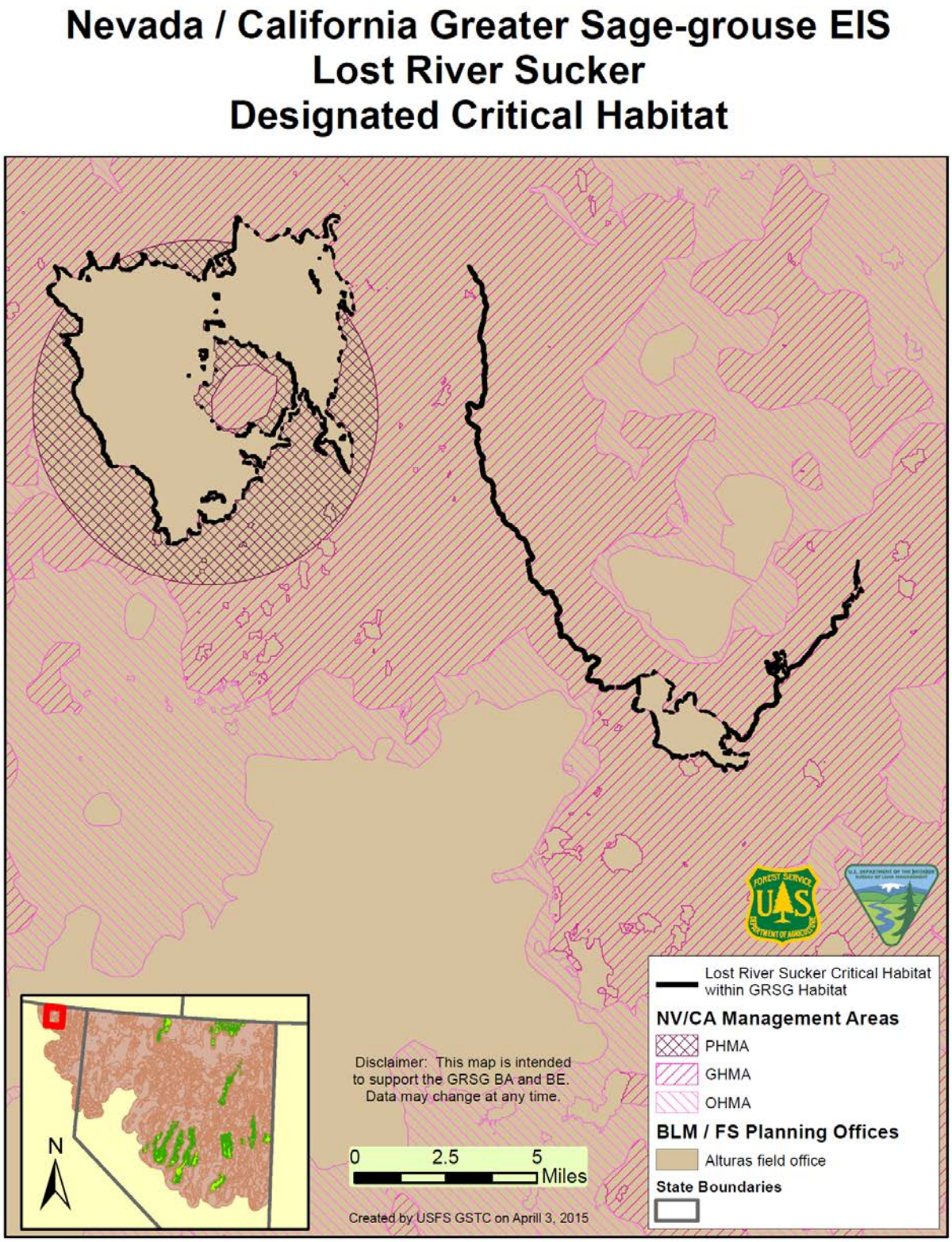

Figure 5. Lost River sucker designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

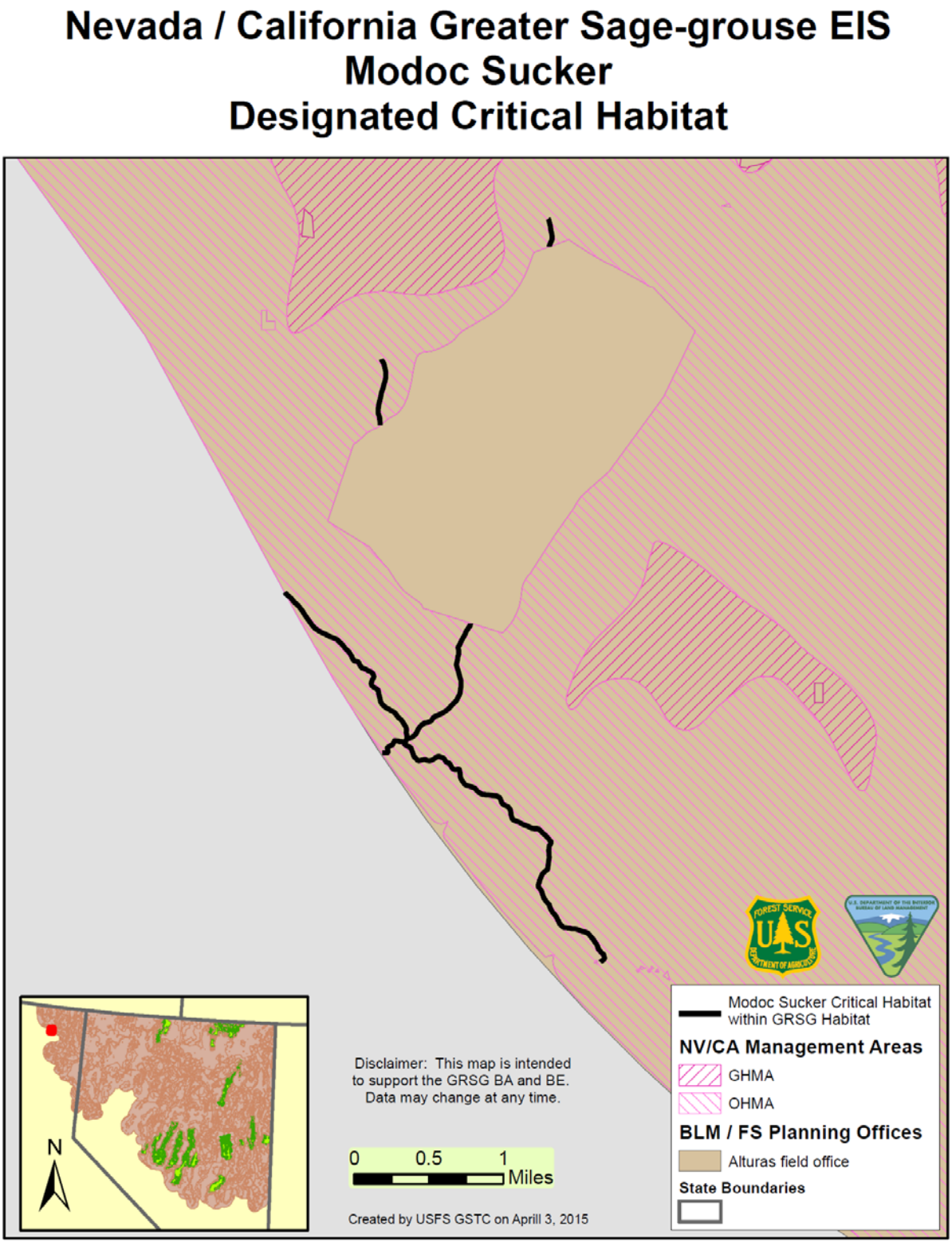

Figure 6. Modoc sucker designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

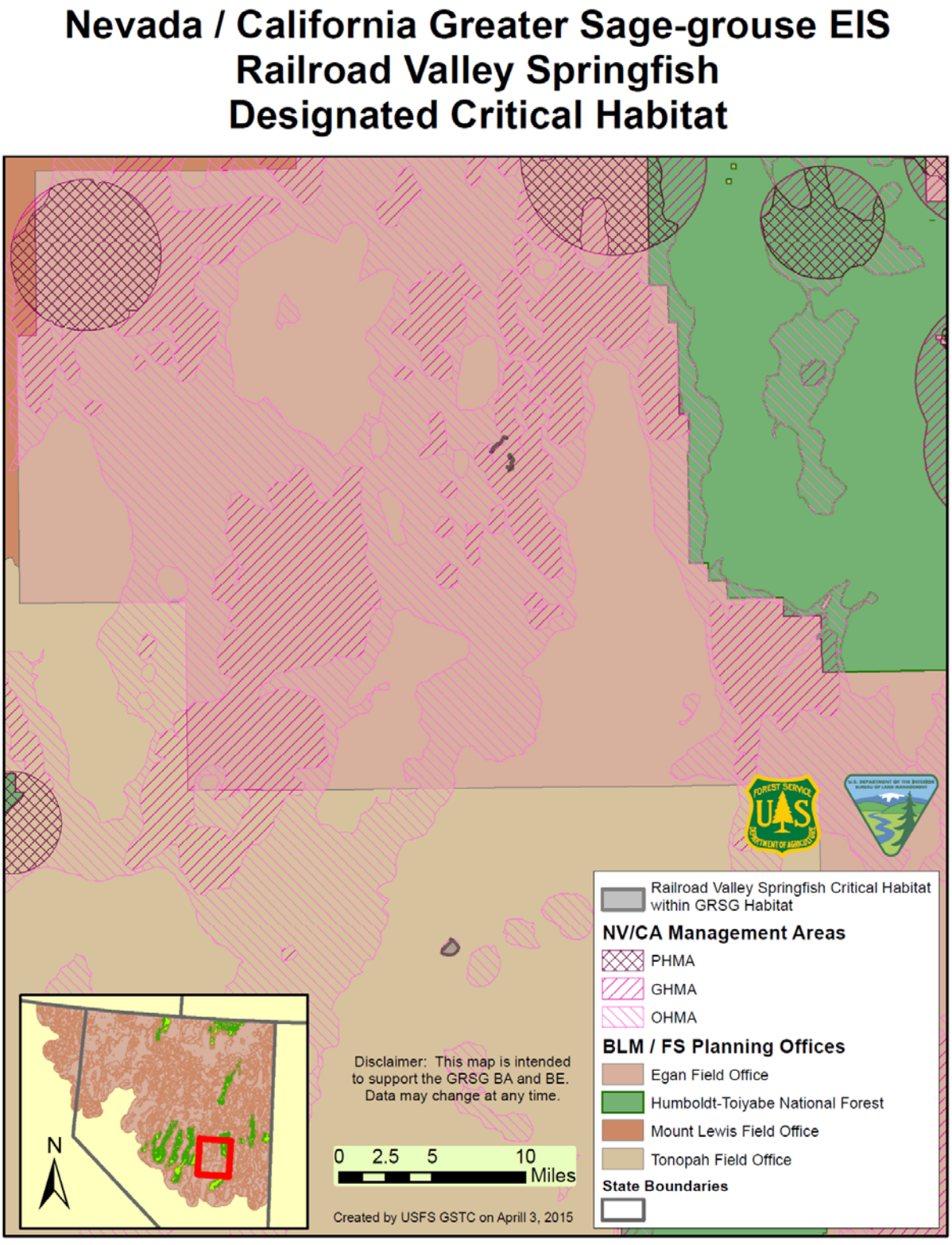

Figure 7. Railroad Valley springfish designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

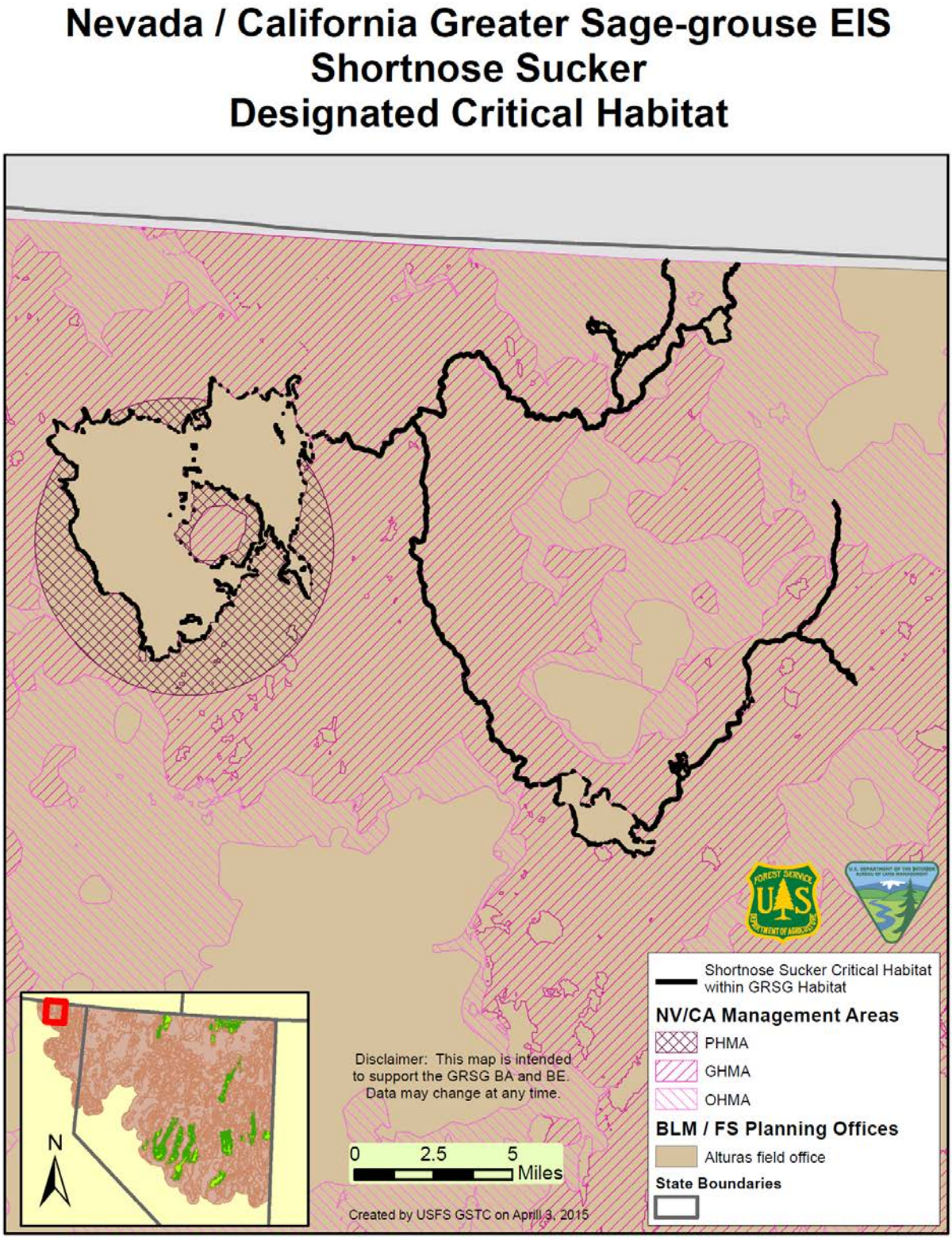

Figure 8. Shortnose sucker designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area.

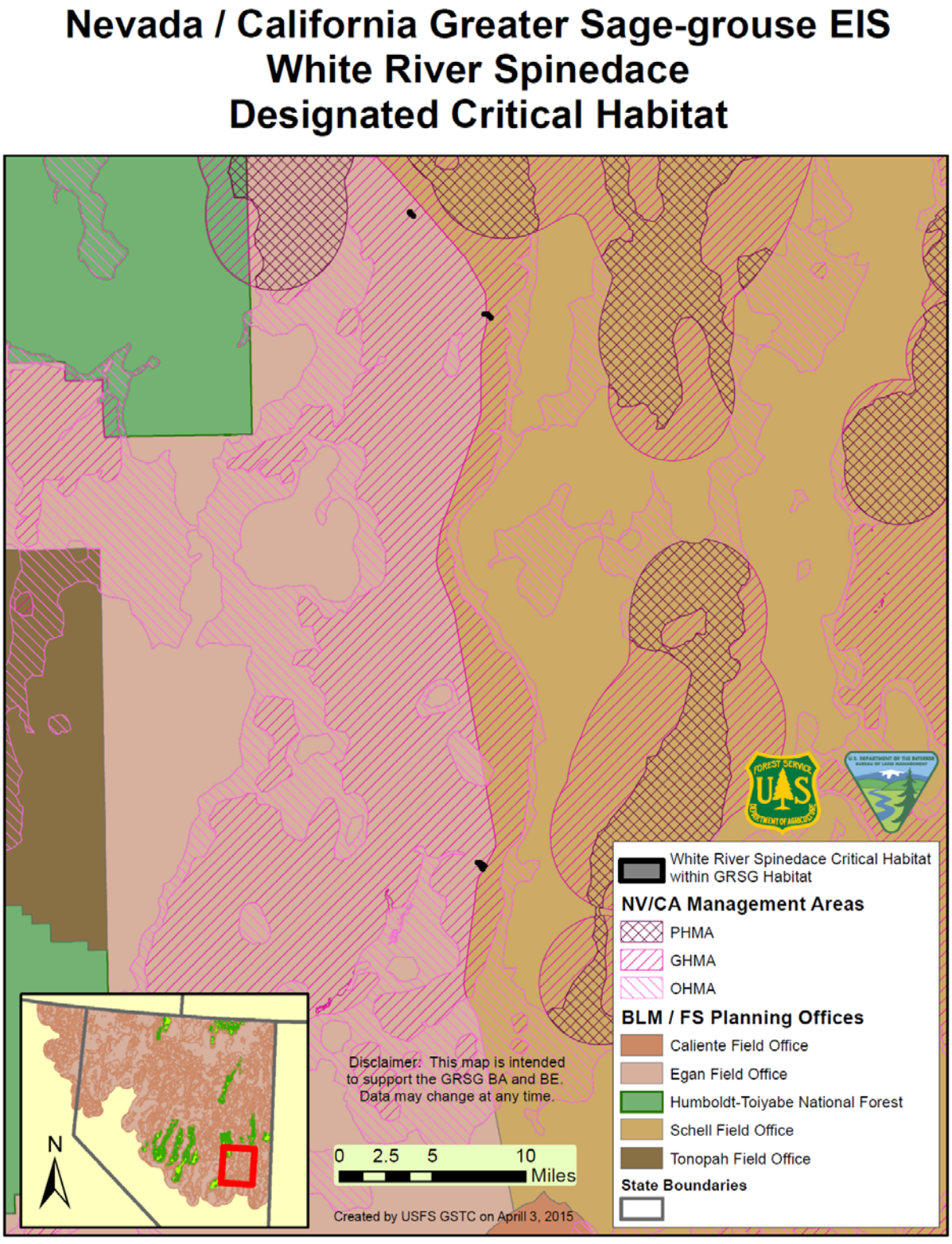

Figure 9. White River spinedace designated critical habitat with respect to Nevada and Northeastern California Greater Sage-Grouse LUPA and EIS action area

Appendix B: BLM Proposed Plan Amendment

BLM Proposed Plan Amendment

Greater Sage-Grouse

Goal SSS 1: Conserve, enhance, and restore the sagebrush ecosystem upon which GRSG populations depend in an effort to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners

Objective SSS 1: Manage land resource uses to meet GRSG habitat objectives, as described in **Table 2-2**. The habitat objectives would be used to evaluate management actions that are proposed in GRSG habitat. Managing for habitat objectives would ensure that habitat conditions are maintained if they are currently meeting objectives or if habitat conditions move toward these objectives in the event that current conditions do not meet these objectives.

