BUREAU OF LAND MANAGEMENT – IDAHO – BOISE DISTRICT – OWYHEE FIELD OFFICE

Jump Creek, Succor Creek, and Cow Creek Watersheds Grazing Permit Renewal Final Environmental Impact Statement

EIS # DOI-BLM-ID-B030-2012-0014-EIS

BLM-ID-NEPA Permit Renewal Team

October 2013

Summary

The Jump Creek, Succor Creek, & Cow Creek Watersheds Grazing Permit Renewal Final Environmental Impact Statement (hereinafter, EIS) addresses options for future management of 25 livestock grazing allotments in northern Owyhee County, Idaho. These Owyhee Field Office Priority Group 2 allotments are of mixed ownership comprising 80,720 acres of publicly owned land managed by the Owyhee Field Office of the Bureau of Land Management (BLM), 35,953 acres of privately owned land, and 8,589 acres of land managed by the State of Idaho, for a total of 125,262 acres in the EIS. Although the allotments fall within three watersheds, throughout the remainder of this document they will be referred to as the Chipmunk Group allotments.

This EIS addresses grazing permits in these allotments that are expiring and the applications to renew the permits that the BLM has received from the current permit holders. The EIS analyzes alternative management prescriptions that range from continuing the current kind and level of livestock numbers (current management), as is more fully defined later in the document (Alternative 1), to reducing livestock numbers to zero, with no grazing occurring for the next 10 years (Alternative 6), and other management options that continue grazing on the allotments with management changes to address resource issues on the allotments as described below and (Alternatives 3-5).

To comply with our obligation and responsibility, the BLM implemented a scoping process to solicit internal and external input on the issues, impacts, and potential alternatives that will be addressed in the EIS. This process provided an opportunity to inform the general public early in the NEPA process and helped the BLM to gauge the concerns of those who have a stake in the management of the public lands in this area. A scoping report was published on the BLM's ePlanning website in October 2012. This summary will speak briefly about the issues identified in the scoping process; the full report can be accessed on the BLM website (http://www.blm.gov/id/st/en/prog/nepa_register/owyhee_grazing_group/grazing_permit_renewal0.html) or a hard copy can be requested by contacting the Idaho State Office of the BLM by email (BLM_ID_NPR_EIS@blm.gov), fax ((208) 373-3805), or mail (1387 S. Vinnell Way, Boise ID 83709, attn: Jake Vialpando).

Throughout the NEPA process, the following issues were identified by members of the public, other governmental agencies, or the BLM interdisciplinary team. Not all issues apply to every grazing allotment.

- Evidence suggests that the contact between California bighorn sheep and domestic sheep can transmit disease, cause mortality to bighorn sheep individuals, and reduce long-term herd health. The risk of contact between domestic sheep and bighorn sheep in the analysis area is considerable, and the effects to bighorn sheep are potentially significant.

- Healthy sage-grouse habitat is directly related to upland vegetation and watershed, in addition to riparian area conditions. Specific areas of the Chipmunk Group allotments contain altered sagebrush habitat that is affecting sage-grouse, as well as other sagebrush habitat-dependent species.

- Livestock grazing in riparian areas during certain seasons is affecting riparian vegetation health and aquatic habitat. Streams, floodplains, and wetlands are directly related to conditions within the riparian vegetation areas. Altering of riparian areas can affect the health and sustainability of fish and amphibians.

- Livestock grazing is also affecting upland vegetation by reducing it below levels that adequately protect watershed soil and hydrologic function. This can also adversely affect special status plants by altering the upland vegetation around these plants. Noxious and invasive weeds have the potential to increase or spread as a result of effects that grazing has on upland vegetation. When operators trail their livestock from one area to another, these allotment crossings may adversely affect these same resources discussed above, though to a lesser degree than grazing.

- Livestock production contributes to local and regional social and economic activities in the area. These contributions may be adversely affected if decisions are made that reduce livestock production on public lands, although management actions that contribute to improved rangeland health could help ensure sufficient long-term forage for grazing these lands.

- Wildfire fuels could be influenced positively or negatively by the level and intensity of livestock grazing prescriptions. The consideration of this interaction is pertinent when permitting grazing activity.

- The issue of climate change and its relationship to the proposed federal action of renewing grazing permits is twofold. Livestock grazing in Owyhee County contributes CO2 and methane emissions to the earth's atmosphere. In addition, climate change, itself a stressor on the sagebrush-steppe semi-arid ecosystem found in the Owyhee Uplands can, when found in conjunction with cattle grazing, further stress the ecosystem's vegetation.

- Livestock grazing competes with foraging and habitat of wild horses.

The following is a brief overview of how the document is organized, to assist the reader in reviewing this EIS.

Section 1 – Introduction
This section is the introduction to the document. It gives the reader the background, location, and setting of the public land involved in the analysis. This is where the BLM's Purpose and Need Statement is found. It explains the reason a Federal action is needed here and now. Other information in Chapter 1 includes land use plan information and the regulations under which the BLM is obligated to manage these public lands.

Section 2 – Alternatives
This section contains a complete description of the alternative management prescriptions mentioned above. Each addresses the BLM's purpose and need to varying degrees. The BLM conducted a detailed analysis of six alternatives and considered several other management alternatives that were dismissed prior to a detailed analysis. The rationale for dismissal is found in Chapter 2.

An important topic to address here is the Council on Environmental Quality's (CEQ) direction for the BLM to "…identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference (40 CFR 1502.14 (e))." The BLM did not identify a preferred alternative in the draft EIS, but now has identified a preferred alternative in the Final EIS as summarized in Table PREF-1 in Section 2 below.

Section 3 – Affected Environment and Environmental Consequences
This section combines Chapters 3 and 4 in this EIS. Traditionally, EIS documents have dedicated Chapter 3 to describing the Affected Environment. By definition, this contained a description of current conditions

of the resources found within the project area that the proposed action and alternative actions would affect. Chapter 4 was dedicated to describing the environmental consequences of implementing the proposed action and alternative actions. However, because we are addressing 25 allotments in this EIS, we have combined the affected environment description and the environmental consequences of the alternatives in Section 3, which we believe will make it easier to follow the analysis. In this document, we first describe the affected environment and the current condition of a specific resource (vegetation, for example), and then explain the effects or impacts to vegetation when alternative management actions are implemented. The expected impacts resulting from each of the alternatives are described by resource, and the expected impacts on each allotment are addressed in each alternative. We then address the affected environment of the next resource, (soils, for example), and describe the impacts to that resource from implementing the different management prescriptions. We continue in this manner, describing the condition of, and analyzing effects to, each resource.

Section 4 – Consultation and Coordination
This section is a brief description of the BLM's consultation and coordination efforts with other Federal agencies, Tribes, and State and local government entities.

Section 5 – List of Preparers
This section is a list of the document preparers and their associated experience.

Section 6 – Literature Cited
This section is the list of literature cited in the EIS.

Section 7 – Appendices
This section contains the appendices, which include supporting information such as actual use and utilization data, the permittees' grazing applications, and the Rangeland Health Determinations. Rangeland Health Determinations (Appendix E) and the Specialists' Reports (saved in the project record and available at the BLM Owyhee Field Office by request or on the BLM Idaho website: http://www.blm.gov/id/st/en/prog/nepa_register/owyhee_grazing_group/grazing_permit_renewal0.html) play important roles in supporting the analysis in this EIS; readers are encouraged to view these documents in conjunction with the EIS. The online version of the EIS will be split into three parts, with Sections 7 and 8 uploaded separately but available in the same location.

The BLM in Idaho uses eight Standards for determining rangeland health for livestock grazing management (Appendix A):

Standard 1-Watersheds
Standard 2-Riparian Areas and Wetlands
Standard 3-Stream Channel/Floodplain
Standard 4 Native Plant Communities
Standard 5-Seedings
Standard 6-Exotic Plant Communities Other Than Seedings
Standard 7-Water Quality
Standard 8-Threatened and Endangered Plants and Animals

Public rangelands should be meeting these Standards or making significant progress toward meeting them. The Determination documents disclose whether current grazing management on the public lands portions of the Chipmunk Group allotments is a significant contributing factor in the failure to achieve any of the eight Standards.

Section 8 – Maps
This section contains all of the maps that are referenced within the EIS.

Section 9 – Index and Glossary
This section contains the index and glossary of terms that are referenced within the EIS.

Additional Notes
The BLM Owyhee Field Manager is required to make informed decisions regarding whether to renew the applicants' grazing permits and, if so, which management actions will be prescribed for each of the 25 Chipmunk Group allotments to ensure management objectives of the Owyhee Resource Management Plan and the Standards for Rangeland Health are met. To facilitate the decision-making process, the BLM is required to provide environmental documents to the public so as to inform those who may be interested or affected by the decisions.

On May 3, 2013, the BLM released the Draft Jump Creek, Succor Creek, & Cow Creek Watersheds Grazing Permit Renewal Environmental Impact Statement for public review. All public comments received during the comment period have been addressed by the BLM and were considered during the development of this FEIS; the comments and BLM responses can be found in Appendix L. With the release of this Final EIS for a 30-day availability period, and the subsequent proposed decisions and 15-day protest period of the proposed 15 grazing decisions, will provide the public additional opportunities to give the BLM input on the management of the Chipmunk Group allotments.

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1. INTRODUCTION

1.1. TITLE

Jump Creek, Succor Creek, & Cow Creek Watersheds Grazing Permit Renewal Final Environmental Impact Statement

1.2. NAME AND LOCATION OF PREPARING OFFICE

Bureau of Land Management
Idaho State Office
1387 S. Vinnell Way
Boise, ID 83709

1.3. LOCATION, SETTING, AND BACKGROUND

This Environmental Impact Statement (EIS) has been prepared to analyze the impacts of renewing livestock grazing permits for a term of 10 years on 25 allotments in Owyhee County, Idaho: Alkali-Wildcat (514); Baxter Basin (530); Blackstock Springs (515); Burgess (572); Burgess FFR (638); Chimney Pot FFR (464); Chipmunk Field FFR (523); Corral Creek FFR (602); Cow Creek (562); Elephant Butte (513); Ferris FFR (545); Franconi (558); Jackson Creek (506); Joint (531); Lowry FFR (477); Madriaga (557); Poison Creek (603); R Collins FFR (612); Rats Nest (522); Sands Basin (521); Soda Creek (652); Stanford FFR (608); Texas Basin FFR (472); Trout Creek (529); Trout Creek/Lequerica (560) (Map GEN-1).

The 25 Jump Creek, Succor Creek & Cow Creek Watersheds allotments are located in Owyhee County, Idaho, and occupy the northwestern portions of the Owyhee Mountains along the state line from just south-southwest of Marsing, Idaho, to east of Jordan Valley, Oregon. Elevations range from around 2,324 feet in pasture 3 of the Elephant Butte allotment to 7,400 feet in pasture 5 of the Jackson Creek allotment.

In the northern third of the Chipmunk Group area, the terrain is diverse and extends from the low salt desert shrubland flats above the Snake River plains, across the abruptly rising steep rocky foothills and structural benches along the northern boundary of the Owyhee Mountains. Beyond the rim, the landscape consists of undulating plateaus that are bisected by major stream systems, such as Jump Creek and Squaw Creek.

The landscape of the mid-section of the Chipmunk Group area is dominated by north-southward trending high-elevation mountainous volcanic uplands cut by ephemeral, intermittent, and perennial streams within numerous steep drainages. Transitional foothills and fan terraces surround the mountainside slopes, yielding to stream and lake sediments that make up the adjacent basin deposits at lower elevations to the west.

Toward the southern third of the area, the terrain is undulating to very steep, with most landforms being of volcanic origin. Lower-elevation sediment-filled basins parallel the Idaho/Oregon state line, gradually turning from gently sloping terrain into steep foothills, benches, mountains, and ridges. Numerous draws and canyons contain perennial and ephemeral streams that generally drain northwest to southwest.

The BLM Owyhee Field Office has prioritized and grouped allotments to fully process and renew grazing permits in accordance with the Order Approving Stipulated Settlement Agreement (United States District Court for the District of Idaho Case 1:97-CV-00519-BLW) dated June 26, 2008. The agreement defined a schedule for completing the required environmental analyses and to issue final decisions and grazing permits for the allotments.

This document considers grazing permit renewals on a group of allotments that share three specific and closely-related watersheds. The Chipmunk Group allotments are under the management of the Owyhee Field Office and are located adjacent to one another within the northern portion of Owyhee County, Idaho, within one of three watersheds: Cow Creek, Jump Creek, and Succor Creek (MAP GEN-1). Applications for renewal of grazing permits for use in these allotments have been received by the BLM from permittees who are currently authorized to graze livestock in these allotments (Appendix D).

Renewed grazing permits must be in conformance with the Owyhee Resource Management Plan (ORMP) (USDI BLM, 1999a), ensure compliance with the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Idaho S&Gs) adopted in 1997 (Appendix A), and comply with 43 CFR 4100 – Grazing Administration. Federal actions must be analyzed in accordance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations to determine potential environmental consequences.

Fenced Federal Range Allotments (FFR)

Depending on the resource values identified on public lands, most FFR allotments in the Owyhee Field Office are identified as Category C allotments (see definition below). The ORMP identifies a number of FFR allotments in the M and I categories, but all of the Chipmunk Group FFR allotments are identified as Category C allotments. Resource management and grazing administration of these allotments is associated with the public lands only. All allotments are managed the same way, although Category C allotments are given a lower priority for renewal of associated grazing permits and fewer resources (i.e., funding for range improvements and personnel for monitoring) are expended for management. This is due to the amount of return that the investment would provide. For example, it is more cost effective for the BLM to provide more intensive monitoring and range improvement efforts on larger allotments with a significant amount of public land (e.g., 10,000 acres) and sensitive habitat than to spend a large amount of funding on small areas of public land (e.g., 50 acres) with no habitat, as noted below in Category C.

Guidance (Handbook 1740-1; Appendix 1, Illustration 3) assigning allotments to one of the three categories, and in accordance with Instruction Memorandum 2009-018, is intended to help field offices determine priorities for focusing staff and fiscal resources when processing grazing permits and leases. IM-WO-2009-018 defines the management categories as follows:

> Category I: Allotments where current livestock grazing management or level of use on public land is, or is expected to be, a significant causal factor in the non-achievement of land health standards, or where a change in mandatory terms and conditions in the grazing authorization is or may be necessary. When identifying Category I allotments, review condition of critical habitat, conflicts with sage-grouse, and whether projects have been proposed specifically for implementing the Healthy Lands Initiative.
>
> Category M: Allotments where land health standards are met or where livestock grazing on public land is not a significant causal factor for not meeting the standards and current livestock management is in conformance with guidelines developed by the State Directors in consultation with Resource Advisory Councils. Allotments where an evaluation of land health standards has not been completed but existing monitoring data indicate that resource conditions are satisfactory.
>
> Category C: Allotments where public lands produce less than 10 percent of the forage in the allotment or are less than 10 percent of the land area. An allotment should generally not be designated Category C if the public land in the allotment contains 1) critical habitat for a threatened or endangered species, or 2) wetlands negatively affected by livestock grazing.

The BLM currently manages FFR allotments as Category C allotments where it has been determined that livestock grazing management practices are compatible to meet Idaho Rangeland Health Standards and Guidelines, and/or where ORMP management objectives are being achieved. In cases where it is determined that land health standards or RMP objectives are not being met or making progress toward being met, the BLM may change allotment categorizations to I or M.

Lands Involved

The following table displays the lands involved in the 25 Chipmunk Group allotments. The allotments include 80,720 acres of BLM lands, 35,953 acres of private lands, and 8,589 acres of state lands, for a total of 125, 262 total acres within the allotments.

Table ALLOT-1: Lands involved

Meridian	Township	Range	Sections	Acres
Boise	**2N**	**6W**	**20, 28, 29, 31, 32, 33**	**125,262**
	11S	**4W**	**21, 22, 26-28, 31-35**	
	12S	**3W**	**4-8, 17-20, 29-31**	
	12S	**4W**	**1-36**	
	13S	**3W**	**5-8, 16-21, 28-32**	
	13S	**4W**	**1-36**	
	13S	**5W**	**35, 36**	
	14S	**1W**	**7, 18, 19, 30, 31**	
	14S	**2W**	**1-36**	
	14S	**3W**	**1-36**	
	14S	**4W**	**1-36**	
	14S	**5W**	**1, 2, 11-13, 24, 25, 36**	
	15S	**1W**	**1-36**	
	15S	**2W**	**1-36**	
	15S	**3W**	**1-36**	
	15S	**4W**	**1-6, 8-16, 22-27, 35, 36**	
	16S	**1E**	**6, 7, 18, 19, 30**	
	16S	**1W**	**1-30**	
	16S	**2W**	**1-30**	
	16S	**3W**	**1-29**	
	16S	**4W**	**1, 12, 13**	

Determinations

The Idaho Bureau of Land Management uses the Standards for Rangeland Health and Guidelines for Livestock Grazing Management, to ensure healthy and productive federal lands (Appendix A). Rangelands should be meeting the standards or making significant progress toward meeting the Standards. Table ALLOT-2 summarizes the determinations for the 25 Chipmunk Group allotments by the BLM management unit. As required by 43 CFR 4180, these determinations of standards also disclose whether current (past 10 years) grazing management practices or levels of grazing use on public lands managed by the BLM are significant contributing factors in the allotment's failure to achieve the Standards for Rangeland Health and conform with the guidelines for livestock grazing management established for public lands managed by the BLM in Idaho.

Each allotment was evaluated to identify whether it was meeting or not meeting Idaho Rangeland Health Standards, and if not, whether current livestock grazing was a significant causal factor for its failure to meet any of the Standards (Table ALLOT-2). The eight Standards are: Standard 1-Watersheds; Standard 2-Riparian Areas and Wetlands; Standard 3-Stream Channel/Floodplain; Standard 4 Native Plant Communities; Standard 5-Seedings; Standard 6-Exotic Plant Communities Other Than Seedings;

Standard 7-Water Quality; and Standard 8-Threatened and Endangered Plants and Animals. If the allotment was failing to meet any one of the eight Standards, BLM concluded that the whole allotment was therefore not meeting the Standard. The signed determinations and findings are in Appendix E.

Table ALLOT-2: Determinations of rangeland conditions by allotment

	Are Rangeland Health Standards Being Met? (Yes/No/MP/NA)[1]								
Allotment Name/ Year Signed	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Significant Causal Factors in not meeting the Standards and additional information**
Alkali-Wildcat-2013[2]	No	No*	No*	No	NA	NA	Yes	No*	1, 4-Historic Grazing, wildfire and exotic vegetation; 2, 3 - Current livestock grazing, streams and springs condition; 8 (w) – Current livestock grazing, wildfire and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Baxter Basin-2006	Yes	No MP	No MP	Yes	NA	Yes	NA	No MP	2, 3, 8 - Making significant progress toward meeting; 8 (w) - 2012 Sage-grouse information consistent with 2006 Determination of not meeting this Standard. Also not meeting due to riparian and aquatic species habitat conditions.
Blackstock Springs-2013	No*	No*	No*	No*	NA	NA	No*	No*	1, 4 - Current livestock grazing, exotic vegetation, and recreation; 2, 3 - Current livestock grazing, streams and springs condition; 8 (p)- Exotic vegetation; 8 (w) - Current livestock grazing and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Burgess-2013	Yes	Yes	Yes	Yes	NA	NA	No	No	8 (w) – Sage-grouse habitat conditions; 7- Not meeting IDEQ water quality standards.
Burgess FFR-2013[2]	No*	No*	No*	Yes	NA	No	No	No*	1, 6 - Current and historic livestock grazing, wildfire, and exotic vegetation; 2, 3 - Current livestock grazing, Succor Creek condition; 8 (w) - Current and historic grazing, wildfire, and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Chimney Pot FFR-2013	Yes	NA	NA	Yes	NA	NA	NA	Yes	Meeting all applicable Standards
Chipmunk Field FFR-2007	Yes	NA	NA	Yes	NA	NA	NA	Yes	Meeting all applicable Standards
Corral Creek FFR-2008	No	NA	NA	No	NA	NA	NA	No	1, 4, 8 - Historic livestock grazing; 8 (w) - 2012 Sage-grouse habitat conditions; this conclusion is consistent with 2008 Determination of not meeting the Standard.
Cow Creek-2013[2]	Yes	No*	No*	No	NA	NA	Yes	No*	4 - Due to exotic vegetation; 2, 3 - Current livestock grazing, streams and springs condition; 8 (w) - Current livestock grazing and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Elephant Butte-2013	No*	Yes	Yes	NA	NA	No*	Yes	No*	1, 6 - Current and historic livestock grazing, exotic vegetation, and recreation; 8 (p) - OHV use and illegal dumping; 8 (w) - Current and historic livestock grazing, exotic species, upland habitat conditions for wildlife in general.
Ferris FFR-2013	Yes	No*	NA	No	NA	NA	No	No*	2 - Current livestock grazing, springs condition; 4 - Exotic vegetation and lack of functional groups; 7- Not meeting IDEQ water quality standards; 8(w) - Current livestock grazing and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.

	Are Rangeland Health Standards Being Met? (Yes/No/MP/NA)[1]								
Allotment Name/ Year Signed	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Significant Causal Factors in not meeting the Standards and additional information**
Franconi-2007	No	Yes	Yes	No	NA	NA	Yes	No	1, 8 - Current grazing not a significant factor; 4 – Fire; 8 (w) - Standard 8 not being met due to sage-grouse habitat.
Jackson Creek-2013	No*	No*	No*	Yes	NA	No*	No*	No*	1, 6 - Current and historic livestock grazing; 2, 3 7 - Current livestock grazing, streams and springs condition; 8 (w) - Current livestock grazing and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Joint-2013[2]	No*	No*	No*	Yes	No	NA	No	No*	1 - Current and historic livestock grazing; exotic vegetation; 5 - Exotic monoculture seeding; 2, 3 - Current livestock grazing, streams and springs condition; 8 (w) - Current livestock grazing and exotic monoculture, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Lowry FFR-2013	Yes	NA	NA	NA	NA	Yes	NA	No	8 (w) - Exotic species, upland habitat conditions for wildlife in general.
Madriaga-2013[2]	No*	No*	No*	No	NA	NA	No	No*	1 - Current and historic livestock grazing; exotic vegetation; 4 - Exotic vegetation; 2, 3 - Current livestock grazing, streams and springs condition; 8 (w) - Current livestock grazing and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Poison Creek-2013[2]	Yes	No-MP	No-MP	NA	Yes	NA	Yes	No*	2, 3 - Making significant progress toward meeting Standards; some condition concerns on Posey Creek; 8 (p) - Current livestock grazing and OHV use; 8 (w) – Current livestock grazing and seeding composition; upland and riparian habitat conditions for terrestrial, avian, and aquatic species; potential risk of bighorn sheep and domestic sheep contact, with possible disease transmission.
R Collins FFR-2006	Yes	NA	NA	Yes	NA	NA	NA	Yes	Meeting all applicable Standards
Rats Nest-2013	No*	No*	No*	No*	NA	NA	Yes	No*	1, 4 - Current livestock and wild horse grazing; 2, 3 - Current livestock grazing, stream and spring condition; 8 (w) - Current livestock grazing, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Sands Basin-2013	No*	No*	No*	No*	Yes	No*	No*	No*	1, 4, 6 - Current livestock grazing, wild horse grazing, and exotics; 2, 3, 7 - Current livestock grazing, portions of Jump Creek condition; 8 (w) - Current livestock grazing and exotic species, upland and riparian habitat conditions for terrestrial, avian, and aquatic species.
Soda Creek-2013	Yes	No MP	No MP	Yes	NA	NA	No MP	No MP	2, 3, 7 - Making significant progress toward meeting Standards; some condition & not meeting IDEQ water quality standards; 8 (w) - Riparian habitat conditions for aquatic species.
Stanford FFR-2008	No	NA	NA	No	NA	NA	NA	No	1, 4, 8 - Historic livestock grazing; 8 (w) - Sage-grouse habitat conditions, therefore not meeting this Standard. This is consistent with the 2006 Determination.

	Are Rangeland Health Standards Being Met? (Yes/No/MP/NA)[1]								
Allotment Name/ Year Signed	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Significant Causal Factors in not meeting the Standards and additional information**
Texas Basin FFR-2007	Yes	NA	NA	Yes	NA	NA	NA	No	8 - 2012 Sage-grouse habitat conditions are not meeting this Standard. This is inconsistent with 2008 Determination for meeting this Standard.
Trout Creek-2006	Yes	No MP	No MP	No	NA	NA	No MP	No	2, 3, 7, 8 - Making significant progress toward meeting; 4 - Exotic vegetation; 8 - Not meeting due to riparian and aquatic species habitat conditions.
Trout Cr/Lequerica -2013	Yes	No*	No*	Yes	NA	NA	Yes	No*	2, 3- Current livestock grazing, portions of WF Trout Creek, Nichols Creek, and Split Rock Canyon condition; 8 (w) – Current livestock grazing, riparian habitat conditions for aquatic species.

N/A – Not applicable
MP-Making Significant Progress
* Current livestock grazing is a the causal factor
(p): plants
(w): wildlife
[1]Standards: 1 Watersheds; 2 Riparian Areas and Wetlands; 3 Stream Channel/Floodplain; 4 Native Plant Communities; 5 Seedings; 6 Exotic Plant Communities, other than Seedings; 7 Water quality; 8 Threatened and Endangered Plants and Animals
[2]Determination changes made in the FEIS: Alkali-Wildcat and Cow Creek now meeting Standard 7; Burgess FFR, Joint, and Madriaga are now not meeting Standard 7 due to livestock; Poison Creek is now meeting Standard 7 and is making progress toward meeting Standards 2 & 3 (also see Section 3.5.1- Idaho Rangeland Health Standards 2, 3, and 7)

1.4. PURPOSE AND NEED OF ACTION

The purpose of this action is to provide for livestock grazing opportunities on public lands using existing infrastructure where such grazing is consistent with meeting management objectives, including the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (USDI-BLM, 1997) and the ORMP objectives.

The need for this action is established by the Taylor Grazing Act (TGA), the Federal Land Policy and Management Act (FLPMA), and the Owyhee Resource Management Plan (ORMP) (USDI BLM, 1999a), which require that the BLM respond to applications to fully process and renew permits to graze livestock on public land. In detail, analysis of the actions identified in the applications for grazing permit renewals and the alternative actions is needed because:

- BLM Idaho adopted the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Idaho S&Gs) in 1997 (Appendix A) (USDI BLM, 1997). Rangelands should be meeting or making significant progress toward meeting the Standards and must provide for proper nutrient cycling, hydrologic cycling, and energy flow. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the Standards. Rangeland health assessments and evaluation reports and/or analysis completed for the 25 allotments identify a number of Standards that have not been met, as depicted in Table ALLOT-2 above.
- The ORMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the Owyhee Field Office. The ORMP allocated public lands within the 25 allotments available for domestic livestock grazing. Where consistent with the goals and objectives of the ORMP and Idaho S&Gs, allocation of forage for livestock use and the issuance of grazing permits to qualified applicants are provided for by the Taylor Grazing Act (TGA) and the Federal Land Policy and Management Act (FLPMA).

Decision to Be Made

The Owyhee Field Manager is the authorized officer responsible for the decisions regarding management of public lands within these 25 allotments. Based on the results of the NEPA analysis, the authorized officer will issue a proposed grazing decision with the Final EIS; following public comment on the FEIS and proposed grazing decision, a final grazing decision will be issued in the Record of Decision. The EIS will provide information for the authorized officer to make an informed decision whether to renew the applicants' grazing permits, and if renewed, which management actions, mitigation measures, and monitoring requirements will be prescribed for each of the 25 allotments to ensure management objectives and Idaho S&Gs are met.

1.5. SCOPING AND DEVELOPMENT OF ISSUES

The process for completing the Jump Creek, Succor Creek, & Cow Creek Watersheds Grazing Permit Renewal Environmental Impact Statement (Chipmunk Group EIS) began with the publication of the Notice of Intent (NOI) in the Federal Register on January 9, 2012. The NOI included a request for resource information and the identification of issues for this project planning effort. The scoping period closed on March 9, 2012, but some relevant comments were submitted after the end of the scoping period. All comments, including those submitted after March 9, 2012, are addressed in the scoping report (which can be found at http://www.blm.gov/id/st/en/prog/nepa_register/owyhee_grazing_group/grazing_permit_renewal0.html) and were considered during the development of the EIS.

Scoping Meeting

One public scoping meeting was held from 5:30 PM until 8:30 PM on February 23, 2012, in Marsing, Idaho, with the public arriving and departing at their leisure. The Public Scoping Meeting Notice (Appendix A of the scoping report) announcing the scoping meeting was sent to the Argus Observer in Ontario, Oregon, the Malheur Enterprise in Vale, Oregon, and the Owyhee Avalanche in Homedale, Idaho. The scoping notice was also posted on the Idaho State BLM website at http://www.blm.gov/id/st/en/info/newsroom/2012/january/open_house_will_discuss.html. During the scoping meeting, six people registered their attendance on the sign-in sheet (Appendix B of the scoping report) and took the opportunity to interact and ask questions about the project and EIS process. Written scoping comments were accepted via mail, email, and fax. A total of nine responses were received between January 9 and March 9, 2012. A response is defined as one letter, email, or fax and each person could submit more than one response. Because some responses had more than one comment, the total number of comments received is greater than the number of respondents who submitted comments. Written comments were received from Western Watersheds Project (WWP), the USDA Natural Resources Conservation Service (NRCS), Region 10 of the U.S. Environmental Protection Agency (EPA), Baltzor Cattle Company, and the Owyhee County Commissioners.