The habitat objectives in Table 2-2 summarize the characteristics that research has found represent the seasonal habitat needs for Greater Sage-Grouse. The specific seasonal components identified in the Table were adjusted based on local science and monitoring data to define the range of characteristics used in this sub-region. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by sage-grouse. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the sage-grouse habitat assessment to be used during land health evaluations (see **Appendix** E). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use.

Table 2-1
Proposed Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
GENERAL/LANDSCAPE-LEVEL			
All life stages	Rangeland health assessments	Meeting all standards[1]	
Cover (nesting)	Seasonal habitat needed	>65% of the landscape in sagebrush cover	Aldridge and Boyce 2007
	Annual grasses	<%5	Blomberg et al. 2012
Security (nesting)	Conifer encroachment	<3% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50% cover)	Casazza et al. 2011 USGS (in prep A)
Cover and food (winter)	Conifer encroachment	<5% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50%)	USGS (in prep A) USGS (in prep B)
	Sagebrush extent	>85% sagebrush land cover	USGS (in prep A) Doherty et al. 2008
LEK (Seasonal Use Period: March 1 to May 15)			
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover	Blomberg et al. 2012 Connelly et al. 2000 Stiver et al. 2015
Security[2]	Pinyon or juniper cover	<3% landscape canopy cover within; .6 mile of leks	Connelly et al. 2000 (modified) Stiver et al. 2015 Baruch-Mordo et al. 2013
	Proximity of tall structures[3]	Use Manier et al. 2014-Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles	Coates et al. 2013 Manier et al. 2014
NESTING (Seasonal Use Period: April 1 to June 30)			
Cover	Sagebrush canopy cover	≥20%	Kolada et al. 2009a, 2009b
	Residual and live perennial grass cover	≥10% if shrub cover is <25%[4]	Coates et al. 2013 Coates and Delehanty 2010 Kolada et al. 2009a, 2009b
	Annual grass cover	<5%	Lockyer et al. (in press)

Table 2-1
Proposed Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
	Total shrub cover	≥30%	Coates and Delehanty 2010 Kolada et al. 2009a Lockyer et al. (in press)
	Perennial grass height	Provide overhead and lateral concealment from predators[7]	Connelly et al. 2000, 2003 Hagen et al. 2007; Stiver et al. 2015
Security[2]	Proximity of tall structures[3] (3 feet [1 meter] above shrub canopy)	Use Manier et al. 2014, Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles	Coates et al. 2013 Gibson et al. 2013 Manier et al. 2014
BROOD-REARING/SUMMER (Seasonal Use Period: May 15 to September 15; Early: May 15 to June 15; Late: June 15 to September 15)			
UPLAND HABITATS			
Cover	Sagebrush canopy cover	10 to 25%	Connelly et al. 2000
	Perennial grass canopy Cover and forbs	>15% combined perennial grass and forb canopy cover	Connelly et al. 2000 Hagen et al. 2007
	Deep rooted perennial bunchgrass	7 inches[5, 6]	Hagen et al. 2007
Cover and food	Perennial forb canopy cover	≥5% arid ≥15% mesic	Casazza et al. 2011 Lockyer et al. (in press)
RIPARIAN/MEADOW HABITATS			
Cover and food	Riparian areas/meadows	PFC	Dickard et al. 2015 Prichard et al. 1998, 1999 Stiver et al. 2015
Security	Upland and riparian perennial forb availability and understory species richness	• Preferred forbs are common with several species present[5] • High species richness (all plants)	Stiver et al. 2015
	Riparian area/meadow interspersion with adjacent sagebrush	Has adjacent sagebrush cover	Casazza et al. 2011 Stiver et al. 2015

Table 2-1
Proposed Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
WINTER (Seasonal Use Period: November 1 to February 28)			
Cover and Food	Sagebrush canopy cover	≥10% above snow depth	Connelly et al. 2000 USGS (in prep C)
	Sagebrush height	>9.8 inches above snow depth	Connelly et al. 2000 USGS (in prep C)

[1]Upland standards are based on indicators for canopy and ground cover, including litter, live vegetation, and rock, appropriate to the ecological potential of the site.
[2] Applicable to Phase I and Phase II pinyon and/or juniper.
[3] Does not include fences.
[4]In addition, if upland rangeland health standards are being met.
[5]Relative to ecological site potential.
[6] In drought years, 4-inch perennial bunchgrass height with greater than 20 percent measurements exceeding 5 inches in dry years.
[7] Specific height requirements needed to meet the objective will be set at the time of HAF assessments.

Objective SSS 2: Maintain or improve connectivity between, to, and in PHMAs and GHMAs to promote movement and genetic diversity for GRSG population persistence and expansion.

Objective SSS 3: Identify and implement GRSG conservation actions that can augment, enhance, or integrate program conservation measures established in agency and state land use and policy plans.

Objective SSS 4: In PHMAs and GHMAs, apply the concept of "avoid, minimize, and mitigate" for all human disturbance not already excluded or closed, so as to avoid adverse effects on GRSG and its habitat. The first priority would be to avoid new disturbance; where this is not feasible, the second priority would be to minimize and mitigate any new disturbance (**Appendix J**).

Action SSS 1: In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat:[13]

- First priority—locate project/activity outside PHMAs and GHMAs
- Second priority—if the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG

[13]The screening criteria would not be applicable to vegetation treatments being conducted to enhance GRSG habitat.

- In non-habitat, ensure the project/activity would not create a barrier to movement or connectivity between seasonal habitats and populations

- Third priority—collocate the project/activity next to or in the footprint of existing infrastructure

Action SSS 2: In PHMAs, the following conditions would be met in order to minimize and mitigate any effects on GRSG and its habitat from the project/activity:[14]

- Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSUs; total PHMA area associated with a GRSG population area) and 2) in a proposed project analysis area. See **Appendix F** (Disturbance Cap Guidance) for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area, as follows:
  - If the 3 percent human disturbance cap is exceeded on all lands (regardless of ownership) in PHMAs in any given BSU, then no further discrete human disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, and valid existing rights) will be permitted, by BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap (see Nevada exception under SSS 2 a. 3. **Appendix F**).
  - If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, valid existing rights; see Nevada exception under SSS 2 a. 3. **Appendix F**).
  - For BLM land in the state of Nevada only, the following disturbance management protocol (DMP) is intended to provide for a 3 percent limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species.

[14]The conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, with the exceptions of seasonal restrictions and noise.

        - Such discretionary activities that would cause disturbances in excess of 3 percent at the project or BSU scale (see **Appendix F**) would be prohibited, unless a technical team described below determines that new or site-specific information indicates the project could be modified to result in a net conservation gain at the BSU level. Factors considered by the team will include GRSG abundance and trends, habitat amount and quality, extent of project disturbance, location and density of existing disturbance, project design options and other biological factors.
        - Any exceptions to the 3 percent disturbance limitation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the NDOW, the USFWS, and the BLM unanimously find that the proposed action satisfies the conditions stated in the above paragraph. Such finding shall initially be made by the technical team, which consists of a field biologist or other GRSG experts from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the BLM State Director, USFWS State Ecological Services Director and NDOW Director for final resolution. In the event their finding is not unanimous, the exception will not be granted (**Appendix F**).
    - For BLM land in the state of California only, subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.
- The new project/activity would not result in any of the adaptive management hard triggers being reached (see **Section 2.7.1**, Adaptive Management Plan in FEIS).

- The project/activity with associated mitigation would result in an overall net conservation gain to GRSG (see **Appendix I**).

  Actions that result in habitat loss and degradation are those identified as threats that contribute to GRSG disturbance, as identified by the USFWS in its 2010 listing decision (75 *Federal Register* 13910) and shown in **Table 2** in the attached Monitoring Framework (**Appendix E**).

- Authorized/permitted activities are implemented by adhering to the RDFs described in **Appendix D** for specific resources and the BMPs for locatable minerals. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

  - A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
  - An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.
  - A specific RDF will provide no additional protection to GRSG or its habitat.

- In management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File-Report 2014-1239 (Manier et al. 2014), in accordance with **Appendix B**.

- Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:

  - In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30
    - Lek—March 1 to May 15
    - Lek hourly restrictions—6 p.m. to 9 a.m.
    - Nesting—April 1 to June 30
  - Brood-rearing habitat from May 15 to September 15
    - Early—May 15 to June 15

        - Late—June 15 to September 15
    - Winter habitat from November 1 to February 28

    The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW and CDFW, in order to better protect GRSG and its habitat.

- Authorizations and permits would limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See **Appendix K**, Summary of Noise-Monitoring Recommendations.

Action SSS-3: In GHMAs, the following conditions would be met in order to minimize and mitigate any effects on GRSG or its habitat from the project/activity:[15]

- New project/activity in GHMAs would not result in any of the adaptive management hard triggers being reached (see **Section 2.7.1**, Adaptive Management Plan, below).

- The project/activity with associated mitigation in GHMAs would result in an overall net conservation gain to GRSG (see **Appendix I**, Mitigation Framework).

- Actions that result in habitat loss and degradation are those identified as threats that contribute to GRSG disturbance, as identified by the USFWS in its 2010 listing decision (75 *Federal Register* 13910) and shown in **Table 2** in the attached Monitoring Framework (**Appendix E**).

- Authorized/permitted activities are implemented adhering to the RDFs described in **Appendix D** for specific resources and the BMPs for locatable minerals. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

    - A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not

[15]The conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, with exceptions for seasonal restrictions and noise.

necessarily require that an RDF be varied or rendered inapplicable.

- An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.
- A specific RDF will provide no additional protection to GRSG or its habitat.

- In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File Report 2014-1239 (Manier et.al 2014]), in accordance with **Appendix B**.

- Seasonal restrictions would be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:

  - In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30:
    - Lek—March 1 to May 15
    - Lek hourly restrictions—6 p.m. to 9 a.m.
    - Nesting—April 1 to June 30
  - Brood-rearing habitat from May 15 to September 15
    - Early—May 15 to June 15
    - Late—June 15 to Sept 15
  - Winter habitat from November 1 to February 28

  The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW and CDFW, in order to better protect GRSG.

- Authorizations and permits would limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See **Appendix K**, Summary of Noise-Monitoring Recommendations.

Action SSS 4: In OHMAs, authorized/permitted activities are implemented adhering to the RDFs described in **Appendix D** for specific

resources and the BMPs for locatable minerals. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
- An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.
- A specific RDF will provide no additional protection to GRSG or its habitat.

Action SSS 5: Designate SFAs, as shown on **Figure 1-3** (2,797,400 acres). SFAs will be managed as PHMAs, with the following additional management:

- Recommended for withdrawal from the General Mining Act of 1872, subject to valid existing rights
- Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing
- Prioritized for management and conservation actions in these areas, including review of livestock grazing permits/leases (see actions LG)

Action SSS 6: Cooperate with federal and state agencies, universities, and other organizations to establish and maintain a GRSG telemetry database.

Action SSS 7: Work with project proponents to limit project-related noise, seasonally or annually (see Actions SSS 2 and SSS 3), in GRSG habitat where it would be expected to reduce functionality of habitats that support associated GRSG populations. Support the establishment of ambient baseline noise levels for leks in PHMAs and GHMAs.

As additional noise-related research and information emerge, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize the potential for noise impacts on GRSG populations.

Action SSS 8: For any surface-disturbing activities proposed in PHMAs and GHMAs, the proponent will hire a qualified biologist approved by the BLM to conduct surveys for GRSG breeding activity during the GRSG breeding season before project activities begin. The surveys must

encompass all suitable GRSG habitats within a minimum of 4 miles of the proposed activities. Surveys will be conducted following protocols established by state fish and wildlife agencies during planning operations and during project activities. GRSG seasonal habitat delineations will also be required within a minimum of 4 miles of project activities.

Action SSS 9a: In Nevada only, the BLM would consult with the Sagebrush Ecosystem Technical Team (SETT) for application of the "avoid, minimize, mitigate" process and the Conservation Credit System developed by the Nevada Natural Heritage Program and the SETT (2014a, 2014b) or other applicable mitigation system. This would be to ensure that a net conservation gain of GRSG habitat occurs due to human disturbances in PHMAs and GHMAs (see **Appendix L**) on all agency-authorized activities. The specifics of the coordination will be identified in a MOU between the agencies.

Action SSS 9b: In California only, the BLM would follow the BLM mitigation strategy outlined in **Appendix I**.

Action SSS 10: Site-specific NEPA analysis on use authorizations would include project level adaptive management responses to address changed conditions in GRSG habitat and population trends, when necessary or as new data becomes available (see **Section 2.7.1**, Adaptive Management Plan).

Action SSS 11: Design and construct fences consistent with BLM H-1741-1, Fencing Standards Manual (BLM 1990), and apply the Sage-Grouse Fence Collision Risk Tool to Reduce Bird Strikes (NRCS 2012). Bring existing fencing into compliance as opportunities arise.

Disease

Objective SSS-DIS 1: Coordinate with state agencies to monitor trends of diseases, such as West Nile virus, in the sub-region to determine if mitigation or additional RDFs need to be applied to use authorizations.

Action SSS-DIS 1: When developing or modifying water developments on BLM-administered lands in PHMAs, GHMAs, and OHMAs and in accordance with state water law and subject to valid existing rights, use applicable RDFs to mitigate potential impacts from West Nile virus. Bring existing water developments into compliance as opportunities arise.

Predation

Objective PR 1: Manage human uses on public lands to reduce the effects of predation on GRSG.

Action PR 1: Require authorizations to include stipulations and RDFs to reduce or eliminate opportunities to attract and provide nesting, cover, or perches for predators in PHMAs and GHMAs.

Action PR 2: Coordinate with other federal, state, county, and tribal governments and local working groups to reduce GRSG deaths due to predation where it is determined to be additive or is a limiting factor influencing GRSG populations.

Action PR 3: Reduce and eliminate artificial hunting perches and nesting surfaces for aerial predators (e.g., remove fences, nonworking fences, and power lines and install anti-perch devices on existing and new power lines).

Action PR 4: Manage landfills and transfer stations on public lands by reducing opportunities for predator feeding and nesting.

Vegetation Management

Sagebrush-steppe

Objective VEG 1: In all SFAs and PHMAs, the desired condition is to maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).

Objective VEG 2: On public lands, establish, maintain, and enhance a resistant and resilient sagebrush vegetative community and restore sagebrush vegetation communities to reduce GRSG habitat fragmentation and maintain or reestablish GRSG habitat connectivity over the long term (Chambers et al. 2014).

Objective VEG 3: Manage PHMAs and GHMAs for vegetation composition and structure, consistent with ecological site potential and to achieve GRSG habitat objectives (**Table 2-2**).

Action VEG 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action VEG 2: Incorporate GRSG habitat objectives (**Table 2-2**) in the design of habitat restoration projects and manage treated areas to meet GRSG habitat objectives.

Action VEG 3: Use BLM GRSG habitat maps, habitat objectives (**Table 2-2** for GRSG habitat objectives), ecological site potential, state and

transition models, and concepts of resistance and resilience (**Appendix G**) to prioritize habitat restoration projects, including those following wildfire, to address the most limiting GRSG habitat vegetation components and to connect seasonal ranges.

Habitat restoration includes the following:

- Restoring sagebrush canopy in PHMAs and GHMAs to meet GRSG habitat objectives (**Table 2-2**)
- Reestablishing perennial grasses and native forbs in PHMAs and GHMAs
- Reducing or removing pinyon or juniper in PHMAs and GHMAs to enhance seasonal range connectivity and to maintain sagebrush canopy and understory integrity
- Restore areas affected by wildfire and the continuing invasive annual fire cycle to meet GRSG habitat objectives (**Table 2-2**)
- Prioritize restoration in areas that have not crossed an ecological threshold

Action VEG 5: Plan vegetation treatments (including GRSG habitat treatments) in a landscape-scale context to address habitat fragmentation, effective patch size, invasive species presence, and intact sagebrush community protection, consistent with the GRSG habitat objectives identified in **Table 2-2**.

Action VEG 6: For Wyoming, mountain, and basin big sagebrush communities in PHMAs and GHMAs:

- Prioritize treatments that focus on enhancing, reestablishing, or maintaining the most limiting GRSG habitat component
- Reestablish sagebrush to meet GRSG habitat objectives (**Table 2-2**)
- Manage sagebrush communities to achieve age-class, structure, cover, and species composition objectives in GRSG habitat (**Table** 2-2)
- Restore herbaceous understory in brush-dominated areas to meet GRSG habitat objectives (**Table 2-2**)
- Treat areas with cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species (**Table 2-2**)

- Treat disturbed areas in accordance with FIAT (see **Appendix G**), including implementation-level assessments

Action VEG 7: Manage for establishment of sagebrush in unmaintained nonnative seedings (e.g., crested wheatgrass seedings) in or next to GRSG habitat to meet habitat objectives (**Table 2-2**).

Action VEG 8: In PHMAs and GHMAs, give preference to native seeds for restoration, based on availability, adaptation (ecological site potential), and probability of success. Where the probability of success or adapted seed availability is low, nonnative seeds may be used, as long as they support GRSG habitat objectives. Choose native plant species outlined in Ecological Site Descriptions (ESDs), where available, to revegetate sites. Emphasize use of local seed collected from intact stands or greenhouse cultivation. If the commercial supply of appropriate native seeds and plants is limited, work with the BLM Native Plant Materials Development Program or NRCS Plant Material Program. If currently available supplies are limited, use the materials that provide the greatest benefit for GRSG. In all cases, seed must be certified as weed free.

Action VEG 9: To increase seeding success and to ensure effective soil and seed contact, consider the use of specialized seed drills or other proven and effective methods that may become available based on new science.

Action VEG 10a: For Nevada BLM-managed lands, before implementation, establish project monitoring sites where vegetation treatment is planned. Treatment areas would be monitored both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved.

Action VEG 10b: For California BLM-managed lands, before implementation, establish project monitoring sites where vegetation treatment is planned. Treatment areas would be monitored both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved. Juniper treatments would be monitored in accordance with the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Action VEG 11: On public lands, where the attributes, quality, or lack of GRSG winter habitat has been identified as a limiting factor, emphasize vegetation treatments in known winter habitat to enhance quality or reduce wildfire risk around or in winter habitat.

Action VEG 12: In perennial grass, invasive annual grass, and conifer-invaded cover types, restore sagebrush steppe with local sagebrush seedings or planted seedlings where feasible.

Action VEG 13: Continue to coordinate with NDOW, CDFW, and NRCS for all development or habitat restoration proposals in PHMAs and GHMAs. Also, coordinate with the Nevada SETT, tribes, and local working groups on projects proposed in sagebrush ecosystems.

Conifer encroachment

Objective VEG-WD 1: In accordance with the vegetation dynamic development tool (VDDT; **Appendix M**), improve GRSG habitat by removing invading conifers in the number of acres shown in **Table 2-3** annually for the next 50 years.

Table 2-2
Acres to be Treated Annually for 50 Years

State	Mechanical Treatment[1]	Prescribed Fire[2]
Nevada	66,700	1,800
California[3]	3,200	900
Total	**69,900**	**2,700**

[1]Removal of conifers that have invaded sagebrush, generally phase one juniper that is 10 percent or less.
[2]Acres are those that are greater than 30 percent sagebrush canopy cover or invaded by 10 percent or greater conifer.
[3]BLM California-managed lands will be consistent with annual acres of treatment specified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Action VEG-WD 1: Remove conifers encroaching into sagebrush habitats. Prioritize treatments closest to occupied GRSG habitats and near occupied leks and where juniper encroachment is phase 1 and phase 2. Use of site-specific analysis and tools like VDDT and FIAT (see **Appendices M** and **F**) will help refine the location for specific areas to be treated.

Action VEG-WD 2: Do not construct or create new roads (temporary or permanent), skid trails, or landings in phase I pinyon or juniper removal areas during project implementation for vegetation treatments. Administrative access, including off-road travel with heavy equipment and vehicles, would be allowed during implementation.

Action VEG-WD 3: Treat habitats in late phase II or phase III pinyon or juniper condition only, to create movement corridors, connect habitats, or reduce the potential for catastrophic fire (see **Table 2-2**).

Invasive Species

Objective VEG-ISM 1: Reduce the amount of GRSG habitat loss due to wide-spread wildfires and invasion by nonnative species.

Objective VEG-ISM 2: Control invasive species infestations in GRSG habitat already compromised by invasion.

Objective VEG-ISM 3: In accordance with the VDDT (**Appendix M**), improve GRSG habitat by treating annual grasses in the number of acres shown in **Table 2-4**.

Action VEG-ISM 1: Prevent the establishment of invasive species into uninvaded areas in PHMAs and GHMAs through properly managed grazing and by conducting systematic and strategic detection surveys, collecting data, mapping these areas, and engaging in early response to contain and eradicate invasion if it occurs.

Table 2-3
Acres to be Treated Annually for 50 Years

State	Grass Restoration[1]
Nevada	161,100
California	9,800
Total	**170,900**

[1]Acres presently dominated by annual grasses that could be improved by herbicide application or seeding of perennial vegetation

Action VEG-ISM 2: Control the spread and introduction of noxious weeds listed by the Nevada Department of Agriculture and California Department of Food and Agriculture (NAC 555.010, Classes A through C, inclusive and 3 CCR 4500, Noxious Weed Species Pest Rating A, B, C, and Q) and undesirable nonnative plant species (Gelbard and Belnap 2003; Bergquist et al. 2007). Work with federal, state, local, and tribal groups, such as Weed Control Districts, Cooperative Weed Management Areas, and Conservation Districts, in detecting and treating nonnative species.

Action VEG-ISM 3: Where scientific support is lacking, carefully construct treatments to rigorously assess the value or detriment of untested methods to determine their value for future application to GRSG habitats.

Action VEG-ISM 4: The BLM would cooperate with other federal, state, tribal and local agencies along with academia in researching the development of biological control agents and deploying emerging technologies as they become available.

Action VEG-ISM 5: Monitor and adjust treatment sites and methods as needed to ensure effectiveness of efforts to prevent and control invasive species and restore GRSG habitat.

Action VEG-ISM 6: Assess invasive annual grass presence and distribution before implementing vegetation restoration projects to determine if treatments are required to treat invasive annual grasses.

Action VEG- ISM 7: Treat sites in PHMAs and GHMAs that contain invasive species infestations through an integrated pest management

(IPM) approach, using fire, chemical, mechanical, and biological (e.g., targeted grazing) methods, based on site potential and in accordance with FIAT (**Appendix G**).

Riparian and Wetlands Habitat

Objective VEG-RH 1: Manage riparian areas in PHMAs and GHMAs for vegetation composition and structure, consistent with ecological site potential and to achieve GRSG habitat objectives (**Table 2-2**).

Objective VEG-RH 2: Manage upland habitat associated with riparian areas to promote cover relative to site potential to facilitate brood-rearing habitat (**Table 2-2**).

Objective VEG-RH 3: Where riparian function has been compromised or lost, manage to restore riparian function and meet GRSG habitat objectives (**Table 2-2**).

Objective VEG-RH 4: In riparian and wet meadow areas, inventory, monitor, and control invasive species in PHMAs and GHMAs.

Action VEG-RH 1: Design and implement vegetation treatments in PHMAs and GHMAs to restore, enhance, and maintain riparian areas (**Table 2-2**).

Action VEG-RH 2: Consider an array of vegetation treatments to increase edge and expand mesic areas in PHMAs and GHMAs where riparian extent is limited by shrub encroachment (**Table 2-2**).

Action VEG-RH 3: Manage lotic riparian habitats in conjunction with adjacent terraces and valley bottoms as natural fuel breaks to reduce the size and frequency of wildfires in PHMAs and GHMAs.

Climate Change

Objective CC 1: Use the landscape approach and promote landscape-scale, ecosystem-based actions to enhance resiliency and sustainability of PHMAs and GHMAs to climate stress.

Objective CC 2: In PHMAs and GHMAs, manage risks of GRSG habitat degradation or loss from landscape stressors of drought, invasive species, and wildfire exacerbated by climate change to maintain existing GRSG populations and habitats.

Action CC 1: As climate change data become available through Rapid Ecoregional Assessments or other ecological studies, identify areas of unfragmented GRSG habitat and corridors that provide the life-cycle and genetic transfer needs for GRSG and adjust resource management practices, as needed.

Action CC 2: Cooperate with multiple agencies and stakeholders to establish and maintain a network of climate monitoring sites and stations.

Wildfire Management

Objective WFM 1: The safety of firefighters and the public is the highest priority. GRSG habitat would be prioritized commensurate with property values and other critical or sensitive habitats to be protected, with the goal to restore, enhance, and maintain areas suitable for GRSG.

Action WFM 1: Support the conservation of GRSG habitat objectives (**Table 2-2**) through appropriate wildfire management planning, coordination, staffing, resource allocations, training, equipment, and management oversight.

Action WFM 2: Prioritize fire operations and fuels management decisions in SFAs first, followed by PHMAs outside of SFAs in accordance with the implementation-level FIAT assessments, and then GHMAs for conservation and protection during fire operations and fuels management decision-making. When suppression resources are widely available, place maximum efforts on limiting fire growth in GHMAs as well.

Action WFM 3: BLM planning units (field offices and districts), in coordination with the USFWS and relevant state agencies, would annually review the GRSG landscape wildfire and invasive species habitat assessments. Where areas of large-scale fires, complete appropriate updates.

Action WFM 4: Compile relevant field office- and district-level information into the statewide GRSG Annual Operating Handbook for use by resource advisors, wildfire crews, and agency administrators. The handbook would contain GRSG maps (including habitat and fuels treatment maps) and lists of state and local GRSG resource advisors and their contact information, local guidance, and other relevant information for each field office and district, aggregated into a statewide document.

Action WFM 5: Coordinate and collaborate with federal, tribal, state, and local governments and associations sanctioned through either California or Nevada that meet fire standards for effective and efficient wildfire response.

Action WFM 6: Strengthen and improve interagency wildfire prevention statewide through targeted wildfire prevention messages, including providing education on GRSG habitat loss, updating interagency agreements, and conducting wildfire prevention workshops and demonstration projects.

Pre-Suppression

Objective WFM-PSU 1: Use pre-suppression efforts to reduce the size and impact of wildfires in SFAs, PHMAs, and GHMAs.

Action WFM-PSU 1: Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection, in accordance with FIAT (see **Appendix G,** USDI 2015) and further refined in the implementation-level FIAT assessments.

Action WFM-PSU 2: Create fire management plans to guide wildfire suppression in order to protect PHMAs and GHMAs.

Action WFM-PSU 3: Before the fire season, train GRSG resource advisors on wildfire suppression organization, objectives, tactics, and procedures to develop a cadre of qualified individuals. Involve state wildlife agency experts in fire operations through the following:

- Instruction of resource advisors during preseason trainings
- Qualification as resource advisors
- Coordination with resource advisors before fire season
- Contribution to incident planning with information, such as habitat features or other key data useful in fire decision-making

Suppression

Objective WFM-SU 1: Use suppression to reduce the size and impact of wildfires in SFAs, PHMAs, and GHMAs.

Action WFM-SU 1: Provide local GRSG habitat maps to dispatch offices and extend attack incident commanders to prioritize wildfire suppression resources and design suppression tactics. Ensure GRSG habitat maps and suppression strategies are uploaded and updated in WFDSs.

Action WFM-SU 3: Assign a resource advisor with GRSG habitat expertise or with access to GRSG habitat expertise to all extended attack fires in or near SFAs, PHMAs, and GHMAs.

Action WFM-SU 4: In advance of critical fire weather, station additional federal fire suppression resources to optimize a quick and efficient response in SFAs, PHMAs, and GHMAs.

Action WFM-SU 5: During periods of multiple fires, ensure line officers prioritize decisions by coordinating with resource advisors.

Action WFM-SU 6: To the extent possible, locate wildfire suppression facilities (e.g., base camps, spike camps, drop points, staging areas, and

helicopter bases) in areas to avoid disturbing PHMAs and GHMAs. These include disturbed areas, grasslands, roads and trails, or in other areas with existing disturbance or minimal sagebrush cover.

Action WFM-SU 7: Adequately document fire operations (e.g., disturbance) in PHMAs and GHMAs for potential follow-up coordination and restoration.

Action WFM-SU 8: Use indirect attack tactics (including burn-out operations) when direct attack is not effective in stopping fires with the potential of becoming significantly larger due to fuel loading, weather conditions, and fire behavior. If firefighter and public safety appears to be threatened or compromised, use indirect attack tactics in suppression actions.

Action WFM-SU 9: Use retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack. As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.

Action WFM-SU 10: Minimize unnecessary cross-country vehicle travel during fire operations in GRSG habitat.

Fuels Management

Objective WFM-HFM 1: Protect and enhance PHMAs and GHMAs and areas of connectivity that support GRSG populations, including large contiguous blocks of sagebrush, through fuels management.

Action WFM-HFM 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action WFM-HFM 2: In PHMAs and GHMAs, apply fuels treatments on a landscape level to modify fire behavior, intensity, complexity (fire patchiness), size, and effects in which fire management efforts are enhanced.

Action WFM-HFM 3: Establish and maintain fuel breaks to protect GRSG and its habitat to limit fire size and mitigate fire behavior to increase suppression effectiveness. When possible, establish fuel breaks next to roads or other previously disturbed areas.

Action WFM-HFM 4: Use a full range of fuels management strategies and tactics within acceptable risk levels across the range of GRSG habitat consistent with land use plan direction.

Action WFM-HFM 5: If prescribed fire is used in GRSG habitat, the NEPA analysis for the Burn Plan will address:

- why alternative techniques were not selected as a viable option
- how GRSG goals and objectives would be met by its use
- how the COT report objectives would be addressed and met
- a risk assessment to address how potential threats to GRSG habitat would be minimized.

a) Allow prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the burn plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect GRSG habitat in PHMAs (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities).

b) Allow prescribed fire in known winter range shall only be considered after the NEPA analysis for the burn plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat would need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.

Action WFM-HFM 6: In coordination with the USFWS and relevant state agencies and in accordance with FIAT (see **Appendix G**), develop a fuels management strategy for the BLM with large blocks of GRSG habitat. The strategy should include an up-to-date fuels profile, land use plan direction, current and potential habitat fragmentation, sagebrush and GRSG ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity. When developing this strategy, consider the risk of increased habitat fragmentation from a proposed action versus the risk of large-scale fragmentation posed by wildfires if the action were not taken.

Action WFM-HFM 7: Design fuels treatments through an interdisciplinary team process to expand, enhance, maintain, and protect PHMAs and GHMAs. Fuel reduction techniques, such as prescribed fire and chemical, biological (including targeted grazing), and mechanical treatments, are acceptable. Use green strips and fuel breaks, where appropriate, to protect seeding from subsequent fires.

Action WFM-HFM 8: In coordination with the USFWS and relevant state agencies and in accordance with FIAT (see **Appendix G**), BLM Districts will identify treatment needs for wildfire and invasive species management. Ongoing treatment needs would be coordinated on state and regional scales and across jurisdictional boundaries for long-term conservation of GRSG and its habitat.

Action WFM-HFM 9: On project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and other treatment components. Control invasive vegetation post-treatment.

Action WFM-HFM 10: Design fuels treatments to protect sagebrush ecosystems, modify fire behavior, restore ecological function, and create landscape patterns that most benefit PHMAs and GHMAs and promote use by GRSG.

Action WFM-HFM 11: Train fuels treatment personnel on GRSG biology, habitat requirements, and identification of areas used locally.

Action WFM-HFM 12: Use burning prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize killing desirable perennial plant species and reduce risk of annual grass invasion) in PHMAs and GHMAs.

Action WFM-HFM 13: Ensure proposed sagebrush treatments are planned with interdisciplinary input from the BLM and coordinated with state fish and wildlife agencies to meet GRSG habitat objectives (**Table 2-2**).

Action WFM-HFM 14: Design vegetation treatments in areas of high fire frequency to facilitate firefighter safety, reduce the potential acres burned, and reduce the fire risk to GRSG habitat.

Action WFM-HFM 15a: For Nevada BLM-administered lands, before implementation, establish project monitoring sites where fuels management projects are planned. Monitor treatment areas both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved.

Action WFM-HFM 15b: For California BLM-managed lands, before implementation, establish project monitoring sites where fuels management projects are planned. Monitor treatment areas both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved. Juniper treatments would be monitored in accordance with the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Post Fire Management

Objective WFM-PF 1: Retain, protect, and improve intact unburned sagebrush communities in burned areas.

Objective WFM-PF 2: Protect post-fire treatments in PHMAs and GHMAs from subsequent wildfires.

Action WFM-PF 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action WFM-PF 2: Prioritize post-fire treatments in PHMAs and GHMAs to maximize benefits to GRSG and its habitat. Focus post-fire treatments on replacing or reestablishing burned sagebrush habitat with the appropriate cover and structure to support GRSG habitat objectives (**Table 2-2**).

Action WFM-PF 3: Design and implement post-fire treatments in PHMAs and GHMAs that emphasize stabilizing, rehabilitating, and restoring sagebrush ecosystems damaged by wildfires, including controlling invasive species.

Action WFM-PF 4: Increase post-fire treatment activities in PHMAs and GHMAs through the use of integrated funding opportunities with other resource programs and partners.

Action WFM-PF 5: In post-fire rehabilitation plans in PHMAs and GHMAs, design revegetation projects to accomplish the following:

- Maintain and enhance unburned intact sagebrush communities when at risk from adjacent threats
- Stabilize soils
- Reestablish hydrologic function
- Maintain and enhance biological integrity
- Promote plant resiliency
- Limit expansion or dominance or invasive species
- Reestablish native species

Action WFM-PF 6: Following post-fire treatments, monitor and implement management actions in PHMAs and GHMAs that promote healthy perennial grass, shrub and forb communities, and lentic (slow-moving freshwater) and lotic (rapid freshwater) riparian habitats so as to further restoration and ensure long-term persistence of seeded or pre-burn native plants, in accordance with GRSG habitat objectives (**Table 2-2**).

Action WFM- PF 7: Evaluate the potential for sagebrush island plantings based on ESDs in large burn areas that may lack sufficient sagebrush seed sources in order to ensure the reestablishment of sagebrush in GRSG habitat.

Action WFM-PF 8: Monitor post-fire rehabilitation treatments on a multiple-year basis to ensure that project objectives are achieved.

Action WFM-PF 9: Use GRSG habitat objectives (**Table 2-2**) and emphasize the use of native plant species in post-fire rehabilitation (e.g. reseeding), recognizing that nonnative species may be necessary, depending on the availability of native seed and prevailing site conditions. Selected species should maintain site ecological function based on pre-burn conditions and anticipated threat of invasive and noxious weed establishment. Use ESDs and state and transition models if available.

Livestock Grazing

Objective LG 1: Manage permitted livestock grazing to maintain and/or enhance PHMAs and GHMAs to meet or make progress towards meeting all GRSG life-cycle requirements and habitat objectives (**Table 2-2**), based on site potential.