All of the written responses were reviewed and considered. Half of the comments received regarded sage-grouse and sagebrush (*Artemisia spp.*) habitats. These comments expressed a desire for additional protection of sagebrush habitats in order to increase sage-grouse populations, and some comments focused on minimizing and/or eliminating livestock grazing on public lands where sage-grouse habitats exist. Other comments were more general in nature and were primarily associated with overall multiple uses within the project area, the EIS development process and cumulative impacts analysis, livestock trailing/crossing authorizations, domestic sheep grazing, future range improvements, vegetation treatments (juniper management), and water quality in the project area. The scoping report describes the comments received in greater detail.

Issues Identified During Scoping

Throughout the internal and external (public) scoping process and project development period, the BLM interdisciplinary team identified the following issues concerning livestock grazing management in one or more of the Chipmunk Group allotments and developed alternatives to resolve these issues:

- Risk to California bighorn sheep (*Ovis canadensis california*; from this point on referred to as bighorn sheep) and domestic sheep: Evidence suggests that contact with domestic sheep can transmit disease, cause mortality to bighorn sheep individuals, and reduce long-term herd health. The risk of contact between domestic sheep and bighorn sheep is considerable in the analysis area, and the effects to bighorn sheep are potentially significant. The BLM developed Alternative 5 specifically for this significant issue to be carried forward in the analysis that would look at the effects of removing all domestic sheep grazing from the Poison allotment. In addition, Alternatives 3 and 4 were developed to reduce the potential for contact between domestic and wild sheep.
- Habitat conditions for greater sage-grouse (*Centrocercus urophasianus*; from this point on referred to as sage-grouse): Sage-grouse habitat health is directly related to upland vegetation and watershed conditions. Specific areas of the Chipmunk Group allotments contain altered sagebrush community composition, structure, and function that are affecting sage-grouse and other sagebrush habitat-dependent species.
- Riparian vegetation conditions: Livestock grazing is affecting riparian condition and aquatic habitat by changing the health and composition of riparian vegetation communities.
- Fish and amphibian habitat conditions: Stream, floodplain, wetland, and mesic (moderately moist) habitat conditions are directly related to conditions within the riparian vegetation

community. Altering of the riparian community may affect the health and sustainability of fish and amphibian populations.

- Upland vegetation and watershed conditions: Livestock grazing is affecting upland vegetation by reducing or removing native vegetation communities that protect watershed soil and hydrologic function.
- Special Status Plant Species: Livestock grazing is adversely affecting special status plants by altering surrounding upland vegetation, habitat and reproduction of individuals.
- Noxious and invasive weeds: Livestock grazing and trailing has the potential to increase or spread noxious and invasive weeds.
- Livestock trailing: Trailing may adversely affect upland vegetation, soils, weeds and riparian vegetation.
- Socioeconomic impacts: Livestock grazing affects local and regional socioeconomic activities generated by livestock production.
- Wildfire fuels: Livestock grazing has the potential to change vegetation that may affect wildfire.
- Climate Change: The issue of climate change and its relationship to the proposed federal action of renewing grazing permits is twofold. Livestock grazing in Owyhee County contributes CO2 and methane emissions to the earth's atmosphere. In addition, climate change, itself a stressor on the sagebrush-steppe semi-arid ecosystem found in the Owyhee Uplands can, when found in conjunction with cattle grazing, further stress the ecosystem's vegetation.
- Wild Horse Herd Management Areas (HMA): Livestock grazing competes with foraging and habitat of wild horses.

1.6. SUMMARY OF PROPOSED ACTION

BLM received applications for renewal of grazing permits from current permittees authorized to graze livestock within the Chipmunk Group allotments. The applications included terms and conditions required for all BLM grazing permits. In accordance with regulations, mandatory terms and conditions include the kind and number of livestock, the period of use, the allotment to be used, the amount of use (in animal unit months (AUMs)), and terms and conditions that ensure conformance with the fundamentals of Rangeland Health Standards and Guidelines for grazing administration. In addition, other terms and conditions in applications include those that will assist in achieving management objectives, provide for proper range management, or assist with the orderly administration of the public rangelands.

Under Alternative 2 – Proposed Action, grazing permits would be offered with terms and conditions identified in the applications received (Appendix D).

1.7. CONFORMANCE WITH LAND USE PLAN

The alternatives analyzed here involve public lands and are subject to and in conformance with the ORMP dated December 1999. Relevant objectives from the ORMP are summarized below:

- SOIL 1: Improve unsatisfactory and maintain satisfactory watershed health/condition on all areas.
- SOIL 2: Achieve stabilization of current, and prevent the potential for future, localized accelerated soil erosion problems (particularly on stream banks, roads, and trails).
- WATR 1: Meet or exceed State of Idaho water quality standards on all federally administered waters within the Owyhee Resource Area.
- WATR 2: Follow current State water rights processes and procedures to acquire water rights for beneficial uses and support establishment of in-stream flows which are in the public interest.
- VEGE 1: Improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas.

- RPN 1: Maintain or improve riparian-wetland areas to attain proper functioning and satisfactory conditions. Riparian-wetland areas include streams, springs, seeps, and wetlands.
- WDLF1: Maintain or enhance the condition, abundance, structural stage, and distribution of plant communities and special habitat features required to support a high diversity and desired population of wildlife.
- FISH 1: Improve or maintain perennial stream/riparian areas to attain satisfactory conditions to support native fish.
- SSPS1: Manage special status species and habitats to increase or maintain populations at levels where their existence is no longer threatened and there is no need for listing under the Endangered Species Act of 1973, as amended.
- LVST 1: Provide for sustained level of livestock use compatible with meeting other resource objectives.
- VISL1: Manage the public lands for visual resource values under visual resource management classifications.
- ACEC1: Retain existing and designate new areas of critical environmental concern (ACECs) where relevance and importance criteria are met and where special management is needed to protect the values identified.
- CULT 1: Protect known cultural resource values from loss until their significance is determined.
- CULT 2: Provide special management emphasis for the protection and conservation of significant cultural resource sites and values.
- WHRS1: Maintain wild and free-roaming horses in the Owyhee Wild Horse Herd Management Areas (HMAs) at appropriate management levels (AML) within a thriving natural ecological balance.

1.8. RELATIONSHIP TO STATUTES, REGULATIONS, AND OTHER REQUIREMENTS

1.8.1. Relevant Statutes, Regulations, or Other Plans

- American Indian Religious Freedom Act of 1978
- Archaeological Resource Protection Act of 1979
- Bald and Golden Eagle Protection Act
- Bureau of Land Management, IM # 2012-043, Greater Sage-Grouse Interim Management Policies and Procedures
- Bureau of Land Management 6840 Manual on Special Status Species Management 2008
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy 2010
- Clean Air Act of 1970 (amended 1990)
- Clean Water Act of 1972
- Code of Federal Regulations (CFR); Title 40; Part 1500 – Council on Environmental Quality 2009
- CFR; Title 43; Part 4100 – Grazing Administration – Exclusive of Alaska 2006
- Coordinated Implementation Plan for Bird Conservation in Idaho
- Endangered Species Act (ESA) of 1973, Section 7, as amended
- Executive Order 11593: Protection and Enhancement of the Cultural Environment 1971
- Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation
- Federal Land Policy and Management Act 1976
- Handbook 1740-1; Appendix 1, Illustration 3
- IDAPA 58.01.02
- Idaho Bighorn Sheep Management Plan 2010
- Idaho Comprehensive Wildlife Conservation Strategy 2005
- Idaho Forest Practices Act (1974), Title 38, Chapter 13, Idaho Code
- Idaho Sage-Grouse Conservation Plan 2006

- Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management
- IM-WO-2009-018 Management Categories
- Migratory Bird Treaty Act of 1918 (MBTA)
- Executive Order 13186: Responsibilities of Federal Agencies To Protect Migratory Birds
- National Fire Plan 2000
- National Historic Preservation Act of 1966
- Native American Graves Protection and Repatriation Act of 1990
- Oregon's Bighorn Sheep and Rocky Mountain Goat Management Plan 2003
- The Omnibus Public Lands Management Act of 2009
- The Public Rangeland Improvement Act of 1978
- The Taylor Grazing Act of 1934
- The Wild and Scenic Rivers Act of 1968
- The Wilderness Act of 1964

2. ALTERNATIVES

Six alternatives are considered and analyzed in this environmental impact statement. The range of alternatives developed include: Alternative 1 – No Action/Current Condition, Alternative 2 – Permittee's Application, and Alternative 6 – No Grazing, as well as Alternatives 3 and 4, which were developed based on resource constraints, and Alternative 5 – Sheep-to-Cattle Conversion, which was developed to protect bighorn sheep while continuing to authorize current AUMs in the Poison Creek allotment. The sections that follow describe the theme of each of the alternatives and the allotment-specific authorizations and actions under each alternative. Appendix C provides a comparison table of authorizations and actions included in each of the six alternatives.

Alternative 1 No Action/Current Condition – all 25 allotments

Alternative 2 Permittee Applications – 24 allotments, which includes combining Alkali-Wildcat and Rats Nest to form a new allotment (Wild Rat allotment)

Alternative 3 Deferred Grazing – applies to 21 allotments and includes combining Alkali-Wildcat and Rats Nest to form a new allotment (Wild Rat allotment) and either a deferred grazing system or a rest/rotation system, which fulfills the NEPA requirement to consider a range of alternatives. Three allotments that are currently meeting all Standards do not apply to this alternative: Chipmunk Field FFR, Chimney Pot FFR and R Collins FFR. In this group of allotments, deferment would generally be to fall use.

Resource constraints are applied where there are issues and/or where Standards are not being met:

1. Sensitive species and wildlife: April 15 to June 20; use allowed 2 years in every 3-year period; either defer grazing or rest 1 out of 3 years
2. Vegetation: April 1 to June 30; use allowed 2 years in every 3-year period; either defer grazing or rest 1 out of 3 years
3. Soils: March 1 to May 15; use allowed 2 years in every 3-year period; either defer grazing or rest 1 out of 3 years
4. Riparian: May 15 to August 31; use allowed 2 years in every 3-year period; either defer grazing or rest 1 out of 3 years

Alternative 4 Season-based – applies to 14 allotments and includes combining Alkali-Wildcat and Rats Nest to form a new allotment (Wild Rat allotment); this alternative excludes eight allotments and two of the FFR allotments with previously signed determinations where current livestock grazing is not the

causal factor for the failure to meet Standards. The allotments addressed by this alternative include Alkali-Wildcat, Blackstock Springs, Burgess, Burgess FFR, Cow Creek, Elephant Butte, Ferris FFR, Jackson Creek, Joint, Madriaga, Poison Creek, Rats Nest, Sands Basin, Soda Creek and Trout Creek/Lequerica. In this group of allotments, use would occur during the spring, and the allotments would either be deferred use to the fall or rested.

Resource constraints are applied where there are issues and/or where Standards are not being met:

1. Sensitive species and wildlife: Breeding occurs April 15 to June 20 and late brood-rearing occurs June 20 to August 15; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years
2. Vegetation: April 1 to June 30; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years
3. Soils: March 1 to May 15; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years
4. Riparian: May 15 to August 31; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years

Alternative 5 Sheep-to-Cattle Conversion – applies to the Poison Creek allotment only and includes a conversion of domestic sheep AUMs to cattle AUMs

Alternative 6 No Grazing – applies to all 25 allotments

Preferred Alternative—applies to all 25 allotments

The preferred alternative is the result of assigning management prescriptions in a way designed to meet the resource needs of each individual allotment. This preferred alternative, therefore, is a composite of the action alternatives that are analyzed in this Final EIS because no individual alternative analyzed is expected to provide the resource benefits for all 25 allotments that BLM was seeking. This preferred alternative is summarized in Table PREF-1 below.

Table PREF-1: Preferred Alternatives by allotment

Allotment Name	Preferred Alternative
Baxter Basin	Alternative 2
Blackstock Springs	Alternative 4
Burgess	Alternative 3
Burgess FFR	Alternative 4
Chimney Pot FFR	Alternative 2
Chipmunk Field FFR	Alternative 2
Corral Creek FFR	Alternative 2
Cow Creek	Alternative 3
Elephant Butte	Alternative 3
Ferris FFR	Alternative 4
Franconi	Alternative 2
Jackson Creek	Alternative 4
Joint	Alternative 3
Lowry FFR	Alternative 3
Madriaga	Alternative 3
Poison Creek	Alternative 4
R Collins FFR	Alternative 2
Sands Basin	Alternative 4
Soda Creek	Alternative 4
Stanford FFR	Alternative 3

Allotment Name	Preferred Alternative
Texas Basin FFR	Alternative 3
Trout Creek	Alternative 3
Trout Cr/Lequerica	Alternative 3
Wild Rat[1]	Alternative 3

[1]The preferred alternative for Alkali-Wildcat and Rat's Nest allotments will be the new Wild Rat allotment as described in Alternative 3.

2.1. MANAGEMENT COMMON TO ALL GRAZING ALTERNATIVES

2.1.1. Boise District terms and conditions common to all grazing alternatives:

1. Grazing use will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Livestock grazing will be in accordance with your allotment grazing schedule(s). Changes to the scheduled use require approval.
2. Turn-out is subject to the Boise District range readiness criteria.
3. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
4. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
5. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
6. Pursuant to 43 CFR 10.4(B), the permittee must notify the BLM field manager, by telephone with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2) on federal lands. Pursuant to 43 CFR 10.4 (C), the permittee must immediately stop any ongoing activities connected with such discovery and make a reasonable effort to protect the discovered remains or objects.
7. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of $25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed $250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR § 4140.1(b)(1) and shall result in action by the authorized officer under 43 CFR § 4150.1 and § 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schedule(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. Comply with current Bighorn Sheep Separation Agreement.

Monitoring

Monitoring studies would be conducted during the term of the grazing permits in accordance with guidance provided by the BLM Idaho State Office Instruction Memorandum Monitoring Strategies for Rangelands, IM ID-2008-022 (USDI BLM, 2008b). Monitoring studies conducted during the term of the permits would include, but are not limited to nested plot frequency, upland utilization, browse utilization, photo plots, studies conducted in accordance with Interpreting Indicators of Rangeland Health (USDI

BLM, 2000) (USDI BLM, 2005a), multiple indicator monitoring (MIM), stubble height measurement, bank alteration, riparian woody browse utilization, water quality testing, and sage-grouse habitat suitability assessments (USDI BLM, 1999c).

2.1.2. Livestock Trailing/Crossing

In summer 2012, the Owyhee Field Office released the 2012 Owyhee Field Office Livestock Trailing Environmental Assessment (2012 Trailing EA) (USDI BLM, 2012c) (hereby incorporated by reference) but did not consider three new sheep trailing routes and one cattle trailing route that facilitate permitted grazing in the allotments at issue in this EIS. The impacts of these routes over a period of 10 years will be analyzed in this EIS. In addition, the impacts from the trailing routes described in the 2012 Trailing EA will be analyzed in this EIS for an additional 10-year period and will be authorized on an annual basis. Any effects in addition to those described in the 2012 Trailing EA will be analyzed in the effects section of this EIS.

Trailing, or moving animals across federal, state, or private land, is a component of regular grazing management practices in the Chipmunk Group allotments. Livestock are primarily actively trailed on the existing roads, where no or limited forage is consumed and the trailing occurs for short durations. For the majority of situations, trailing activities have not been documented, nor are they expected to substantially affect resources. Thus, they are not affecting the ability of these allotments to meet or make significant progress toward meeting Standards. For specific livestock routes, see tables TRL-1 through TRL-3 below and map RNGE-4 Trailing.

The timing of specific trailing events varies annually based on factors such as forage production, drought, resource conditions, weather, wildfire, court decisions, and individual livestock operations across the Owyhee Mountains. Livestock trailing effects are analyzed over a 10-year period and are referenced to the 2012 Trailing EA. Although the timing of livestock trailing may be adjusted to coincide with the grazing alternative selected, the effects of the trailing would be the same as described in the 2012 Trailing EA. Effects other than those described in the 2012 Trailing EA will be discussed in the effects section of this EIS by resource. Table TRL-1 describes the new trailing routes and miles by route and allotment. Specific livestock kind and numbers that will be trailed on these routes are described in Table TRL-3 below.

Table TRL-1: Trailing/Crossing miles by allotment and material crossed (new routes that were not analyzed in the 2012 trailing EA)

Route and Allotment	Kind of Livestock	Gravel	Native Material	Paved	Unknown/No Data	Grand Total
Boulder Flat Route		**6.04**	**5.70**	**2.91**	**11.13**	**25.78**
Baxter Basin	sheep				0.68	0.68
Berrett FFR		0.49	0.36			0.85
Boulder			1.37		0.41	1.79
Boulder Flat					2.83	2.83
Cow Creek Indiv.					6.24	6.24
Glass Creek		1.55	0.29		0.07	1.91
Gusman		0.05		2.01	0.23	2.29
Jordan Creek FFR				0.61		0.61
Lower Deer Creek			1.29		0.52	1.80
Lowry FFR				0.29		0.29

Route and Allotment	Kind of Livestock	Gravel	Native Material	Paved	Unknown/No Data	Grand Total
Morgan		3.38	0.22		0.16	3.76
Upper Deer Creek			2.08			2.08
Walt's Pond FFR		0.56	0.09			0.65
Rats Nest Route			**4.02**			**4.02**
Rats Nest	cattle		4.02			4.02
Rockville Route			**9.43**	**0.10**	**3.92**	**13.45**
Corral Creek FFR	cattle		0.33			0.33
Rockville			9.10	0.10	3.92	13.12
Strodes Basin Route			**3.52**		**0.86**	**4.38**
Strodes Basin	cattle		3.52		0.86	4.38
Grand Total		**6.04**	**22.67**	**3.01**	**15.91**	**47.63**

In addition, domestic sheep and cattle trailing would include routes and timing as described in the trailing applications in Appendix D and tables TRL-1 (above) and TRL-2-3 below. Trailing may be authorized on these routes during years the allotments or pastures within allotments are rested. Trailing effects common to all grazing alternatives are described in Chapter 3 below.

Other Terms and Conditions Common to All Trailing Permits

Livestock Trailing[1]:

- Trailing will be active with livestock moving toward their final destination, except at night.
- 90 percent of the livestock will stay within the required 0.25-mile and/or 240-foot corridor.
- The permittee will contact the Owyhee Field Office if natural events such as heavy rain or fire would not allow the permittee to complete the trailing event during the permitted time. The BLM would work with the permittee in these instances to mitigate resource impacts using all the applicable terms and conditions and design criteria.
- All supplemental feeding of livestock during trailing, including feeding horses used for the purposes of herding, will use certified noxious weed-free forage to prevent the spread of noxious weeds on BLM-administered public lands in Idaho.
- Areas used for staging vehicles, horse trailers, fence panels, etc., will avoid sagebrush areas. If this is not feasible, previously disturbed sites such as areas around stock ponds or troughs will be used, or in past seedings or other grassland sites.
- Sheep trailing in the fall through Graveyard Point, Sands Basin and Poison Creek allotments requires one scout, two herders and sheepherding dogs. A wagon or truck would follow to ensure no sheep are left behind for any reason.
- Fall overnighting of sheep in the Poison Creek allotment requires electric fencing of the bedding ground and a watch person.

Soils:

- Trailing will only be authorized during times when soils are firm enough to support trailing livestock with little to no pugging/hummocking to minimize impacts to soils, as per Boise District Range Readiness soil criteria (Appendix K).

[1] These terms and conditions are directly from the Owyhee 2012 Trailing EA (USDI BLM, 2012c).

Wildlife:

- From March 1 to May 15, livestock trailing will be routed at least 0.62 miles (1 km) from occupied and undetermined sage-grouse leks; if this is not possible, trailing events would be timed to occur between 10:00 am and 6:00 pm. These trailing routes are identified in Map RNGE-4.
- From March 1 to July 15, trailing routes will avoid areas known to be occupied by pygmy rabbits, in order to avoid impacts to natal burrows; if this is not possible, then livestock are to be kept within 120 feet of trailing routes in those areas.
- From March 1 to June 30, temporary water sites and overnight areas will not be located in sagebrush habitat within 4.0 miles of occupied or undetermined sage-grouse leks, in order to avoid impacts to lekking or nesting sage-grouse (and/or hens with early broods); if this is not possible, 90 percent of watering and overnighting livestock are to be kept within a 35-acre area or in previously disturbed sites, such as areas around stock ponds or troughs, corrals, existing seedings or other grassland sites.
- Sheep trailing will continue to follow the separation agreement and management objectives or subsequent plans for bighorn sheep (Appendix H).

Special Status Plants:

- Livestock trailing will be narrowed to within 120 feet on either side (240 feet total) of the identified trailing route within pastures containing special status plants within the 0.25-mile-long corridor.

Riparian:

- Livestock trailing adjacent to perennial streams or springs will require 90 percent of the livestock to be kept out of riparian areas for resource protection.

Cultural:

- Bedding or other congregation areas will not be allowed within at least 0.25 miles of known National Register of Historic Places-eligible sites.
- Trailing will not occur over wet soils, to avoid mixing of undisturbed stratified cultural deposits, as per Boise District Range Readiness soil criteria.

Travel Management and Off Highway Vehicles:

- Motorized vehicles incorporated with trailing activities will remain on existing vehicle routes. Cross-country use of motorized vehicles will not be authorized.

Tables TRL-2 and 3 are the trailing permits that would be offered to the respective permittees (Chipmunk Grazing Association and Poison Creek Grazing Association) for 10 years. These new trailing permits have been analyzed in detail in the effects section of the EIS.

Table TRL-2: Chipmunk Grazing Association trailing/crossing permit for Rats Nest allotment

Allotment Number	Allotment Name	Livestock		Time Frame		Duration[1]	AUMs	Method
		Number	Kind	Begin	End			
522	Rats Nest	450	Cattle	3/15	11/30	2 days	54	Horse and Motorized

[1]One overnight authorized.

Table TRL-3: Poison Creek Grazing Association Trailing/Crossing Permit

Allotment Number	Allotment Name	Livestock		Time Frame		Duration[1]	AUMs	Method
		Number	Kind	Begin	End			
Strodes Basin trailing route								
568	Strodes	Two Bands						Horse,

Allotment Number	Allotment Name	Livestock		Time Frame		Duration[1]	AUMs	Method
		Number	Kind	Begin	End			
	Basin	800	Sheep	3/20	4/1	2 days	20	Wagon and Motorized
		800	Sheep	3/20	4/1	2 days	20	
Rockville trailing route								
565	Rockville[2]	Two Bands						Horse, Wagon and Motorized
		800	Sheep	4/1	11/17	2 days	20	
		800	Sheep	4/1	11/17	2 days	20	
Boulder Flat[3] trailing route								
530	Baxter Basin	Two Bands						Horse, Wagon and Motorized
		800	Sheep	5/1	5/15	1 day	10	
		800	Sheep	5/1	5/15	1 day	10	
562	Cow Creek	Two Bands						
		800	Sheep	5/15	11/17	3 days	30	
		800	Sheep	5/15	11/17	3 days	30	
554	Gusman	Two Bands						
		800	Sheep	5/15	11/17	3 days	30	
		800	Sheep	5/15	11/17	3days	30	
505	Morgan	Two Bands						
		800	Sheep	5/15	11/17	3 days	30	
		800	Sheep	5/15	11/17	3 days	30	
526	Boulder Flat	Two Bands						
		800	Sheep	5/15	11/17	3 days	30	
		800	Sheep	5/15	11/17	3 days	30	

[1]Overnight stays in allotments are 1 night for a 2-day duration and 2 nights for 3-day duration.
[2]The trailing route for Rockville includes overnight in Corral Creek FFR on private land.
[3]The trailing route for Boulder Flat will include fewer than 3 hours to cross the Berrett FFR, Boulder, Glass Creek, Jordan Creek FFR, Lower Deer Creek, Lowry FFR, Upper Deer Creek, and Walt's Pond FFR allotments. These allotments may fall within the GIS buffer for some of these routes.

2.1.3. Suspension AUMs

In accordance with regulation pertaining to reducing permitted use (43 CFR 4110.3-2), alternatives that result in a reduction in active use AUMs to meet Rangeland Health Standards or make significant progress, as well as reductions in active use AUMs to meet ORMP management objectives, would be implemented by reducing permitted use. Active use AUMs no longer available in Alternatives 3 and 4 would not be converted to suspension. Any reduction in AUMs requested by the permittee (Alternative 2) would be converted to suspension AUMs. Suspension AUMs held on permits prior to this activity planning process would continue to be held on permits as suspension.

2.2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.2.1. Alternative 1 – No Action – Continue Current Management

In accordance with the BLM NEPA Handbook (H-1790-1), the No Action alternative for externally generated proposals or applications is generally to reject the proposal or deny the application. The sole exception to this is for renewal of a grazing permit, for which the No Action alternative is to issue a new permit with the same terms and conditions as the expiring permit. The No Action alternative provides a useful baseline for comparison of effects from other alternatives. To provide a useful baseline for comparison of effects, Alternative 1 – No Action is defined as the actions on the 25 Chipmunk Group allotments that have led to existing conditions and have occurred under the authorizations provided by the current grazing permits. These authorizations vary by year, due to weather, timing and preference, and are recorded in recent utilization and actual use as described in Appendix B.

Under Alternative 1, permits to graze livestock on the 25 Chipmunk Group allotments would be renewed with the terms and conditions of permits currently in effect. This would include terms and conditions imposed by the U.S. District Court in February 29, 2000, because they have been in effect since that time. The mandatory and other terms and conditions for each allotment are listed by table below (Tables ALT-1.1 and 1.2). Interim terms and conditions as currently permitted are:

- Key herbaceous riparian vegetation, where streambank stability is dependent upon it, will have a minimum stubble height of 4 inches on the streambank, along the greenline, after the growing season;
- Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
- Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
- Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

Under Alternative 1, standard Boise District terms and conditions identified in Section 2.1 would apply, in addition to other terms and conditions incorporated into the grazing permit as identified in Table ALT-1.2. Management objectives identified in Section 2.1 are provided to inform permit holders of BLM's management intent on public lands within preliminary priority habitat (PPH)/ preliminary general habitat (PGH) for sage-grouse. Permit holders are encouraged, as partners, to manage their livestock operations in a manner to consistent with BLM IM 2012-043 (USDI BLM, 2012b).

Table ALT-1.1: Alternative 1 - No Action mandatory terms and conditions by allotment

Allotment	Permittee	Livestock	Kind	begin	end	%PL	Active AUMs	Susp. AUMs	Temp Susp AUMs	Permitted Use
Alkali-Wildcat (514)	Ted Blackstock (1389)	77	c	4/1	5/31	100	155	-	-	155
	Chipmunk Grazing Assn. (1395)	234	c	4/1	5/31	100	469	-	-	469
	Total	**311**	**-**	**-**	**-**	**-**	**624**	**-**	**-**	**624**
Baxter Basin (530)	Elordi Cattle Co. LLC (1468)	121	c	4/1	6/14	100	299	-	-	299
Blackstock Springs (515)	Ted Blackstock (1389)	189	c	5/1	11/18	85	1,052	-	-	1,052
	Chipmunk Grazing Assn. (1395)	61	c	5/1	11/18	47	190	-	-	190
	Alan J. Johnstone (1422)	192	c	5/1	11/15	65	815	-	-	815
	Total	**442**	**-**	**-**	**-**	**-**	**2,057**			**2,057**
Burgess (572)	Doug Burgess (1436)	66	c	4/16	8/15	91	240	-	-	240
Burgess FFR (638)	Doug Burgess (1436)	11	c	12/1	12/30	100	11	-	-	11
Chimney Pot FFR (464)	LU Ranching Co. (1429)	4	c	12/1	12/31	100	4	-	-	4
Chipmunk Field FFR (523)	Chipmunk Grazing Assn. (1395)	71	c	12/1	12/31	100	72	-	-	72
Corral Creek FFR (602)	Alan J. Johnstone (0129)	9	c	12/1	12/31	100	9	-	-	9
Cow Creek (562)	LU Ranching Co. (1429)	201	c	4/1	9/30	100	1,214	-	-	1,214
Elephant Butte (513)	Ted Blackstock (1389)	67	c	3/15	5/31	88	305	-	-	305
		86	c	11/1	2/28	88	-	-	-	
	Chipmunk Grazing Assn. (1395)	21	c	4/1	5/31	100	85	-	-	85
		21	c	11/1	2/28	100	-	-	-	
	Total	**195**	**-**	**-**	**-**	**-**	**390**	**-**	**-**	**390**
Ferris FFR (545)	John Isernhagen (2860)	147	c	12/1	12/31	100	150	-	-	150
Franconi (558)	Chad & Dannelle Hensley (4228)	118	c	12/1	12/31	100	120	-	-	120
Jackson Creek (506)	LS Cattle Company (1425)	78	c	4/16	10/31	100	510	-	-	510
	Tim McBride (0436)	69	c	6/1	10/31	100	344	-	-	344
	Chipmunk Grazing Assn. (1395)	191	c	4/16	10/30	23	285	-	-	285
	Total	**338**	**-**	**-**	**-**	**-**	**1,139**	**-**	**-**	**1,139**
Joint (531)	John Isernhagen (2860)	285	c	4/16	7/15	85	1,089	-	-	1,089
		283	c	10/1	11/15	85	-	-		-
	Total	**568**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Lowry FFR (477)	LU Ranching Co. (1429)	6	c	12/1	12/31	100	6	-	-	6
Madriaga (557)	Chad & Dannelle Hensley (4228)	160	c	4/16	9/30	98	865	-	-	865
Poison Creek (603)	Poison Creek Grazing Association LLC (3987)	1,000	s	4/1	5/31	100	-	-	-	-
		174	c	4/1	5/31	100	-	-	-	-
		5	h	4/1	5/31	100	-	-	-	-
	Total	**-**	**-**	**-**	**-**	**-**	**761**	**-**	**-**	**761**
R Collins FFR (612)	Sean & Andrea Burch (4245)	24	c	12/1	12/31	100	24	-	-	24

Allotment	Permittee	Livestock	Kind	begin	end	%PL	Active AUMs	Susp. AUMs	Temp Susp AUMs	Permitted Use
Rats Nest (522)	Chipmunk Grazing Assn. (1395)	323	c	4/1	5/27	92	557	160	-	717
Sands Basin (521)	Chipmunk Grazing Assn. (1395)	600	c	4/1	6/5	70	-	-	-	-
		123	c	10/1	10/31	70	-	-	-	-
	Total	**723**	**-**	**-**	**-**	**-**	**999**	**-**	**-**	**999**
Soda Creek (652)	Elordi Cattle Company LLC (1468)	255	c	6/1	10/31	36	463	-	-	463
		3	h	6/1	10/31	36	5	-	-	5
	Elordi Sheep Camp (4084)	18	c	6/1	10/31	36	33	-	-	33
	Total	**276**	**-**	**-**	**-**	**-**	**501**	**-**	**-**	**501**
Stanford FFR (608)	LS Cattle Company (1425)	112	c	12/1	12/31	100	114	-	-	114
Texas Basin FFR (472)	Chipmunk Grazing Assn. (1395)	5	c	12/1	12/31	100	5	-	-	5
Trout Creek (529)	Sean & Andrea Burch (4245)	123	c	4/1	9/30	98	726	-	-	726
Trout Cr/Lequerica (560)	Lequerica & Sons INC. (2984)	52	c	6/1	10/31	44	115	-	-	115

Table ALT-1.2: Current Grazing Permits - Other Terms and Conditions

Operator No. & Allotments	Other Terms and Conditions
Alan J. Johnstone (1422) Blackstock Springs	• A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 1.4 miles of Little McBride Creek at the end of the growing season. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Alan J. Johnstone (0129) Corral Creek FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Chad & Dannelle Hensley (4228) Franconi Madriaga	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Chipmunk Grazing Assn. (1395) Alkali-Wildcat Blackstock Springs Chipmunk Field FFR Elephant Butte Jackson Creek Rats Nest Sands Basin Texas Basin FFR	• A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.75 miles of Jump Creek at the end of the growing season. • Early use (March 1 to March 31) may be authorized on an annual basis in the Elephant Butte allotment. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Gates in management fences located inside wild horse herd management areas will be opened within 15 days after the authorized grazing period. • Fall use (October 1 to November 30) may be authorized on an annual basis in the Sands Basin allotment. • The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Doug Burgess (1436) Burgess Burgess FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Elordi Cattle Co. LLC (1468) Soda Creek	• A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 1.0 miles of Cow Creek at the end of the growing season.

Operator No. & Allotments	Other Terms and Conditions
Baxter Basin	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Elordi Sheep Camp (4084) Soda Creek	• A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 1.0 miles of Cow Creek at the end of the growing season. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
John Isernhagen (2860) Ferris FFR Joint	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Lequerica & Sons INC. (2984) Trout Creek/Lequerica	• A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along .3 miles of Trout Creek at the end of the growing season. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
LS Cattle Company (1425) Jackson Creek Stanford FFR	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
LU Ranching Co. (1429) Chimney Pot FFR Cow Creek Lowery FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Poison Creek Grazing Association LLC (3987) Poison Creek	• Early use (March 27 to March 31) may be authorized on an annual basis for sheep use in the Poison Creek allotment. • A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.75 miles of Jump Creek at the end of the growing season.
Sean & Andrea Burch (4245) R. Collins FFR Trout Creek	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Ted Blackstock (1389) Alkali-Wildcat Blackstock Springs Elephant Butte	• A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.75 miles of Jump Creek at the end of the growing season. • Early use (March 1 to March 31) may be authorized on an annual basis in the Elephant Butte allotment. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • A minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 1.4 miles of Little McBride Creek at the end of the growing season.
Tim McBride (0436) Jackson Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.

Livestock Grazing Management

Allotment grazing management under the rotation schedules implemented since 1997 would continue under Alternative 1 and are described below by allotment. The tables described by allotment below will show the latest decision or allotment management plan (AMP) that describes rotations; in some cases, these decisions do not represent what is current management. In those cases, an additional table was created for the allotment to display the latest rotation that reflects the actual use reports as submitted by permittees (Appendix B). On allotments where no grazing rotation schedule has been developed, (i.e., one-pasture allotments), the BLM would continue to authorize use on a yearly basis following mandatory terms and conditions as stated on the permit.

Fenced Federal Range Allotments

The BLM currently authorizes livestock grazing on Fenced Federal Range allotments (FFRs) (see Fenced Federal Range Allotments under EIS Section 1.3). The season of use is described as 12/1 through 12/31 and livestock numbers and AUMs vary depending on total acres of unfenced BLM lands found with the allotment boundaries (see table ALT-1.1). Currently, these grazing allotments are authorized to be grazed any time during the year and at the discretion of the permittee, with authorized officer's prior approval. Other grazing permit terms and conditions indicate that utilization of key forage plants is not to exceed 50 percent of annual production. FFR allotments include Corral Creek FFR, Chipmunk Field FFR, Texas Basin FFR, Burgess FFR, Chimney Pot FFR, Ferris FFR, Lowry FFR, R Collins FFR, and Stanford FFR. Although the Franconi allotment is not named as a FFR allotment, it is being managed similarly to other FFR allotments. The FFRs will not be described in a table below because no additional livestock grazing management activities are currently authorized other than mandatory terms and conditions.

Alkali-Wildcat Allotment

Table ALT-1.3 describes the grazing management from the 2002 Decision on the allotment. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually. Actual use reports submitted between 1998 and 2011 indicate that AUMs have ranged from 179 to 602 and average actual use on the allotment was 312 AUMs.

Table ALT-1.3: 2002 Alkali-Wildcat allotment grazing schedule

Pasture	Year 1	Year 2
Pasture 1 (623 AUMs)	4/1-5/31	4/1-5/31

Baxter Basin Allotment

Table ALT-1.4 describes the grazing management on the allotment in accordance with the 1991 Decision. In addition to the grazing rotation identified in Table ALT-1.4, the following livestock grazing management flexibility and allotment management objectives include: Utilization of key forage plants may not exceed 50 percent of annual production.

Table ALT-1.4: 1991 Decision Baxter Basin allotment three-pasture rest-rotation grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1 (35% active preference)	4/16-5/4	5/7-5/26	Rest
Pasture 2 (28% active preference)	5/5-5/20	Rest	4/16-5/1
Pasture 3 (37% active preference)	Rest	4/16-5/6	5/2-5/22

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1991 Decision (Table ALT-1.5). Changes have been made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 191 to 428 and average actual use was 326 AUMs for the allotment.

Table ALT-1.5: Baxter Basin allotment three-pasture rest-rotation grazing system, as described in actual use reports (Appendix B).

Pasture	2009	2010	2011
Pasture 1	Rest	5/15-6/5	Rest
Pasture 2	5/13-6/1	Rest	5/10-6/5
Pasture 3	4/2-5/12	4/15-5/14	4/10-5/9

Blackstock Springs Allotment

Table ALT-1.6 describes the grazing management on the allotment from the 1984 Allotment Management Plan (AMP). Dates are approximate and may vary according to fluctuations in climatic conditions and utilization. Flexibility would be allowed on the allotment if mutually agreed upon by the permittees and approved by the Field Manager; spring use may begin as early as May 1. Utilization levels on crested wheatgrass may not exceed 50 percent in the seeded portion of pasture 1. After seed ripe (July 21), pasture rotations may be at the discretion of the permittees, not to exceed the specified utilization levels of the key forage grasses.

Table ALT-1.6: 1984 AMP Blackstock Springs allotment two-pasture grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1	5/21[2]-7/20 & 10/1-11/15[1]	5/21-5/31 8/15-11/15[1]	5/21-7/20 10/1-11/15[1]
Pasture 2	7/21 with 50% utilization & 10/1-10/15	6/1-8/15	7/21 with 50% utilization & 10/1-10/15

[1]Fall use in pasture 1 is subject to grazing conditions and 50 percent utilization. Pasture 2 should be used from 10/1 to 10/15. Fall use of pasture 1 will begin no earlier than 10/1.
[2]Permit issued for 5/1 to 11/18.

Since the AMP was finalized in 1984, the allotment has been divided into three pastures and has been authorized on an annual basis, as described in Table ALT-1.7. Livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1984 Blackstock Springs AMP (Table ALT-1.7). Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 1,841 to 2,248 and average actual use was 2,105 AUMs for the allotment.

Table ALT-1.7: Blackstock Springs allotment three-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	5/1-7/14 10/1-11/15[1]	5/1-7/14 10/19-11/20[1]	5/2-7/11 10/15-11/14[1]
Pasture 2	6/10-8/3	9/14-10/19	7/11-8/23
Pasture 3	8/4-10/7	7/14-9/14	8/24-10/14

[1]Fall use of pasture 1 subject to grazing conditions

Burgess Allotment

Table ALT-1.8 describes the grazing management on the allotment in accordance with the 1982 Decision. In addition to the grazing rotation identified in Table ALT-1.8, the following livestock grazing

management flexibility and allotment management objectives were included: Utilization of key forage plants may not exceed 50 percent of annual production. Dates of use vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.8: 1982 Decision Burgess allotment two-pasture deferred grazing system

Pasture	Year 1	Year 2
Pasture 1 (22% active preference)	5/1-6/14	8/4-9/17
Pasture 2 (63% active preference)	6/15-9/17	5/1-8/3

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1982 Decision (Table ALT-1.9). Changes have been made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 153 to 267 and average actual use was 231 AUMs for the allotment.

Table ALT 1-9: Burgess allotment two-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	4/16-5/18	4/16-5/20	4/16-5/22
Pasture 2	5/19-8/16	5/21-8/16	5/23-8/16

Cow Creek Allotment

Table ALT-1.10 describes the grazing management on the allotment in accordance with the 1986 Decision. In addition to the grazing rotation identified in Table ALT-1.10, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on pasture 1 may not exceed 50 percent of annual production for 2 of 3 years and 30 percent on the third year; native pastures will be utilized at 30 percent. Dates of use vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.10: 1986 Decision Cow Creek allotment five-pasture grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1	4/1-5/31	4/1-5/31[1]	6/1-6/30[2]
Pasture 2	4/1-6/30	4/1-6/30[1]	6/1-6/30
Pasture 3	4/25-5/8 & 7/1-7/15	4/25-5/8 & 7/1-7/15	4/25-5/8 & 7/1-7/15
Pasture 4	5/9-8/31	5/9-8/31	5/9-8/31
Pasture 5	6/1-9/30	6/1-9/30	6/1-9/30

[1]Graze in seeding first until desired utilization is reached, then move to native vegetation.
[2]May bypass and use after seed ripe until snow

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1986 Decision (Table ALT-1.11). After the 1986 Decision, the allotment was split into a five-pasture grazing system, and changes were made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 2000 and 2011 indicate that AUMs have ranged from 871 to 1,234 and average actual use was 1,188 for the allotment.

Table ALT-1.11: Cow Creek allotment five-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2011
Pasture 1	4/7-5/1
Pasture 2	5/2-6/18
Pasture 3	7/2-7/15
Pasture 4	6/10-9/15
Pasture 5	7/2-9/22

Elephant Butte Allotment

Table ALT-1.12 describes the grazing management from the 2002 Decision on the allotment. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 179 to 531 and average actual use was 320 AUMs for the allotment.

Table ALT-1.12: 2002 Elephant Butte allotment grazing schedule

Pasture	Year 1	Year 2	Year 3
Pasture 1 (131 AUMs)	4/1-5/16	12/1-1/31	5/1-5/31
Pasture 2 (98 AUMs)	12/1-1/31	4/21-5/31	4/1-4/30
Pasture 3 (57 AUMs)	5/17-5/31	4/1-4/20	12/1-1/31
Pasture 4 (32 AUMs)	12/10-12/31	3/15-3/31	12/10-12/31
Pasture 5 (94 AUMs)	3/15-4/16	12/1-1/31	3/15-4/16

A spring-deferred rotation grazing system is implemented for pastures 1, 2 and 3, and a separate deferred rotation for pastures 4 and 5.

Jackson Creek Allotment

Table ALT-1.13 describes the grazing management on the allotment in accordance with the 1982 Decision. In addition to the grazing rotation identified in Table ALT-1.13, the following livestock grazing management flexibility and allotment management objectives were included: Utilization of key forage plants may not exceed 50 percent of annual production.

Table ALT-1.13: 1982 Decision Jackson Creek allotment three-pasture rest-rotation and two-pasture deferred grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1	Rest	4/16-5/5	5/15-5/30
Pasture 2	4/16-5/11	5/6-5/30	Rest
Pasture 3	5/12-5/30	Rest	4/16-5/14
Pasture 4	6/1-8/15	8/16-11/15	6/1-8/15
Pasture 5	8/16-11/15	6/1-8/15	8/16-11/15

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1982 Decision (Table ALT-1.14). Changes have been made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 837 to 1,233 and average actual use was 1,142 for the allotment.

Table ALT-1.14: Jackson Creek allotment three-pasture rest-rotation and two-pasture grazing system, as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Pasture 1	4/8-5/18	4/13-4/23	4/18-6/1	4/26-5/5
Pasture 2	5/19-6/19	6/14-6/23	6/2-6/15	6/5-6/21
Pasture 3	Rest	4/24-6/13	No Data	5/6-6/4
Pasture 4	6/4-11/5	6/24-10/31	6/18-10/31	6/22-10/31
Pasture 5	6/4-11/5	6/24-10/31	6/18-10/31	6/22-10/31

Joint Allotment

Table ALT-1.15 describes the grazing management on the allotment in accordance with the 1986 Decision. In addition to the grazing rotation identified in Table ALT-1.15, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.15: 1986 Decision Joint allotment four-pasture grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1	7/1-9/15	4/16-5/30	7/1-8/15
Pasture 2	6/16-7/15	6/1-6/30	4/16-5/30
Pasture 3	5/8-6/15	8/1-6/30	8/16-9/15
Pasture 4	4/16-5/7-10	7/1-7/31	6/1-6/30

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1986 Decision (Table ALT-1.16). Following the 1986 Decision, the allotment was split into a three-pasture grazing system and changes were made in the turn-in-and-out dates for livestock by pasture. Pasture 1 was combined into Ferris FFR pasture 1. Actual use reports submitted between 2000 and 2011 indicate that AUMs have ranged from 293 to 1,061 and average actual use was 615 AUMs for the allotment.

Table ALT-1.16: Joint allotment three-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 2	6/6-7/18	6/12-6/24	6/1-7/12
Pasture 3	4/25-6/5	4/17-6/11	4/26-5/31
Pasture 4	Rest	ND	7/13-8/15

Madriaga Allotment

Table ALT-1.17 describes the grazing management on the allotment in accordance with the 1986 Decision. In addition to the grazing rotation identified in Table ALT-1.17, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.17: 1986 Decision Madriaga allotment one-pasture grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1	6/16-7/15	6/1-6/30	8/16-9/15

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1986 Decision (Table ALT-1.18). Following the 1986 Decision, the actual use reporting was for 3 pastures, since the Madriaga allotment is a two-pasture grazing system that uses a temporary hotwire fence in pasture 1 to better manage the pasture. In addition, changes in the turn-in-and-out dates for livestock by pasture have occurred. Actual use reports submitted between 1998 and 2011 indicate that AUMs have ranged from 183 to 908 and average actual use was 574 AUMs for the allotment and was reported as three pastures.

Table ALT-1.18: Madriaga allotment three-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2009	2010	2011
Pasture 1	5/9-6/19	4/16-7/3	4/17-6/17
Pasture 2	6/20-8/22	6/16-8/28	6/18-8/20
Pasture 3	8/23-9/13	8/7-9/30	8/21-8/27

Poison Creek Allotment

The grazing schedule identified in table ALT-1.19 describes the 1997 Decision for the single pasture in the Poison Creek allotment. Additionally, the allotment is used in the fall for a few days at a time while trailing sheep to the Homedale, Idaho, area. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 269 to 742 and average actual use was 474 AUMs for the allotment.

Table ALT-1.19: 1997 Poison Creek grazing schedule

Pasture	Year 1
Pasture 1	4/1-5/31

Rats Nest Allotment

Table ALT-1.20 describes the grazing management from the 2002 Decision on the allotment. Grazing occurs from April 1 to May 31 in alternate years. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 251 to 605 and average actual use was 458 AUMs for the allotment. Although Table ALT-1.20 shows every other year as rest, no rest has occurred on the allotment per the 2002 partial stay.

Table ALT-1.20: 2002 Rats Nest allotment grazing schedule

Pasture Name	Year 1	Year 2
Pasture 1 (428 AUMs)	4/1-5/31[1]	Rest

[1]Permit is issued from 4/1 to 5/27.

Sands Basin Allotment

Table ALT-1.21 describes the grazing management in accordance with the 2002 Decision on the allotment. In addition to the grazing rotation identified in Table ALT-1.21, the following grazing monument flexibility was included: livestock grazing is authorized in the spring from April 1 to June 5 with cow/calf pairs, and in the fall from October 1 to 10 with dry cows or yearlings annually. Livestock numbers and season may vary with prior BLM approval as long as total AUMs in each pasture are not exceeded annually.

Table ALT-1.21: 2002 Sands Basin allotment grazing schedule

Pasture	Year 1	Year 2
Pasture 1 (190 AUMs)	4/1-4/20	4/11-4/30
Pasture 2 (409 AUMs)	5/1-5/20 10/1-10/10[1]	5/17-6/5 10/1-10/10[1]
Pasture 3 (80 AUMs)	4/21-4/30	4/1-4/10
Pasture 4 (320 AUMs)	3/21-6/5	5/1-5/16

[1]Fall grazing in pasture 2 may occur with dry cows or yearlings only.

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 2002 Decision (Table ALT-1.22). Changes were made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 750 to 994 and average actual use was 883 AUMs for the allotment.

Table ALT-1.22: Sands Basin allotment grazing schedule in accordance with actual use reports (Appendix B)

Pasture	2007	2008	2009	2010	2011
Pasture 1	3/31-4/30	4/1-5/1	4/1-4/10 10/8-10/12	4/1-5/15	4/3-4/24
Pasture 2	10/28-11/6	5/2-6/6 10/28-11/6	3/11-4/25 10/1-10/7 10/13-10/31	5/16-6/6 10/29-10/31	5/1-6/7 11/6-11/7
Pasture 3	4/1-4/30	4/2-5/4	4/1-4/30	4/1-4/30	4/2-4/30
Pasture 4	5/1-5/24	5/5-6/2 11/8-11/10	5/1-5/30	5/1-6/3	4/25-6/4

Soda Creek Allotment

Table ALT-1.23 describes the grazing management on the allotment in accordance with the 1988 Decision for grazing management. In addition to the grazing rotation identified in Table ALT-1.23, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.23: 1988 Decision Soda Creek two-pasture grazing system

Pasture	Year 1	Year 2
Pasture 1	Summer: 6/1 to 50% use	Fall: 8/1 to 50% use
Pasture 2	Fall: 8/1 to 50% use	Summer: 6/1 to 50% use

However, livestock grazing management between 2000 and 2011, in accordance with actual use reports, has varied in comparison with the 1988 Decision (Table ALT-1.24). Since the 1986 Decision, the allotment was split into a four-pasture grazing system, and changes were made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted from 2000 to 2011 indicate that AUMs have ranged from 177 to 711 and average actual use was 431 AUMs for the allotment.

Table ALT-1.24: Soda Creek four-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Soda Creek 1	ND	7/15-10/13	6/1-7/13	6/6-7/6
Soda Creek 5	6/2-7/14	ND	ND	9/23-10/2
Soda Creek 2	6/1-7/13	6/1-7/15	6/5-7/13	6/5-7/1
Soda Creek 3	7/14-9/18	6/2-7/15	7/14-9/17	7/7-9/23

ND-No Data reported

Trout Creek Allotment

Table ALT-1.25 describes the grazing management on the allotment in accordance with the 1981 Decision. In addition to the grazing rotation identified in Table ALT-1.25, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.25: 1981 Decision Trout Creek three-pasture grazing system

Pasture	Year 1	Year 2	Year 3
Pasture 1	5/21-7/10[1]	8/16-9/30	7/1-8/20
Pasture 2	7/11-8/31	5/27-7/10[1]	8/21-9/30
Pasture 3	9/1-9/30	7/11-8/15	5/23-6/30[1]

[1]Earlier use may be allowed as movement into the second pasture may not occur earlier than specified above.

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1981 Decision (Table ALT-1.26). Changes have been made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2011 indicate that AUMs have ranged from 240 to 725 and average actual use was 342 AUMs for the allotment.

Table ALT-1.26: Trout Creek three-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Pasture 1	ND	5/15-8/15	5/17-8/14	5/16-8/14
Pasture 2	4/2-4/20	4/1-5/14	4/1-5/15	4/1-5/15
Pasture 3	8/15-9/2	8/16-10/1	8/15-9/12	8/15-9/12

ND-No Data reported

Trout Creek/Lequerica Allotment

Table ALT-1.27 describes the grazing management on the allotment in accordance with the 1984 Decision for grazing management. In addition to the grazing rotation identified in Table ALT-1.27, the following livestock grazing management flexibility and allotment management objectives were included: Utilization on key forage plants may not exceed 50 percent of annual production. Dates of use may vary, depending on climatic conditions and availability of the key forage species.

Table ALT-1.27: 1984 Decision Trout Creek/Lequerica allotment two-pasture grazing system

Pasture	Year 1	Year 2
Pasture 1	Summer: 6/25 to 50% use	Fall:7/16 to50% use
Pasture 2	Fall: 7/16 to 50% use	Summer: 6/25 to 50% use

However, livestock grazing management between 1997 and 2011, in accordance with actual use reports, has varied in comparison with the 1984 Decision (Table ALT-1.28). Changes have been made in the turn-in-and-out dates for livestock by pasture. Actual use reports submitted between 1997 and 2010 indicate that AUMs have ranged from 68 to 131 and average actual use was 103 AUMs for the allotment.

Table ALT-1.28: Trout Creek/Lequerica allotment three-pasture grazing system as described in actual use reports (Appendix B)

Pasture	2008	2009	2010	2011
Pasture 1	7/19-10/1	6/20-9/13	6/20-8/18	ND
Pasture 2	7/3-7/18	9/14-10/4	8/19-9/27	ND

2.2.2. Alternative 2 – Permittee Application – Proposed Action

Applications for renewal of grazing permits were received from current permittees authorized to graze livestock within the Chipmunk Group allotments. Under Alternative 2, grazing permits would be renewed for 10 years according to the applications received from each permittee. Permit applications submitted by permittees are available in Appendix D and Maps.

FFR allotments will be authorized as March 1 through February 28 to reflect discretional use by percent of public land in the allotment. These cattle numbers have changed slightly to reflect use any time of the year; however AUMs have not changed.

Under Alternative 2, standard Boise District terms and conditions identified in Section 2.1 would apply, and others are incorporated into the grazing permit as identified. The mandatory and other terms and conditions for each allotment are listed by table below (Tables ALT-2.1 and ALT-2.2).

Table ALT-2.1: Alternative 2 – Permittee Application by allotment

Allotment	Permittee	Livestock	Kind	begin	end	%PL	Active AUMs	Susp AUMs	Temp Susp AUMs	Permitted Use
Baxter Basin (530)	Elordi Cattle Company LLC (1468)	121	c	4/1	6/14	100	299	-	-	299
Blackstock Springs (515)	Ted Blackstock (1389)	189	c	5/1	11/18	85	1,052	-	-	1,052
	Chipmunk Grazing Assn. (1395)	61	c	5/1	11/18	47	190	-	-	190
	Alan J. Johnstone (**1422**)	192	c	5/1	11/15	65	815	-	-	815
	Total	**442**	-	-	-	-	**2,057**	-	-	**2,057**
Burgess (572)	Doug Burgess (1436)	66	c	4/16	8/15	91	240	-	-	240
Burgess FFR (638)	Doug Burgess (1436)	3	c	3/1	2/28	35	11	-	-	11
Chimney Pot FFR (464)	LU Ranching Co. (1429)	17	c	3/1	2/28	2	4	-	-	4
Chipmunk Field FFR (523)	Chipmunk Grazing Assn. (1395)	155	c	3/1	2/28	4	72	-	-	72
Corral Creek FFR (602)	Alan J. Johnstone (**0129**)	3	c	3/1	2/28	26	9	-	-	9
Cow Creek (562)	LU Ranching Co. (1429)	201	c	4/1	9/30	100	1,214	-	-	1,214
Elephant Butte (513)	Ted Blackstock (1389)	72	c	11/1	5/31	83	417	-	-	417
Ferris FFR (545)	John Isernhagen (2860)	38	c	3/1	2/28	33	150	-	-	150
Franconi (558)	Chad & Dannelle Hensley (4228)	32	c	3/1	2/28	31	120	-	-	120
Jackson Creek (506)	LS Cattle Company (1425)	78	c	4/16	10/31	100	510	-	-	510
	Tim McBride (0436)	69	c	6/1	10/31	100	344	-	-	344
	Chipmunk Grazing Assn. (1395)	191	c	4/16	10/30	23	285	-	-	285
	Total	**338**	-	-	-	-	**1,139**	-	-	**1,139**
Joint (531)	John Isernhagen (2860)	182	c	4/16	11/15	85	1,089	-	-	1,089
Lowry FFR (477)	LU Ranching Co. (1429)	4	c	3/1	2/28	14	6	-	-	6
Madriaga (557)	Chad & Dannelle Hensley (4228)	225	c	4/16	9/30	98	865	-	-	865
Poison Creek (603)	Poison Creek Grazing Association LLC (3987)	1,600	s	4/1	5/31	100	-	-	-	-
		174	c	4/1	5/31	100	-	-	-	-
		5	h	4/1	5/31	100	-	-	-	-
	Total	-	-	-	-	-	**761**	-	-	**761**
R Collins FFR (612)	Sean & Andrea Burch (4245)	9	c	3/1	2/28	23	24	-	-	24
Sands Basin (521)[1]	Chipmunk Grazing Assn. (1395)	600	c	4/1	6/5	70	911	-	-	911
		123	c	10/1	10/31	70	88	-	-	88
	Total	**723**	-	-	-	-	**999**	-	-	**999**
Soda Creek (652)[2]	Elordi Cattle Company LLC (1468) Pastures 2,3,7	214	c	6/1	10/31	59	635	-	-	635
	Pasture 5	10	h	6/1	10/31	9	5	-	-	5
	Pasture 1	48	c	5/15	11/15	20	58			58
	Elordi Sheep Camp (4084) Pasture 6	27	c	6/1	10/31	24	33	-	-	33

Allotment	Permittee	Livestock	Kind	begin	end	%PL	Active AUMs	Susp AUMs	Temp Susp AUMs	Permitted Use
	Total	**299**	-	-	-	-	731	-	-	**731**
Stanford FFR (608)	LS Cattle Company (1425)	33	c	3/1	2/28	29	114	-	-	114
Texas Basin FFR (472)	Chipmunk Grazing Assn. (1395)	9	c	3/1	2/28	5	5	-	-	5
Trout Creek (529)	Sean & Andrea Burch (4245)	129	c	4/1	10/31	98	593	-	-	593
Trout Cr/Lequerica (560)	Lequerica & Sons INC. (2984)	129	c	6/1	10/31	44	115	-	-	115
Wild Rat	Chipmunk Grazing Assn. (1395)	576	c	4/1	5/31	95	1097	245	-	1342

[1]Although the application only asked for 600 head of cattle, the TBD AUMs from 10/1 to 10/31 were calculated for them (123 AUMs).
[2]Exchange of use credit not recognized for pastures 4 and 8, both of which are both 99 percent private/state lands. Percent public land (PL) was calculated by pasture or combination of pastures, as identified on the Elordi Application (i.e., combination of pastures 2, 3 and 7 for line 1 with 2,163 BLM acres and 3,645 total acres (equals 59 percent PL) in these pastures).