Action LG 1: When renewing term grazing permits or leases, or when revising or developing new allotment management plans within PHMAs and GHMAs, if not meeting, or making progress towards meeting land health standards, as associated with not meeting GRSG habitat objectives, and grazing is a significant causal factor, adjust permits and take actions prior to the start of the next grazing season by implementing management strategies, including the addition of one or more of the following (not in priority order):

- Season or timing of use
- Numbers of livestock (includes temporary nonuse or livestock removal)
- Intensity of use
- Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas, and goats)
- Extended rest or temporary closure from grazing through BLM administrative actions
- Make allotment unavailable to grazing

Action LG 2: The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in SFAs

followed by PHMAs outside of the SFAs. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting land health standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.

Action LG 3: The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFAs and PHMAs will include specific management thresholds based on GRSG Habitat Objectives Table, Land Health Standards (43 CFR 4180.2) and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis.

Action LG 4: Complete land health assessments in PHMAs and GHMAs to identify whether or not GRSG habitat objectives (**Table 2-2**) are being met. The priority order for completing land health assessments in GRSG habitat is:

- Allotments containing SFAs that have never been evaluated;
- Allotments containing SFAs that have not been re-evaluated in 10 or more years;
- Allotments containing PHMAs that have never been evaluated;
- Allotments containing PHMAs that have not been re-evaluated in 10 or more years;
- Allotments containing GHMAs that have never been evaluated;
- Allotments containing GHMAs that have not been re-evaluated in 10 or more years.

Action LG 5: If results from a land health assessment indicate that GRSG habitat objectives (**Table 2-2**) are not met in SFAs, PHMAs, or GHMAs and grazing is a contributing factor, and until appropriate modifications (Action LG 1) are incorporated through the permit renewal process, implement management strategies that may include the following:

- Provide periods of rest or deferment during critical growth periods of key vegetation species
- Limit grazing duration and intensity to allow plant growth sufficient to meet GRSG habitat objectives (**Table 2-2**)
- Employ herd management techniques to minimize impacts of livestock on breeding, nesting, and brood-rearing habitat during the

breeding season (March 1 to June 30; Lek—March 1 to May 15, and Nesting—April 1 to June 30)

- Consider any temporary projects that could mitigate livestock impacts (e.g., temporary fencing or temporary water hauling locations;
- Work with permittees to avoid concentrated turn-out locations for livestock within 4 miles of active and pending leks from March 1 to June 30
- Avoid domestic sheep use and bedding areas and herder camps within 2 miles of active and pending leks from March 1 to June 30
- Utilizing land features and roads on maps provided to the permittee to help delineate livestock use avoidance areas
- Considering no grazing from May 15 – Sept. 15 in riparian areas and wet meadows.
- Removing livestock within 3-7 days for the remainder of the grazing year once the allowable use levels are reached
    - In riparian areas and wet meadows the allowable percent utilization is 35% woody species, and a minimum stubble height of 4-6 inches (10-15 cm) for herbaceous riparian vegetation based on site.
    - In mountain big sage habitat, the allowable percent utilization is 40 % herbaceous key species and/or 35 % shrub key species.
    - In Wyoming Basin big sage habitat, the allowable percent utilization is 35% herbaceous key species and/or 35 % shrub key species.
    - In black sage habitat, the allowable percent utilization is 35% herbaceous key species and/or 35 % shrub key species.

Action LG 6: Appropriate allowable utilization levels will be defined through the grazing permit renewal process. At least one alternative in the NEPA process will consider the utilization levels identified in Action LG 5.

Action LG 7: In pastures where post livestock removal use monitoring results in utilization levels that exceed allowable use levels, and livestock are identified as an influencing factor, reduce AUMs grazed the following year accordingly. AUMs cannot be applied to another pasture.

Action LG 8: Within PHMAs and GHMAs, incorporate terms and conditions into grazing permits to meet GRSG habitat objectives (**Table**

2-2), specific terms and conditions would be based on rangeland health assessments (and subsequent monitoring data).

Action LG 9: When a transfer application is received for preference on an allotment within GRSG habitat, and a recent rangeland health determination is already completed and terms and conditions on the current permit reflect any necessary changes to benefit GRSG habitat: Transfer preference and renew permit as appropriate.

i. a recent rangeland health assessment is already completed, but permit has not been fully processed to modify terms and conditions to address any changes necessary to benefit GRSG habitat: review GRSG habitat conditions before approving grazing permit transfers. Where GRSG habitat objectives (**Table 2-2**) are not being met or making significant progress towards being met in an allotment and a significant causal factor was identified as livestock grazing, adjust the annual grazing authorization or operating instructions in accordance with the terms and conditions of the permit, or through 43 CFR 4110, as appropriate to address grazing conflicts prior to the next grazing season.

ii. a rangeland health assessment is not yet completed: in SFAs and PHMAs, review of GRSG habitat conditions is necessary before approving a grazing permit transfer. In GHMAs, review habitat conditions before approving grazing permit transfers when monitoring data or habitat assessment information is available. When data/assessment information indicates current livestock grazing is adversely impacting GRSG and its habitat, adjust the annual grazing authorization or operating instructions within the terms and conditions if possible, or through 43 CFR 4110 as necessary, of the existing grazing permit to address grazing conflicts prior to the next grazing season.

Action LG 10: In any allotment where land health standards were not met and livestock grazing was found to be a significant causal factor, compliance monitoring will be conducted annually until GRSG habitat objectives (**Table 2-2**) are met.

Action LG 11: allotments within SFAs, followed by those within PHMAs, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.

Action LG 12: Grazing management strategies for riparian areas and wet meadows would, at a minimum, maintain or achieve proper functioning

condition (PFC) and promote GRSG brood-rearing habitat objectives (**Table 2-2**) within PHMAs and GHMAs.

Action LG 13: For range improvement projects, review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LG 14: Build or modify livestock exclosures so that they are large enough to provide hiding cover to GRSG and other wildlife and to reduce the possibility of wildlife collisions with fences (Christiansen 2009; Stevens 2011; NRCS 2012).

Action LG 15: Subject to valid existing rights, remove or modify water developments that are negatively impacting GRSG habitats.

Action LG 16: In accordance with state water law and subject to valid rights, ensure that any water developments (new or existing) do not remove more than 50 percent of water from any spring or other surface water source.

Action LG 17: Authorize new water developments for diversion from spring or seep source, in accordance with state water law and subject to valid existing rights only when PHMAs and GHMAs would benefit from or not be negatively impacted by the new development. This includes developing new water sources for livestock as part of a grazing management plan to improve GRSG habitat.

Action LG 18: Modify water development projects to ensure riparian habitats in PHMAs and GHMAs are being maintained or improved in compliance with valid existing rights and in accordance with state water law.

Action LG 19: Locate salting and supplemental feeding locations, temporary or mobile watering, and new handling facilities (e.g., corrals and chutes) at least 1 mile from riparian areas, springs, and meadows. The distance can be greater based on site-specific conditions.

Action LG 20: In PHMAs and GHMAs, remove livestock ponds built in perennial channels that are negatively impacting riparian habitats, either directly or indirectly, unless riparian access is able to be controlled and negative impacts effectively mitigated (e.g.; water gap fence to pond), and do not permit new ones to be built in these areas subject to valid existing rights. Prior to pond removal, offsite watering options would be examined and considered.

Action LG 21: In PHMA and GHMA, rest areas that have received vegetative treatments from livestock grazing until resource monitoring

data verifies the treatment objectives are being met and an appropriate grazing regime has been developed. Any livestock grazing temporary closures or other management changes for the purpose of a vegetation treatment would be done through the grazing decision, prior to treatment.

Action LG 22: At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as grass banks and fire breaks.

Action LG 23: After grazing rest associated with vegetation treatments in PHMAs and GHMAs, monitor annually for a minimum of 5 years to ensure project objectives are being maintained.

Action LG 24: Fences should not be constructed or reconstructed within 1.2 miles from the perimeter of occupied leks, unless the collision risk can be mitigated through design features or markings (e.g., mark, laydown fences, and design).

Wild Horses and Burros

Action WHB 1: For WHB management activities (e.g., gathers), review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action WHB 2: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (**Table 2-2**).

Action WHB 3: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g., range, wildlife, and riparian). The priorities for conducting assessments are:

1. HMAs containing SFA;
2. HMAs containing PHMAs, which include riparian areas;
3. HMAs containing only GHMAs;
4. HMAs containing sagebrush habitat outside of PHMAs and GHMAs mapped habitat;
5. HMAs without GRSG habitat.

Action WHB 4: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd

health impacts. Place higher priority on herd areas not allocated as HMAs and occupied by wild horses and burros in SFAs, followed by PHMAs.

Action WHB 5: In SFAs and PHMAs outside SFAs, assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting rangeland health standards, even if current AML is not being exceeded.

Action WHB 6: In SFAs and PHMAs outside of SFAs, monitor the effects of WHB use in relation to GRSG habitat objectives (**Table 2-2**) on an annual basis to help determine future management actions.

Action WHB 7: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives (**Table 2-2**) and management considerations for all HMAs within GRSG habitat, with emphasis placed on SFAs and other PHMAs.

Action WHB 8: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives (**Table 2-2**) where HMAs overlap with GRSG habitat.

Action WHB 9: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

Action WHB 10: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

Lands and Realty Actions

Objective LR 1: Manage land use authorizations, including ROWs, leases, permits, and tenure adjustments, to maintain or enhance PHMAs and GHMAs and connectivity.

Land Tenure

Action LR-LT 1: Lands classified as PHMAs and GHMAs for GRSG will be retained in federal management, unless: (1) the agency can demonstrate that disposal of the lands will provide a net conservation gain to GRSG or (2) the agency can demonstrate that the disposal of the lands will have no direct or indirect adverse impact on conservation of the GRSG.

Action LR-LT 2: Where significant conservation actions could be achieved in PHMAs and GHMAs, seek to acquire lands with intact subsurface mineral estate by donation, purchase, or exchange in order to best conserve, enhance, or restore GRSG habitat.

Action LR-LT 3: Manage lands acquired by exchange, purchase or easement as either PHMAs or GHMAs, in consideration of surrounding habitat.

Withdrawals

Action LR-LW 1: Recommend SFAs for withdrawal from the General Mining Act of 1872, as amended, subject to valid existing rights (see **Figure 1-3**).

Land Use Authorizations and Corridors

Industrial Solar

Action LR-IS 1: Designate PHMAs and GHMAs as ROW exclusion for utility-scale solar energy facilities (those that generate 20 megawatts or more).

Action LR-IS 2: In PHMAs and GHMAs, consider approving solar facilities on existing industrial infrastructure (e.g., a mine site) to generate power on-site. Review Objective SSS 4 and apply Actions SSS 1 through SSS 3 when reviewing and analyzing projects and activities proposed in GRSG habitat. In OHMAs, apply Action SSS 4.

Wind Energy Development

Action LR-WD 1: Designate PHMAs as ROW exclusion for utility-scale commercial wind energy facilities (those that generate 20 megawatts or more).

Action LR-WD 2: Within PHMAs, wind facilities associated with existing industrial infrastructure (e.g., a mine site) to provide on-site power generation could be considered for approval, subject to a net conservation gain. Apply Actions SSS 1 through SSS 2 when reviewing and analyzing projects/activities proposed within GRSG habitat.

Action LR-WD 3: Designate GHMAs as ROW avoidance for utility-scale commercial wind energy facilities (i.e., facilities that generate 20 megawatts or more). Review Objective SSS 4 and apply Actions SSS 1 through SSS 3 when reviewing and analyzing projects/activities proposed within GRSG habitat. In OHMAs apply Action SSS 4.

Corridors

Action LR LUA 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LR LUA 2: Only utility corridors identified on **Figure 2-67** remain as designated corridors in PHMAs and GHMAs. All previously designated corridors in PHMAs and GHMAs not shown on the map that were designated through past land use planning efforts have been evaluated and undesignated.

Action LR LUA 3: On public lands, keep the designated corridors identified on **Figure 2-67** in PHMAs and GHMAs available to new uses, subject to a maximum corridor width of 3,500 feet, unless a narrow width is specified in an existing plan.

High-Voltage Transmission Lines and Major Pipeline ROWs

Action LR-LUA 4: PHMAs and GHMAs are designated as avoidance areas for high voltage transmission line ROWs (>100 kV), except for the transmission project specifically identified below. All authorizations in these areas, other than the excepted project, must comply with the conservation measures outlined in this proposed plan amendment, including the all of the requirements presented in Actions SSS 1 – SSS 4. The BLM is currently processing an application for the TransWest Express transmission line and the NEPA review for this project is well underway. The BLM is analyzing GRSG mitigation measures through the project's NEPA review process.

Action LR-LUA 5: PHMAs and GHMAs are designated as major pipeline (≥24-inch diameter) ROW avoidance areas. Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat. In OHMAs, apply Action SSS 4.

Action LR-LUA 6: Issue ROWs only after documenting that they would not adversely affect or disrupt GRSG habitat (independent of disturbance cap), except where such limitation would make accessing valid existing rights impracticable in PHMAs and GHMAs.

Minor ROWs, Permits, and Leases

Action LR-LUA 7: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LR-LUA 8: Manage PHMAs as avoidance areas for other ROWs (including permits and leases). These do not include the wind, solar, or high-voltage transmission line and major pipeline ROW actions, above.

Action LR-LUA 9: Manage GHMAs as stipulated ROW open areas (including for permits and leases). These do not include the wind, solar, or high-voltage transmission line and major pipeline ROW actions, above.

Action LR-LUA 10: In PHMAs, bury new distribution power and communication lines in existing disturbed areas, unless it would not be technically feasible or the cost would prohibit the proponent from providing the service. Where burying transmission lines is not feasible, locate new transmission lines next to existing linear disturbances, when possible; additional mitigation would be required.

Action LR-LUA 11: When renewing or amending ROWs (including permits and leases), assess the impacts of ongoing use of the ROW on GRSGs and their habitat and minimize such impacts to the extent allowed by law.

Action LR-LUA 12: When renewing or amending ROWs that are undeveloped, work with ROW holders to bury or relocate authorized but undeveloped lines to minimize impacts on PHMAs, unless this would not be technically feasible or would be contrary to policy. Where burying transmission lines is not feasible, locate new transmission lines next to existing linear disturbances, when possible.

Action LR-LUA 13: In PHMAs and GHMAs where existing ROWs, permits, or leases are no longer in use, coordinate with the authorized holder to relinquish the authorization and reclaim the site by removing the infrastructure.

Action LR-LUA 14: Stipulate site relinquishment and reclamation in all new, amended or renewed ROWs, permits, and leases.

Action LR-LUA 15: When issuing new communication site management plans or amending existing plans, include GRSG habitat objectives (**Table 2-2**). Current authorizations would then be amended to reflect the updated communication site management plans.

Action LR-LUA 16: In PHMAs and GHMAs, site new linear features in designated corridors, as identified on **Figure 2-67**, or at a minimum, collocate with existing linear features. Construct new ROWs in designated corridors as close as technically feasible to existing linear ROW infrastructure to limit disturbance to the smallest footprint.

Action LR-LUA 17: Manage landfills and transfer stations on public lands to eliminate opportunities to attract and provide nesting, cover, or perches for predators.

Action LR-LUA 18: Within 4 miles of active and pending leks in GRSG habitat, require ROW, permit, and lease holders to retrofit those portions of power lines and other utility structures with nesting and perch-deterring devices. Do this during the renewal and amendment process if adverse effects, such as increased nest predation, on GRSG populations have been documented. This requirement should be predicated on research and monitoring studies specific to power lines or other utility structures.

Action LR-LUA 19: In PHMAs and subject to valid existing rights, authorize new road ROWs only when necessary for public safety or administrative access, or if it would create no new surface disturbance.

Action LR-LUA 20: Do not manage existing federal and state road easements as PHMAs or GHMAs and exempt them from the management actions associated with PHMAs and GHMAs. Any new modification or adjustments outside of the existing easement would be subject to Actions SSS 1 through SSS 4.

Action LR-LUA 21: In PHMAs and GHMAs, address access to valid existing rights to provide the minimum access necessary to exercise the right and maintain or enhance PHMAs and GHMAs.

Fluid Minerals

Objective FM 1: priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, that are subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).

Objective FM 2: Where a proposed fluid mineral development project on an existing lease could adversely affect GRSG populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to GRSG or its habitat and will ensure that the best information about GRSG and its habitat informs and helps to guide development of such federal leases.

Unleased Fluid Minerals

Action UFM 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action UFM 2: Manage SFAs as NSO without waivers, exceptions, or modifications (see **Figure 1-3**).

Action UFM 3: In PHMAs outside of SFAs, no waivers or modifications to an oil and gas lease no-surface-occupancy stipulation will be granted. The Authorized Officer may grant an exception to an oil and gas lease no-surface-occupancy stipulation only where the proposed action:

i. Would not have direct, indirect, or cumulative effects on GRSG or its habitat; or,

ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to GRSG.

Exceptions based on conservation gain (ii) may only be considered in (a) PHMAs of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) Areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid federal oil and gas lease existing as of the date of this RMP amendment. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts (see **Appendix N**).

Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other GRSG expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publicly available at least quarterly.

Action UFM 4a: For BLM land in the state of Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if all of the following conditions are met:

- A team comprised of BLM, FWS, and NDOW specialists advises the BLM State Director on appropriate mitigation measures for the project and its ancillary facilities, including lek buffer distances using the best available science;

- Mitigation actions are consistent with this Plan's mitigation strategy such as the Nevada Conservation Credit System, and;
- The footprint of the project is consistent with the disturbance management protocols identified in this plan (see Action SSS 2 and **Appendix F**)

Action UFM 4b: For BLM lands in California only, manage geothermal leasing in PHMAs in accordance with Action UFM 3 (see **Appendix N**).

Action UFM 5: In GHMAs, manage oil and gas and geothermal fluid minerals with moderate constraints, timing limitations, and controlled surface use stipulations (see **Appendix N**).

Action UFM 6: In PHMAs and GHMAs, allow only geophysical exploration that does not crush sagebrush or create new or additional surface disturbance. Examples of technologies that may meet this requirement are drilling methods using helicopters, articulated rubber-tired vehicles that leave no trace, and vibroseis geophysical operations on roads and bladed shoulders.