Table ALT-2.2: Grazing Permits - Other Terms and Conditions

Operator No. & Allotment	Other Terms and Conditions
Alan J. Johnstone (1422) Blackstock Springs	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Alan J. Johnstone (0129) Corral Creek FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Chad & Dannelle Hensley (4228) Franconi Madriaga	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. Annually, livestock numbers in the Madriaga allotment may vary up to 225 cow/calf pairs, with prior approval by the authorized officer, and as long as active AUMs by pasture are not exceeded.
Chipmunk Grazing Assn. (1395) Blackstock Springs Chipmunk Field FFR Elephant Butte Jackson Creek Sands Basin Texas Basin FFR Wild Rat	• Early use (March 1 to March 31) may be authorized on an annual basis in the Elephant Butte allotment. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Gates in management fences located inside wild horse herd management areas will be opened within 15 days after the authorized grazing period. • Fall use (October 1 to November 30) may be authorized on an annual basis in the Sands Basin allotment. • The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Doug Burgess (1436) Burgess Burgess FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Elordi Cattle Co. LLC (1468) Soda Creek Baxter Basin	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Elordi Sheep Camp (4084) Soda Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
John Isernhagen (2860) Ferris FFR	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. Variable seasons of use on the Joint allotment up to a maximum of 285 head of cattle, not to exceed 1,089 AUMs.

Operator No. & Allotment	Other Terms and Conditions
Joint	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Lequerica & Sons INC. (2984) Trout Creek/Lequerica	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
LS Cattle Company (1425) Jackson Creek Stanford FFR	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
LU Ranching Co. (1429) Chimney Pot FFR Cow Creek Lowery FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion.
Poison Creek Grazing Association LLC (3987) Poison Creek	• Early use (March 27 to March 31) may be authorized on an annual basis for sheep use in the Poison Creek allotment. • Up to 1,600 additional sheep may be authorized as long as season of use and AUMs are not exceeded. Fall use for up to 2 weeks between October 20 and November 15 may be authorized annually as long as AUMs are not exceeded.
Sean & Andrea Burch (4245) R. Collins FFR Trout Creek	• The number of livestock and the season of use on the fenced federal range (FFR) allotments are at the permittee's discretion. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Ted Blackstock (1389) Blackstock Springs Elephant Butte	• The number of livestock may vary among pastures within the authorized season of use as long as the total active permitted use AUMs is not exceeded; may be authorized on an annual basis in the Elephant Butte allotment. • Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
Tim McBride (0436) Jackson Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.

Livestock Grazing Management

Allotment grazing rotation schedules implemented since 1997 would continue under Alternative 2 or as described below by allotment. Where no grazing rotation schedule has been developed, the BLM would continue to authorize use on a yearly basis following mandatory terms and conditions, as stated on the permit (See Appendix B for a summary of actual use reported by allotment).

Fenced Federal Range Allotments

Currently, the BLM authorizes livestock grazing on Fenced Federal Range allotments (FFRs). The management of these allotments is based on a percentage of the allotment that is public land, and the season of use is described as March 1 through February 28; livestock numbers and AUMs vary depending on total acres of unfenced BLM lands within the allotment boundaries (see table ALT-2.1). Currently, these allotments are authorized to be grazed anytime during the year and at the discretion of the permittee, with the authorized officer's prior approval. Other grazing permit terms and conditions indicate that utilization of key forage plants is not to exceed 50 percent of annual production. FFR allotments include Corral Creek FFR, Chipmunk Field FFR, Texas Basin FFR, Burgess FFR, Chimney Pot FFR, Ferris FFR, Lowry FFR, R. Collins FFR, and Stanford FFR. Although the Franconi allotment is not named as an FFR allotment, it is being managed similarly to other FFR allotments. The FFRs will not be described in a table below because no additional livestock grazing management activities are currently authorized, other than mandatory terms and conditions.

Baxter Basin Allotment

Grazing System:
Pasture 1 will be used May 11 to June 15 in even years.
Pasture 2 will be used May 11 to June 15 in odd years.
Pasture 3 will be used April 1 to May 10.

Blackstock Springs Allotment

See the full proposal and map as submitted by permittees to the Owyhee Field Office in Appendix D.

Grazing management and flexibility:
Pasture 1: During years 1 and 2, a light spring grazing treatment will occur over a period of 65±14 days at the start of the grazing season. In addition, a fall deferred grazing treatment will occur over a period of 21±7 days at the end of the grazing season. In year 3, a slight to light spring grazing treatment will occur for a period of 45±10 days, with a fall deferred grazing treatment occurring for a period of 45 ± 10 days at the end of the grazing season.

Pasture 2: Pasture 2 will receive a deferred grazing treatment for a period of 45±10 days in years 1 and 2 and primarily a deferred grazing treatment in year 3 for a period of 45±10 days.

Pasture 3: Pasture 3 will receive a late-season deferred grazing treatment annually for a period of 60+ days

No grazing would occur in pastures 2 and 3 (56 percent of the allotment) during sage-grouse nesting season.

Elephant Butte Allotment

The following grazing management plan is based on the proposed rangeline agreement and grazing preference adjustment between the Elephant Butte and Alkali-Wildcat allotments. Any exchange of use

outside of percent public land, as addressed in the mandatory terms and conditions of the grazing permit being renewed, would need to be addressed in a separate exchange-of-use agreement. The rangeline agreement submitted by the applicant includes modifying the Alkali-Wildcat and Elephant Butte allotment boundaries, recognizing an additional 1,050 public land acres as part of the Elephant Butte allotment (acres originally from the Alkali-Wildcat allotment). As proposed by the grazing permittee, the Rats Nest and Alkali-Wildcat (as modified) allotments would be combined and called the Wild Rat allotment (new allotment number to be assigned at a later date). Additionally, as applied for by the permittee, 154 AUMs originally assigned to Ted Blackstock in the Alkali-Wildcat allotment would now be assigned to the Elephant Butte allotment. Chipmunk Grazing Association has applied to move 85 AUMs of suspended use originally assigned to the Elephant Butte allotment to suspended AUMs associated with the Wild Rat allotment. Ted Blackstock's active use in the Elephant Butte allotment would change from 305 to 417 active AUMs (per his application submitted). Chipmunk Grazing Association's active use in the newly created Wild Rat allotment would include 1,097 active use AUMs and 245 suspended use AUMs (See full proposal and map as submitted by Chipmunk Grazing Association and Ted Blackstock to the Owyhee Field Office in Appendix D).

The following grazing treatments are authorized to be applied at the discretion of the permittee. In addition, temporary use authorizations may be approved under specific conditions.

- Winter grazing (November 1 to March 15) may be applied annually in any pasture.
- Early spring grazing (March 15 to April 25) may be applied annually in any pasture.
- Spring grazing (April 25 to May 31) may be applied 1 year in 3 to any pasture.

Jackson Creek Allotment

See the full proposal and map as submitted by permittees to the Owyhee Field Office in Appendix D.

Grazing management and flexibility:
Pasture 1 will be used under an early-spring grazing treatment beginning April 16 for a period of 21±5 days annually.
Pasture 2 will be used under a spring grazing treatment for a period of 10±5 days annually.
Pasture 3 will be used under a spring grazing treatment for a period of 21±5 days annually.
Pastures 4 and 5 will be used under a deferred treatment alternated between pastures for a period of 70+10 days in each pasture.

At least 66 percent of the surface area of the allotment will not be grazed during the sage-grouse nesting season.

Joint Allotment

This is a three-pasture grazing rotation management, variable by season, not to exceed 1,089 AUMs.

Madriaga and Franconi Allotments

As is identified in Table ALT-2.3, the Franconi and Madriaga allotments would be grazed in conjunction (in accordance with the 3-year grazing schedule) but remain individual allotments. The total active AUMs in the Franconi allotment would remain 120 AUMs, and 865 AUMs for the Madriaga allotment.

Table ALT-2.3: Madriaga allotment grazing schedule used in conjunction with the Franconi allotment

Pasture[1]	**Year 1**	**Year 2**	**Year 3**
Franconi #1 (hay field) 50 BLM AUMs	3/1-2/28	3/1- 2/28	3/1- 2/28
Franconi #2 (summer) 50 BLM AUMs	3/1 – 9/30	3/1-9/30	7/1-9/30
Franconi #3 (late summer) 20 BLM AUMs	9/1-2/28	9/1-2/28	3/1-9/30
Madriaga #2 (early) 381 BLM AUMs	4/15 – 6/30	4/15 – 6/30	7/1-9/30
Madriaga #1 (summer) 484 BLM AUMs	7/1 – 9/30	7/1-9/30	4/15-6/30

[1]Not to exceed BLM AUMs by pasture annually

Sands Basin Allotment

1. Pastures 1 and 3 would be authorized for an early-spring grazing treatment beginning April 1 for 21±7 days with 300 cattle annually, as modified in number 6 below.
2. Pastures 2 and 4 would be authorized for a spring grazing treatment beginning on or after April 15 for 40±7 days with up to 300 cattle annually, as modified by number 6 below.
3. The allotment will be authorized for a fall grazing treatment beginning October 1. Such use is limited to active use AUMs that are not used during the spring grazing season.
4. All grazing would occur within the established season of use.
5. Livestock numbers may vary as long as the total authorized active use is not exceeded.
6. To accommodate climate/weather conditions, the following practices will be employed:
    a. When weather conditions permit, or at least 2 years in 10, cattle will be held in pastures 1 and 3 for the maximum time allowed in order to minimize use pastures 2 and 4.
    b. When weather conditions permit, or at least 2 years in 10, the pasture rotation will be reversed in order to apply an early-spring light (less than 31 percent utilization) grazing treatment in the pastures 2 and 4.
7. All upland and riparian monitoring will be conducted in a manner that clearly distinguishes livestock use from use by wild horses. At a minimum, utilization will be conducted at the end of the growing season, on or about July 1, and at the end of the grazing year, on or about December 1, to document wild horse impact on utilization.
8. Discretionary days of use will be applied only for the purpose of achieving management objectives.
9. See full proposal and map as submitted by Chipmunk Grazing Association to the Owyhee Field Office (Appendix D).

Soda Creek Allotment

See the full proposal and map as submitted by permittees to the Owyhee Field Office in Appendix D.

The permitted use of Elordi Sheep Camp, Inc., would be restricted to pasture 6 only. The status of pasture 1 would be changed to an FFR pasture since there is little public land.

Grazing system:
Pastures 1: Cattle (May 15- November 15)
Pastures 2, 3, and 7: Cattle (June 1 to October 31*)
Pasture 5: Horses (June 1 to October 31)
Pastures 4 and 8: Private Land
Pasture 6: (June 1 to October 31) (33 AUMs)
*There is an intentional overlap in pastures 1 through 5 due to weather, livestock, and growing conditions.

Trout Creek and Trout Creek/Lequerica Allotments

Sean and Andrea Burch, submitted a modified Trout Creek, Trout Creek/Lequerica (on behalf of Lequerica & Sons, INC – lessor), and R Collins FFR grazing application on June 17, 2013, which incorporated the following grazing management details.

Table ALT-2.4: Mandatory terms and conditions

Allotment	Permittee	Number	Kind	On Date	Off Date	% PL	AUMs	Suspend. AUMs	Temp. Susp. AUMs	Active AUMs
R Collins FFR (612)	Sean & Andrea Burch (4245)	9	c	3/1	2/28	23	24	-	-	24
Trout Creek (529)	Sean & Andrea Burch (4245)	129[1]	c	4/1	10/31	98	593	-	-	593
Trout Cr/Lequerica (560)	Lequerica & Sons INC. (2984)	129[1]	c	6/1	10/31	44	115	-	-	115

[1]Livestock numbers could vary up to 129 head (cow/calf pairs) in each allotment with prior approval from the authorized officer before livestock turnout and as long as active AUMs are not exceeded annually.

Table ALT-2.5: Additional mandatory terms and conditions

Sean & Andrea Burch (4245) R. Collins FFR Trout Creek	• The number of livestock and the season of use on the fenced federal range (FFR) allotment will be at the permittee's discretion. • Livestock grazing in the Trout Creek allotment will be authorized in accordance with the Trout Creek allotment grazing schedule listed above. Changes in scheduled pasture use dates will require prior approval from the authorized officer annually before livestock turnout.
Lequerica & Sons INC. (2984) Trout Creek/Lequerica	• Livestock grazing in the Trout Creek/Lequerica allotment will be authorized in accordance with the Trout Creek/Lequerica allotment grazing schedule listed above. Changes in scheduled pasture use dates will require prior approval from the authorized officer annually before livestock turnout.

Trout Creek Allotment

Currently, Sean and Andrea Burch own the base property associated with the Trout Creek and R Collins FFR allotments and control (lease) the base property associated with the Trout Creek/Lequerica allotment. The permittees are proposing a grazing management schedule that would authorize grazing these allotments in conjunction (as described in Table ALT-2.6 and ALT-2.7), but each allotment would remain an individual allotment. The proposal includes authorizing up to 129 cattle, not to exceed 593 active AUMs annually, with a season of use from April 1 to October 31 in the Trout Creek allotment. If, in the future, the Trout Creek/Lequerica allotment lease is not renewed, the grazing rotation for the Trout Creek allotment in Table ALT-2.7 would be authorized. If livestock grazing were authorized in accordance with Table ALT-2.4, up to 129 cattle and 593 active AUMs would be authorized. For the full permittee's grazing application, see Appendix D.

Table ALT-2.6: Trout Creek allotment grazing schedule used in conjunction with Trout Creek/Lequerica allotment

Pasture	Cattle #	AUMs	BLM Acres/AUM	Year 1	Year 2	Year 3
1	Up to 129 c	338	5.3	6/6-8/31	8/7-10/31	4/1-6/26
2		85	4.5	4/1-4/22	5/15-6/5	8/28-9/18
3		170	5.2	4/23-6/5	4/1-5/14	9/19-10/31

Table ALT-2.7: Trout Creek allotment grazing schedule without use of the Trout Creek/Lequerica allotment

Pasture	Cattle #	AUMs	BLM Acres/AUM	Year 1	Year 2	Year 3
1	Up to 129 c	338	5.3	7/2-10/31	4/1-8/1	6/2-9/30
2		85	4.5	4/1-4/30	8/2-9/2	10/1-10/31
3		170	5.2	5/1-7/1	9/2-10/31	4/1-6/1

Trout Creek/Lequerica Allotment

This proposal includes authorizing up to 129 cattle, not to exceed 115 active AUMs annually, with a season of use from June 1 to October 31 in the Trout Creek/Lequerica allotment (Table ALT-2.8). As described above, this allotment would be grazed in conjunction with the Trout Creek allotment, as described in Table ALT-2.6. This allotment is only 44 percent public land, so the following schedule includes total AUMs for private and BLM lands.

Rotation dates are subject to Sean and Andrea Burch controlling the associated base property for this grazing permit. If the base property lease between Sean and Andrea Burch and Lequerica & Sons, Inc., were to not be renewed in the future, and livestock grazing management changes were desired, the permittee would need to submit a new application to change grazing management at that time.

Table ALT-2.8: Trout Creek/Lequerica allotment grazing schedule

Pasture	Cattle Nos.	BLM AUMs	BLM Acres/AUM	Total AUMs	Total Acres/AUM	Year 1	Year 2	Year 3
1	Up to 129 c	103	6.8	234	4.4	8/31-10/31	6/6-8/6	6/27-8/27
2		11	3.4	26	4.8	6/1-6/17	6/1-6/17	9/1-9/17

Wild Rat Allotment

The following grazing management plan is based on the proposed rangeline agreement and grazing adjustments described above under the Elephant Butte allotment.

This proposal combines the Alkali-Wildcat and Rats Nest allotments into one single allotment to be named Wild Rat (also see the full proposal and map as submitted by Chipmunk Grazing Association to the Owyhee Field Office in Appendix D).

1. The Alkali-Wildcat section of the new allotment (pasture) will be authorized for a light use spring grazing treatment (up to 30 percent average utilization) with 300 cattle annually for 61 days beginning April 1. The number of livestock may vary commensurate with delayed turnout and/or early removal as long as the total active AUMs in the allotment are not exceeded.

2. The Rats Nest section of the new allotment (pasture) will be authorized for a light use spring grazing treatment (up to 30 percent average utilization) with 276 cattle annually for 61 days beginning April 1. The number of livestock may vary commensurate with delayed turnout and/or early removal as long as the total active AUMs in the allotment are not exceeded.
3. Grazing use of the Rats Nest section of the new allotment (pasture)is authorized for cow/calf pairs or yearling cattle at the discretion of the permittee.
4. Herding and salting practices would be employed to encourage uniform animal use and distribution.
5. All upland and riparian monitoring will be conducted in a manner that clearly distinguishes livestock use from use by wild horses. At a minimum, utilization will be conducted at the end of the grazing season, on or about June 1, and at the end of the grazing year, on or about December 1, to document wild horse impact on utilization.
6. Utilization of uplands will be conducted using the Key Forage Plant method with a minimum of 25 hits at a minimum of 10 locations.

2.2.3. Alternative 3 – Deferred Grazing

Alternative 3 includes terms and conditions required for all BLM grazing permits, as listed above in Section 2.1 Management Common to All Grazing Alternatives. Grazing schedules and AUM authorizations for the allotments can be found below.

Under Alternative 3, deferred grazing systems would be used to limit adverse impacts from livestock grazing on resource values for 21 of the Chipmunk Group allotments. Deferred rotation grazing schedules provide for 1 or more years of grazing use after seed-set, following 1 or more years of growing season use. In addition, stocking rates[2] have been adjusted based upon monitoring and assessments (Appendix C-2). Mandatory terms and conditions are provided in Table ALT-3.1.

Alternative 3 includes either a deferred grazing system or a rest/rotation system, which fulfills the NEPA requirement to consider a range of alternatives. Alternative 3 combines the Alkali-Wildcat and Rats Nest allotments into one allotment with two pastures called Wild Rat. This new allotment would release 1,050 acres of the Alkali-Wildcat allotment to create a new pasture 6 (1,050 acres) in Elephant Butte allotment. The Elephant Butte allotment would go from a five-pasture to a six-pasture grazing schedule. The three allotments that are currently meeting all Standards and ORMP management objects that are not discussed in this alternative include Chipmunk Field FFR, Chimney Pot FFR, and R Collins FFR. In this group of allotments, grazing would occur in the spring and summer and deferment would generally be in the fall.

Resource constraints were applied where there are issues and/or where Standards are not being met:

1. Sensitive species and wildlife: April 15 to June 20; use allowed 2 years in every 3-year period; defer grazing or rest 1 out of 3 years
2. Vegetation: April 1 to June 30; use allowed 2 years in every 3-year period; defer grazing or rest 1 out of 3 years
3. Soils: March 1 to May 15; use allowed 2 years in every 3-year period; defer grazing or rest 1 out of 3 years
4. Riparian: May 15 to August 31; use allowed 2 years in every 3-year period; defer grazing or rest 1 out of 3 years

[2] Stocking rates were developed for alternatives 3, 4 and 5 by allotment in Appendix C-2 and used ESDs production data (USDA NRCS, 2010) as a starting point and current average actual use to develop appropriate rates (Reed, Roath, & Bradford, 1999); using the method described in USDA technical reference Estimating Initial Stocking Rates method (USDA NRCS, 2009).

Under Alternative 3, other terms and conditions identified in Table Alt-3.2 are provided to inform permit holders of BLM's management intent on public lands within riparian and PPH/PGH for sage-grouse on key species[3]. Permit holders are encouraged as partners to manage their livestock operations in a manner consistent with BLM IM 2012-043. The mandatory and other terms and conditions for each allotment are listed in Tables ALT-3.1 and 3.2 below.

[3] Key species as identified here and in Table ALT-3.2 are defined as key grass species that provide for healthy upland communities (i.e., bluebunch wheatgrass, Thurber's needlegrass, and Idaho fescue).

Table ALT-3.1: Alternative 3 Deferred Grazing mandatory terms and conditions by allotment

Allotment	Permittee	Livestock[1]	Kind	begin	end	%PL	Active AUMs	Susp. AUMs	Temp Susp AUMs	Permitted Use
Baxter Basin (530)	Elordi Cattle Company LLC (1468)	121	c	4/1	6/14	100	299	-	-	299
Blackstock Springs (515)	Ted Blackstock (1389)	189	c	5/15	12/2	85	768	-	-	768
	Chipmunk Grazing Assn. (1395)	61	c	5/15	12/2	47	136	-	-	136
	Alan J. Johnstone (**1422**)	192	c	5/15	12/2	65	602	-	-	602
	Total	**442**					**1,506**			**1,506**
Burgess (572)	Doug Burgess (1436)	66	c	4/16	8/15	91	240	-	-	240
Burgess FFR (638)	Doug Burgess (1436)	7	c	5/1	9/23	35	11	-	-	11
Corral Creek FFR (602)	Alan J. Johnstone (0129)	3	c	3/1	2/28	26	9	-	-	9
Cow Creek (562)	LU Ranching Co. (1429)	201	c	4/1	9/30	100	1,210	-	-	1,210
Elephant Butte (513)	Ted Blackstock (1389)	72	c	3/15	12/31	70	417	-	-	417
Ferris FFR (545)	John Isernhagen (2860)	82	c	5/15	10/29	33	150	-	-	150
Franconi (558)	Chad & Dannelle Hensley (4228)	32	c	3/1	2/28	31	120	-	-	120
Jackson Creek (506)	LS Cattle Company (1425)	78	c	6/27	11/25	100	427	-	-	427
	Tim McBride (0436)	69	c	6/27	11/25	100	284	-	-	284
	Chipmunk Grazing Assn. (1395)	191	c	6/27	11/25	23	237	-	-	237
	Total	**338**	-	-	-	-	**948**	-	-	**948**
Joint (531)	John Isernhagen (2860)	285	c	4/16	12/30	85	601	-	-	601
Lowry FFR (477)	LU Ranching Co. (1429)	4	c	3/1	2/28	14	6	-	-	6
Madriaga (557)	Chad & Dannelle Hensley (4228)	160	c	6/1	12/1	98	647	-	-	647
Poison Creek (603)	Poison Creek Grazing Association LLC (3987)	1600	s	4/1	11/30	100	401	-	-	401
		174	c	4/1	11/30	100	331	-	-	331
		5	h	4/1	11/30	100	10	-	-	10
	Total	-	-	-	-	-	**742**	-	-	**742**
Sands Basin (521)	Chipmunk Grazing Assn. (1395)	600	c	4/1	11/5	70	912	-	-	912
Soda Creek (652)	Elordi Cattle Company LLC (1468)	255	c	6/1	10/31	36	463	-	-	463
		3	h	6/1	10/31	36	5	-	-	5
	Elordi Sheep Camp (4084)	18	c	6/1	10/31	36	33	-	-	33
	Total	**276**	-	-	-	-	**501**	-	-	**501**
Stanford FFR (608)	LS Cattle Company (1425)	33	c	3/1	2/28	29	114	-	-	114
Texas Basin (472)	Chipmunk Grazing Assn. (1395)	9	c	3/1	2/28	5	5	-	-	5
Trout Creek (529)	Sean & Andrea Burch (4245)	123	c	6/28	10/10	98	342	-	-	342
Trout Cr/Lequerica (560)	Lequerica & Sons INC. (2984)	52	c	6/15	11/15	44	115	-	-	115

Allotment	Permittee	Livestock[1]	Kind	begin	end	%PL	Active AUMs	Susp. AUMs	Temp Susp AUMs	Permitted Use
Wild Rat	Chipmunk Grazing Assn. (1395)	576	c	4/1	11/14	95	1097	-	-	1097

[1]See Table ALT-3.2 for explanation of season of use, AUMs and livestock numbers.

Table ALT-3.2: Grazing Permits - Other Terms and Conditions

Operator No. & Allotments	Other Terms and Conditions
Alan J. Johnstone (1422) Blackstock Springs Corral Creek FFR	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Blackstock Springs will not exceed 192 head, not to exceed authorized AUMs by pasture; each pasture will be deferred after 8/31 no less than 1 in 3 years. There would be 815 AUMs in pasture 1, 434 AUMs in pasture 2, and 257 AUMs in pasture 3. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration would be maintained in key riparian areas. • Maintain an average of more than 18 cm (7 inches) perennial grass height on upland key species.
Chad & Dannelle Hensley (4228) Franconi Madriaga	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Madriaga will not exceed 160 head and may vary by pasture, not to exceed authorized AUMs by pasture. There would be 362 AUMs in pasture 1 and 285 AUMs in pasture 2. • Grazing will be deferred in the Madriaga allotment 6/17 through 12/1 every other year. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Chipmunk Grazing Assn. (1395) Blackstock Springs Elephant Butte Jackson Creek Sands Basin Texas Basin FFR Wild Rat	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Gates in management fences located inside wild horse herd management areas will be opened within 15 days after the authorized grazing period. • Fall trail home use (October 1 to October 30) may be authorized on an annual basis in the Sands Basin allotment, not to exceed 6 days or 88 AUMs (or 912 AUMs for the allotment). Livestock numbers will not exceed 600 head, not to exceed authorized AUMs by pasture. • Wild Rat allotment: The Alkali-Wildcat pasture will be used in the spring 2 in 3 years (4/1-5/31) and will be deferred to fall use (9/15 to 11/14) 1 in 3 years. Livestock numbers will not exceed 300 head, not to exceed authorized AUMs. Rats Nest pasture will be used in the spring 2 in 3 years (4/1-5/31) and will be deferred to fall use (9/15 to 11/14) 1 in 3 years. Livestock numbers will not exceed 276 head, not to exceed authorized AUMs. • Livestock numbers in Blackstock Springs will not exceed 61 head, not to exceed authorized AUMs by pasture; each pasture will be deferred after 8/31 no less than 1 in 3 years. There would be 815 AUMs in pasture 1,434 AUMs in pasture 2, and 257 AUMs in pasture 3. • Livestock numbers in Jackson Creek will not exceed 191 head, not to exceed authorized AUMs by pasture. Each pasture will be deferred after 8/31 no less than 1 in 3 years. There would be 116 AUMs in pasture 1, 113 AUMs in pasture 2, 185 AUMs in pasture 3, and 534 AUMs in pasture 4/5. • Grazing in Elephant Butte will be deferred to fall use (11/1 to 12/31) 1 in 3 years in pastures 1, 2, 3, and 5; pasture 4 will have fall use 1 in 3 years. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season.

Operator No. & Allotments	Other Terms and Conditions
	• Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Doug Burgess (1436) Burgess Burgess FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotment will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Elordi Cattle Co. LLC (1468) Baxter Basin Soda Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Grazing in Soda Creek will be deferred to fall use (8/10 to 1/9) 1 in 3 years. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Elordi Sheep Camp (4084) Soda Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Grazing in Soda Creek will be deferred to fall use (8/10 to 1/9) 1 in 3 years. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
John Isernhagen (2860) Ferris FFR Joint	• The number of livestock and the season of use on the fenced federal range (FFR) allotment will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Grazing in Joint will be used in the spring 2 in 3 years (4/16-7/15) and will be deferred to fall use (10/1 to 12/30) 1 in every 3 years. Livestock numbers will not exceed 285 head, not to exceed authorized AUMs. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Lequerica & Sons INC. (2984) Trout Creek/Lequerica	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
LS Cattle Company (1425) Jackson Creek Stanford FFR	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Jackson Creek will not exceed 78 head, not to exceed authorized AUMs by pasture each pasture will be deferred after 8/31 no less than 1 in 3 years. There would be 116 AUMs in pasture 1,113 AUMs in pasture 2, 185 AUMs in pasture 3, and 534 AUMs in pasture 4/5. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
LU Ranching Co. (1429) Cow Creek Lowry FFR	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Cow Creek will not exceed 201 head and may vary by pasture, not to exceed authorized AUMs by pasture. There would be 124 AUMs in pasture 1, 567 AUMs in pasture 2, 182 AUMs in pasture 3, 123 AUMs in pasture 4, and 214 AUMs in pasture 5. Grazing in

Operator No. & Allotments	Other Terms and Conditions
	pasture 3 will be deferred to fall use (9/1 to 11/15) no less than 1 in 3 years. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Poison Creek Grazing Association LLC (3987) Poison Creek	• Grazing in Poison Creek will be used in the spring 2 in 3 years (4/1-5/31) and will be deferred to fall use (10/15 to 11/30) 1 in 3 years. • Up to 1,600 additional sheep may be authorized as long as season of use and AUMs are not exceeded. Cattle numbers will not exceed 165 head and horses up to 5 head, not to exceed authorized AUMs. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Sean & Andrea Burch (4245) Trout Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Ted Blackstock (1389) Blackstock Springs Elephant Butte	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Grazing in Elephant Butte will be deferred to fall use (11/1 to 12/31) 1 in 3 years pastures 1, 3, 4, 5 and 6; pasture 2 will have fall use 2 in 3 years. Livestock numbers will not exceed 72 head, not to exceed authorized AUMs. • Livestock numbers in Blackstock Springs will not exceed 189 head, not to exceed authorized AUMs by pasture; each pasture will be deferred after 8/31 no less than 1 in 3 years. There would be 815 AUMs in pasture 1,434 AUMs in pasture 2, and 257 AUMs in pasture 3. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.
Tim McBride (0436) Jackson Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Jackson Creek will not exceed 69 head, not to exceed authorized AUMs by pasture; each pasture will be deferred after 8/31 no less than 1 in 3 years. There would be 116 AUMs in pasture 1,113 AUMs in pasture 2, 185 AUMs in pasture 3, and 534 AUMs in pasture 4/5. • A minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season. • Maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species.

Livestock Grazing Management

Baxter Basin Allotment

The grazing schedule identified in table ALT-3.3 would be established for pastures in the Baxter Basin allotment and made a term and condition of the grazing permit.

Table ALT-3.3: Baxter Basin grazing schedule

Pasture	Year 1	Year 2	Year 3
1	4/1-5/6	Rest	5/18-6/15
2	5/7-6/7	4/1-5/2	Rest
3	Rest	5/3-6/15	4/1-5/17

Blackstock Springs Allotment

The grazing schedule identified in table ALT-3.4 would be established for pastures in the Blackstock Springs allotment and made a term and condition of the grazing permit.

Table ALT-3.4: Blackstock Springs grazing schedule

Pasture	Year 1	Year 2	Year 3
1	5/15-8/31	8/16-12/2	6/19-10/5
2	9/1-10/28	5/15-7/11	10/6-12/2
3	10/29-12/2	7/12-8/15	5/15-6/18

Burgess Allotment

The grazing schedule identified in table ALT-3.5 would be established for pastures in the Burgess allotment and made a term and condition of the grazing permit.

Table ALT-3.5: Burgess grazing schedule

Pasture	Year 1	Year 2
1	4/16-5/20	7/12-8/15
3	5/21-8/15	4/16-7/11

Burgess FFR Allotment

The grazing schedule identified in table ALT-3.6 would be established for pastures in the Burgess FFR allotment and made a term and condition of the grazing permit.

Table ALT-3.6: Burgess FFR grazing schedule

Pasture	Year 1	Year 2
1	5/1-6/10	8/14-9/23
2	6/11-9/23	5/1-8/13

Corral Creek FFR Allotment

The grazing schedule identified in table ALT-3.7 would be established for pastures in the Corral Creek FFR allotment and made a term and condition of the grazing permit.

Table ALT-3.7: Corral Creek FFR grazing schedule

Pasture	Year 1	Year 2	Year 3
1	3/1-6/30	3/1-6/30	7/1-2/28
2	7/1-2/28	7/1-2/28	3/1-6/30

Cow Creek Allotment

The grazing schedule identified in table ALT-3.8 would be established for pastures in the Cow Creek allotment and made a term and condition of the grazing permit.

Table ALT-3.8: Cow Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1 & 2	4/1-6/30	4/1-6/30	Rest
3	6/16-9/30	6/16-9/30	9/1-9/30
4	6/16-9/30	6/16-9/30	6/16-9/30
5	6/16-9/30	6/16-9/30	6/16-9/30

Elephant Butte Allotment

The grazing schedule identified in table ALT-3.9 would be established for pastures in the Elephant Butte allotment and made a term and condition of the grazing permit. Elephant Butte allotment is adding an additional pasture with 1,050 acres from Alkali-Wildcat allotment and establishing pasture 6 by using a natural boundary. Allotment acres were 6,339 and would now be 7,389 acres.

Table ALT-3.9: Elephant Butte grazing schedule

Pasture	Year 1	Year 2	Year 3
1	11/1-12/31	3/15-5/31	3/15-5/31
2	3/15-5/31	11/1-12/31	11/1-12/31
3	3/15-5/31	3/15-5/31	11/1-12/31
4	3/15-5/31	11/1-12/31	3/15-5/31
5	11/1-12/31	3/15-5/31	3/15-5/31
6	3/15-5/31	3/15-5/31	11/1-12/31

Ferris FFR Allotment

The grazing schedule identified in table ALT-3.10 would be established for pastures in the Ferris FFR allotment and made a term and condition of the grazing permit.

Table ALT-3.10: Ferris FFR Grazing schedule

Pasture	Year 1	Year 2	Year 3
1	5/15-7/16	8/28-10/29	8/8-10/9
2	7/17-8/5	5/15-6/3	10/10-10/29
3	8/6-10/29	6/4-8/27	5/15-8/7

Franconi Allotment

The grazing schedule identified in table ALT-3.11 would be established for pastures in the Franconi allotment and made a term and condition of the grazing permit.

Table ALT-3.11: Franconi grazing schedule

Pasture	Year 1	Year 2	Year 3
1	3/19-5/8	3/19-5/8	9/1-10/21
2	5/9-8/31	5/9-8/31	10/22-2/13
3	9/1-3/18	9/1-3/18	2/14-8/31

Jackson Creek Allotment

The grazing schedule identified in table ALT-3.12 would be established for pastures in the Jackson Creek allotment and made a term and condition of the grazing permit.

Table ALT-3.12: Jackson Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1	6/27-7/15	8/13-8/31	7/26-8/13
2	7/16-8/2	6/27-7/14	8/14-8/31
3	8/3-8/31	7/15-8/12	6/27-7/25
4	9/1-11/25	9/1-11/25	9/1-11/25
5	9/1-11/25	9/1-11/25	9/1-11/25

Joint Allotment

The grazing schedule identified in table ALT-3.13 would be established for pastures in the Joint allotment and made a term and condition of the grazing permit.

Table ALT-3.13: Joint grazing schedule

Pasture	Year 1	Year 2	Year 3
2	4/16-5/29	10/1-11/13	4/16-5/29
3	5/30-7/1	11/14-12/16	5/30-7/1
4	7/2-7/15	12/17-12/30	7/2-7/15

Lowry FFR Allotment

The grazing schedule identified in table ALT-3.14 would be established for pastures in the Lowry FFR allotment and made a term and condition of the grazing permit.

Table ALT-3.14: Lowry FFR grazing schedule

Pasture	Year 1	Year 2	Year 3
1	3/1-8/31	3/1-8/31	9/1-2/28

Madriaga Allotment

The grazing schedule identified in table ALT-3.15 would be established for pastures in the Madriaga allotment and made a term and condition of the grazing permit.

Table ALT-3.15: Madriaga grazing schedule

Pasture	Year 1	Year 2
1	6/1-8/31	9/1-12/1
2	9/1-11/15	6/17-8/31

Poison Creek Allotment

The grazing schedule identified in table ALT-3.16 would be established for the single pasture in the Poison Creek allotment and made a term and condition of the grazing permit.

Table ALT-3.16: Poison Creek grazing schedule

Year	Date
1	4/1-5/31
2	4/1-5/31
3	10/15-11/30

Sands Basin Allotment

The grazing schedule identified in table ALT-3.17 would be established for pastures in the Sands Basin allotment and made a term and condition of the grazing permit.

Table ALT-3.17: Sands Basin grazing schedule

Pasture	Year 1	Year 2
1	4/1-4/30	9/1-9/30
2	4/1-4/30	9/1-9/30
3	5/1-6/5	10/1-11/5
4	5/1-6/5	10/1-11/5

Trail home only from October 5 to November 5, not to exceed 6 days or 88 AUMs during spring use years.

Soda Creek Allotment

The grazing schedule identified in table ALT-3.18 would be established for pastures in the Soda Creek allotment and made a term and condition of the grazing permit.

Table ALT-3.18: Soda Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1	6/1-7/15 not to exceed AUMs by pasture	7/16-10/31 not to exceed AUMs by pasture	6/1-7/15 not to exceed AUMs by pasture
2			
7			
3	7/16-10/31 not to exceed AUMs by pasture	6/1-7/15 not to exceed AUMs by pasture	7/16-10/31 not to exceed AUMs by pasture
5			
6		9/1-10/31 not to exceed AUMs by pasture	

Stanford FFR Allotment

The grazing schedule identified in table ALT-3.19 would be established for pastures in the Stanford FFR allotment and made a term and condition of the grazing permit.

Table ALT-3.19: Stanford FFR grazing schedule

Pasture	Year 1	Year 2	Year 3
1	3/1-8/31	3/1-8/31	9/1-2/28

Texas Basin FFR Allotment

The grazing schedule identified in table ALT-3.20 would be established for pastures in the Texas Basin FFR allotment and made a term and condition of the grazing permit.

Table ALT-3.20: Texas Basin FFR grazing schedule

Pasture	Year 1	Year 2	Year 3
1	3/1-6/30	3/1-6/30	7/1-2/28
2	7/1-2/28	7/1-2/28	3/1-6/30

Trout Creek Allotment

The grazing schedule identified in table ALT-3.21 would be established for pastures in the Trout Creek allotment and made a term and condition of the grazing permit.

Table ALT-3.21: Trout Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1	6/28-8/6	9/1-10/10	7/23-8/31
2	8/7-8/31	7/18-8/11	9/1-9/25
3	9/1-9/20	8/12-8/31	7/3-7/22

Trout Creek/Lequerica Allotment

The grazing schedule identified in table ALT-3.22 would be established for pastures in the Trout Creek/Lequerica allotment and made a term and condition of the grazing permit.

Table ALT-3.22: Trout Creek/Lequerica grazing schedule

Pasture	Year 1	Year 2
1	6/15-8/31	9/1-11/15
2	9/1-11/15	6/15-8/31

Wild Rat Allotment

The grazing schedule identified in table ALT-3.23 would be established for pastures in the Wild Rat allotment and made a term and condition of the grazing permit. This alternative combines Alkali-Wildcat and Rats Nest allotments and moves 1,050 acres from the Alkali-Wildcat pasture to Elephant Butte pasture 6. Alkali-Wildcat pasture acres were 6,211 and now will be 5,161 acres.

Table ALT-3.23: Wild Rat grazing schedule

Pasture	Year 1	Year 2	Year 3
1 (Alkali-Wildcat)	4/1-5/31	4/1-5/31	9/15-11/14
2 (Rats Nest)	4/1-5/31	4/1-5/31	9/15-11/14

2.2.4. Alternative 4 – Season-based

Alternative 4 includes terms and conditions required for all BLM grazing permits, as listed above in Section 2.2 Management Common to All Alternatives. Grazing schedules and AUM authorizations for the allotments can be found below.

Under Alternative 4, grazing would be managed more intensively by incorporating additional deferment or rest compared to Alternative 3, to limit adverse impacts from livestock grazing on resource values for 14 of the Chipmunk Group allotments, excluding eight allotments and two of the FFR allotments with previously signed Determinations in which current livestock grazing is not the causal factor for failure to meet Standards. Deferred or rest rotation grazing schedules provide for 1 or more years of grazing use after seed-set or rest, following 1 or more years of growing season use. In addition, stocking rates have been adjusted based upon monitoring and assessments (Appendix C-2).

Alternative 4 combines Alkali-Wildcat and Rats Nest allotments into one allotment with two pastures called Wild Rat. This new allotment would exchange 1,050 acres of the Alkali-Wildcat allotment to create a new pasture 6 (1,050 acres) in Elephant Butte allotment. Elephant Butte allotment would go from a five-pasture grazing schedule to a six-pasture grazing schedule. Allotments included in Alternative 4 include Blackstock Springs, Burgess, Burgess FFR, Cow Creek, Elephant Butte, Ferris FFR, Jackson Creek, Joint, Madriaga, Poison Creek, Sands Basin, Soda Creek, Trout Creek/Lequerica and Wild Rat.

Resource constraints were applied where there are issues and/or where Standards are not being met:

1. Sensitive species and wildlife: Breeding April 15 to June 20 and late brood-rearing June 20 to August 15; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years
2. Vegetation: April 1 to June 30; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years
3. Soils: March 1 to May 15; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years
4. Riparian: May 15 to August 31; use allowed 1 year in every 3-year period; defer grazing or rest 2 out of 3 years

Under Alternative 4, standard Boise District terms and conditions identified in Section 2.1 would apply and others may be incorporated into the grazing permit as identified. Management objectives identified in Section 2.1 are provided to inform permit holders of BLM's management intent on public lands within PPH/PGH for sage-grouse. Permit holders are encouraged, as partners, to manage their livestock operations in a manner consistent with BLM IM 2012-043.

No further terms and conditions are recognized as necessary to meet the intent of BLM IM 2012-043 for sage-grouse. Implementing this alternative by design will meet the management objectives identified by BLM IM 2012-043. The mandatory and other terms and conditions for each allotment are listed by table below (Tables ALT-4.1 and 4.2).

Table ALT-4.1: Alternative 4 Season-based mandatory terms and conditions by allotment

Allotment	Permittee	Livestock[1]	Kind	Begin[1]	end	%PL	Active AUMs	Susp. AUMs	Temp Susp AUMs	Permitted Use
Blackstock Springs (515)	Ted Blackstock (1389)	189	c	5/15	12/18	85	637	-	-	637
	Chipmunk Grazing Assn. (1395)	61	c	5/15	12/18	47	112	-	-	112
	Alan J. Johnstone (**1422**)	192	c	5/15	12/18	65	500	-	-	500
	Total	**442**					**1,249**			**1,249**
Burgess (572)	Doug Burgess (1436)	63	c	4/16	8/15	91	231			231
Burgess FFR (638)	Doug Burgess (1436)	7	c	5/1	1/23	35	11	-	-	11
Cow Creek (562)	LU Ranching Co. (1429)	201	c	4/1	10/15	100	1210	-	-	1210
Elephant Butte (513)	Ted Blackstock (1389)	72	c	3/15	12/31	70	308	-	-	308
Ferris FFR (545)	John Isernhagen (2860)	48	c	5/15	2/25	33	150	-	-	150
Jackson Creek (506)	LS Cattle Company (1425)	78	c	4/15	11/25	100	323	-	-	323
	Tim McBride (0436)	69	c	4/15	11/25	100	216	-	-	216
	Chipmunk Grazing Assn. (1395)	191	c	4/15	11/25	23	180	-	-	180
	Total	**338**					**719**			**719**
Joint (531)	John Isernhagen (2860)	285	c	4/16	12/30	85	601	-	-	601
Madriaga (557)	Chad & Dannelle Hensley (4228)	160	c	6/1	12/1	98	647	-	-	647
Poison Creek (603)	Poison Creek Grazing Association LLC (3987)	1,600	s	4/1	10/31	100	402	-	-	402
		165	c	4/1	10/31	100	62	-	-	62
		5	h	4/1	10/31	100	10	-	-	10
	Total	**-**					**474**	**-**	**-**	**474**
Sands Basin (521)	Chipmunk Grazing Assn. (1395)	600	c	4/1	6/5	70	558	-	-	558
Soda Creek (652)	Elordi Cattle Company LLC (1468)	255	c	6/1	1/31	36	463	-	-	463
		3	h	6/1	1/31	36	5	-	-	5
	Elordi Sheep Camp (4084)	18	c	6/1	1/31	36	33	-	-	33
	Total	**276**	-	-	-	-	**501**	**-**	**-**	**501**
Trout Cr/Lequerica (560)	Lequerica & Sons INC. (2984)	52	c	6/15	12/31	44	115	-	-	115
Wild Rat	Chipmunk Grazing Assn. (1395)	576	c	3/15	5/31	95	1097	-	-	1097

[1]See table ALT-4.2 for explanation of season of use, AUMs and livestock numbers.

Table ALT 4-2: Grazing Permits - Other Terms and Conditions

Operator No. & Allotments	Other Terms and Conditions
Alan J. Johnstone (1422) Blackstock Springs	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Blackstock Springs will not exceed 192 head, not to exceed authorized AUMs by pasture; each pasture will be rested no less than 1 in 3 years. There will be 815 AUMs in pasture 1,434 AUMs in pasture 2, and 257 AUMs in pasture 3. Rest each pasture 1 in 3 years.
Chad & Dannelle Hensley (4228) Madriaga	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Madriaga will not exceed 160 head and may vary by pasture, not to exceed authorized AUMs by pasture. There will be 362 AUMs in pasture 1 and 285 AUMs in pasture 2. • Grazing in Madriaga will be deferred to 6/17 through 12/1 every third year and rested 1 out of 3 years.
Chipmunk Grazing Assn. (1395) Blackstock Springs Jackson Creek Sands Basin Wild Rat	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Gates in management fences located inside wild horse herd management areas will be opened within 15 days after the authorized grazing period. • Wild Rat: Alkali-Wildcat pasture will be rested from grazing 2 in 3 years, not to exceed 300 cattle. Rats Nest pasture will be rested form grazing 2 in 3 years, not to exceed 276 cattle. • Livestock numbers in Blackstock Springs will not exceed 61 head, not to exceed authorized AUMs by pasture; each pasture will be rested no less than 1 in 3 years. There will be 815 AUMs in pasture 1,434 AUMs in pasture 2, and 257 AUMs in pasture 3. Rest each pasture 1 in 3 years. • Livestock numbers in Jackson Creek will not exceed 191 head, not to exceed authorized AUMs by pasture; pastures 1, 2 and 3 will be rested no less than 1 in 3 years; pastures 4 and 5 will be deferred after 8/31 no less than 2 in 3 years. There will be 116 AUMs in pasture 1,113 AUMs in pasture 2, 185 AUMs in pasture 3, and 534 AUMs in pastures 4 and 5. Pastures 1-3 rested 2 in 3 years. Pastures 4 and 5 deferred to fall use (9/1 to 11/25) 2 in 3 years. • Sands Basin will be rested from grazing every other year, not to exceed 600 head or AUMs by pasture. There will be 193 AUMs in pasture 1,239 AUMs in pasture 2, 188 AUMs in pasture 3, and 319 AUMs in pasture 4.
Doug Burgess (1436) Burgess Burgess FFR	• The number of livestock and the season of use on the fenced federal range (FFR) allotment will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. Cattle numbers and season of use is based on 35 percent public land in the allotment.
Elordi Cattle Co. LLC (1468) Soda Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Grazing in Soda Creek will be deferred to fall use 9/1-1/31 in 1 in 3 years. • Livestock numbers will not exceed 258 head and may vary by pasture, not to exceed authorized AUMs by pasture. • There will be 36 AUMs in pasture 1, 50 AUMs in pasture 2, 395 AUMs in pastures 3, 6, and 7, and 19 AUMs in pastures 5.
Elordi Sheep Camp (4084) Soda Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Grazing in Soda Creek will be deferred to fall use 9/1-1/31 in 1 in 3 years. • Livestock numbers will not exceed 18 head and may vary by pasture, not to exceed authorized AUMs by pasture. • There will be 36 AUMs in pasture 1, 50 AUMs in pasture 2, 395 AUMs in pastures 3, 6, and 7, and 19 AUMs in pastures 5.
John Isernhagen (2860) Ferris FFR Joint	• The number of livestock and the season of use on the fenced federal range (FFR) allotment will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. Livestock numbers may run up to 147 head, not to exceed AUMs and are based on 33 percent public land.

Operator No. & Allotments	Other Terms and Conditions
	• Grazing in Joint will be deferred to fall use (10/1 to 12/30) 2 in every 3 years. • Livestock numbers in Joint will not exceed 285 head and may vary by pasture, not to exceed authorized AUMs by pasture. There will be 293 AUMs in pasture 2,216 AUMs in pasture 3, and 92 AUMs in pasture 4.
Lequerica & Sons INC. (2984) Trout Creek/Lequerica	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization.
LS Cattle Company (1425) Jackson Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Jackson Creek will not exceed 78 head, not to exceed authorized AUMs by pasture; pastures 1, 2 and 3 will be rested no less than 1 in 3 years; pastures 4 and 5 will be deferred after 8/31 no less than 2 in 3 years. There will be 116 AUMs in pasture 1,113 AUMs in pasture 2, 185 AUMs in pasture 3, and 534 AUMs in pastures 4 and 5. Pastures 1-3 rested 2 in 3 years. Pastures 4 and 5 deferred to fall use (9/ to -11/25) 2 in 3 years.
LU Ranching Co. (1429) Cow Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Cow Creek will not exceed 201 head and may vary by pasture, not to exceed authorized AUMs by pasture. There will be 124 AUMs in pasture 1, 567 AUMs in pasture 2, 182 AUMs in pasture 3, 123 AUMs in pasture 4, and 214 AUMs in pasture 5. Pasture 1 and 2 will be rested no less than 2 in 3 years; pastures 3, 4 and 5 will be deferred after 8/31 no less than 2 in 3 years.
Poison Creek Grazing Association LLC (3987) Poison Creek	• Poison Creek will be rested from grazing 1 in 3 years. Grazing will be deferred 1 in 3 years to fall use 10/1 through 10/31. • Up to 1,600 additional sheep may be authorized or change the kind of livestock as long as season of use and 474 AUMs are not exceeded.
Ted Blackstock (1389) Blackstock Springs Elephant Butte	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Elephant Butte will be not exceed 72 head, not to exceed authorized AUMs by pasture. There will be 118 AUMs in pasture 1, 133 AUMs in pasture 2, 122 AUMs in pasture 3, 27 AUMs in pasture 4, 99 AUMs in pasture 5 and 105 in pasture 6. • Livestock numbers in Blackstock Springs will not exceed 189 head, not to exceed authorized AUMs by pasture; each pasture will be rested no less than 1 in 3 years. There will be 815 AUMs in pasture 1, 434 AUMs in pasture 2, and 257 AUMs in pasture 3. Rest each pasture 1 in 3 years. Year 1 off-dates will change to 5/15 through 8/31 and year 3 will change to 7/18 through 10/28, not to exceed authorized AUMs by pasture.
Tim McBride (0436) Jackson Creek	• Livestock grazing will be in accordance with the allotment grazing schedule. Changes in scheduled pasture use dates will require prior authorization. • Livestock numbers in Jackson Creek will not exceed 69 head, not to exceed authorized AUMs by pasture; pastures 1, 2 and 3 will be rested no less than 1 in 3 years; pastures 4 and 5 will be deferred after 8/31 no less than 2 in 3 years. There will be 116 AUMs in pasture 1,113 AUMs in pasture 2, 185 AUMs in pasture 3, and 534 AUMs in pastures 4 and 5. Pastures 1-3 rested 2 in 3 years. Pastures 4 and 5 deferred to fall use (9/1 to 11/25) 2 in 3 years.

Livestock Grazing Management

Blackstock Springs Allotment

The grazing schedule identified in table ALT-4.3 would be established for pastures in the Blackstock Springs allotment and made a term and condition of the grazing permit.

Table ALT-4.3: Blackstock Springs grazing schedule

Pasture	Year 1	Year 2	Year 3
1	5/15-8/31	9/1-12/18	Rest
2	Rest	7/5-8/31	9/1-10/28
3	9/1-10/5	Rest	7/28-8/31

Burgess Allotment

The grazing schedule identified in table ALT-4.4 would be established for pastures in the Burgess allotment and made a term and condition of the grazing permit.

Table ALT-4.4: Burgess grazing schedule

Pasture	Year 1	Year 2	Year 3
1	4/16-5/20	Rest	Rest
2	5/21-8/15	Rest	Rest

Burgess FFR Allotment

The grazing schedule identified in table ALT-4.5 would be established for pastures in the Burgess FFR allotment and made a term and condition of the grazing permit.

Table ALT-4.5: Burgess FFR grazing schedule

Pasture	Year 1	Year 2	Year 3
1	5/1-6/10	9/1-10/11	9/1-10/11
2	6/11-9/23	10/12-1/23	10/12-1/23

Cow Creek Allotment

The grazing schedule identified in table ALT-4.6 would be established for pastures in the Cow Creek allotment and made a term and condition of the grazing permit.

Table ALT-4.6: Cow Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1 & 2	4/1-6/30	Rest	Rest
3	7/1-9/30	9/1-10/15	9/1-10/15
4	7/1-9/30	9/1-10/15	9/1-10/15
5	7/1-9/30	9/1-10/15	9/1-10/15

Elephant Butte Allotment

The grazing schedule identified in table ALT-4.7 would be established for pastures in the Elephant Butte allotment and made a term and condition of the grazing permit.

Table ALT-4.7: Elephant Butte grazing schedule

Pasture	Year 1	Year 2	Year 3
1	11/1-12/31	Rest	3/15-5/31
2	3/15-5/31	11/1-12/31	Rest
3	Rest	3/15-5/31	11/1-12/31
4	3/15-5/31	11/1-12/31	Rest
5	Rest	3/15-5/31	11/1-12/31
6	11/1-12/31	Rest	3/15-5/31

Ferris FFR Allotment

The grazing schedule identified in table ALT-4.8 would be established for pastures in the Ferris FFR and made a term and condition of the grazing permit.

Table ALT-4.8: Ferris FFR grazing schedule

Pasture	Year 1	Year 2	Year 3
1	5/15-7/17	9/1-11/2	9/1-11/2
2	7/18-8/6	11/3-11/22	11/3-11/22
3	8/7-12/5	11/23-2/15	11/23-2/25

Jackson Creek Allotment

The grazing schedule identified in table ALT-4.9 would be established for pastures in the Jackson Creek allotment and made a term and condition of the grazing permit.

Table ALT-4.9: Jackson Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1	4/15-5/30	Rest	Rest
2	Rest	4/15-5/15	Rest
3	Rest	Rest	4/15-5/30
4	7/1-10/31	9/1-11/25	9/1-11/25
5	7/1-10/31	9/1-11/25	9/1-11/25

Joint Allotment

The grazing schedule identified in table ALT-4.10 would be established for pastures in the Joint allotment and made a term and condition of the grazing permit.

Table ALT-4.10: Joint grazing schedule

Pasture	Year 1	Year 2	Year 3
2	4/16-5/29	10/1-11/13	10/1-11/13
3	5/30-7/1	11/14-12/16	11/14-12/16
4	7/2-7/15	12/17-12/30	12/17-12/30

Madriaga Allotment

The grazing schedule identified in table ALT-4.11 would be established for pastures in the Madriaga allotment and made a term and condition of the grazing permit.

Table ALT-4.11: Madriaga grazing schedule

Pasture	Year 1	Year 2	Year 3
1	6/1-8/31	9/1-12/1	Rest
2	9/1-11/15	6/17-8/31	Rest

Poison Creek Allotment

The grazing schedule identified in table ALT-4.12 would be established for the single pasture in the Poison Creek allotment and made a term and condition of the grazing permit.

Table ALT-4.12: Poison Creek grazing schedule

Year	Date
1	4/1-5/31
2	10/1-10/31
3	Rest

Sands Basin Allotment

The grazing schedule identified in table ALT-4.13 would be established for pastures in the Sands Basin allotment and made a term and condition of the grazing permit.

Table ALT-4.13: Sands Basin grazing schedule

Pasture	Year 1	Year 2
1	4/1-4/30	Rest
2	5/1-6/5	Rest
3	Rest	4/1-4/30
4	Rest	5/1-6/5

Soda Creek Allotment

The grazing schedule identified in table ALT-4.14 would be established for pastures in the Soda Creek allotment and made a term and condition of the grazing permit.

Table ALT-4.14: Soda Creek grazing schedule

Pasture	Year 1	Year 2	Year 3
1	6/1-7/15 not to exceed AUMs by pasture	7/16-10/31 not to exceed AUMs by pasture	9/1-1/31 not to exceed AUMs by pasture
2			
7			
3	7/16-10/31 not to exceed AUMs by pasture	6/1-7/15 not to exceed AUMs by pasture	
5			
6			

Trout Creek/Lequerica Allotment

The grazing schedule identified in table ALT-4.15 would be established for pastures in the Trout Creek/Lequerica allotment and made a term and condition of the grazing permit.

Table ALT-4.15: Trout Creek/Lequerica grazing schedule

Pasture	Year 1	Year 2	Year 3
1	6/15-8/31	9/1-11/15	11/16-12/31
2	9/1-11/15	6/15-8/31	9/1-11/15

Wild Rat Allotment

The grazing schedule identified in table ALT-4.16 would be established for pastures in the Wild Rat allotment and made a term and condition of the grazing permit.

Table ALT-4.16: Wild Rat grazing schedule

Pasture	Year 1	Year 2	Year 3
1 (Alkali-Wildcat)	4/1-5/31	Rest	Rest
2 (Rats Nest)	Rest	4/1-5/31	Rest

2.2.5. Alternative 5 – Sheep-to-Cattle Conversion

Alternative 5 includes terms and a condition required for the Poison Creek allotment only and includes Section 2.1 Management Common to All Grazing Alternatives. In addition, the following grazing schedule and authorization for AUMs has been developed. Under Alternative 5, a sheep-to-cattle conversion would be used to limit adverse impacts from domestic sheep grazing to bighorn sheep on the Poison Creek allotment only. However, trailing of domestic sheep through the Poison Creek allotment from Homedale, Idaho, to Flint Creek, Oregon, is still anticipated to occur under this alternative to move to other private lands. Although the effects of trailing will be analyzed in this alternative, other forms of moving sheep, such as trucking, may also be authorized.

Under Alternative 5, standard Boise District terms and conditions identified in Section 2.1 would apply and others may be incorporated into the grazing permit as identified. Management objectives identified in Section 2.1 are provided to inform permit holders of BLM's management intent on public lands within PPH/PGH for sage-grouse. Permit holders are encouraged as partners to manage their livestock operations in a manner consistent with BLM IM 2012-043.

Poison Creek Allotment

Permitted active use and permitted use for the Poison Creek allotment would be as listed in table ALT-5.1 below.