Action UFM 7: Prohibit surface shot methods in PHMAs.

Leased Federal Fluid Mineral Estate Actions

Action FM 1: Review Objective SSS 4, and to the extent allowed by law, apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action Lease FM 2: Use directional and horizontal drilling to reduce surface disturbance.

Action Lease FM 3: On leased federal fluid mineral estate, where no APD or geothermal drilling permit (GDP) has been issued, apply RDFs and other conditions of approval (COAs) that conserve GRSG. Manage existing fluid mineral leases through COAs applied at the time APD or GDP is approved.

Action Lease FM 4: On leased federal fluid mineral estate in PHMAs, complete master development plans for oil and gas in lieu of APD-by-APD, or operations/utilization plans for geothermal processing for all but exploration wells.

Action Lease FM 5: On leased, federal, fluid mineral estate in PHMAs, require a full reclamation bond specific to the site. Ensure bonds are sufficient for reclamation costs for full restoration. Base the reclamation costs on the assumption that BLM contractors would perform the work.

Action Lease FM 6: In PHMAs and GHMAs, place infrastructure in already disturbed locations to the extent feasible.

Action Lease FM 7: Locate new compressor stations outside PHMAs and GHMAs and design them to reduce noise that may be directed toward PHMAs and GHMAs (see Actions SSS 2 and SSS 3 and **Appendix K**).

Locatable Minerals

Action LOC 1: Review Objective SSS 4, and to the extent allowed by law, apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LOC 2: Recommend for withdrawal SFAs under the General Mining Act of 1872, as amended, subject to valid existing rights (see **Figure 1-3**).

Action LOC 3: On public lands, manage disturbances associated with notice-level activity in GRSG habitat on a landscape basis to avoid segmenting a project. Do this by encouraging operators and claimants to consolidate exploration into a plan of operations to reduce the proliferation of mining notices, in accordance with 43 CFR, Part 3809.21(b).

Action LOC 4: Authorize locatable mineral development activity, in accordance with 43 CFR, Part 3809, by approving plans of operation and apply mitigation and best management practices that minimize the loss of PHMAs and GHMAs or that enhance GRSG habitat by applying the "avoid, minimize and mitigate" process through an applicable mitigation system, such as the Nevada Conservation Credit System.

Action LOC 5: Close or mitigate abandoned mine sites in PHMAs and GHMAs to reduce GRSG predation by eliminating physical structures that could provide nesting opportunities and perching sites for predators.

Salable Minerals

Action SAL 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action SAL 2: PHMAs are closed to new mineral material sales.
However, these areas remain open to free use permits and the expansion of existing active pits only if the following criteria are met:

- The activity is within the biologically significant unit (BSU) and project area disturbance cap
- The activity is subject to the provisions set forth in the mitigation framework (**Appendix I**)

- All applicable required design features are applied; and
- If applicable, the activity is permissible under the specific sub-regional screening criteria (site location in ADPP where this screening process is present)

Action SAL 3: Manage GHMAs as open to existing and new mineral materials disposal sites.

Action SAL 4: Provide reasonable access and development opportunity to Federal Highway Administration, Nevada Department of Transportation (NDOT), California Department of Transportation (Caltrans), counties, tribes and the public for existing mineral material pits in PHMAs and GHMAs.

Nonenergy Leasable Minerals

Action NEL 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action NEL 2: Manage PHMAs as closed to new nonenergy leasable mineral leasing.

Action NEL 3: Consider expanding existing leases in PHMAs.

Action NEL 4: Manage GHMAs as open to new nonenergy leasable mineral leasing.

Mineral Split Estate

Action MSE 1: Review Objective SSS 4, and to the extent allowed by law, apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action MSE 2: Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.

Action MSE 3: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMAs and GHMAs, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.

Comprehensive Travel and Transportation Management

Objective CTTM 1: Prioritize and complete transportation planning in PHMAs and GHMAs that provides for reasonable access to public lands for administration and recreation and that minimizes proliferation of user-created routes (e.g., roads, primitive roads, and trails).

Action CTTM 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action CTTM 2: In travel management plans that have been completed and are being implemented (e.g., northeastern California plans), continue to limit motorized travel to designated routes in PHMAs and GHMAs. In areas where travel planning has not been completed, limit motorized travel to existing routes in PHMAs and GHMAs until subsequent implementation-level travel planning is completed and a designated route system is established.

Action CTTM 3: Allow the goals, objectives, and actions in relevant national OHV guidance to guide subsequent implementation-level travel planning efforts, as well as by the following:

- Identify, prioritize, and update annually a timeline to complete travel planning in all relevant planning areas to accelerate data collection, route evaluation and selection, and on-the-ground implementation, including signing, monitoring, and rehabilitation.
- Consult with interested user groups, federal, state, county, and local agencies, local landowners, and other parties to provide an opportunity for the public to express itself and have its views considered. Consequently, incorporate a public outreach plan to fully engage all interested stakeholders into future travel management plans.
- Among other route evaluation criteria developed in this plan amendment, incorporate criteria from 43 CFR, Part 8342.1, and specifically section (b), “areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.”
- Evaluate all routes to determine the purpose and need and the potential resource or user conflicts from motorized travel. Where resource or user conflicts outweigh the purpose and need for the route, consider closing the route or relocating it outside of PHMAs and GHMAs. Evaluate for administrative access only routes not required for public access or recreation against current administrative/agency purpose or need.

- Consider closing routes that are duplicative, parallel, or redundant.
- Consider seasonal restrictions (see Actions SSS 2 and SSS 3) on motorized travel use PHMAs and GHMAs where motorized vehicle use is a threat. Consider limiting over snow vehicles (OSVs) designed for use on a track or tracks or a ski or skis, while in use to designated routes or consider seasonal closures in GRSG wintering areas from November 1 through February 28.
- Consider the need for restricting motorized vehicles, including their sound levels (Actions SSS 2 and SSS 3), speed and design (e.g., motorcycles, ATVs, and UTVs).
- Consider scheduling road maintenance to avoid disturbance during sensitive GRSG life-cycle periods to the extent practicable. Consider using time of day, seasonal, and noise restrictions (see Actions SSS 2 and SSS 3) to reduce impacts on GRSG seasonal habitat.
- In PHMAs and GHMAs, close to motorized travel those roads, primitive roads, and trails not designated in travel management plans until they can be restored.
- In PHMAs and GHMAs, prioritize restoring routes not designated in a travel management plan. Obliterate and seed roads, primitive roads, and trails not designated in travel management plans, with appropriate seed mixes and transplanted sagebrush when applicable. Use fire-resistant species as fuel breaks where appropriate. Seed must be certified weed free.

Action CTTM 4: In PHMAs and GHMAs, where new roads are necessary for public safety, administration, or public need, consider limiting route construction to realignments of existing routes where possible.

Action CTTM 5: In PHMAs and GHMAs, work with local governments to minimize upgrading existing routes that would change route category (e.g., road, primitive road, or trail) or capacity, unless the upgrade would maintain or enhance GRSG habitat, provide a fuel break to protect native vegetation, would be necessary for public safety, or would eliminate the need to construct a new road.

Action CTTM 6: In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR, Subpart 8364 (Closures and Restrictions), 43 CFR, Subpart 8351 (Designated National Area), 43 CFR, Subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties), and 43 CFR, Subpart 8341 (Conditions of Use).

Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts

and protect persons, property, and public lands and resources. where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.

Recreation and Visitor Services

Action REC 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when analyzing projects and activities proposed in GRSG habitat.

Action REC 2: Allow special recreation permits in PHMAs and GHMAs only if their effects on GRSG and its habitat are neutral or result in a net conservation gain.

Action REC 3: In PHMA, do not construct new recreation facilities (e.g., campgrounds, trails, trailheads, staging areas) unless the development would have a net conservation gain to GRSG and its habitat (such as concentrating recreation, diverting use away from critical areas, etc.), or unless the development is required for visitor health and safety or resource protection.

Action REC 4: Develop trail mapping and educational campaigns in PHMAs and GHMAs to reduce recreational impacts on GRSG and their habitat, including the effects of cross-country travel.

Tribal Interests

Action TI 1: Do not restrict tribal access to view GRSG breeding behavior for a tribe's traditional lifeways.

Action TI 2: Do not prohibit tribal access to traditional locations for cultural practices in PHMAs and GHMAs.

Action TI 3: Do not prohibit tribal collection of seeds, vegetation, or medicinal plants related to traditional cultural practices in PHMAs and GHMAs.

Adaptive Management

Action AM-1: As site-specific GRSG data (habitat assessments, lek counts, telemetry, etc.) is collected, it will be included into future modeling

efforts using the "*Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California*" (Coates et al. 2014) to reflect the most up-to-date spatial representation of GRSG habitat management categories. Through plan maintenance or plan amendment, the updated modeling efforts will be adopted and appropriate allocation decisions and management actions will be applied to PHMA, GHMA, and OHMA. Future modeling efforts will utilize the same modeling methods (as described under *Methods and Results* in Coates et al. 2014) used to develop the current Nevada and Northeastern California Sub-regions' GRSG habitat management categories. The addition of site-specific GRSG data will allow for the refinement of the spatial representation of the GRSG habitat management categories.

Action AM 2: A BSU that has hit a soft trigger due to vegetation disturbance would be a priority for restoration treatments consistent with FIAT (**Appendix G**).

Action AM 3: Once a hard trigger has been reached, all responses in **Table 2-9** and **Table 2-10** would be implemented. This includes where soft triggers have been reached for both population and habitat.

Action AM 4: When a hard trigger is hit in a PAC that has multiple BSUs, including those that cross state lines, the WAFWA GRSG Conservation Team will convene to determine the cause, will put project level responses in place, as appropriate, and will discuss further appropriate actions to be applied. The team will also investigate the status of the hard triggers in other BSUs in the PAC and will invoke the appropriate plan response. Adopting any further actions at the plan level may require initiating a plan amendment process.

Action AM 5: Project-level authorizations that have the potential to affect GRSG or its habitat will include an adaptive management strategy that has been analyzed in the NEPA document. Once a soft trigger has been reached, project-specific adaptive management strategies would be implemented.

Action AM 6: Project authorizations (with the possible exception of short duration activities outside of seasonal GRSG habitats) would require that active and pending leks be monitored annually within 4 miles of disturbance until the use terminates and all disturbances have been restored. The proponent would fund the services of an independent qualified biologist approved by the BLM, in coordination with NDOW or CDFW.

Action AM 7: In making amendments to this plan, the BLM will coordinate with the FWS as BLM continues to meet its objective of

conserving, enhancing and restoring GRSG habitat by reducing, minimizing or eliminating threats to GRSG and its habitat.

Required Design Features

RDFs are meant for certain activities in all GRSG habitats. They establish the minimum specifications for certain activities to help mitigate adverse impacts. However, the applicability and overall effectiveness of each RDF cannot be assessed at the project level until the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) or may require slight variations (e.g., a larger or smaller protective area). All variations in RDFs would require that at least one of the following be demonstrated in the NEPA analysis associated with the project or activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project or activity (e.g., due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
- An alternative RDF is determined to provide equal or better protection for GRSG or its habitat.
- A specific RDF will provide no additional protection to GRSG or its habitat.

The RDFs are presented in **Appendix D**.

Appendix C: Forest Service Proposed Plan Amendment

Forest Service Plan Components

Desired conditions - A description of specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed. Desired conditions must be described in terms that are specific enough to allow progress toward their achievement to be determined, but do not include completion dates. (36 CFR 219.7(e)(1)(i)) FSH 1909.12, Chapter 20)

Guideline – A constraint on project and activity decision making that allows for departure from its terms, so long as the purpose of the guideline is met. (§ 219.15(d)(3)). Guidelines are established to help achieve or maintain a desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements. (36 CFR 219.7(e)(1)(iv); FSH 1909.12, Chapter 20)

Objective - A concise, measurable, and time-specific statement of a desired rate of progress toward a desired condition or conditions. Objectives should be based on reasonably foreseeable budgets. (36 CFR 219.9(e)(1)(ii)) FSH 1909.12, Chapter 20)

Standard - A mandatory constraint on project and activity decision making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements. (36 CFR 219.7(e)(1) (iii)) FSH 1909.12, Chapter 20)

General Greater Sage-grouse

GRSG-GEN-DC-001-Desired Condition – The landscape for greater sage-grouse encompasses large contiguous areas, approximately 6 to 62 square miles in area, to provide for multiple aspects of species life requirements. In these landscapes, a variety of sagebrush-community compositions exist, with variations in subspecies composition, co-dominant vegetation, shrub cover, herbaceous cover, and stand structure, to meet seasonal requirements for food, cover, and nesting for greater sage-grouse.

GRSG-GEN-DC-002-Desired Condition – Anthropogenic disturbance is focused in non-habitat areas outside of priority and general habitat management areas and sagebrush focal areas[16]. Disturbance in general habitat management areas is limited, and there is little to no disturbance in priority habitat management areas and sagebrush focal areas except for valid existing rights and existing authorized uses.

GRSG-GEN-DC-003-Desired Condition – In greater sage-grouse management areas, including all seasonal habitats, 70% of lands capable of producing sagebrush have 10 to 30% sagebrush canopy cover and less than 10% conifer canopy cover. In addition, in breeding and nesting

[16]Suitable greater sage-grouse habitat within polygons identified as priority or general habitat management areas. Areas of non-habitat within a polygon are not included as part of any priority or general habitat management areas. Sagebrush focal areas may include areas of non-habitat.

habitat, sufficient herbaceous vegetation structure and height provides overhead and lateral concealment for nesting and early brood rearing life stages. In brood rearing habitat, wet meadows and riparian areas sustain forbs with a rich diversity of perennial forb species relative to site potential. In winter habitat, sufficient sagebrush height and density provides food and cover for greater sage-grouse during this seasonal period. Specific desired conditions for greater sage-grouse based on seasonal habitat requirements are in tables 1a and 1b.

Table 1a. Seasonal Habitat Desired Conditions for Greater Sage-grouse (Ecoregion 342).

ATTRIBUTE	INDICATORS	DESIRED CONDTION
BREEDING AND NESTING [1,2,3] (Seasonal Use Period March 1 to June 30) Apply 4.0 miles from active leks. [4]		
Lek Security	Proximity of trees [5]	Trees to uncommon in 1.86 miles (3 km) of leks [6,7]
	Proximity of sagebrush to leks [6]	Adjacent protective sagebrush cover in 328 feet of lek [6]
Cover	Seasonal habitat extent [7]	>80% of the breeding and nesting habitat
	Sagebrush canopy cover [6,7,8]	>15%
	Sagebrush height [7] Arid sites [6,7,9] Mesic sites [6,7,10]	 > 12 inches >16 inches
	Predominant sagebrush shape [6]	>50% in spreading [11]
	Perennial grass cover [6,7] Arid sites [7,9] Mesic sites [7,10]	 ≥10% ≥15%
	Perennial grass height [6,7,8]	Provide overhead and lateral concealment from predators [7]
	Perennial forb canopy cover [6,7,8] Arid sites [9] Mesic sites [10]	 ≥5% [6,7] ≥10% [6,7]
BROOD-REARING/SUMMER [1] (Seasonal Use Period May 15 to September 15)		
Cover	Seasonal habitat extent [7]	>40% of the brood-rearing/summer habitat
	Sagebrush canopy cover [6,7,8]	10 to 25%
	Sagebrush height [7,8]	> 16 inches
	Perennial grass canopy cover and forbs [6,7]	>15%
	Riparian areas/mesic meadows	Proper Functioning Condition [12]
	Upland and riparian perennial forb availability [5,6]	Preferred forbs are common with several preferred species present [13]
Security	Riparian Area/Meadow Interspersion with adjacent sagebrush	Has adjacent sagebrush cover [5, 6]
WINTER/FALL [1] (Seasonal Use Period September 1 to February 28)		
Cover and Food	Seasonal habitat extent [6,7,8]	>80% of the winter habitat
	Sagebrush canopy cover above snow [6,7,8]	>10%
	Sagebrush height above snow [6,7,8]	>10 inches [14]

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

[2] Doherty, K. 2008. *Sage-grouse and Energy Development: Integrating Science with Conservation Planning to Reduce Impacts*. University of Montana. Missoula, MT.

[3] Holloran and Anderson. 2005. *Spatial Distribution of Greater Sage-grouse nests in relatively contiguous sagebrush habitats*. Condor 107:742-752.

[4] Buffer distance may be changed only if 3 out of 5 years of telemetry studies indicate the 4 miles is not appropriate.

[5] Baruch-Mordo, S. J.S. Evans, J.P Severson, D.E. Naugle, J. D. Maestas, J.M. Kiesecker, M.J. Falkowski. C.A. Hagen, and K.P. Reese. . 2013. *Saving sage-grouse from trees*: A proactive solution to reducing a key threat to a candidate species. Biological Conservation 167: 233-241.

[6] Stiver, S.J., E.T. Rinkes, D.E. Naugle, P.D. Makela, D.A. Nance, and J.W. Karl, eds. 2015. Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.

[7] Connelly, J. M. A. Schroweder, A.R. Sands, and C.E. Braun.2000. Guidelines to manage sage-grouse populations and their habitats. Wildlife Society Bulletin 28 (4): 967-985.

ATTRIBUTE	INDICATORS	DESIRED CONDTION

[8] Connelly, J. K. Reese, and M. Schroder. 2003. *Monitoring of Greater sage-grouse habitats and populations*. Station Bulletin 80, Contribution 979. University of Idaho, College of Natural Resources Experiment Station. Moscow, ID.
[9] 10–12 inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush sub-species for this type site (HAF 2014).
[10] ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush sub-species for this type site (HAF 2014).
[11] Sagebrush plants with a spreading shape provide more protective cover than sagebrush plants that are more tree- or columnar shaped (HAF 2014).
[12] Existing land management plan desired conditions for riparian areas/wet meadows (spring seeps) may be used in place of properly functioning conditions, if appropriate for meeting greater sage-grouse habitat requirements.
[13] Preferred forbs are listed in HAF Table III-2 (HAF 2014). Overall total forb cover may be greater than that of preferred forb cover since not all forb species are listed as preferred in Table III-2.
[14] The height of sagebrush remaining above the snow depends upon snow depth in a particular year. Intent is to manage for tall, healthy, sagebrush stands.