Table ALT-5.1: Permitted grazing use within the Poison Creek allotment with implementation of Alternative 5 – Sheep-to-Cattle Conversion mandatory terms and conditions

Permittee	Active Use	Suspension	Permitted Use
Poison Creek Grazing Assoc., LLC	761 AUMs	-	761 AUMs

Mandatory and other terms and conditions of the offered permits would be defined as listed in table ALT-5.2. Other terms and conditions would include following current Separation Agreement for domestic sheep grazing and trailing (Appendix H).

Table ALT-5.2: Mandatory and other terms and conditions of the offered permit to graze livestock within the Poison Creek allotment with implementation of Alternative 5

Allotment	Livestock		Grazing Period[1]		% PL	Type Use	AUMs[2]
	Number	Kind	Begin	End			
00603 Poison Creek	379[3]	Cattle	4/1	11/30	100	Active	754

[1] Every third year, fall grazing may occur from October 1 to November 30.

[2]The sum of the AUMs from the Authorization Schedule Information may not equal the active use AUMs for each authorization or allotment due to rounding in the AUM calculation.
[3]Not to exceed authorized AUMs by allotment.

The grazing schedule identified in table ALT-5.3 would be established for the single pasture in the Poison Creek allotment and made a term and condition of the grazing permit.

Table ALT-5.3: Poison Creek grazing schedule

Year	Date
1	4/1-5/31
2	4/1-5/31
3	10/1-11/30

2.2.6. Alternative 6 – No Grazing

No grazing would be authorized on public lands within the 25 Chipmunk Group allotments for a term of 10 years. Applications for grazing permit renewal would be denied and no grazing permits would be offered. All AUMs of permitted use for all of the Chipmunk Group allotments would be unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment(s) would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to current base property(s).

2.3. COMPARISON OF EFFECTS

The comparison of effects Table ALT-6.1 below compares the effects to resources by alternative. Every alternative does not apply to every allotment. See Section 2.2 Description of Proposed Action and Alternatives above for detailed allotment information. For this comparison table, the following lists which allotments apply to each alternative.

Alternative 1 No Action/Continue Current Management – applies to all 25 allotments

Alternative 2 Permittee Applications – applies to all 24 allotments, which includes combining Alkali-Wildcat and Rats Nest to form a new allotment (Wild Rat allotment)

Alternative 3 Deferred Grazing – applies to 21 allotments, which includes combining Alkali-Wildcat and Rats Nest to form a new allotment (Wild Rat allotment). This alternative does not apply to three allotments where all Standards are currently being met: Chipmunk Field FFR, Chimney Pot FFR and R Collins FFR.

Alternative 4 Season-based – applies to 14 allotments, which includes combining Alkali-Wildcat and Rats Nest to form a new allotment (Wild Rat allotment), excluding eight allotments and two of the FFR allotments with previously signed Determinations where current livestock grazing is not the causal factor for failure to meet Standards. Allotments included in this alternative are Alkali-Wildcat, Blackstock Springs, Burgess, Burgess FFR, Cow Creek, Elephant Butte, Ferris FFR, Jackson Creek, Joint, Madriaga, Poison Creek, Rats Nest, Sands Basin, Soda Creek and Trout Creek/Lequerica.

Alternative 5 Sheep-to-Cattle Conversion – applies to the Poison Creek allotment only

Alternative 6 No Grazing – applies to all 25 allotments

Table ALT-6.1: Comparison of the Effects of the Resource Issues by Alternative

Resource & Issue	Alternative 1 - applies to 25 allotments	Alternative 2 - applies to 24 allotments	Alternative 3 - applies to 21 allotments	Alternative 4 - applies to 14 allotments	Alternative 5 - applies to 1 allotment	Alternative 6 - applies to 25 allotments
Upland Soils						
Standard 1-Watershed (soil stability, hydrologic function, and nutrient flow)	12 allotments would not maintain or improve; 0% benefit; potential long-term[4] decline in pastures of 4 additional allotments	10 allotments would not maintain or improve; 1 allotment may benefit (4%); potential long-term decline in pastures of 4 additional allotments	11 allotments improve; 52% benefit; potential long-term progress in pastures of 4 additional allotments	8 allotments improve; 57% benefit; potential long-term progress in pastures of 4 additional allotments; greatest resource progress for grazing alternatives	Allows for maintenance and improvement of upland soil and watershed function in 1 allotment (long-term benefit ≤100%)	Provides for the most unimpeded and rapid improvement for all 25 allotments (long-term benefit ≤100%)
Upland Vegetation/Noxious Weeds						
Standard 4-Native Plant Communities (BLM acres that meet standard)	23,334 acres out of 59,122 acres would continue to meet standards (39%)	23,334 acres out of 59,122 acres would continue to meet standards (39%); however 9,618 acres meeting would be at risk to additional impacts. (16%)	22,649 acres out of 58,437 acres would continue to meet standards. (39%) Acres not currently meeting would maintain or slowly improve in 10 years.	21,559 acres out of 52,825 acres would continue to meet standards. (41%) Acres not currently meeting would maintain or improve faster than Alternative 3 in 10 years.	NA	23,334 acres out of 59,122 acres would continue to meet standards. (39%) Acres not meeting would maintain or move toward meeting with no influence from livestock.
Standard 5-Seeding Communities (BLM acres that meet standard)	9,611 acres out of 10,666 (90%) would continue to meet standards.	9,611 acres out of 10,666 (90%) would continue to meet standards.	9,611 acres out of 10,666 (90%) would continue to meet standards.	9,611 acres out of 10,666 (90%) would continue to meet standards.	5,244 acres out of 5,244 (100%) acres would continue to meet standards.	9,611 acres out of 10,666 (90%) would continue to meet standards. All acres would continue a transition back to a native plant community with no influence from livestock.

[4] Long-term for Standard 1 is defined as more than 10 years.

Resource & Issue	Alternative 1 - applies to 25 allotments	Alternative 2 - applies to 24 allotments	Alternative 3 - applies to 21 allotments	Alternative 4 - applies to 14 allotments	Alternative 5 - applies to 1 allotment	Alternative 6 - applies to 25 allotments
Standard 6-Exotic Communities (BLM acres that meet standard)	5,748 acres out of 10,932 (53%) would continue to meet standards.	5,748 acres out of 10,932 (53%) would continue to meet standards.	5,748 acres out of 10,932 (53%) would continue to meet standards. Acres currently not meeting because of livestock grazing would continue to not meet because of other causal factors.	5,748 acres out of 10,932 (53%) would continue to meet standards. Acres currently not meeting because of livestock grazing would continue to not meet because of other causal factors.	NA	5,748 acres out of 10,932 (53%) would continue to meet standards. All acres in exotic plant communities may remain in exotic plant communities without mechanical manipulation. Livestock grazing would not influence this process.
Water and Riparian/Wetland Resources						
Standards 2 & 3- Riparian Area Condition[5] (miles of stream that support hydric veg, and would be in PFC)	36 (54% of total)	36 (54% of total)	42 (63% of total)	52 (77 % of total)	36 (54% of total)	long term: 67 (100% of total)
Standard 7- Not Meeting Water Quality Standards[6] (miles of stream on IDEQ 303(d) list)	47	47	37.6	23.5	47	long term: 0
Special Status Animal and Plant Species						

[5] See Table RIPN-1 for Riparian area Indicators Considered in Section 3.1
[6] See Table RIPN-2 for Water Quality Indicators Considered in Section 3.1

Resource & Issue	Alternative 1 - applies to 25 allotments	Alternative 2 - applies to 24 allotments	Alternative 3 - applies to 21 allotments	Alternative 4 - applies to 14 allotments	Alternative 5 - applies to 1 allotment	Alternative 6 - applies to 25 allotments
Standard 8-Wildlife Focal species wildlife habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species	22 of 25 allotments not meeting Standard 8 for viable wildlife habitat conditions. 3 out of 25 allotments are meeting Standard 8 for suitable wildlife habitat conditions.	Little to no change in current conditions. Affects the same as Alternative 1.	Short term[7] Upland habitat progress will be minimal; riparian habitats will respond favorably. Maintenance of exotic communities will occur. Long term[8] Upland habitat progress will occur in 12 of 25 allotments managed as native or seeded communities; riparian habitat will be well established. Maintenance to limited improvement in the 5 out of 25exotic communities.	Short term Upland habitat progress will occur in 10 of 25 allotments managed as native plant communities; riparian habitats will respond quickly and show active recovery. Maintenance of exotic communities will occur. Long term Upland habitat progress will occur in 12 of 25 allotments managed as native or seeded communities; riparian habitats will be well established. Limited improvement in 4 out of the 25 allotments with exotic communities will occur.	Affects the same as Alternative 3.	Short term Upland habitat progress will occur in 20 of 25 allotments; riparian habitat will respond quickly and show active recovery. Maintenance of exotic communities will occur. Long term Upland habitat and riparian habitat conditions will show substantial improvement. Limited to better improvement in 4 out of the 25 allotments with exotic communities will occur.

[6]Short-term for Standard 8 is defined as 3-6 years (2 grazing rotations)

[7]Long-term for Standard 8 is defined as 7-12 years (4 grazing rotations)

Resource & Issue	Alternative 1 - applies to 25 allotments	Alternative 2 - applies to 24 allotments	Alternative 3 - applies to 21 allotments	Alternative 4 - applies to 14 allotments	Alternative 5 - applies to 1 allotment	Alternative 6 - applies to 25 allotments
California Bighorn Sheep: Risk of contact between domestic sheep and bighorn sheep	1 out of 25 allotments grazes domestic sheep within this group (3 allotments total within the cumulative effects analysis area). Grazing of domestic sheep would continue to be grazed in the spring (March 27-May 31) every year. Potential contact between domestic sheep and bighorn sheep during the grazing schedule is limited to the spring. Trailing domestic sheep through the allotment will continue to occur in the fall on return trip home. No removal of domestic or bighorn sheep has occurred to date.	Same as Alt. 1	A 2 out 3 year deferred grazing system is proposed. Bighorn sheep are more mobile in the spring and during the breeding season in October and November. Domestic sheep will be grazed 2 years in the spring (April 1-May 31) and 1 year in the fall (Oct. 1 – Nov. 30). Grazing system will move domestic sheep into the fall in year 3 during the breeding season for bighorn sheep. Trailing domestic sheep through the allotment will continue in off grazing years .	A 1 out 3 year deferred/rest grazing system is proposed. Domestic sheep will be grazed in the spring on year 1 (April 1-May 31); grazed in the fall on year 2 (Oct. 1-Oct 31); and no grazing will occur in year 3 (rest). Grazing system removes 2 years of spring grazing, but moves domestic sheep into the fall for 1 year during the onset of the breeding season for bighorn sheep. No risk of contact in year 3 from grazing. Trailing of domestic sheep through the allotment will continue in off grazing years.	Removes risk of contact between domestic and bighorn sheep under the Poison Creek grazing permit only. If domestic sheep trailing is approved, trailing 300 miles (roundtrip) to graze two other OFO and Oregon allotments would still occur. Potential contact between domestic sheep and bighorn sheep would still exist	Same as Alt. 5
Standard 8-Special Status Plants (SSP) & their habitat	3 of 7 allotments not meeting; potential long-term (>10 years) decline to maintained SSP sites in allotments not meeting Standards 4, 5, or where Standard 6 applies.	3 of 7 allotments not meeting; potential long-term (>10 years) decline to maintained SSP sites in allotments not meeting Standards 4, 5, or where Standard	5 of 5 allotments maintain or improve (Alternative 3 does not apply to the 2 FFRs)	5 of 5 allotments maintain or improve; greatest resource benefit for grazing alternatives (Alternative 3 does not apply to the 2 FFRs)	Progress toward meeting Standard 8 for Cusick's pincushion.	Greatest resource benefit with 7 of 7 allotments improving in the short & long-term.

Resource & Issue	Alternative 1 - applies to 25 allotments	Alternative 2 - applies to 24 allotments	Alternative 3 - applies to 21 allotments	Alternative 4 - applies to 14 allotments	Alternative 5 - applies to 1 allotment	Alternative 6 - applies to 25 allotments
		6 applies.				
Social and Economic Values						
Cumulative direct impact over 10 yrs (change in net revenue)	$27,337,049 (est. baseline net revenue)	+$501,526	-$3,030,149	-$8,563,271	-$36,697	-$22,402,364
Value of AUMs to the local community	$809,304	$860,982	$668,864	$526,884	$50,941	$0

2.4. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Alternative 7 – Range improvements

Range improvements were suggested for implementation by three permittees in permit applications; however, they will not be carried through the analysis due to time limitations and funding. Applications for new range improvements include:

1. Sean & Andrea Burch on the Trout Creek allotment for a water gap and two new reservoirs;
2. Elordi Cattle Company, LLC on the Baxter Basin allotment for two new spring developments; and four new spring developments on the Soda Creek allotment;
3. Chad and Dannelle Hensley on the Madriaga allotment for an additional water tank.

No new project construction or reconstruction is considered within any alternative of this NEPA document. In addition, no juniper treatments, active restoration of seedings or plant communities, or removal of range improvements, including water developments or fences, will be analyzed. Regarding consideration for additional range projects, from the outset of this process, BLM clearly communicated during permittee meetings in 2012 that new range projects would not be included in these grazing permit renewals. In these meetings, BLM communicated that it would not be possible to use range projects to achieve Rangeland Health Standards and land-use plan objectives because inadequate time existed to complete both the pre-NEPA project layout and design and the required pre-surveys and clearances that are necessary to allow for an adequate NEPA analysis of site-specific impacts associated with new range projects. Analysis of consequences of any new project construction or reconstruction may be addressed through a separate NEPA analysis and will not be included in this EIS.

In addition, though rangeland projects are one of a number of tools available to meet rangeland health standards and/or resource objectives, BLM did not consider such proposals in detail for the following reasons:[9]

- BLM limited the action to renewing grazing permits using existing infrastructure on the allotments at issue, and thus requests to build new infrastructure do not meet the purpose and need for this action. Although the Owyhee Resource Management Plan recognizes that rangeland projects have the potential to assist BLM in meeting management objectives in some situations, the ORMP states, "Use a minimal level of rangeland developments (e.g., fences, water facilities) to adjust livestock grazing practices to achieve multiple use resource objectives and meet standards for rangeland health (RMP/ROD at 24)". This language identifies range improvements as only one tool among many that can be used to implement appropriate livestock management practices.

- A variety and considerable number of range improvement projects such as spring developments, fences, reservoirs, storage tanks, and troughs have already been constructed across the allotments to aid in livestock grazing management. For example, there are approximately 220 miles of fencing and approximately 63 troughs and reservoirs in place on public land in the Group 2 allotments. The BLM decided to rely on additional means to improve rangeland health and meet RMP objectives in this permit renewal process, including in part, varying the seasons of use for grazing, adjusting the timing and intensity of use, and also by considering adjustments to stocking rates.

- The BLM is preparing an RMP-amending Environmental Impact Statement that considers alternative strategies to protect greater sage-grouse in Idaho and southwestern Montana; consequently, the

[9] Information specific to each allotment and project proposed in permit renewal applications is provided in section 2.2.2 of this EA.

Owyhee Field Office is reluctant to approve new range improvement projects in sage-grouse habitat.[10]

- BLM Washington Office Instruction Memorandum 2012-043 provides interim conservation policies and procedures to the field offices to be applied to ongoing and proposed authorizations and activities that affect greater sage-grouse and its habitats while the sub-regional RMP amendment process is underway. The guidance is in effect until the BLM develops and decides how to best incorporate long-term conservation measures for greater sage-grouse into applicable land use plans. Proposed fences are addressed with the following guidance:

  Evaluate the need for proposed fences, especially those within 1.25 miles of leks that have been active within the past 5 years and in movement corridors between leks and roost locations. Consider deferring fence construction unless the objective is to benefit Greater Sage-Grouse habitat, improve land health, promote successful reclamation, protect human health and safety, or provide resource protection. ---

  Similarly, water developments are addressed with the following guidance:

  NEPA analysis for all water developments must assess impacts to Greater Sage-Grouse and its habitat. Install escape ramps and a mechanism such as a float or shut-off valve to control the flow of water in tanks and troughs. Design structures in a manner that minimizes potential for production of mosquitos which may carry West Nile virus.

  As a result, the complexity of considering and analyzing proposed projects during grazing permit renewal is heightened pending the identification of long-term conservation measures for greater sage-grouse in the amendment to the Owyhee Resource Management Plan not yet completed.

- Inventories and surveys would be necessary to fully and appropriately analyze and disclose the direct, indirect, and cumulative impacts associated with new or modified infrastructure projects. The limited time available in order to meet the terms of the June 26, 2008, Order Approving Stipulated Settlement Agreement permits makes it impossible to complete the analysis of project modification and/or construction. There simply is no time to conduct the necessary site-specific inventories and surveys of resources affected by infrastructure projects.

- The project proposals received failed to identify the ways in which they would facilitate significant progress toward, or the attainment of, rangeland health standards. While many of the proposed projects appear to facilitate livestock production, the majority appear to have a limited relationship to

[10] **2005BLM Land Use Planning Handbook H-1601-1, Status of Existing Decisions During the Amendment or Revision Process:** During the amendment or revision process, the BLM should review all proposed implementation actions through the NEPA process to determine whether approval of a proposed action would harm resource values so as to limit the choice of reasonable alternative actions relative to the land use plan decisions being reexamined. Even though the current land use plan may allow an action, the BLM manager has the discretion to defer or modify proposed implementation-level actions and require appropriate conditions of approval, stipulations, relocations, or redesigns to reduce the effect of the action on the values being considered through the amendment or revision process. The appropriate modification to the proposed action is subject to valid existing rights and program-specific regulations. A decision to temporarily defer an action could be made where a different land use or allocation is currently being considered in the preferred alternative of a draft or proposed RMP revision or amendment. These decisions would be specific to individual projects or activities and must not lead to an area-wide moratorium on certain activities during the planning process (H-1601-1 at 47).

the grazing management practices needed to meet or make progress toward meeting rangeland health standards, conform to guidelines, or meet management objectives.

- The projects proposed provided insufficient site-specific information (locations, engineering specifications, etc.) for BLM to fully analyze the improvements.

- Funding availability for range improvements in past years was much more reliable and predictable than it is currently. The 2011 Budget Control Act (sequestration) and impending budget reductions give the Department of Interior and BLM unprecedented challenges in anticipating what level of funding will be available for all programs, including range improvement projects for livestock grazing in the years ahead. Because of these funding uncertainties, approving range improvements in concept now provides no assurance that their construction on the ground would be realized in the foreseeable future.

- BLM's regulations for grazing administration specific to the Standards and Guidelines (43 CFR 4180.2) require that the authorized BLM officer, upon determining existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the Standards and conform with the Guidelines, take appropriate action as soon as practicable but not later than the start of the next grazing year. Considering the time required for project design, completion of site specific surveys and NEPA analysis, plus construction time, it is unlikely that the authorized officer could take the required appropriate action prior to the start of the next grazing year. It would be most likely that these projects could not be completed in time, and would therefore require a set of interim actions to be taken while projects were still in various stages of analysis and construction. Even these interim actions could require another layer of NEPA analysis before implementation, further delaying progress toward improving rangeland conditions.

- Although BLM excluded range improvements from this permit renewal process for the above reasons, this is not intended to preclude proposals for range improvement projects that directly address rangeland health standards, ORMP objectives, and issues relating to protection of BLM sensitive species such as sage-grouse. Permittees are still encouraged to submit applications for range improvement projects outside the current permit renewal process, and the BLM will take a close look at the merit of those proposals within the context of any budgetary constraints at the time.

Alternative 8 – Wildfire Fuels

Wildfire is a natural event that defines a range of variability in potential vegetation communities of sagebrush steppe vegetation types. Wildfire behavior is dependent on a number of factors, including weather and climatic conditions, as well as the size and connectivity of fuels, fuel loading, fuel moisture, and topographic slope. In the absence of actions that significantly alter fuel loading, wildfire spread rates for grass fuel types and grass/shrub fuel types are similar. Models for the rate of spread in these fuel types follow similar curves for low fuel load and moderate fuel load and differ most at the extremes of fuel moisture and wind speed (USDA USFS, 2005).

Invasive annual grasses have been shown to alter wildfire behavior. Knapp (1996) reviewed the history, persistence, and influences to human activities of cheatgrass (*Bromus tectorum*) dominance in the Great Basin desert and noted that changes in density of cheatgrass have led to commensurate changes in fire frequency. Further, fires have shown a tendency to occur repeatedly within cheatgrass-dominated areas.

Balch et al (2012) found that cheatgrass-dominated lands had a shorter fire-return interval, were disproportionately represented in the larger fires, were significantly more likely to have been the ignition point for fires, and showed a strong inter-annual response to wet years in comparison to other prominent land cover classes across the Great Basin.

Livestock grazing has been identified as an underutilized tool in assisting managers to achieve fuels and vegetation management objectives. A number of sources suggest that livestock grazing could minimize wildfire impacts to high-priority areas (Great Basin Restoration Initiative Workgroup, 2010) (Davies, Bates, Svejar, & Boyd, 2010) (Diamond, Call, & Devoe, 2009) (Taylor, Jr., 2006). The Governor's alternative for greater sage-grouse management in Idaho says, "The unintended consequences of altering grazing use, such as possible increased risk of wildfire, must be carefully considered in any management proposal" (The State of Idaho, 2012).

Following a series of large wildfires in south-central Idaho and northern Nevada in 2007, a team of scientists, habitat specialists, and land managers examined initial information pertaining to plant communities and patterns of livestock grazing, as they related to fuel loads and fire behavior. Vegetation communities involved in the 2007 fires are similar to sagebrush steppe within the Chipmunk Group allotments. The team concluded that much of the area involved in these fires burned under extreme fuel and weather conditions that likely overshadow livestock grazing as a factor influencing fine fuels and thus fire behavior. One finding was that fire behavior in sagebrush vegetation types is driven by sagebrush cover and height, with the herbaceous component on which livestock focus their grazing playing a lesser role. Consequently, opportunities to influence fire behavior through livestock grazing are greatest in grassland vegetation types. Secondly, the potential effects of grazing on fire behavior are highly dependent on weather, fuel load, and fuel moisture conditions. Grazing applied at sustainable utilization levels would have limited or negligible effects on fire behavior when fuel moisture and weather conditions are extreme. When weather and fuel moisture conditions are less extreme, grazing may reduce the rate of spread and intensity of fires allowing for more patchy burns with lower fuel consumption levels. The team further identified the use of targeted grazing programs on specific areas as greater opportunities when livestock can affect fire behavior through reduction in fine fuels on semi-arid rangelands, as opposed to landscape-scale grazing that is not strategic (USDI USGS, 2008).

Targeted grazing is the application of a specific kind of livestock at a determined season, duration, and intensity to accomplish defined vegetation or landscape goals. The major difference between good grazing management and targeted grazing is that targeted grazing refocuses outputs of grazing from livestock production to vegetation and landscape enhancement (Launchbaugh & Walker, 2006). Recent application of targeted grazing has included control of noxious weeds, control of completing vegetation in agroforestry, and the establishment and maintenance of fuel breaks. Targeted grazing is one of a number of tools available for constructing desirable ecosystems. Targeted grazing should be used in combination with other technologies to meet vegetation management objectives, with consideration for economic, ecological, and social implications.

Sheep and goats have been identified as livestock more conducive to fuel reduction in vegetation types with a shrub component, as compared to cattle. Although woody species are a greater portion of the selected diet of sheep and goats, intensive livestock management including protein and energy supplements increases consumption of shrubs (Taylor, Jr., 2006).

A number of sources in addition to the USGS (2008) report following the Murphy Complex fires have identified the utility of targeted livestock grazing as one of a number of tools that can be used in an integrated plan to establish and maintain fuel breaks, as opposed to landscape-scale livestock grazing to reduce fuel loads (Great Basin Restoration Initiative Workgroup, 2010) (University of Nevada Cooperative Extension, 2007) (Taylor, Jr., 2006). In addition to the emphasis on site-specific targeted

grazing to provide fuel breaks, these sources and other citations listed above have consistently noted that grazing as a fuels management tool is primarily limited to grassland-dominated vegetation types. Many of these sources recognize the need to ensure that prescriptions for reduction in fine fuels through targeting grazing before the fire season do not also reduce the health and vigor of perennial herbaceous species during the active growing season, do not impair watershed function, or do not limit the ability to meet other resource objectives on a landscape scale. The adverse effect on these resources in small areas to meet targeted grazing prescriptions that establish and maintain linked fuel breaks needs to be considered against a goal to minimize impacts of wildfire to large areas of intact habitat (Great Basin Restoration Initiative Workgroup, 2010) (USDI USGS, 2008).

The Policy Analysis Group for the College of Natural Resources of the University of Idaho provided information on policy options related to wildfire management and fuels treatments on Idaho's rangelands. The report summarized the potential benefits and detrimental effects of a number of tools, including livestock grazing. Although the group's report did not recommend an alternative, it focused on landscape-scale treatments and identified livestock grazing as an effective tool to reduce fuel loading. In addition, the report included information on potential adverse impacts from grazing treatments for fuels reductions, the same impacts that are identified in a number of other sources. Like those other sources, the report identified livestock grazing as a complex and dynamic tool with many plant and animal variables.

The role of targeted grazing to manage fuels, as compared to traditional grazing authorizations by permit or lease, is discussed in the Great Basin Restoration Initiative Workgroup's report (2010). Although targeted livestock grazing to reduce fuels within strategic strips or zones can help reduce wildfire impacts, accomplishing this goal is a formidable challenge given the many climatic, biological, wildfire behavior, and livestock management variables that may affect the outcome. The option and benefits of using stewardship contracting are discussed. The report suggests that targeted fuels management is best addressed in a fire management plan that can integrate all wildland fire management guidance, direction, and activities to implement national fire policy and fire management direction from the resource management plan. Taylor (2006) also identified that planning for use of livestock grazing for fuels management planning needs to consider the integration of additional fuels management tools. Livestock grazing actions for fuels management involves a shift in purpose from providing for a use of public lands to a purpose to meet vegetation or fuels objectives.

Diamond, Call, and Devoe (2009) found that targeted, or prescribed, cattle grazing that removed 80 to 90 percent of cheatgrass biomass during the growing season was an effective tool to reduce flame length and rate of spread of fire during the following fire season, especially when combined with late summer prescribed fire treatment and the same grazing treatment in the following year. Few rangeland managers, including the authors in the final sentence of the article, would suggest that native perennial herbaceous species could be maintained, let alone improved, with this series of vegetation treatments. In addition, site stability and watershed function would likely be jeopardized with consecutive years of herbaceous utilization at these levels and with frequent prescribed burning. Ecological objectives should be included as a part of the overall strategy of targeted grazing to reduce fuel loading (Taylor, Jr., 2006). Utilization levels of 50 to 60 percent on crested wheatgrass were effective in creating a patchy burn in the Murphy Complex fires (USDI USGS, 2008). In addition, contracted sheep grazing has been used by the BLM Boise District Office to establish and maintain narrow fuel breaks in the wildland-urban interface. The BLM has and will continue to develop plans to create fuel breaks that provide firefighters an additional tool in managing wildland fire. Livestock grazing will continue to be a tool available to establish and maintain strategically located fuel breaks.

In conclusion, landscape-scale fuels treatment through livestock grazing has limited application within the sagebrush/bunchgrass vegetation types in the Chipmunk Group allotments, a landscape with few large or connected areas dominated by annual species or grazing-tolerant introduced perennial grasses. The use of

livestock grazing as a fuels treatment in an integrated program is better adapted to fuels planning and contracting (including stewardship contracting) with objectives for vegetation and fuels management, rather than administered through the typical grazing permit/lease program. Although grazing authorized in the alternatives of this EIS will reduce fine fuels, the intensity of grazing necessary to be an effective fuels treatment at the landscape-level is outside the purpose and need for this permit renewal EIS. Additionally, targeted grazing for fuels reduction to establish fuel breaks is outside the purpose and need of this NEPA document, which responds to applications for grazing permit renewal authorizing cattle and horse grazing to meet Rangeland Health Standards and resource management objectives. Therefore targeted grazing is not included in alternatives considered.

Using livestock grazing as a tool for managing vegetation and fuel loads will be addressed in the Idaho/Southwest Montana Environmental Impact Statement for sage-grouse, a planning effort that will amend relevant BLM resource management plans, including the Owyhee Resource Management Plan. Once the RMPs are amended, renewal of permits for grazing within the Owyhee Field Office will incorporate resource objectives and actions according to direction in the amended ORMP.

Alternative 9 – Global Climate Change

The science on predicting future climate conditions is continuously evolving. Land management actions might contribute to changes in atmospheric greenhouse gas levels, which can affect global climate. Addressing effects on greenhouse gas (GHG) levels within the scope of NEPA is difficult due to the lack of explicit regulatory guidance on how to meaningfully apply existing NEPA regulations to this evolving issue, and due to the continuously evolving science available at varying levels.

Agencies apply the rule of reason to ensure that their discussion pertains to the issues that deserve study and de-emphasizes issues that are less useful to the decision regarding the proposal, its alternatives, and mitigation options (40 CFR 1500.4(f), (g), 1501.7, 1508.25). In addressing GHG emissions, the BLM ensures that such description is commensurate with the importance of the GHG emissions of the proposed action, avoiding useless bulk and boilerplate documentation, so that the NEPA document may concentrate attention on important issues (40 CFR 1502.5, 1502.24).