Table 1b. Seasonal Habitat Desired Conditions for Greater Sage-grouse (Ecoregion 341).

ATTRIBUTE	INDICATOR	DESIRED CONDITION
GENERAL/LANDSCAPE-LEVEL		
Cover (Nesting)	Seasonal Habitat Needed	>65% of the landscape in sagebrush cover[1]
	Annual Grasses	< %5[3]
Security (Nesting)	Conifer encroachment	<3% phase I (>0% to <25% cover) No phase II (25 – 50% cover) No phase III (>50% cover)
Cover and Food (Winter)	Conifer encroachment	<5% phase I (>0% to <25% cover) No phase II (25 – 50% cover) No phase III (>50% cover)
	Sagebrush extent	>85% sagebrush land cover
LEK		
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover[7,15]
Security [4]	Pinyon and/or Juniper cover	<3% landscape canopy cover in 1 km of leks[2]
	Proximity of tall structures (1 meter above shrub canopy)	None in 3 miles (5 kilometers)[16]
NESTING		
Cover	Sagebrush canopy cover	≥20%[11,12]
	Residual and live perennial grass cover	≥10% if shrub cover <25%[2,6,5]
	Annual grass cover [5]	<5%[13]
	Perennial grass height	Provide overhead and lateral concealment from predators[7]
	Total shrub cover	≥30%[5,11]
Security	Proximity of tall structure (1 meter above shrub canopy)	None in 3 miles[16]
BROOD-REARING/SUMMER		
Cover	Sagebrush canopy cover	10-25%[7]
	Perennial grass canopy cover and forbs	>15% combined perennial grass and forb canopy cover[7]
Cover and Food	Perennial forb canopy cover	≥5% arid (<10 inches precipitation) ≥15% mesic (> 10 inches or meadow system)
Food	Riparian Areas/Meadows	Proper Functioning Condition[15]
	Understory species richness (in the vicinity of riparian areas/meadows)	≥ 5% preferred forb species present[3,4]
Security	Riparian Area/Meadow Interspersion with adjacent sagebrush	Has adjacent sagebrush cover[7,15]
WINTER		
Cover and Food	Sagebrush canopy cover	≥10% above snow depth[7]
	Sagebrush height	>9.8 inches

ATTRIBUTE	INDICATOR	DESIRED CONDITION
		(25 centimeters) above snow depth[7]

[1]Aldridge, C. L.; Boyce, M. S. 2007. Linking occurrence and fitness to persistence: Habitat-based approach for endangered Greater Sage-Grouse. Ecological Applications, 17: 508 – 526.
[2]Baruch-Mordo, S., J. S. Evans, J. P. Severson, D. E. Naugle, J. D. Maestas, J. M. Kiesecker, M. J. Falkowski, C. a. Hagen, and K. P. Reese. 2013. Saving sage-grouse from the trees: a proactive solution to reducing a key threat to a candidate species. Biological Conservation 167:233–241.
[3]Blomberg, E.J., J.S. Sedinger, M.T. Atamian, and D.V. Nonne. 2012. Characteristics of climate and landscape disturbance influence the dynamics of greater sage-grouse populations. Ecosphere 3(6):55.
[4]Casazza, M.L., P.S. Coates, C.T. Overton. 2011. Linking habitat selection to brood success in greater sagegrouse. In: Sandercock, MK, K Martin, G Segelbacher (eds.). Ecology, Conservation, and Management of Grouse. University of California Press. Pp. 151-167.
[5]Coates, P.S., and D.J. Delehanty. 2010. Nest predation of greater sage-grouse in relation to microhabitat factors and predators. Journal of Wildlife Management 74:240-248.
[6]Coates, P. S., M. L. Casazza, E. J. Blomberg, S. C. Gardner, S. P. Espinosa, J. L. Yee, L. Wiechman, and B. J. Halstead. 2013. Evaluating greater sage-grouse seasonal space use relative to leks: implications for surface use designations in sagebrush ecosystems. Journal of Wildlife Management 77: 1598–1609.
[7]Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage-grouse populations and their habitats. Wildlife Society Bulletin 28:967-985.
8.Connelly, J.W., Reese, K.P., M.A. Schroeder. 2003. Monitoring of Greater Sage-Grouse Habitats and Populations. Station Bulletin 80.
[9]Doherty, K.E., Naugle, D.E., Walker, B.L., and J.M. Graham. 2008. Greater Sage-Grouse Winter Habitat Selection and Energy Development. Journal of Wildlife Management: 72(1):187-195. 2008.
[10]Hagen, C.A., Connelly, J.W. & Schroeder, M.A. 2007: A meta-analysis of greater sage-grouse (Centrocercus urophasianus) nesting and brood-rearing habitats. - Wildlife Biology: 13 (Suppl. 1): 42-50.
[11]Kolada, E.J., J.S. Sedinger, M.L. Casazza. 2009a. Nest site selection by greater sage-grouse in Mono County, California. Journal of Wildlife Management 73:1333-1340.
[12]Kolada, E.J., J.S Sedinger, M.L. Casazza. 2009b. Ecological factors influencing nest survival of greater sage-grouse in Mono County, California. Journal of Wildlife Management 73:1341-1347.
[13]Lockyer, Z., P.S. Coates, M.L. Casazza, S. Espinosa, D.L. Delehanty. In review. Linking nest site selection to nest survival in greater sage-grouse.
[14]Nevada Governor's Sage-grouse Conservation Team. 2010. Nevada energy and infrastructure development standards to conserve greater sage-grouse populations and their habitats. Pp 9-11.
[15]Stiver, S.J., E.T Rinkes, and D.E. Naugle. (in press). Sage-grouse Habitat Assessment Framework. U.S. Bureau of Land Management. Unpublished Report. U.S. Bureau of Land Management, Idaho State Office, Boise, Idaho.

GRSG-GEN-ST-001-Standard – In priority habitat management areas and sagebrush focal areas, do not issue new discretionary written authorizations unless all existing discrete anthropogenic disturbances cover less than 3% of the total greater sage-grouse habitat in the Biologically Significant Unit and the proposed project analysis area, regardless of ownership, and the new use will not cause exceedance of the 3% cap (Appendix Z – Disturbance Cap Guidance). Discretionary activities that might result in disturbance above 3% at the Biologically Significant Unit or proposed project analysis scale would be prohibited unless approved by the forest supervisor with concurrence from the regional forester after review of new or site-specific information that indicates the project could occur without significant impacts to greater sage-grouse or that the project could be modified to result in a net conservation gain at the Biologically Significant Unit scale.

GRSG-GEN-ST-002-Standard – In priority and general habitat management areas and sagebrush focal areas, only allow new authorized land uses if the residual impacts to greater sage-grouse or their habitats are fully offset by compensatory mitigation projects that provide a net conservation gain to the species, which will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Any compensatory mitigation will be durable, timely, and in addition to what would have resulted without the compensatory mitigation as addressed in the Mitigation Framework (Appendix X).

GRSG-GEN-GL-001-Guideline – During lekking (March 1 to May 15) surface disturbing and disruptive activities, including noise at 10 dB above ambient (not to exceed 20-24 dB) to lekking birds should be restricted from 6 pm to 9 am at a distance of 3.1 miles from the perimeter of an occupied lek.

GRSG-GEN-GL-002-Guideline – During breeding and nesting (March 1 to June 30), surface disturbing and disruptive activities to nesting birds should be restricted.

GRSG-GEN-GL-003-Guideline - In priority and general habitat management areas and sagebrush focal areas, conduct surveys during the breeding season during pre-planning operations. Use protocols such as those established by State Fish and Wildlife agencies. The surveys should encompass all suitable greater sage-grouse habitats in 4 miles of the proposed activities.

GRSG-GEN-GL-004-Guideline - When breeding and nesting habitat overlaps with other seasonal habitats, habitat should be managed for breeding and nesting desired habitat conditions.

GRSG-GEN-GL-005-Guideline – Development of tall structures in 3.0 miles from the perimeter of occupied leks, as determined by local conditions (such as vegetation or topography), with the potential to disrupt breeding or nesting by creating new perching/nesting opportunities for avian predators or by decreasing the use of an area, should be restricted in nesting habitat.

Adaptive Management

GRSG-AM-ST-001-Standard – If a hard trigger is reached, as described in Section 2.7.1, based on either population monitoring or habitat monitoring immediate action is necessary to stop a severe deviation from GRSG conservation objectives. The hard trigger responses are identified in Table 2-9 and Table 2-10 for both priority and general management areas.

GRSG-AM-ST-002-Standard – If a soft trigger is reached as described in Section 2.7.1, based on either population monitoring or habitat monitoring apply more conservative or restrictive implementation measures (e.g., extending seasonal restrictions for seasonal surface disturbing activities, modifying seasons of use for livestock grazing, and applying additional restrictions on discretionary activities) for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions.

Lands and Realty

Special Use Authorizations (non recreation)

GRSG-LR-SUA-O-001-Objective - In priority and general habitat management areas and sagebrush focal areas, retrofit existing tall structures (e.g., power poles, cellular towers) with perch deterrents or other anti-perching devices in 2 years of signing the Record of Decision.

GRSG-LR-SUA-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, restrict issuance of new lands special use authorizations that authorize infrastructure, such as high-voltage transmission lines, major pipelines, hydropower, distribution

lines, and cellular towers. Exceptions must be limited and based on rationale (e.g., monitoring, modeling, or best available science) that explicitly demonstrates that adverse impacts to greater sage-grouse will be avoided with the exception.

GRSG-LR-SUA-ST-002-Standard – In priority and general habitat management areas and sagebrush focal areas, do not authorize temporary lands special uses (i.e., facilities or activities) that result in loss of habitat or would have long-term (i.e., greater than 5 years) negative impact on greater sage-grouse or their habitats.

GRSG-LR-SUA-ST-003-Standard – In priority and general habitat management areas and sagebrush focal areas, require protective stipulations (e.g., noise, tall structure, guy wire removal, perch deterrent installation) when issuing new authorizations or during renewal, amendment, or reissuance of existing authorizations that authorize infrastructure (e.g., high-voltage transmission lines, major pipelines, roads, distribution lines, and cellular towers).

GRSG-LR-SUA-ST-004-Standard – In priority and general habitat management areas and sagebrush focal areas, locate upgrades to existing transmission lines in the existing designated corridors unless an alternate route would benefit greater sage-grouse or their habitats.

GRSG-LR-SUA-ST-005-Standard - In priority and general habitat management areas and sagebrush focal areas, when a lands special use authorization is revoked or terminated, the authorization holder must remove overhead lines and other surface infrastructure in compliance with 36 CFR 251.60(i).

GRSG-LR-SUA-ST-006-Standard - In priority and general habitat management areas and sagebrush focal areas, if the potential long-term (greater than 5 years) impacts of mitigation (e.g., relocation or burying) to greater sage-grouse or their habitats are greater than the potential impacts from new lands special use authorizations, do not pursue the mitigation. If mitigation is not feasible or would result in short-term (less than 5 years) or long-term impacts, incorporate additional terms and conditions in the special use authorization for protection of greater sage-grouse or their habitats.

GRSG-LR-SUA-ST-007-Standard – In priority and general habitat management areas and sagebrush focal areas, co-locate new infrastructure (e.g., high-voltage transmission lines, major pipelines, roads, distribution lines, and cellular towers) in existing infrastructure to limit disturbance to the smallest footprint, or where it best limits impacts to greater sage-grouse or their habitats. When co-location of new infrastructure cannot be accomplished, locate it adjacent to existing infrastructure, roads, or already disturbed areas. New communication tower sites may be authorized for public safety.

GRSG-LR-SUA-GL-001-Guideline – In priority habitat management areas and sagebrush focal areas, outside of existing designated corridors, new transmission lines and pipelines should be buried to limit disturbance to the smallest footprint unless explicit rationale is provided that the

biological impacts to greater sage-grouse are being avoided. When new transmission lines and pipelines are not buried, locate them adjacent to existing transmission lines and pipelines.

Land Ownership Adjustments

GRSG-LR-LOA-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, prohibit land ownership adjustments unless the action results in a net conservation gain to greater sage-grouse or it will not directly or indirectly adversely impact greater sage-grouse conservation.

GRSG-LR-LOA-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas with minority Federal ownership, consider land ownership adjustments to achieve a landownership pattern (e.g., consolidation, reducing fragmentation) that supports improved greater sage-grouse population trends and habitats.

Land Withdrawal

GRSG-LR-LW-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas, utilize land withdrawals as a tool, where appropriate and subject to valid existing rights, to prevent activities that will be detrimental to greater sage-grouse or their habitats.

Wind and Solar

GRSG-WS-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, prohibit new solar utility-scale and/or commercial energy development except for on-site power generation associated with existing industrial infrastructure (e.g., mine site).

GRSG-WS-ST-002-Standard - In priority habitat management areas and sagebrush focal areas, prohibit new wind energy utility-scale and/or commercial development.

GRSG-WS-GL-001- Guideline – In general habitat management areas, new wind energy utility-scale and/or commercial development should be avoided. If development cannot be avoided due to existing authorize uses, adjacent developments, or split estate issues, then ensure that stipulations are incorporated into the authorization to protect greater sage-grouse and their habitats.

Greater Sage-grouse Habitat

GRSG-GRSG-DC-001-Desired Condition -Sagebrush vegetative communities provide contiguous habitat for greater sage grouse, which is resistant and resilient to disturbances such as fire and invasives. Appendix X - *Using resistance and resilience concepts to reduce impacts of invasive annual grasses and altered fire regimes on the sagebrush ecosystem and greater sage-grouse: A strategic multi-scale approach* identifies the concepts of resistance and resilient.

GRSG-GRSGH-O-001-Objective – Every 10 years for the next 50 years, improve greater sage-grouse habitat by removing invading conifers and other undesirable species in the number of acres shown in table 2.

Table 2. Treatment Acres per Decade.[1]

ACRES			
FOREST	**MECHANICAL[2]**	**PRESCRIBED FIRE[3]**	**GRASS RESTORATION[4]**
Humboldt-Toiyabe Total	202000	0	43000
Population Area 15	200000	0	26000
Population Area 26	2000	0	17000

[1]These are estimates of treatments required to achieve and/or maintain desired habitat conditions over a period of ten years. There are many dynamic and highly variable disturbances that may happen over that period of time that could have a significant effect on the amount, type, and timing of treatment needed. Those disturbances are factored into the ten-year simulation using stochastic, not predictive, techniques. Probabilities of events such as large wildfires are used in the model to make the simulation as realistic as possible, given empirical data about such events in the past, but the results of the simulation cannot be used to predict the future occurrence of such events, including their timing, size, or location, which are essentially random.

[2]Removal of conifers that have invaded sagebrush including phase one juniper that is 10% or less and reducing sagebrush cover in areas over 30% canopy cover

[3]Acres are those that are greater than 30% sagebrush canopy cover and/or invaded by 10% or greater conifer.

[4]Acres presently dominated by annual grasses that could be improved by herbicide application and seeding of perennial vegetation.

GRSG-GRSGH-ST-001-Standard – Design habitat restoration projects to move towards desired conditions (table 1a or 1b) and incorporate the concepts outlined in Appendix X.

GRSG-GRSGH-GL-001-Guideline – Sagebrush removal in greater sage-grouse breeding and nesting and wintering habitats should be avoided unless necessary to support attainment of desired habitat conditions (table 1a or 1b).

GRSG-GRSGH-GL-002-Guideline – – When removing conifers that are encroaching into greater sage-grouse habitat, avoid persistent woodland (old growth relative to the site or more than 100 years old).

GRSG-GRSGH-GL-003-Guideline – In priority and general habitat management areas and sagebrush focal areas, actions and authorizations should include design features to limit the spread and effect of undesirable non-native plant species.

GRSG-GRSGH-GL-004-Guideline - To facilitate safe and effective fire management actions, in priority and general habitat management areas and sagebrush focal areas, fuels treatments should be designed to reduce the spread and intensity of wildfire in high-risk areas (i.e., areas of increased potential for ignition and in areas where there is a potential for wildfire that would be difficult for suppression resources to contain and control).

GRSG-GRSGH-GL-005-Guideline - In priority and general habitat management areas and sagebrush focal areas, native plant species should be used, when possible, to restore, enhance, or maintain desired habitat conditions (table 1a or 1b).

GRSG-GRSGH-GL-006-Guideline – In priority habitat management areas and sagebrush focal areas, vegetation treatment projects should only be conducted if they restore, enhance, or maintain desired habitat conditions (table 1a or 1b).

GRSG-GRSGH-GL-007-Guideline - Vegetative treatment activities in lentic riparian areas (i.e., seeps, springs, and wet meadows) in priority and general habitat management areas and

sagebrush focal areas, should only be authorized if they maintain or improve conditions to meet greater sage-grouse desired conditions (table 1a or 1b).

GRSG-GRSGH-GL-008-Guideline – When authorizing vegetation management treatments in priority, sagebrush focal, and general sage grouse habitat management areas, priority should be given to treatments in Phase I and early Phase II pinyon and/or juniper stands in areas with a sagebrush component. Pinyon-Juniper treatments in Phase I and Phase II condition should be designed to maintain or enhance sagebrush in the treatment areas. Treatments in late Phase II or Phase III condition should only be authorized to create movement corridors, connect habitats, or reduce the potential for catastrophic fire.

GRSG-GRSGH-GL-009-Guideline: In priority and general habitat management areas and sagebrush focal areas, treatment methodologies should be based on the treatment areas' resistance to annual invasive grasses and the resilience of native vegetation to respond after disturbance. Use mechanical treatments (i.e., do not use fire) in areas with relatively low resistance to annuals and treat areas in early- to mid-phase pinyon-juniper expansion.

Livestock Grazing

GRSG-LG-DC-001-Desired Condition – In priority and general habitat management areas and sagebrush focal areas, livestock grazing is managed to provide for adequate nesting, breeding, and winter vegetation cover (tables 1a and 1b).

GRSG-LG-ST-001-Standard – In priority, sagebrush focal, and general management areas, prohibit construction of water developments unless beneficial to greater sage-grouse habitat consistent with State approved water rights.

GRSG-LG-ST-002-Standard – When vertical embankments in water troughs or open water facilities pose a drowning risk to birds, wildlife escape ramps should be installed and maintained.

GRSG-LG-GL-001-Guideline - Grazing guidelines should be applied in each of the seasonal habitats in table 3. If values in table 3 guidelines cannot be achieved based upon a site-specific analysis using Ecological Site Descriptions, long-term ecological site capability analysis, or other similar analysis, adjust grazing management to move towards desired habitat conditions in table 1a or 1b consistent with the ecological site capability. Do not use drought and degraded habitat condition to adjust values. Grazing guidelines in table 3 would not apply to isolated parcels of National Forest System lands that have less than 200 acres of greater sage-grouse habitat.

Table 3. Grazing Guidelines for Greater Sage-grouse Seasonal Habitat.

Seasonal Habitat	Grazing Guidelines
Breeding and nesting [1] in 4 miles	Perennial grass height: [2]

of active or pending leks	When grazing occurs during breeding and nesting season (March 1 to June 30) manage for upland perennial grass height of 7 inches [3,4,5] When grazing occurs post breeding and nesting season (July 1 to September 1) manage for 4 inches of perennial grass height. [4,5,6]
Brood rearing and summer [1]	Retain an average stubble height of 4 inches for herbaceous riparian/mesic meadow vegetation. [5,7,8]
Winter/Fall [1]	≤35% use of sagebrush

[1] For descriptions of Seasonal Habitat and Seasonal Periods of greater sage-grouse see table 1a and 1b.
[2] Grass heights only apply in breeding and nesting habitat with ≥10% sagebrush cover to support nesting.
[3] Holloran, M. J., B. J. Heath, A. G. Lyon, S. J. Slater, J. L. Kuipers, and S. H. Anderson. 2005. Greater sage-grouse nesting habitat selection and success in Wyoming. Journal Wildlife Management 69:638-649.
[4] Average droop height, assuming current vegetation composition has the capability to achieve these heights. Heights will be measured at the end of the nesting period (Connelly, 2000).
[5] Hagen C., J.W. Connelly, and M.A. Schroeder. 2007. *A meta-analysis of greater sage-grouse Centrocercus urophasianus nesting and brood-rearing habitats.*
[6] Stubble height to be measured at the end of the growing season.
[7] Crawford , J.A., R.A. Olson. N.E. West, J.C. Mosley, M.A. Schroeder, T.D. Whitson, R.F. Miller, M.A. Gregg, and C.S. Boyd. 2004. Ecology and Management of sage-grouse and sage-grouse habitat. Journal of Range Management 57:2-19. "In riparian brood-rearing habitat, sage-grouse prefer the lower vegetation (5-15 cm (2-6 in) vs. 30-50 cm (12-20 in); Oakleaf 1971, Neel 1980, Klebenow 1982, Evans 1986) and succulent forb growth stimulated by moderate livestock grazing (Neel 1980, Evans 1986). "Moderate use equates to a 10-cm residual stubble height for most grasses and sedges."
Wildlife Biology 13(1): 42-50.
[8] Stubble height to be measured in the meadow areas used by greater sage-grouse for brood-rearing (not on the hydric greenline).

GRSG-LG-GL-002-Guideline – In priority, sagebrush focal, and general management areas, consider closure of grazing allotments, pastures, or portions of pastures, or managing the allotment as a forage reserve as opportunities arise under applicable regulations, where removal of livestock grazing would enhance the ability to achieve desired habitat conditions (table 1a or 1b).

GRSG-LG-GL-003-Guideline – Bedding sheep and locating camps in 2.0 miles from the perimeter of a lek during lekking (March 1 to May 15) should be restricted.

GRSG-LG-GL-004-Guideline – During breeding and nesting season (March 1 to June 30), trailing livestock through breeding and nesting habitat should be minimized. Specific routes should be identified, existing trails should be used, and stopovers on active leks should be restricted.

GRSG-LG-GL-005-Guideline – Fences should not be constructed or reconstructed in 1.2 miles from the perimeter of occupied leks, unless the collision risk can be mitigated through design features or markings (e.g., mark, laydown fences, and design).

GRSG-LG-GL-006-Guideline –New permanent livestock facilities (e.g., windmills, water tanks, corrals) should not be constructed in 1.2 miles from the perimeter of occupied leks.

Fire Management

GRSG-FM-ST-001-Standard– In priority and general habitat management areas and sagebrush focal areas, do not use prescribed fire, except for pile burning, in 12-inch or less precipitation zones unless necessary to facilitate site preparation for restoration of greater sage-grouse habitat consistent with desired conditions in table 1a or 1b.

GRSG-FM-ST-002-Standard – In priority and general habitat management areas and sagebrush focal areas, if it is necessary to use prescribed fire to facilitate site preparation for restoration of greater sage-grouse habitat consistent with desired conditions in table 1a or 1b, the associated NEPA analysis must identify how greater sage-grouse desired conditions would be met, why alternative techniques were not selected, and how potential threats to greater sage-grouse habitat would be minimized.

GRSG-FM-GL-001-Guideline – In wintering or breeding and nesting habitat, sagebrush removal or manipulation, including prescribed fire, should be restricted unless the removal strategically reduces the potential impacts from wildfire.

GRSG-FM-GL-002-Guideline – In priority and general habitat management areas and sagebrush focal areas, when reseeding in fuel breaks, fire resistant native plant species should be used if available, or consider using fire resistance nonnative species to meet resource objectives.

GRSG-FM-GL-003-Guideline – In priority and general habitat management areas and sagebrush focal areas, fuel treatments should be designed to restore, enhance, or maintain greater sage-grouse habitat.

GRSG-FM-GL-004-Guideline – Locating temporary wildfire suppression facilities (e.g., incident command posts, spike camps, helibases, mobile retardant plants) in priority and general habitat management areas and sagebrush focal areas should be restricted.

GRSG-FM-GL-005-Guideline - In priority and general habitat management areas and sagebrush focal areas, cross-country vehicle travel during fire operations should be restricted whenever safe and practical to do so, as determined by fireline leadership, incident commanders, etc.

GRSG-FM-GL-006-Guideline – In priority and general habitat management areas and sagebrush focal areas, burnout operation areas should be avoided by constructing direct fire lines, whenever safe and practical to do so, to improve suppression effectiveness and minimize loss of existing sagebrush habitat as determined by fireline leadership, incident commanders, etc.

GRSG-FM-GL-007-Guideline – In priority and general habitat management areas and sagebrush focal areas, prescribed fire prescriptions should minimize undesirable effects on vegetation and/or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of hydrophobicity).

GRSG-FM-GL-008-Guideline - In priority and general habitat management areas and sagebrush focal areas, roads and natural fuel breaks should be incorporated into fuel break design to improve effectiveness and minimize loss of existing sagebrush habitat.

GRSG-FM-GL-009-Guideline - In priority and general habitat management areas and sagebrush focal areas, all fire-associated vehicles and equipment should be power-washed before entering and exiting the area to minimize the introduction of undesirable invasive plant species.

GRSG-FM-GL-010-Guideline - Unit-specific greater sage-grouse fire management toolboxes containing maps, lists, contact information for qualified resource advisors, local guidance, and relevant information should be developed.

GRSG-FM-GL-011-Guideline – Localized maps of priority and general habitat management areas and sagebrush focal areas should be provided to dispatch officers and extended attack incident commanders to use when prioritizing wildfire suppression resources and designing suppression tactics.

GRSG-FM-GL-012-Guideline - In or near priority and general habitat management areas and sagebrush focal areas, a greater sage-grouse resource advisor should be assigned to all extended attack fires.

GRSG-FM-GL-013-Guideline – On critical fire weather days, available fire suppression resources should be pre-positioned to optimize a quick and efficient response into priority and general habitat management areas and sagebrush focal areas.

GRSG-FM-GL-014-Guideline - During periods of multiple fires, line officers should be involved in setting priorities to help protect priority and general habitat management areas and sagebrush focal areas.

GRSG-FM-GL-015-Guideline – In priority and general habitat management areas and sagebrush focal areas, consider using fire retardant and mechanized equipment only if it is likely to result in minimizing burned acreage.

GRSG-FM-GL-016-Guideline – In priority and general habitat management areas and sagebrush focal areas, to minimize sagebrush loss, mop-up should be conducted where the burned areas adjoin unburned islands, doglegs, or other habitat features, as safety and available allows.

Wild Horse and Burro

GRSG-HB-DC-001-Desired Condition – In priority and general habitat management areas, wild horse and burro populations are managed in established appropriate management levels to restore, enhance, or maintain greater sage-grouse desired habitat conditions (table 1a or 1b).

GRSG-HB-ST-001-Standard – In priority and general habitat, adjust established appropriate management levels if greater sage-grouse management standards are not met due to degradation that can be at least partially attributed to wild horse or burro populations.

GRSG-HB-ST-002-Standard - In priority and general management areas, remove wild horses and burros outside of a wild horse and burro territory.

GRSG-HB-GL-001-Guideline - In priority and general habitat, herd gathering should be prioritized when wild horse and burro populations exceed the upper limit of the established appropriate management level.

GRSG-HB-GL-002-Guideline - In priority and general habitat, wild horse and burro population levels should be managed at the lower limit of established appropriate management level ranges.

GRSG-HB-GL-003-Guideline – In priority and general habitat, consider removals or exclusion of wild horse or burros immediately following emergency situation (such as fire, floods, and drought).

Recreation

GRSG-R-DC-001-Desired Condition – In priority and general habitat management areas and sagebrush focal areas, existing and new recreation special use authorizations and expansion of special use authorizations restrict effects to greater sage-grouse and their habitats.

GRSG-R-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, do not authorize temporary recreation uses (i.e., facilities or activities) that result in loss of habitat or would have long-term (greater than 5 years) negative impacts on greater sage-grouse or their habitats.

GRSG-R-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas, terms and conditions that protect and/or restore greater sage-grouse habitat in the permit area should be included in new recreation special use authorizations. During renewal, amendment, or reauthorization, terms and conditions in existing permits and operating plans should be modified to protect and/or restore greater sage-grouse habitat.

GRSG-R-GL-002-Guideline – In priority and general habitat management areas and sagebrush focal areas, new recreational facilities or expansion of existing recreational facilities (e.g., roads, trails, campgrounds), including special use authorizations for facilities and activities, should not be approved unless the development results in a net conservation gain to greater sage-grouse and/or their habitats or the development is required for visitor safety.

GRSG-R-GL-003-Guideline - During breeding and nesting (March 1 to June 30), outfitter-guide activities in 0.25 mile from the perimeter of active leks should not be authorized.

Roads/Transportation

GRSG-RT-DC-001-Desired Condition - In priority and general habitat management areas and sagebrush focal areas, in the travel management system, greater sage-grouse experience minimal disturbance during breeding and nesting (March 1 to June 30) and wintering periods (November 1 to February 28).

GRSG-RT-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, prohibit new road or trail construction (does not apply to realignments for resource protection) except when necessary for administrative access, public safety, or to access valid existing rights. If necessary to construct new roads and trails for one of these purposes, construct them to the minimum standard, length, and number and avoid, minimize, and mitigate impacts.

GRSG-RT-ST-002-Standard – Prohibit road and trail maintenance activities in 2 miles from the perimeter of active leks during lekking (March 1 to May 15) from 6 pm to 9 am.

GRSG-RT-ST-003-Standard – In priority habitat management areas and sagebrush focal areas, prohibit public access on temporary energy development roads, unless consistent with all other terms and conditions included in the land use management plan.

GRSG-RT-GL-001-Guideline – In priority habitat management areas and sagebrush focal areas, new roads and road realignments should be designed and administered to reduce collisions with greater sage-grouse.

GRSG-RT-GL-002-Guideline – In priority habitat management areas and sagebrush focal areas, road construction in riparian areas and mesic meadows should be restricted. If not possible to restrict construction in riparian areas and mesic meadows, roads should be designed and constructed at right angles to ephemeral drainages and stream crossings, unless topography prevents doing so.

GRSG-RT-GL-003-Guideline – In priority and general habitat management areas and sagebrush focal areas, when decommissioning roads and unauthorized routes, restoration activity should be designed to move habitat towards desired conditions (table 1a or 1b).

GRSG-RT-GL-004-Guideline – In priority and general habitat management areas and sagebrush focal areas, dust abatement terms and conditions should be included in road use permits when dust has the potential to impact greater sage-grouse.

GRSG-RT-GL-005-Guideline - In priority and general habitat management areas and sagebrush focal areas, road and road-way maintenance activities should be designed and implemented to reduce the risk of vehicle or human-caused wildfires and the spread of invasive plants. Such activities include but are not limited to the removal or mowing of vegetation a car-width off the edge of roads; use of weed-free earth-moving equipment, gravel, fill, or other

materials; and blading or pulling roadsides and ditches that are infested with noxious weeds only if required for public safety or protection of the roadway.

GRSG-RT-GL-006-Guideline - In priority and general habitat management areas and sagebrush focal areas, during breeding and nesting (March 1 to June 30), consider seasonal road closures on motorized travel routes with high traffic volume, speeds, or noise levels.

GRSG-RT-GL-007-Guideline – In priority and general habitat management areas and sagebrush focal areas, from November 1 to February 28, consider limiting over-snow motorized vehicles in wintering areas.

Minerals

Fluid Minerals – Unleased

GRSG-M-FMUL-ST-001-Standard - In priority habitat management areas and sagebrush focal areas, any new oil and gas leases must include a no surface occupancy stipulation. There will be no waivers or modifications. An exception could be granted by the authorized officer with unanimous concurrence from a team of agency greater sage-grouse experts from the Fish and Wildlife Service, Forest Service, and State wildlife agency if:

- There would be no direct, indirect, or cumulative effects to greater sage-grouse or their habitats or
- Granting the exception provides an alternative to a similar action occurring on a nearby parcel and
- The exception provides a clear net conservation gain to greater sage-grouse.

GRSG-M-FMUL-ST-002-Standard – In general habitat management areas, any new leases must include appropriate controlled surface use and timing limitation stipulations to protect sage-grouse and their habitat.

GRSG-M-FMUL-ST-003-Standard – In sagebrush focal habitat management areas, there will be no surface occupancy and no waivers, exceptions, or modifications for fluid mineral leasing.

GRSG-M-FMUL-ST-004-Standard – In priority habitat management areas outside of sagebrush focal areas, proposed geothermal projects may be considered if:

- A team of agency greater sage-grouse experts from the Fish and Wildlife Service, Forest Service, Bureau of Land Management, and State wildlife agency advises on project-mitigation measures, including lek buffer distances, using the best available science;
- Mitigation actions are consistent with the Mitigation Strategy; and
- The footprint of the project is consistent with the disturbance protocols identified in GRSG-GEN-ST-001.

GRSG-M-FMUL-ST-005-Standard – In priority and general habitat management areas and sagebrush focal areas, when analyzing leasing of fluid mineral resources, prioritize development

in non-habitat areas first and then in the least suitable habitat for greater sage-grouse, subject to valid existing rights, law, and regulations.

GRSG-M-FMUL-ST-006-Standard - In priority and general habitat management areas and sagebrush focal areas, only allow geophysical exploration and similar type of exploratory operations that are consistent with vegetation objectives in table 1a or 1b, achieve a net conservation gain, and include appropriate seasonal restrictions.

Fluid Minerals – Leased

GRSG-M-FML-ST-001-Standard – In priority habitat management areas and sagebrush focal areas, when approving the Surface Use Plan of Operation portion of the Application for Permit to Drill on existing leases that are not yet developed, require that leaseholders avoid and minimize surface disturbing and disruptive activities consistent with the rights granted in the lease.

GRSG-M-FML-ST-002-Standard – In priority and general habitat management areas and sagebrush focal areas, when facilities are no longer needed or leases are relinquished, require reclamation plans to include terms and conditions to restore habitat to desired conditions as described in table 1a or 1b.

GRSG-M-FML-ST-003-Standard – In priority and general habitat management areas and sagebrush focal areas, authorize new transmission line corridors, transmission line right-of-ways, transmission line construction, or transmission line-facility construction associated with fluid mineral leases with stipulations necessary to protect greater sage-grouse and their habitats, consistent with the terms and conditions of the permit.

GRSG-M-FML-ST-004-Standard – Locate compressor stations on portions of a lease that are non-habitat and are not used by greater sage-grouse, and if there would be no direct, indirect, or cumulative effects on sage-grouse or their habitat. If this is not possible, work with the operator to use mufflers, sound insulation, or other features to reduce noise.

GRSG-M-FML-ST-005-Standard – In priority and general habitat management areas and sagebrush focal areas, when authorizing development of fluid mineral resources, prioritize development in non-habitat areas first and then in the least suitable habitat for greater sage-grouse, subject to valid existing rights, law, and regulations.

GRSG-M-FML-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas, operators should be encouraged to reduce disturbance to greater sage-grouse habitat. At the time of approval of the Surface Use Plan of Operation portion of the Application for Permit to Drill, terms and conditions should be included to reduce disturbance to greater sage-grouse habitat, where appropriate and feasible and consistent with the rights granted to the lessee.

GRSG-M-FML-GL-002-Guideline – On Federal leases in priority and general habitat management areas and sagebrush focal areas, when surface occupancy cannot be restrict due to

valid existing rights or development requirements, disturbance and surface occupancy should be limited to areas least harmful to greater sage-grouse based on vegetation, topography, or other habitat features.

GRSG-M-FML-GL-003-Guideline - In priority and general habitat management areas and sagebrush focal areas, where the federal government owns the surface and the mineral estate is in non-federal ownership coordinate with the mineral estate owner/lessee to apply appropriate stipulations, conditions of approval, conservation measures and required design features to the appropriate surface management instruments to the maximum extent permissible under existing authorities.

GRSG-M-FML-GL-004-Guideline - Where the federal government owns the surface and the mineral estate is in non-federal ownership in priority and general habitat management areas and sagebrush focal areas, coordinate with the mineral estate owner/lessee to apply appropriate stipulations, conditions of approval, conservation measures and required design features to the appropriate surface management instruments to the maximum extent permissible under existing authorities.

Fluid Minerals – Operations

GRSG-M-FMO-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, prohibit employee camps.

GRSG-M-FMO-ST-002-Standard – In priority and general habitat management areas and sagebrush focal areas, when feasible, do not locate tanks or other structures that may be used as raptor perches. If this is not feasible, use perch deterrents.

GRSG-M-FMO-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas, closed-loop systems should be used for drilling operations with no reserve pits, where feasible.