The BLM's 2008 NEPA Handbook, H-1790-1, explains that a topic must have a cause-and-effect relationship with the proposed action or alternatives to be considered an issue (H-1790-1, p. 40).

Climate change does not have a clear cause-and effect-relationship with the proposed action or alternatives. It is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions or sequestration and designate it as the cause of specific climate or resource impacts at a specific location.

The proposed action and alternatives, when implemented, would not have a clear, measurable cause-and-effect relationship to climate change because the available science cannot identify a specific source of greenhouse gas emissions such as those from livestock grazing and tie it to a specific amount or type of changes in climate.

Therefore, the effects of livestock grazing to the global climate will not be analyzed in detail in this EIS. Effects of climate change on native perennial vegetation resources when also affected by livestock grazing are discussed in the rangeland vegetation sections of this EIS.

Alternative 10 – Reserve Forage Allotments or Temporary Non Renewable (TNR) grazing use

Environmental Protection agency submitted an alternative in February 2012 that would designate allotments to be used temporarily and on a non-renewable basis to allow for rangeland restoration and

recovery. There was no opportunity at this time for any of the Chipmunk Group allotments to be converted to forage reserve allotments.

In addition, Ted Blackstock applied for TNR on the Elephant Butte allotment. This request was considered and dismissed from detailed analysis based on the lack of available site-specific forage production data to support the theory that additional forage is available on a sustainable basis. In addition, applications for TNR are addressed on a year-to-year basis, reviewing factors associated with the level of livestock grazing that has already occurred and whether additional forage is available during the year of application. Due to these facts, TNR is not addressed during the permit renewal process unless there is a proposal for a permanent increase in active AUMs. In this case, an application for annual TNR has been submitted. For the reasons identified above, the application for TNR has been considered but eliminated from detailed analysis.

Alternative 11 – Management Alternatives
The following management alternatives were submitted by Western Watersheds Project in April 2012 to BLM for consideration for development of this EIS.

The active/passive restoration alternative would include the following actions:

1. Protect remaining relatively intact sagebrush habitats.
2. Enable passive restoration of lands at risk of weed invasion and/or suffering degradation or facing further losses of native species.
3. Provide for active restoration and removal of livestock facilities or roads or end practices that damage important, sensitive and imperiled species' habitats and populations. This includes actions such as removal of fences and water developments, salt/supplement sites, and associated roading or other disturbance.
4. Provide for active restoration of crested wheatgrass seedings and cheatgrass or other exotic species areas.

Active or passive restoration alternatives will not be analyzed in this EIS. BLM has developed and considered a reasonable range of alternatives, including a no-grazing alternative, which will be analyzed in this EIS. The BLM Boise District Office has a weed management plan in place that includes an active weed management program within the Owyhee Field Office.

A request to designate new ACECs has been considered but will not be analyzed in detail, per Section 202(c) of FLPMA (43 U.S.C.1712), which requires that in developing land use plans (or amending existing plans), the BLM must give priority to designating and protecting areas of critical environmental concern (ACECs). Designation of a new ACEC is a land use planning-level decision that would require an amendment to the existing Owyhee RMP. The BLM is not in the position to include an ORMP amendment in this permit renewal process. Grazing authorization renewal is an implementation-level decision that does not involve changes to an RMP.

Alternative 12 – Idaho Governor's Sage Grouse Management
The following summary of the Governor's Sage Grouse Management Alternative was considered during the Chipmunk Group allotments EIS. Although the BLM eliminated this alternative from detailed study, many concepts and aspects of the alternative are already available to the BLM and have been incorporated into Alternatives 3 through 5 of the EIS, including: incorporation of habitat characteristics, conducting habitat assessments and priority area assessments, determination of achievement of habitat objectives, achievement of objectives 2 of 5 years (the Governor's Alternative differs by proposing achievement in 3 of 5 years), and monitoring to determine effectiveness. In addition, the Governor's Alternative was intended for the BLM Idaho RMP amendment process, and BLM understood that this alternative would not be applicable at the project level until the RMP amendment process has been completed; and

furthermore, only if the selected alternative in the Record of Decision (ROD) includes the Governor's sage-grouse alternative.

The Idaho Governor's Office of Species Conservation with the unanimous recommendation of the Task Force adopted a designation of a Sage-Grouse Management Area (SGMA) with three distinct management zones: Core Habitat (CHZ), Important Habitat (IHZ) and General Habitat (GHZ). (The BLM recognizes these management areas and have similar habitat zones identified for management of sage-grouse that have been used in the development of the EIS).

Generally, these management zones outline a suite of basic management activities that may, under certain conditions, occur within a given area. In other words, the three management zones within the SGMA represent a management continuum that includes at one end a relatively restrictive approach aimed at providing a high level of protection to the species within the CHZ, and on the other end, a relatively flexible approach for the GHZ allowing for more multiple-use activities. While the IHZ provides greater flexibility than in the CHZ, the overall quality and ecological importance of the habitat within this zone is more closely aligned with the habitat in the CHZ than in the GHZ.

Allocation to a specific management zone does not mandate or direct the relevant Federal agency to propose or implement any action; rather, the three habitat zones provide an array of permitted and prohibited activities. Activities not specifically addressed by the Alternative are still subject to the allowances and restrictions of the applicable resource management plan.

This alternative only provides special management for sage-grouse on lands managed by the BLM and U.S. Forest Service, and while beneficial to other sage-steppe species, agencies will still have the obligation to analyze other values when considering a proposed action.

The relevant Federal agencies considering these measures as part of environmental analyses, planning updates and ESA listing determinations should recognize that actions on these lands can have direct and indirect impacts on State endowment trust lands managed by the Idaho Department of Lands. Thus, it is important to evaluate sage-grouse management in a comprehensive and holistic manner.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes both the affected environment and the environmental consequences of the six alternatives analyzed in detail by resource. Section 3.1 describes the management that affects all resources and is therefore not repeated in each resource section below. In addition, past, present, and reasonably foreseeable future actions are described in Section 3.2 so as to not repeat those actions in each resource section. In the resource sections, the effects common to all grazing alternatives that affect all allotments are described up front; then, effects specific to each allotment are described in detail under each alternative for ease of reading and to avoid repeating information.

3.1. Management Affecting All Resources

Rangeland Vegetation, Including Noxious Weeds and Invasive Plants

Vegetation Inventory

The Ecological Site Inventory has been the Bureau of Land Management's standard vegetation inventory since 1982. An ecological site is a land structure type with physical characteristics that set it apart from other sites in its ability to produce a distinctive kind and amount of vegetation. It is the product of all the environmental factors responsible for the site's development, and it has a set of key characteristics (soils,

hydrology, and vegetation) that are included in the ecological site description. Ecological sites are correlated with and can generally be determined directly from a soils map.

The vegetation types and ecological sites for public lands within Owyhee Field Office were described in a vegetation inventory and analysis using methodologies described in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and the Bruneau-Kuna Grazing Environmental Impact Statement Draft (USDI BLM, 1982). Vegetation inventories for public lands in Owyhee County were correlated to soil surveys and reported in the Soil Survey of Owyhee County, Idaho[11] (USDA NRCS, 2003).

The potential natural vegetation communities for ecological sites represented in the Chipmunk Group allotments are primarily dominated by sagebrush/bunchgrass in a range of site descriptions, with soil depths from very shallow to moderately deep and textures from loamy to clay. Some sites have significant surface stones. Potential vegetation communities developed with an effective average annual precipitation as little as 8 inches for some sites to more than 16 inches for other sites (USDA NRCS, 2010).

Ecological site descriptions for the Chipmunk Group allotments indicate that vegetation communities are dominated by sagebrush/bunchgrass communities under a natural disturbance regime, but unmapped inclusions are present within the larger ecological sites. Examples of unmapped inclusions are stands of juniper or aspen, riparian areas, and areas with surface features devoid of vegetation. Allotment-specific information for each of the 25 allotments identifying ecological sites, dominant vegetation, and acreages are provided in the Upland Vegetation/Noxious Weeds Affected Environment section (Section 3.3.1) of this EIS.

Weeds

In the Chipmunk Group allotments, the BLM works closely with the Idaho Department of Agriculture, tribal governments, and county governments to combat noxious weeds. Cooperative weed management arrangements utilize local, state, and Federal resources to inventory and treat weed infestations on both public and private lands. Populations are inventoried, recorded, treated, monitored, and retreated as their presence is known. Undiscovered noxious weeds may also exist. The effectiveness of weed control is monitored using site-specific and landscape level methods:

- Site-specific weed monitoring involves assessing the effectiveness of the treatment or control method on specific weed species relative to application rate, method, and treatment area. Monitoring methods may be qualitative or quantitative and are commensurate with the level of treatment complexity, size, and extent of infestation. The methods used to monitor treated areas may include field observations, photo plots, and/or density plot methods. Management actions may be refined or changed over time as these data are analyzed.
- Landscape-level weed monitoring is accomplished over the long term by tracking weed occurrences through Geographic Information System (GIS) mapping. Weed sites are inventoried and mapped to monitor their extent and rate of spread.

Wild Horse Herd Management Areas (HMAs)

The Sands Basin Wild Horse Management Area is located within the Sands Basin allotment (Map ACEC-1); horse numbers and AUMs are described in Table WHMA-1. The Sands Basin HMA has been surveyed in 16 years since 1990; horse numbers exceeded the appropriate management level (AML) during 9 of those years (for census data by year, see Section 3.1.2 Wild Horse Herd Management Areas). The BLM intends to conduct a treatment and removal gather within the next 2 years, although a scheduled

[11] Vegetation inventories for public lands in Owyhee Field Office were completed between 1977 and 1979 using the Soil Vegetation Inventory Method and Range Site Descriptions. These techniques were the precursor of the current Ecological Site Inventory methods.

gather during the fall of 2012 was postponed due to higher priority emergency wild horse/burro gathers. When conducted, the gather will reduce horse populations to the low AML in each HMA.

The Hardtrigger Wild Horse Management Area is located within the Rats Nest and Elephant Butte allotments (Map ACEC-1); horse numbers and AUMs are described in Table WHMA-1. The HMA has been surveyed in 16 years since 1990; horse numbers exceeded the AML during 8 of those years.

The 1999 ORMP management objectives for these areas are: 1) Manage wild horses for the appropriate management level (AML) in the Hardtrigger, Black Mountain and Sands Basin Herd Management Areas (HMAs) (Table WHMA-1), and 2) Allocate forage for wild horses at the AML.

Table WHMA-1: Allotment-specific wild horse herd management HMA (1999 ORMP)

	AML Population Range	**Forage Allocation (AUMs)**
Hardtrigger	66-130	1,176
Black Mountain[1]	30-60	540
Sands Basin	33-64	588
TOTAL	129-254	2,304

[1]Not in the Group 2 analysis area

Riparian Resources

Table RIPN-1 describes stream miles that are in proper functioning condition (PFC) or functioning at risk (FAR) for the 15 Chipmunk Group allotments supporting hydric vegetation, including perennial and intermittent streams. The table also describes the percentage of the streams in those conditions.

Table RIPN-1: Riparian PFC issues and indicators analyzed and included in Effects Comparison Table

Allotment	**Perennial & Intermittent Streams Supporting Hydric Vegetation[12] (miles)**	**Perennial & Intermittent Streams Assessed**	**Condition**	**% of Total**
Alkali-Wildcat	1.5	0.9	FAR	60
Baxter Basin	1.5	0.8	Protocol NA	55
		0.5	PFC	35
Blackstock Springs	9.3	3.2	FAR	36
		0.9	PFC	10
Burgess FFR	0.8	0.3	FAR	43
		0.3	Protocol NA	47
Burgess	0.5	0	--	0
Cow Creek	3.8	1.0	FAR	26
Elephant Butte	1.5	0.1	FAR	6
		0.3	PFC	21
Franconi	0.5	0.3	FAR	73
Jackson Creek	3.5	1.8	FAR	52
		1.2	PFC	35

[12] 2011 NAIP imagery was used along with the field assessment information to estimate the miles of stream that appear to support hydric vegetation

Allotment	Perennial & Intermittent Streams Supporting Hydric Vegetation[12] (miles)	Perennial & Intermittent Streams Assessed	Condition	% of Total
		1.1	Protocol NA	30
	4.5	2.3	FAR	40
Joint		1.1	PFC	35
Madriaga	3.5	1.5	FAR	43
	4.0	0.8	FAR	20
		1.6	NF	40
Poison Creek		0.3	PFC	7
	4.2	3.2	FAR	77
Rats Nest		0.7	PFC	16
	4.2	1.7	FAR	41
Sands Basin		1.4	PFC	33
	4.5	1.9	FAR	42
		0.8	PFC	20
Soda Creek		0.2	Protocol NA	4
Trout	2.0	1.2	FAR	58
Creek/Lequerica		0.4	NF	20
	6.5	5.2	FAR	77
Trout Creek		1.3	PFC	23

Table RIPN-2 describes miles of streams that are listed under 303(d) for the 13 Chipmunk Group allotments not supporting water quality issues.

Table RIPN-2: Water quality issues and indicators analyzed and included in Effects Comparison Table

Allotment	Not Supporting (miles)	303(d) Streams (miles)
Alkali-Wildcat	17	0
Blackstock Springs	12	11
Burgess	1	1
Burgess FFR	1	0.5
Cow Creek	1	1
Ferris FFR	1	1
Franconi	2	2
Jackson Creek	9	8
Joint	6	6
Madriaga	6	6
Poison Creek	12	0
Sands Basin	16	2
Soda Creek	8	8

3.2. Past, Present and Reasonably Foreseeable Future Actions - Cumulative Effects Common to all Resources

Cumulative effects are presented in this section to capture projects or actions common to all resources instead of repeating in each individual section (Tables CMLV-1, -2, and -3 below). Any additional projects or actions not described in this section will be described in the Cumulative Effects sections by resource below.

Several BLM projects currently occur in the Owyhee Mountains and will be incorporated as part of the current condition of the cumulative effects analysis area. The following projects are listed in the BLM NEPA register and are either being implemented or are under review:

- Running Horse Decorative Stone Sale
- Stage Road Exclosure
- Jump Creek Recreation Site Road Improvement
- Grazing Permit Renewals for Multiple Allotments in Oregon and Owyhee Co.
- Owyhee Livestock Trailing
- Black Mountain, Hardtrigger, and Sands Basin Wild Horse Herd Management Areas (HMA)
- Flint Creek and Long Valley Wildlife Habitat Improvement Project
- Berbes Plan of Operations on Hipwell Property

Projects on private land within the analysis areas appropriate for a given resource are discussed in the following resource-specific sections. Much of the private land in the analysis areas is assumed to remain in the current condition unless otherwise noted.

Livestock Grazing Management

Several allotments within and adjacent to the Cumulative Impacts Analysis Area (CIAA)[13] for any given resource have recently had permits issued or are under review for renewal according to the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management, as listed in Table CMLV-3 below. The decisions associated with livestock grazing permits are assumed to meet or move allotments toward meeting the Standards required by the aforementioned regulations.

Juniper Treatment

The USDA Agricultural Research Service (ARS) and the BLM released a scoping/information package for public review on April 15, 2013. This package can be accessed at the following website link: https://www.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=36158. This package informs the public of a proposal to treat a small area (603 acres) of juniper trees on the southwest slope of South Mountain in Owyhee County as a research project, which would evaluate the effects of juniper removal on snow accumulation and melt, stream flow, sedimentation, and vegetation response. This research area is approximately 19 miles due south of the southernmost Chipmunk Group allotment analyzed in this EIS. The area is outside any watersheds affected by the actions proposed in alternatives in this EIS.

[13] CIAA is defined as the boundary establishing the temporal and spatial bounds by resource that cumulative effects analysis effects. For example some resources used the allotment or watershed boundaries; however each CIAA was developed by resource in the cumulative effects analysis section of the FEIS Section 3.

Although this is a distance that, for most resources, would have no ecological connection with the effects from renewing the Chipmunk Group grazing permits, the CIAA established for greater sage-grouse and bighorn sheep in this NEPA document intersect with this proposed research area. BLM acknowledges that the research project is proposed, and that its effects will likely be analyzed in a NEPA document within the year. BLM is not yet able to analyze the cumulative effects that the research project would add to the direct and indirect effects analyzed in this document. However, if the research project were implemented in the future, clearing 603 acres within the sage-grouse CIAA would represent about 0.015 percent of the total CIAA analysis area, so any resultant positive or negative effects to the subpopulation of sage-grouse or its habitat within this area would be immeasurable. The same can be concluded for the CIAA for bighorn sheep (see map CMLV-2, Cumulative Effects, Regional Assessment). The cumulative effects analysis in the juniper research project NEPA document will consider the effects to sage-grouse and bighorn sheep that result from renewing the Chipmunk Group grazing permits, since these impact analysis areas overlap each other both in time and space.

Climate Change

Changes in greenhouse gas levels affect global climate. Ring et al. (2012) reviewed scientific information on greenhouse gas emissions and climate change, including the four Assessment Reports of the Intergovernmental Panel on Climate Change between 1990 and 2007, and recognized a growing consensus within the scientific community that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. The additional analysis by Ring et al. (2012) includes data through 2010 and supports the earlier conclusions by others.

A number of researchers, including Lapage et al. (2012), have recognized the potential impact to agricultural production that climate change scenarios, including altered temperature and precipitation regimes at the regional level, may induce. These researchers also recognize the inherent variability within, and appropriate application of, global and regional climate models. Neilson et al. (2005), in summarizing output from seven models and possible scenarios of regional climate change in the Great Basin, identified long-term trends toward greater precipitation and warmer temperatures, although they noted inter-annual and inter-decadal variability that could account for short-term records that may differ. A similar summary of the available studies and models is presented by Chambers and Pellant (2008).

Possible consequences to vegetation communities resulting from climate change in the Great Basin include a dramatic increase and expansion of woody frost-sensitive species at the expense of shrubland and a corresponding increase in fire. Bradley (2009) modeled the consequences that altered summer precipitation and winter temperature could have on the potential risk of cheatgrass expansion or contraction, noting that climatic change will affect the potential geographic distribution of cheatgrass and will likely affect other plant invaders as well. Ash et al. (2012) identified that adaptation options will be required in different rangeland regions in response to climate change to enhance the development of sustainable livelihoods with both social and ecological resilience. Technical input to the 2013 National Climate Assessment identified the process of adjustment to actual and expected climate and its effects in order to moderate harm or exploit beneficial opportunities on biodiversity, ecosystems, and ecosystem services (Staudinger, et al., 2012). Beschta et al. (2012) recommended strategies for western public lands to reduce anthropogenic stressors of terrestrial and aquatic ecosystems that may add to stressors from climate change, primarily reduction or elimination of ungulate use to help native species and ecosystems survive in an altered environment.

With consideration for anticipated stressors induced by climate change, appropriate livestock management practices that improve and maintain healthy and functioning vegetation communities that

provide for proper nutrient cycling, hydrologic cycling, and energy flow remain the primary adaptations against changing precipitation and temperature regimes.

Table CMLV-1: Past, present, and foreseeable activities by watershed CIAA for the Chipmunk Group allotments

Type of Activity	Past, Present & Foreseeable Actions*	Watersheds							
		Hardtrigger Creek - Snake River	Headwaters Jordan Creek	Jordan Creek -Sheep Spring Creek	Jump Creek- Snake River	Reynolds Creek	Trout Creek- Jordan Creek	Upper Cow Creek	Upper Succor Creek
Grazing Allotments (number)	P & P & F	10	14	27	10	13	44	20	21
Wildfire (acres)	P & P	19,986	2,040	32,567	32,471	1,467	11,529	36,569	18,557
Noxious Weed Infestation Points	P & P	189	74	9	91	203	51	48	438
Agriculture (acres)	P & P	23,980	1,148	6,716	58,165	5,238	7,133	4,593	
Roads (miles)	P & P	343	219	371	512	344	179	283	235
Herd Management Areas (acres)	P & P & F	32,194	0	0	10,943	45,196	0	0	1,468
Livestock Trailing (miles)	P & P & F	35	6.5	14	38	51.4	45.8	36	65
Range Improvements – Reservoirs and Troughs	P & P	28	5	1	30	40	23	27	46
Range Improvements - Exclosures (acres)	P & P	5.8	0	0	0	88.4	46.6	13.2	231
Mining Claims and Gravel Pits (acres)	P & P	237	8,400	0	828	812	10	94	374
Powerline (miles)**	P & P	113	4	0	370	28	32	14	8

*All of the reasonably foreseeable actions are unknown or not planned unless otherwise indicated
**Utility data for watersheds extending into Oregon was not available

Table CMLV-2: Past, present, and foreseeable activities by allotment for the Chipmunk Group allotments

Allotment Name	Past & Present Actions*	Wildfire (acres)	Noxious Weed Infestation Points	Agriculture (acres)	Roads (miles)	Herd Management Areas (acres)	Livestock Trailing (miles)	Range Improvements		Mining claims & Gravel Pits (acres)	Power line (miles)
								# of Reservoirs and Troughs	Exclosures (acres)		
Alkali-Wildcat	P & P	5,657	2	0	22	0	0	4	0	2.8	0.4
Baxter Basin	P & P	1,384	1	0	3	0	2.1	0	0	0	0
Blackstock Springs	P & P	7,549	48	21	46	0	14.6	7	81.5	49.9	1.4
Burgess	P & P	0	4	11	4	0	1.7	3	0	0	2.6
Burgess FFR	P & P	0	0	323	0	0	0.4	0	0	0	0
Chimney Pot FFR	P & P	1,220	0	2	1	0	0	0	0	0	0.5
Chipmunk Field FFR	P & P	611	0	0	36	0	0	0	0	0	0
Corral Creek FFR	P & P	324	1	6	1	0	0	0	0	0	0.8
Cow Creek	P & P	4,061	3	32	23	0	3.4	5	0.2	0	0.5
Elephant Butte	P & P	2,967	4	163	74	452	2.2	4	0	94.0	10.1
Ferris FFR	P & P	1,893	5	485	7	0	0	0	0	0	1.3
Franconi	P & P	2,661	0	60	4	0	0	0	0	0	0
Jackson Creek	P & P	1,442	5	0	30	0	2.4	7	13.2	0	0
Joint	P & P	3,955	15	47	11	0	3.7	1	0	55.4	1.4
Lowry FFR	P & P	0	0	187	2	0	0	0	0	0	1.3
Madriaga	P & P	800	5	26	11	0	1.2	6	0	0	0.7
Poison Creek	P & P	3,985	46	0	24	0	4.5	3	0	315.1	1.2
R Collins FFR	P & P	0	0	108	2	0	0	0	0	0	1.3
Rats Nest	P & P	3,188	6	0	22	5,531	0	5	0	0	0.3
Sands Basin	P & P	7,880	33	0	26	11,692	14.4	8	0	0	0
Soda Creek	P & P	7,820	4	0	30	0	5.3	4	0	89.1	3.4
Stanford FFR	P & P	0	0	259	6	0	0	3	0	0	0
Texas Basin FFR	P & P	613	7	0	7	0	2.4	1	0	0	0
Trout Creek	P & P	211	8	7	10	0	0	2	5.6	10.0	0
Trout Creek/Lequerica	P & P	762	1	0	2	0	0	0	18.6	0	0
Total		**58,983**	**198**	**1,737**	**404**	**17,675**	**58**	**63**	**119**	**616**	**27.25**

Table CMLV-3: Grazing allotments (Idaho side only) by watershed within the Chipmunk Group allotment CIAA acres

Watershed Name	Allotment Name	BLM Acres
Hardtrigger Creek-Snake River	Blackstock Springs	3,175
	Corral Creek FFR	70
	Dry Lake	112
	Elephant Butte	4,341
	Hardtrigger	16,067
	Rats Nest	4,891
	Reynolds Creek	4,644
	Rockville	1,852
	Shares Basin	12,027
	Walker FFR	237
Headwaters Jordan Creek	Blackstock Springs	3,175
	Corral Creek FFR	70
	Dry Lake	112
	Elephant Butte	4,341
	Hardtrigger	16,067
	Rats Nest	4,891
	Reynolds Creek	4,644
	Rockville	1,852
	Shares Basin	12,027
	Walker FFR	237
	Headwaters Jordan Creek	**45,688**
	Bachelor Flat FFR	85
	Bahem FFR	309
	Blackbird Point	202
	Flint Creek	6,770
	Gusman	2,880
	Gusman FFR	244
	Jump Creek	7,751
	Kershner FFR	149
	Louse Creek	18,290
	Louse Creek FFR	1,785
	Silver City	6,386
	Soda Creek	742
	Upper Deer Creek	97
Jordan Creek-Sheep Spring Creek	Baxter Basin	1,378
	Cow Creek Individual	2,655
	Gluch FFR	9
	Gusman	40
	Joint	513
	Jordan Creek FFR	9
	Jordan Valley	111
	Madariaga	1
	Palmer	1,687
Jump Creek-Snake River	Alkali-Wildcat	6,209
	Canal	694
	Elephant Butte	2,598
	Graveyard Point	1,715

Watershed Name	Allotment Name	BLM Acres
	Poison Creek	5,244
	Rockville	2,627
	Sands Basin	10,111
	Shares Basin	3,001
	Strodes Basin	4,251
Reynolds Creek	Bass FFR	352
	East Reynolds Creek	13,493
	Evans FFR	524
	Gaging Station FFR	117
	Hardtrigger	5,072
	Jaca FFR	80
	Jump Creek	1,065
	Rabbit Creek/Peters Gulch	5,315
	Reynolds Creek	38,918
	Silver City	599
	Tyson FFR	536
Trout Creek- Jordan Creek	Bachelor Flat FFR	145
	Baxter Basin	42
	Berrett FFR	652
	Boulder	1,852
	Boulder Flat	1,357
	Corta	31
	Cow Creek Individual	3,969
	Feltwell	949
	Glass Creek	1,747
	Gluch	241
	Gluch FFR	645
	Goose Creek FFR	323
	Gusman	12,867
	Indian Meadows	617
	Jim’s Peak FFR	1,086
	Jordan Creek FFR	203
	Jordan Valley	139
	Louse Creek	922
	Lowry FFR	37
	Morgan	4,702
	Old Man	113
	R Collins FFR	102
	Rail Creek FFR	52
	Soda Creek	21
	South Mtn Area	922
	South Mtn Indv	361
	Staples FFR	171
	Trout Creek	3,360
	Trout Creek/Lequerica	728
	W. Maher FFR	863
	Walt's Pond FFR	1,410
	Warn	382
	Wroten	1,639
Upper Cow Creek	Baltzor FFR	65

Watershed Name	Allotment Name	BLM Acres
	Burgess	1,069
	Burgess FFR	172
	Chimney Pot FFR	24
	Chipmunk Field FFR	42
	Cow Creek Individual	1,215
	Ferris FFR	1,050
	Franconi	629
	Jackson Creek	4,636
	Joint	2,613
	Jump Creek	169
	Madariaga	3,954
	Palmer	172
	Soda Creek	2,588
	Stanford FFR	544
	Succor Creek	1,003
	Trout Creek/Lequerica	5
	Tyson FFR	4
Upper Succor Creek	Baltzor FFR	366
	Blackstock Springs	9,619
	Burgess FFR	78
	Bush Ranch FFR	275
	Chipmunk Field FFR	517
	Coal Mine FFR	418
	East Reynolds Creek	1,305
	Evans FFR	204
	Jaca FFR	550
	Jackson Creek	1,189
	Juniper Spring	9,733
	Reynolds Creek	622
	Rockville	8,597
	Sands Basin	693
	Stateline	463
	Stateline FFR	21
	Succor Creek	11,367
	Texas Basin FFR	91
	Tyson FFR	359

3.3. UPLAND VEGETATION/NOXIOUS WEEDS

3.3.1. Affected Environment

Desired Conditions, Objectives & Assessment/Monitoring Methods

The EIS and the resource objectives mirror those identified on pages 12, 13, 23, and 24 in the Owyhee Resource Management Plan EIS (ORMP-EIS) (USDI BLM, 1999b). The objectives specified in the ORMP for vegetation are:

- Improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas.
- Implement grazing practices that during and at the end of the grazing season provide adequate amounts of ground cover to support proper infiltration, maintain moisture, stabilize soils, and maintain site productivity.

- Implement grazing practices that improve or maintain native rangeland species to attain composition, density, foliar cover and vigor appropriate to site potential.
- Apply approved noxious weed control methods.
- Implement grazing practices designated to meet Idaho Standards for Rangeland Health and conform to the Guidelines for Livestock Grazing Management.

Objectives in the ORMP for Livestock Grazing Management include:

- Adjust forage allocation based upon monitoring and assessment. Evaluation of monitoring data will determine future stocking levels.
- Implement grazing systems to meet multiple use resource objectives.
- Limit upland forage utilization by livestock on key upland herbaceous forage species to 50 percent unless higher or lower level of use is appropriate to meet standards for healthy rangelands. Examples include heavier use levels of crested wheatgrass when grazed other than during the critical growth stage or light use (31 to 40 percent) on Idaho fescue, Thurber's needlegrass, bluebunch wheatgrass or other key forage species when grazed during the critical growth stage every or nearly every year.
- Allotment boundaries may be adjusted or allotments may be combined to facilitate administration and/or meet resource objectives.

ORMP objectives and Idaho Rangeland Health Standards for upland native vegetative communities are currently meeting Standards on 23,334 acres out of 59,122 acres (39 percent); 9,611 acres out of 10,666 are meeting the rangeland seedings Standard (90 percent); and 5,748 acres out of 10,932 are meeting exotic plant community Standard (53 percent). Current management in the Chipmunk Group allotments does not implement grazing practices that maintain native rangeland species to attain composition, density, foliar cover, and vigor appropriate to site potential or multiple-use resource objectives.

The purposes of monitoring and assessments are to determine the effects of management actions on the public land resources including native plant communities, seedings and exotic plant communities other than seedings. These finding are summarized by allotment below and in further detail in the vegetation specialist report in the project record. Monitoring includes collection of ecological site inventory, rangeland health assessment, utilization, trend, actual use, climate, and other data by various methods. Monitoring methods and assumptions are in available in Appendix F.

Ecological sites and vegetation condition class (Reference Community)

Ecological sites are a description of the expected vegetation based on soils, climate (precipitation and temperature), and a natural disturbance regime. Table VEG-1 provides a list of ecological sites by total acreage for the analysis area (Maps ECOL-1, ECOL-2, and ECOL-3). Ecological site descriptions are identified by soil type, average annual precipitation, and plant codes. A crosswalk of plant codes is provided in Appendix J. Ecological site potential and succession, as well as an introduction to state-and-transition models for low sagebrush (*Artemisia arbuscula*)/bunchgrass and big sagebrush/bunchgrass ecological sites, is provided in Appendix F.

Table VEG-1: Primary ecological sites mapped for the analysis area (USDA NRCS, 2010)

Ecological Site	BLM acres[1]	Private acres	State acres	Total	Percent of Analysis Area
SHALLOW CLAYPAN 12-16 ARAR8/FEID	17,770	10,402	479	28,651	22.9%
LOAMY 10-13 ARTRW8/PSSPS	19,338	890	1,084	21,312	17.0%
LOAMY 13-16 ARTRV/PSSPS-FEID	9,008	9,274	735	19,017	15.2%
SHALLOW CLAYPAN 11-13	12,341	3,428	1,502	17,272	13.8%

Ecological Site	BLM acres[1]	Private acres	State acres	Total	Percent of Analysis Area
ARAR8/PSSPS					
LOAMY 16+ ARTRV/FEID	2,484	6,596	2,757	11,837	9.5%

[1]All acre figures and other numbers used in this analysis are approximate projections for comparison and analytical purposes only.

SHALLOW CLAYPAN 12-16 ARAR8/FEID; Major Land Resource Area (MLRA) 25
The dominant visual aspect of this site is low sagebrush, Idaho fescue and bluebunch wheatgrass. Subdominant species include Sandberg bluegrass (*Poa secunda*), squirreltail (*Elymus elymoides*), Nevada bluegrass (*Poa nevadensis*), thickspike wheatgrass (*Elymus lanceolatus*), Thurber's needlegrass (*Achnatherum thurberianum*), arrowleaf balsamroot (*Balsamorhiza sagitatta*), Hooker's balsamroot (*Balsamorhiza hookeri*), and longleaf phlox (*Phlox longifolia*). Composition by weight is approximately 40 to 60 percent grasses, 15 to 25 percent forbs and 25 to 35 percent shrubs. Plant growth usually begins in April. Plants are mature by early July, with some fall green-up usually occurring in early September. Natural herbivory has historically occurred on the site at low levels of utilization. Herbivores include pronghorn antelope, mule deer, sage-grouse, lagomorphs and small rodents. Fire has historically occurred on this site every 80 to 100 years. Total annual production is 650 lbs per acre in a normal year, 950 lbs per acre in a favorable year, and 350 lbs per acre in an unfavorable year. Structurally, cool season deep-rooted perennial bunchgrasses are very dominant, followed by medium height shrubs with perennial forbs and shallow rooted bunchgrasses being sub-dominant. This site is suited for grazing by livestock in spring, early summer, and fall. It also provides habitat for mule deer, pronghorn antelope, small game, sage-grouse, small birds, and rodents.

LOAMY 10-13 ARTRW8/PSSPS
The dominant visual aspect of this site is bluebunch wheatgrass in the understory and Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) in the overstory. Subdominant species include Thurber's needlegrass, Sandberg bluegrass, squirreltail, arrowleaf balsamroot, tapertip hawksbeard (*Crepis acuminata*) and lupine (*Lupinus* spp.). Composition by weight is approximately 45 to 55 percent grass, 10 to 15 percent forbs and 25 to 35 percent shrubs. Natural herbivory has historically occurred on this site at low levels of utilization. Herbivores include mule deer, pronghorn antelope, lagomorphs and small rodents. Fire has historically occurred on the site at intervals of 50 to 70 years. Total annual production is 750 lbs per acre in a normal year, 1,110 lbs per acre in a favorable year, and 400 lbs per acre in an unfavorable year. Structurally, cool season deep-rooted perennial bunchgrasses are very dominant, followed by tall shrubs being more dominant than perennial forbs, while shallow-rooted bunchgrasses are subdominant. This site is suited for livestock grazing in the spring, summer and fall. There are few limitations to grazing, although the distance to water may be a problem in some areas. This site is usually a key area in a management program, provides winter and spring range for mule deer, and has some value for sage-grouse brood rearing.

LOAMY 13-16 ARTRV/PSSPS-FEID
The dominant visual aspect of this site is bluebunch wheatgrass, Idaho fescue and mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). Bitterbrush (*Purshia tridentata*) is a subdominant overstory species. Subdominant species include Sandberg bluegrass, squirreltail, arrowleaf balsamroot and lupine. Composition by weight is approximately 55 to 65 percent grass, 10 to 20 percent forbs and 20 to 30 percent shrubs. Natural herbivory has historically occurred on this site at low levels of utilization. Herbivores include pronghorn antelope, mule deer, Rocky Mountain elk, and rabbits and hares. Total annual production is 1,110 lbs per acre in a normal year, 1,400 lbs per acre in a favorable year, and 800 lbs per acre in an unfavorable year. This site is well suited for big game summer and fall range. It is also well-suited for livestock and recreation use in the late spring, summer and fall.

SHALLOW CLAYPAN 11-13 ARAR8/PSSPS
The dominant visual aspect of the site is low sagebrush and bluebunch wheatgrass. Subdominant species include Sandberg bluegrass, squirreltail, arrowleaf balsamroot and Hooker's balsamroot. Composition by weight is approximately 45 to 65 percent grasses, 10 to 20 percent forbs and 20 to 40 percent shrubs. Natural herbivory has historically occurred on the site at low levels of utilization. Herbivores include pronghorn antelope, mule deer, sage-grouse, lagomorphs and small rodents. Total annual production is 550 lbs per acre in a normal year, 800 lbs per acre in a favorable year, and 300 lbs per acre in an unfavorable year. This site is suited for grazing by livestock in spring, early summer, and fall. It also provides habitat for mule deer, pronghorn antelope, small game, sage-grouse, small birds and rodents.

LOAMY 16+ ARTRV/FEID
The dominant visual aspect of this site is Idaho fescue in the understory and mountain big sagebrush in the overstory. Subdominant species include Columbia needlegrass (*Achnatherum nelsonii*), bluebunch wheatgrass, mountain brome (*Bromus marginatus*), squirreltail, prairie junegrass (*Koeleria macrantha*), arrowleaf balsamroot, tapertip hawksbeard, horsemint (*Agastache* spp.) and lupine. The composition by weight is approximately 60 to 70 percent grass, 10 to 20 percent forbs and 15 to 25 percent shrubs. Natural herbivory has historically occurred on this site at low levels of utilization. Herbivores include mule deer, Rocky Mountain elk, lagomorphs, and small rodents. Fire has historically occurred on the site at intervals of 20 to 50 years. Total annual production is 1,300 lbs per acre in a normal year, 1,800 lbs per acre in a favorable year, and 800 lbs per acre in an unfavorable year. This site is suited for livestock grazing in the spring, summer and fall. There are few limitations to grazing. Water is generally more abundant on this site than adjacent sites. This site is usually a key area in a management program and provides good habitat for mule deer, Rocky Mountain elk, sage-grouse, lagomorphs, raptors, songbirds, and others due to the variety of grasses, forbs, and shrubs.

Ecological sites: Seral Condition and Pacific Northwest National Laboratory (PNNL) data (Existing Conditions)

Table VEG-2 below is a summary of seral stage within the analysis area. Assessments of seral stage were conducted between 1977 and 1979.

Table VEG-2: Seral stage[1] by allotment (Percent of BLM-administered acres) (USDI BLM, 1999b)

Allotment	Early Seral	Mid-Seral	Late Seral	Climax	Treated Lands[2]
Alkali-Wildcat	5	85	5	5	
Elephant Butte	100				
Poison Creek	40	60			
Rats Nest	80	20			
Sands Basin	35	45	5	5	10
Blackstock Springs	5	21	15		59
Corral Creek FFR	65	35			
Chipmunk Field FFR		100			
Jackson Creek	60	35	5		
Texas Basin FFR	100				
Baxter Basin	37	25	5		33
Burgess	75	25			
Burgess FFR	55	45			
Chimney Pot FFR	100				
Cow Creek	44	25	25		6
Ferris FFR	70	15	15		
Franconi	10	70	20		

Allotment	Early Seral	Mid-Seral	Late Seral	Climax	Treated Lands[2]
Joint	50	32			18
Lowry FFR	85	15			
Madriaga	50	50			
R Collins FFR	60	40			
Soda Creek	85	15			
Stanford FFR	100				
Trout Creek	55	40	5		
Trout Cr/Lequerica	65	35			

[1] Seral stage is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50 percent is mid status; A similarity index of 51-76 percent is late status; A similarity index of 77-100 percent is potential natural community.
[2] Treated lands include those where brush control or seeding treatments preclude classification within one of the conditions classes.

Current vegetation cover type (based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery) in the Chipmunk Group allotments is shown in table VEG-3. The table summarizes vegetation communities within the analysis area.

Table VEG-3: Vegetation communities within the analysis area based on PNNL data

Vegetation Community	Acres (Public and Private)	Percent of Analysis Area
Mountain Big Sagebrush	28,629	22.9%
Low Sagebrush	24,776	19.8%
Big Sagebrush	18,035	14.4%
Bunchgrass	15,226	12.2%
Exotic Annual	10,462	8.4%
Juniper	9,666	7.7%
Big Sagebrush Mix	5,989	4.8%
Mountain Shrub	3,419	2.7%
Salt Desert Shrub	2,095	1.7%
Wet Meadow	1,808	1.4%
Agriculture	1,738	1.4%
Stiff Sagebrush	725	0.6%
Bitterbrush	650	0.5%
Aspen	602	0.5%
Seeding	386	0.3%
Sparse Vegetation	388	0.3%
Conifer	293	0.2%
Greasewood	175	0.1%
Rabbitbrush	162	0.1%

Inter-Mountain Basins Big Sagebrush Steppe Group
Includes the following General Cover Types from PNNL:

- Big Sagebrush
- Big Sagebrush Mix
- Rabbitbrush

This vegetation group occurs mostly in the Snake River Plain MLRA but also extends into the Owyhee High Plateau MLRA. Soils are typically deep and non-saline, often with a biological soil crust. The plant community has potential to be dominated by perennial grasses and forbs (more than 25 percent foliar cover) with basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*) and Wyoming big sagebrush dominating or co-dominating the open to moderately dense (10 to 40 percent foliar cover) shrub layer. Shrubs may increase following heavy grazing and/or with fire suppression, particularly in mesic sites. Areas with deeper soils more commonly support basin big sagebrush. Fourwing saltbush (*Atriplex canescens*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), rubber rabbitbrush (*Ericameria nauseosa*), or broom snakeweed (*Gutierrezia sarothrae*) may be common, especially in disturbed stands. Associated grasses can include Indian ricegrass (*Achnatherum hymenoides*), Thurber's needlegrass, squirreltail, Sandberg bluegrass, or bluebunch wheatgrass. Idaho fescue is uncommon in this vegetation group, although it may occur in areas of higher elevations/precipitation. Sand dropseed (*Sporobolus cryptandrus*) and Fendler threeawn (*Aristida purpurea* var. *longiseta*) are less common but can be found along fringes with salt brush scrub areas. Common forbs include spiny phlox (*Phlox hoodii*), sandwort (*Arenaria* spp.*)*, penstemon (*Penstemon* spp.*)* and milkvetch (*Astragalus* spp). Many of these plant communities have been converted to early seral rangelands by fire. Fire was relatively infrequent in this group historically, but fires have become much more frequent recently due to the naturalization of cheatgrass. Areas that burn repeatedly support little or no sagebrush, but rather an abundance of short-lived perennial grasses and annual species.

Inter-Mountain Basins Mountain Sagebrush Steppe Group
Includes the following General Cover Types from PNNL:

- Mountain Big Sagebrush
- Mountain Shrub
- Aspen
- Bitterbrush

This vegetation group is more mesic and compositionally diverse than the xeric Inter-Mountain Basins Big Sagebrush Steppe group. It primarily occurs on deep-soiled to stony flats, ridges, nearly flat ridge tops, and mountain slopes. Shrub canopy cover ranges from 10 to 40 percent and is composed primarily of mountain big sagebrush, though bitterbrush may co-dominate some stands. Other common shrubs include snowberry (*Symphoricarpos oreophilus*), serviceberry (*Amelanchier alnifolia*), rubber rabbitbrush, currant (*Ribes cereum*), and yellow rabbitbrush. Wyoming big sagebrush may be present to co-dominant. Most stands have an abundant perennial herbaceous layer (more than 25 percent cover, in some cases more than 40 percent cover). Common grasses include Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, onespike danthonia (*Danthonia unispicata*), and squirreltail. Wildfire maintains an open herbaceous-rich steppe condition. Pockets of aspen (*Populus tremuloides*) and mountain mahogany (*Cercocarpus ledifolius*) can be found in this group. Cheatgrass is less competitive in this higher elevation and wetter group, compared to the xeric Inter-Mountain Basins Big Sagebrush Steppe.

Owyhee Plateau Low Sagebrush Steppe Group
Includes the following General Cover Types from PNNL:

- Low Sagebrush
- Stiff Sagebrush
- Bunchgrass

This vegetation group is composed of sagebrush dwarf-shrub-steppe that occurs in a variety of shallow-soil habitats in a matrix with other groups throughout the Owyhee High Plateau MLRA. Two species of low sagebrush, *A. arbuscula* ssp. *arbuscula* and *A. arbuscula* ssp. *longiloba*, form stands that typically occur on mountain ridges and flanks and broad terraces, ranging from 5,000 to 8,000 feet in elevation.

Substrates are shallow, fine-textured soils, poorly drained clays, almost always very stony, characterized by recent rhyolite or basalt. Other shrubs and dwarf-shrubs present may include bitterbrush, buckwheat (*Eriogonum* spp.), and other species of sagebrush. Common grasses include Idaho fescue, onespike danthonia, bluebunch wheatgrass, and Sandberg bluegrass. Many forbs also occur and may dominate the herbaceous vegetation, especially at the higher elevations. Isolated individuals of Juniper (*Juniperus occidentalis)* and mountain mahogany can be found in this group.

Table VEG-4 describes the existing condition of ecological sites within the analysis area by allotment and gives percentage by allotment of dominating sites.

Table VEG-4: Dominating ecological sites within the analysis area by allotment

Ecological Sites by allotment	**Percent of Allotment**
Alkali-Wildcat	
LOAMY 10-13 ARTRW8/PSSPS	75.93%
Baxter Basin	
SHALLOW CLAYPAN 12-16 ARAR8/FEID	54.01%
Blackstock Springs	
SHALLOW CLAYPAN 12-16 ARAR8/FEID	53.80%
Burgess	
SHALLOW CLAYPAN 12-16 ARAR8/FEID	48.18%
Burgess FFR	
DRY MEADOW PONE3-PHAL2	31.59%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	35.55%
Chimney Pot FFR	
SHALLOW CLAYPAN 12-16 ARAR8/FEID	54.60%
Chipmunk Field FFR	
LOAMY 16+ ARTRV/FEID	35.82%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	35.16%
Corral Creek FFR	
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	46.43%
Cow Creek Individual	
LOAMY 13-16 ARTRV/PSSPS-FEID	40.86%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	26.77%
Elephant Butte	
CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	43.40%
Ferris FFR	
DRY MEADOW PONE3-PHAL2	12.82%
LOAMY 13-16 ARTRV/PSSPS-FEID	37.89%
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	21.74%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	24.21%
Franconi	
LOAMY 13-16 ARTRV/PSSPS-FEID	62.03%
LOAMY 16+ ARTRV/FEID	9.41%
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	24.93%
Jackson Creek	
LOAMY 16+ ARTRV/FEID	39.60%
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	10.70%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	21.30%
Joint	
LOAMY 13-16 ARTRV/PSSPS-FEID	21.30%
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	63.19%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	12.99%
Lowry FFR	

Ecological Sites by allotment	Percent of Allotment
LOAMY BOTTOM 12-16 ARTRT/LECI4	55.97%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	37.13%
Madriaga	
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	51.76%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	29.80%
Poison Creek	
LOAMY 10-13 ARTRW8/PSSPS	78.83%
R Collins FFR	
LOAMY BOTTOM 12-16 ARTRT/LECI4	11.21%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	64.32%
UNKNOWN	24.48%
Rats Nest	
LOAMY 10-13 ARTRW8/PSSPS	75.29%
Sands Basin	
LOAMY 10-13 ARTRW8/PSSPS	22.94%
LOAMY 11-13 ARTRT/PSSPS	52.53%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	17.15%
Soda Creek	
LOAMY 13-16 ARTRV/PSSPS-FEID	58.36%
LOAMY 16+ ARTRV/FEID	29.36%
Stanford FFR	
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	48.26%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	36.24%
Texas Basin FFR	
SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	65.70%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	31.85%
Trout Creek	
LOAMY 13-16 ARTRV/PSSPS-FEID	23.24%
SHALLOW CLAYPAN 12-16 ARAR8/FEID	37.81%
Trout Creek/Lequerica	
LOAMY 13-16 ARTRV/PSSPS-FEID	89.14%

Comparison of Ecological sites: Potential Reference Community and Existing Seral Condition and PNNL data

One notable change between expected overstory vegetation and the current vegetation is indicated by an increase in exotic annual grasses by approximately 8 percent. Ecological site and PNNL mapping were done at different scales, so precise matching is not possible, but gross changes in plant community structure are apparent. These changes are departures in reference community to early seral communities.

Fire

Table VEG-5 describes the acres burned by allotment and decade. Fires have become more frequent than historic levels, and big and low sagebrush (including bitterbrush) has been reduced in some upland vegetation communities. Early seral shrub species such as rabbitbrush have increased slightly, while more desirable understory species such as Idaho fescue and bluebunch wheatgrass have been reduced. These species have been replaced by Sandberg bluegrass and bulbous bluegrass (*Poa bulbosa*), along with a variety of annual and perennial forbs including noxious and invasive plants in some burned areas. Cheatgrass and medusahead (*Taeniatherum caput-medusae*) have invaded some sites. These fine fuels will continue to increase as the fire frequency increases due to the nature of fire disturbance and the ability of invasive annuals to out-compete natives in these sites. The majority of the Chipmunk Group allotments have been affected by fire. These fires have influenced the departures in reference community to early seral communities.

Table VEG-5: Acres burned by allotment and decade[1]

Allotment	1960 & earlier	1970-1979	1980-1989	1999-1999	2000-2009	2010-2012	No Dates	Total
Alkali-Wildcat	3,117	67	0	501	0	1,972	2,070	7,727
Baxter Basin	1,384	0	0	0	0	0	39	1,423
Blackstock Springs	6,987	562	0	0	0	0	10,179	17,728
Burgess	0	0	0	0	0	0	1,310	1,310
Burgess FFR	0	0	0	0	0	0	723	723
Chimney Pot FFR	1,220	0	0	0	0	0	60	1,280
Chipmunk Field FFR	0	0	0	611	0	0	12,198	12,810
Corral Creek FFR	272	51	0	0	0	0	0	324
Cow Creek Individual	4,004	0	0	0	0	57	3,894	7,956
Elephant Butte	982	494	701	0	693	98	6,794	9,761
Ferris FFR	1,893	0	0	0	0	0	1,249	3,142
Franconi	2,059	0	0	0	602	0	0	2,661
Jackson Creek	1,432	0	0	10	0	0	9,328	10,770
Joint	3,181	0	0	0	774	0	1,036	4,991
Lowry FFR	0	0	0	0	0	0	266	266
Madriaga	800	0	0	0	0	0	3,306	4,106
Poison Creek	0	0	7	41	3,927	10	1,387	5,371
R Collins FFR	0	0	0	0	0	0	435	435
Rats Nest	0	3,188	0	0	0	0	2,343	5,531
Sands Basin	4,546	193	0	0	3,141	0	5,643	13,523
Soda Creek	3,642	0	0	0	4,179	0	3,155	10,975
Stanford FFR	0	0	0	0	0	0	1,892	1,892
Texas Basin FFR	0	0	0	613	0	0	1,385	1,997
Trout Creek	210	0	0	0	0	1	3,236	3,447
Trout Creek/Lequerica	762	0	0	0	0	0	381	1,143
Total	36,492	4,556	708	1,776	13,315	2,137	72,309	131,293

[1]All acre figures and other numbers used in this analysis are approximate projections for comparison and analytical purposes only. Acres may also include multiple burns.

Noxious Weeds

The BLM works closely with the Idaho Department of Agriculture, Tribal governments, and county governments to manage noxious weeds. Cooperative weed management arrangements utilize local, state and federal resources to inventory and treat noxious weed infestations on both public and private lands.

No populations of noxious weeds are known to occur on BLM-managed lands in the Burgess FFR, Chimney Pot FFR, Chipmunk Field FFR, Franconi, Lowry FFR, R Collins FFR and Stanford FFR allotments. Noxious weed control is ongoing within the remaining areas of analysis. Undiscovered noxious weeds may also exist. As populations are identified, they will be recorded, treated, monitored, and re-treated, if necessary. Noxious weed species identified within the area of analysis are listed in Table

VEG-6. Noxious weed occurrences are listed by allotment in Table VEG-7 and by watershed in Table VEG-8.

Noxious Weed Categories:

- Early Detection and Rapid Response (EDRR) – Plants in this category must be reported to the Idaho State Department of Agriculture within 10 days of being identified by an approved, qualified authority. Eradication must begin in the same season the species is found. No known species of EDRR are known within the analysis area.
- Control – In some areas of the state, control or eradication is possible, and a plan must be written that will reduce infestations within 5 years.
- Containment – New or small infestations can be reduced or eliminated, while established populations may be managed as determined by the weed control authority.

Table VEG-6: Noxious weed species within the area of analysis

Scientific Name	NRCS Common Name	Other Common Name	Category
Acroptilon repens	hardheads	Russian knapweed	control
Cardaria draba	whitetop	hoary cress	containment
Centaurea diffusa	diffuse knapweed		containment
Centaurea stoebe ssp. *micranthos*	spotted Knapweed		containment
Chondrilla juncea	rush skeletonweed		containment
Cirsium arvense	Canada thistle		containment
Conium maculatum	poison hemlock		containment
Convolvulus arvensis	field bindweed		containment
Cynoglossum officinale	gypsyflower	houndstongue	containment
Euphorbia esula	leafy spurge		containment
Lepidium latifolium	broadleaved pepperweed	perennial pepperweed	containment
Lythrum salicaria	purple loosestrife		containment
Onopordum acanthium	Scotch cottonthistle	Scotch thistle	containment
Tamarix sp.	tamarisk	saltcedar	containment
Tribulus terrestris	puncturevine	goathead	containment

Table VEG-7: Noxious weed occurrences[1] by allotment and pasture (allotments/pastures with no known occurrences of noxious weeds are not listed)

Allotment and Pasture	Canada thistle	Diffuse knapweed	Invasives	Poison hemlock	Puncturevine	Purple loosestrife	Russian knapweed	Russian olive	Scotch thistle	Spotted knapweed	Tamarisk	Whitetop	Grand Total
Alkali-Wildcat											2		2
01											2		2
Baxter Basin									1				1
Blackstock Springs	5	17		3	1				7			15	48
01		17			1				1			4	23
02	2			3					5			11	21
03	3								1				4
Burgess												4	4
Corral Creek FFR												1	1
02												1	1
Cow Creek Individual	2								1				3
Elephant Butte	1											3	4
02	1											2	3
04												1	1
Ferris FFR												5	5
Jackson Creek									2			3	5
01									2			3	5
Joint												15	15
Madariaga												5	5
Poison Creek	11		1		1		1	4	25		1	2	46
01	11		1		1		1	4	25		1	2	46
Rats Nest								3			1	2	6
01								3			1	2	6
Sands Basin	8				4	1		14	2		3	1	33
Soda Creek									2	1		1	4
01									1				1
03									1	1		1	3
Texas Basin FFR									7				7
Trout Creek									6			2	8
Trout Creek/Lequerica									1				1
Grand Total	27	17	1	3	6	1	1	21	54	1	7	59	198

[1]Occurrence is identified as being a single plant or more variable sizes.

Although no allotments were identified as having noxious weed occurrences at levels that would fail to meet Rangeland Health Standards, three allotments were identified as having areas of concern for noxious weed populations. The Blackstock Springs, Poison Creek, and Sands Basin allotments have relatively high occurrences (more than 15) and richness of noxious weeds (more than three species). Pasture 1 in Blackstock springs has a degraded native plant community due to livestock grazing, non-native invasive species other than noxious weeds, and high recreational use. Poison Creek has the only known occurrence of hardheads among the allotments; this species is a State of Idaho control species. This occurrence is identified as being less than 0.1 acres and it was treated with chemicals in 2003 (Boise District Office database). Riparian areas within the Poison Creek allotment have been degraded by livestock grazing and have been invaded by tamarisk. Sands Basin also contains riparian areas degraded by livestock grazing and tamarisk invasion.

Species of relatively high occurrence within the analysis area include Scotch cottonthistle, tamarisk, and whitetop. Additionally, Canada thistle and diffuse knapweed have relatively high occurrence within the allotments.

Existing Condition

Assessment Tools

This section is a summary of the available monitoring data to determine whether the allotments are meeting Standard 4 (Native Plant Communities), Standard 5 (Seedings), and Standard 6 (Exotic Plant Communities). Livestock grazing management, including numbers, timing, intensity (actual use) and duration, is described in detail under Section 2.2.1 Alternative 1 – No Action above. The Vegetation Specialist Report[14] details the information presented in the current EIS. This specialist report provides the basis upon which upland vegetation and noxious weed conditions are based, and which serves as an integral supplemental document that, due to its size and detail for 25 allotments, is available separately on the BLM website (see footnote below). It discloses whether the Idaho Standards for Rangeland Health are met, provides rationales and causes for meeting or not meeting Standards, and supplies the background for alternative development. Equally important are the Rangeland Health Determinations, which can be found in Appendix E.

The BLM has primarily utilized rangeland health field assessments (RHFAs) (USDI BLM, 2000), which are a qualitative assessment, and upland trend data (nested plot frequency) (USDI BLM, 1999c), which is a quantitative assessment. The Noxious Weed GIS layer, actual use and utilization data, photographs, and Trimbly and Chubby Spain fire ESRs were also used to determine whether vegetation resource standards and ORMP objectives are being met. Monitoring methods, including actual use and utilization, are available in the appendices.

Recorded upland utilization levels at stocking rates under existing permits generally have been within the light (21 to 40 percent) and moderate (41 to 60 percent) categories, with limited exceptions (see Appendix B). These levels are at a rate to meet ORMP objectives, except in the Rats Nest and Sands Basin allotments, where utilization was recorded at heavy utilization in limited years (Appendix B). Utilization methods are generalized into classes as described in Table VEG-8 below. Key species are usually bluebunch wheatgrass, Idaho fescue, or other desirable species expected to occur in the reference community.

[14] All Specialist Reports can be found at the BLM website http://www.blm.gov/id/st/en/prog/nepa_register/owyhee_grazing_group/grazing_permit_renewal0.html

Table VEG-8: Herbaceous utilization classes for key species (TR 4400-3 Utilization Studies and Residual Measurements)

Utilization Class %	Description
0-5% No Use	The key species show no evidence of grazing use or negligible use.
6-20% Slight	The key species has the appearance of very light grazing. Plants may be topped or slightly used. Current seedstalks and young plants are little disturbed.
21-40% Light	The key species may be topped, skimmed, or grazed in patches. Between 60 and 80 percent of current seedstalks remain intact. Most young plants are undamaged.
41-60% Moderate	Half of the available forage (by weight) on key species appears to have been utilized. Fifteen to 25 percent of current seedstalks remain intact.
61-80% Heavy	More than half of the available forage on key species appears to have been utilized. Less than 10 percent of the current seedstalks remain. Shoots of rhizomatous grasses