GRSG-M-FMO-GL-002-Guideline – In priority and general habitat management areas and sagebrush focal areas, during drilling operations, soil compaction should be minimized and soil structure should be maintained using the best available techniques to improve vegetation reestablishment.

GRSG-M-FMO-GL-003-Guideline – In priority and general habitat management areas and sagebrush focal areas, dams, impoundments and ponds for mineral development should be constructed to reduce potential for West Nile virus. Examples of methods to accomplish this include:

- Increase the depth of ponds to accommodate a greater volume of water than is discharged.
- Build steep shorelines (greater than 2 feet) to reduce shallow water and aquatic vegetation around the perimeter of impoundments to reduce breeding habitat for mosquitoes.

- Maintain the water level below that of rooted aquatic and upland vegetation. Restrict flooding terrestrial vegetation in flat terrain or low-lying areas.
- Construct dams or impoundments that restrict down-slope seepage or overflow by digging ponds in flat areas rather than damming natural draws for effluent water storage or lining constructed ponds in areas where seepage is anticipated.
- Line the channel where discharge water flows into the pond with crushed rock or use a horizontal pipe to discharge inflow directly into existing open water.
- Line the overflow spillway with crushed rock and construct the spillway with steep sides.
- Fence pond sites to restrict access by livestock and other wild ungulates.
- Remove or re-inject produced water.
- Treat waters with larvicides to reduce mosquito production where water occurs on the surface.
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- **GRSG-M-FMO-GL-004-Guideline** – In priority and general habitat management areas and sagebrush focal areas to keep habitat disturbance at a minimum, a phased development approach should be applied to fluid mineral operations, wherever possible, consistent with the rights granted under the lease. Disturbed areas should be reclaimed as soon as they are no longer needed for mineral operations.

Locatable Minerals

GRSG-M-LM-ST-001-Standard – In priority and general habitat management areas and sagebrush focal areas, approve Plans of Operation with mitigation to protect greater sage-grouse and their habitats consistent with the rights of the mining claimant as granted by the General Mining Act of 1872, as amended.

GRSG-M-LM-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas to keep habitat disturbance at a minimum, a phased development approach should be applied to operations consistent with the rights granted under the General Mining Act of 1872, as amended. Disturbed areas should be reclaimed as soon as they are no longer needed for mineral operations.

GRSG-M-LM-GL-002-Guideline - In priority and general habitat management areas and sagebrush focal areas, abandoned mine sites should be closed or mitigated, subject to valid or existing rights, to reduce predation of greater sage-grouse by eliminating tall structures that could provide nesting opportunities and perching sites for predators.

Non-energy Leasable Minerals

GRSG-M-NEL-GL-001-Guideline – In priority and general habitat management areas and sagebrush focal areas, at the time of issuance of prospecting permits, exploration licenses and leases, or readjustment of leases, the Forest Service should provide recommendations to the Bureau of Land Management for the protection of greater sage-grouse and their habitats.

GRSG-M-NEL-GL-002-Guideline - In priority, sagebrush focal, and general habitat, the Forest Service should recommend to the Bureau of Land Management that expansion or readjustment of existing leases avoid, minimize, or mitigate the effects to greater sage-grouse and their habitat.

Mineral Materials

GRSG-M-MM-ST-001-Standard – In priority and sagebrush focal management areas, prohibit new mineral material disposal or development.

GRSG-M-MM-ST-002-Standard – In priority habitat management areas and sagebrush focal areas, free-use mineral material collection permits may be issued and expansion of existing active pits may be allowed, except from March 1 to May 15 between 6 pm and 9 am in 2 miles from the perimeter of occupied leks, if doing so is in the Biologically Significant Unit and does not exceed the disturbance cap.

GRSG-M-MM-ST-003-Standard - In priority and general habitat management areas and sagebrush focal areas, any permit for existing mineral material operations must include appropriate requirements for operation and reclamation of the site to restore, enhance, or maintain desired habitat conditions (table 1a or 1b).

Predation

GRSG-P-DC-001-Desired Condition - Anthropogenic uses on public lands are managed to reduce the effects of predation on greater sage-grouse.

Glossary of Terms as Used in this Plan

Active lek - Any lek that has been attended by male greater sage-grouse during the most recent strutting season.

Adjacent – Installation of new improvements (e.g., equipment or facilities) parallel, near, or next to existing improvements.

Administrative access - Access for resource management and administrative purposes such as fire suppression, cadastral surveys, permit compliance, law enforcement, and military in the performance of their official duty, or other access needed to manage National Forest System lands or uses.

Ambient (noise level) - Sometimes called background noise level, reference sound level, or room noise level is the background sound pressure level at a given location, normally specified as a reference level to study a new intrusive sound source.

Anthropogenic disturbances – Human-created features including but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells and associated facilities, geothermal wells and associated facilities, pipelines, landfills, agricultural conversion, homes, grazing-related facilities and structures, and mines.

Authorize use - An activity (i.e., resource use) occurring on the public lands that is either explicitly or implicitly recognized and legalized by law or regulation. The term may refer to activities occurring on the public lands for which the Forest Service has issued a formal authorization document (e.g., livestock grazing permit, special use authorization, approved plan of operation, etc.). Formal authorized uses can involve both commercial and noncommercial activity, facility placement, or event. These authorized uses are often spatially or temporally limited. Unless constrained or bounded by statute, regulation, or an approved land use plan decision, legal activities involving public enjoyment and use of the public lands (e.g., hiking, camping, hunting, etc.) require no formal Forest Service authorization.

Biologically significant unit - A geographical/spatial area in greater sage-grouse habitat that contains relevant and important habitats that is used as the basis for comparative calculations to support evaluation of changes to habitat. A biologically significant unit or subset of the unit is used in the calculation of the anthropogenic disturbance threshold and in the adaptive management habitat trigger.

Co-locate - Installation of new improvements (e.g., equipment or facilities) on or in existing improvements.

Communication tower site - Sites that include broadcast types of uses (e.g., television, AM/FM radio, cable television, broadcast translator) and non-broadcast uses (e.g., commercial or private mobile radio service, cellular telephone, microwave, local exchange network, passive reflector).

Compensatory mitigation - Compensating for the residual impact of a certain action or parts of an action by replacing or providing substitute resources or environments.

Compensatory mitigation projects – The restoration, creation, enhancement, and/or preservation of impacted resources, such as on-the-ground actions to improve and/or protect habitats (e.g. chemical vegetation treatments, land acquisitions, conservation easements).

Disruptive activities - Land resource uses/activities that are likely to alter the behavior, displace, or cause excessive stress to greater sage-grouse populations occurring at a specific location and/or time. Actions that alter behavior or cause the displacement of individuals such that reproductive success is negatively affected, or an individual's physiological ability to cope with environmental stress is compromised.

Distribution line - An electrical utility line with a capacity of less than 100kV or a natural gas, hydrogen, or water pipeline less than 24" in diameter.

Diversity (species) – The number, distribution, and geographic ranges of plant and animal species including focal species and species-at-risk.

Durable (protective and ecological) - The administrative, legal, and financial assurances that secure and protect the conservation status of a compensatory mitigation site, and the ecological benefits of a compensatory mitigation project, for at least as long as the associated impacts persist.

Enhance - The improvement of habitat by increasing missing or modifying unsatisfactory components and/or attributes of the plant community to meet greater sage-grouse objectives.

Exception - A case-by-case exemption from a lease stipulation. The stipulation continues to apply to all other sites in the leasehold to which the restrictive criteria apply. The authorized officer (any employee of the Forest Service to whom has been delegated the authority to perform the duties described in the applicable Forest Service manual or handbook) may grant an exception if an environmental record of review determines that the action, as proposed or conditioned, would not impair the function or utility of the site for the current or subsequent seasonal habitat, life-history, or behavioral needs of greater sage-grouse.

Feasible – see technically/economically feasible.

Fluid minerals - Oil, gas, coal bed natural gas, and geothermal resources.

General habitat management areas - Areas identified by the Forest Service, in coordination with respective state wildlife agencies, as those areas outside of priority habitat management areas and sagebrush focal areas and occupied by greater sage-grouse seasonally or year-round.

Habitat - An environment that meets a specific set of physical, biological, temporal, or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle.

Hard triggers - Thresholds indicating that immediate action is necessary to stop a severe deviation from sage grouse conservation objectives set forth in the land and resources management plan.

High-voltage transmission line – An electrical power line that is 100 kilovolts or larger.

Holder – An individual or entity that holds a valid special use authorization.

Impact - The effect, influence, alteration, or imprint caused by an action.

Indicators - Factors that describe resource condition and change and can help the BLM and the Forest Service determine trends over time.

Isolated parcel - An individual parcel of land that may share a corner, but does not have a common border with another parcel.

Invasive species (invasives plant species, invasives) - An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. The species must cause, or be likely to cause, harm, and be exotic to the ecosystem it has infested before considered invasive.

Landscape – A distinct association of land types that exhibit a unique combination of local climate, landform, topography, geomorphic process, surficial geology, soil, biota, and human influences. Landscapes are generally of a size that the eye can comprehend in a single view.

Lease – A type of special use authorization (usually granted for uses other than linear rights-of-way) that is used when substantial capital investment is required and when conveyance of a conditional and transferable interest in National Forest System lands is necessary or desirable to serve or facilitate authorized long-term uses, and that may be revocable and compensable according to its terms.

Leasable minerals - Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. These include energy-related mineral resources such as oil, natural gas, coal, and geothermal, and some non-energy minerals, such as phosphate, sodium, potassium, and sulfur. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

Lessee - A person or entity authorized to use and occupy National Forest System land under a specific instrument identified as a lease. Forest special use leases are limited to authorize certain wireless communication uses. Leases are also used for certain mineral leasable activities.

Lek - A courtship display area attended by male greater sage-grouse in or adjacent to sagebrush dominated habitat. For management purposes, leks with less than five males observed strutting should be confirmed active for 2 years to meet the definition of a lek (Connelly et al 2000, Connelly et al. 2003, 2004).

Locatable minerals - Mineral disposable under the General Mining Act of 1872, as amended, that was not excepted in later legislation. They include hardrock, placer, industrial minerals, and uncommon varieties of rock found on public domain lands.

Major pipeline – A pipeline that is 24 inches or more in outside-pipe diameter (Mineral Leasing Act of 1920 30 U.S.C. § 181; 36 CFR 251.54(f)(1)).

Mineral - Any naturally formed inorganic material, solid or fluid inorganic substance that can be extracted from the earth, any of various naturally occurring homogeneous substances (as stone, coal, salt, sulfur, sand, petroleum, water, or natural gas) obtained usually from the ground. Under Federal laws, considered as locatable (subject to the general mining laws), leasable (subject to the Mineral Leasing Act of 1920), and salable (subject to the Materials Act of 1947).

Mineral materials - Common varieties of mineral materials such as soil, sand and gravel, stone, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws but that can be acquired under the Materials Act of 1947, as amended.

Minimization mitigation - Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

Mitigation - Specific means, measures, or practices that could reduce, avoid, or eliminate adverse impacts. Mitigation can include avoiding the impact altogether by not taking a certain action or parts of an action, minimizing the impact by limiting the degree of magnitude of the action and its implementation, rectifying the impact by repairing, rehabilitation, or restoring the affected environment, reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and compensating for the impact by replacing or providing substitute resources or environments.

Modification (oil and gas) – A fundamental change to the provisions of a lease stipulation, either temporarily or for the term of the lease. A modification may include an exemption from or alteration to a stipulated requirement. Depending on the specific modification, the stipulation may or may not apply to all other sites in the leasehold to which the restrictive criteria applied.

Native plant species - Species that were located on the land before European settlement, and consequently are in balance with ecosystems because they have well developed parasites, predators, and pollinators.

No surface occupancy (NSO) - Use or occupancy of the land surface for fluid mineral exploration or development prohibited to protect identified resource values. The NSO stipulation

includes stipulations that may be worded as “No Surface Use/Occupancy,” “No Surface Disturbance,” “Conditional NSO,” or “Surface Disturbance or Surface Occupancy Restriction (by location).”

Occupied lek - A lek that has been active during at least one strutting season in the prior 10 years.

Opportunity (allotment closure) - A suitable or favorable time to abolish or close an allotment because of nonuse violations, term permit waivers where the permit is waived back to the government, resource protection, or permit actions resulting in cancellation of the permit.

Permit — A special use authorization that provides permission, without conveying an interest in land, to occupy and use National Forest System land or facilities for specified purposes, and which is both revocable and terminable.

Persistent woodlands – Long-lived pinyon-juniper woodlands that typically have sparse understories and occur on poor substrates in the assessment area.

Plan of Operation - A Plan of Operation is required for all mining activity conducted under the General Mining Act of 1872, as amended, if the proposed operations will likely cause significant disturbance of surface resources. The Plan of Operation describes the type of operations proposed and how they would be conducted, the type and standard of existing and proposed roads or access routes, the means of transportation to be used, the period during which the proposed activity will take place, and measures to be taken to meet the requirements for environmental protection (36 CR 228.4).

Prescribed fire - Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist and NEPA requirements, where applicable, must be met before ignition.

Priority habitat management areas - Areas identified by the Forest Service, in coordination with respective state wildlife agencies, as having the highest conservation value to maintaining sustainable greater sage-grouse populations. These areas include breeding, late brood-rearing and winter concentration areas.

Prohibit – To forbid (something) by law, rule, or other authority; no authorizations will be issued.

Reclamation plans – Plans that guide the suite of actions taken in an area affected by human disturbance, the outcome of which is intended to change the condition of the disturbed area to meet pre-determined objectives and/or make it acceptable for certain defined resources (e.g., wildlife habitat, grazing, ecosystem function, etc.).

Residual impacts - Impacts from an implementation-level decision that remain after applying avoidance and minimization mitigation; also referred to as unavoidable impacts.

Restoration - Implementation of a set of actions that promotes plant community diversity and structure that allows plant communities to be more resilient to disturbance and invasive species over the long term. The long-term goal is to create functional, high quality habitat that is occupied by greater sage-grouse. Short-term goal may be to restore the landform, soils and hydrology and increase the percentage of preferred vegetation, seeding of desired species, or treatment of undesired species.

Restrict – To put a limit on; keep under control; to limit someone's actions or movement, or to limit the amount, size, etc., of something.

Right-of-way - Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project or facility passing over, upon, under or through such land.

Road or trail – A road or trail wholly or partly in or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

Sagebrush focal areas – Areas identified by the U.S. Fish and Wildlife Service that represent recognized "strongholds" for greater sage-grouse and are considered most vital to the species persistence and therefore, have the strongest levels of protection.

Soft triggers - An intermediate threshold indicating that management changes are needed at the implementation level to address habitat or population losses.

Special use authorization - A written permit, term permit, lease, or easement that authorizes use or occupancy of National Forest System lands and specifies the terms and conditions under which the use or occupancy may occur.

Stipulation (general) - A term or condition in an agreement, contract, or written authorization.

Stipulation (oil and gas) - A provision that modifies standard lease rights and is attached to and made a part of the lease.

Surface disturbing and disruptive activities - Actions that alter the vegetation, surface/near surface soil resources, and/or surface geologic features, beyond natural site conditions and on a scale that affects other public land values. Examples of surface disturbing activities may include operation of heavy equipment to construct well pads, roads, pits and reservoirs; installation of pipelines and power lines; maintenance activities, and several types of vegetation treatments (e.g., prescribed fire, etc.). Surface disturbing activities may be either restricted or prohibited.

Surface uses - Activities that may be present on the surface or near-surface (e.g., pipelines) of public lands. When administered as a use restriction (e.g., no surface occupancy), this phrase prohibits all but specified resource uses and activities in a certain area to protect particular sensitive resource values and property. This designation typically applies to small acreage sensitive resource sites (e.g., plant community study exclosure, etc.), and/or administrative sites (e.g., government ware-yard, etc.) where only authorized, agency personnel are admitted.

Tall structures – A wide array of infrastructure (e.g., poles that support lights, telephone and electrical distribution, communication towers, meteorological towers, high-tension transmission towers, and wind turbines) that have the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities and/or decreasing the use of an area. A determination as to whether something is considered a tall structure would be based on local conditions such as vegetation or topography.

Technically/economically feasible - Actions that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. It is the Forest Service's sole responsibility to determine what actions are technically and economically feasible. The Forest Service will consider whether implementation of the proposed action is likely given past and current practice and technology; this consideration does not necessarily require a cost-benefit analysis or speculation about an applicant's costs and profit.

Temporary special use permit – A type of permit that terminates in 1 year or less after the approval date. All other provisions applicable to permits apply fully to temporary permits. Temporary special use permits are issued for seasonal or short-duration uses involving minimal improvement and investment.

Term permit – An authorization to occupy and use National Forest System land, other than rights-of-way for a specified period that is both revocable and compensable according to its terms.

Timely - The conservation benefits from compensatory mitigation accruing as early as possible or before impacts have begun.

Transmission line - An electrical utility line with a capacity greater than or equal to 100kV or a natural gas, hydrogen, or water pipeline greater than or equal to 24" in diameter.

Travel management system – Planned and authorized roads, trails, and areas for motor vehicle use on National Forest System lands that are managed in a controlled, sustained manner.

Utility-scale and/or commercial energy development – A project that is capable of producing 20 or more megawatts of electricity for distribution to customers through the electricity-transmission-grid system.

Valid existing rights - Documented, legal rights, or interests in the land, which allow a person or entity to use said land for a specific purpose and that are still in effect. Such rights include but are not limited to fee title ownership, mineral rights, and easements. Such rights may have been reserved, acquired, granted or otherwise authorized under various statutes of law.

Vegetation treatment - Management practices that are designed to maintain current vegetation structure or change the vegetation structure to a different stage of development. Vegetation treatment methods may include managed fire, prescribed fire, chemical, mechanical, and seeding.

Waiver (oil and gas) - Permanent exemption from a lease stipulation. The stipulation no longer applies anywhere in the leasehold.

West Nile virus - A virus that is found in temperate and tropical regions of the world and most commonly transmitted by mosquitoes. West Nile virus can cause flu-like symptoms in humans and can be lethal to birds, including greater sage-grouse.

Wildfire suppression - An appropriate management response to wildfire, escaped wildland fire use or prescribed fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire.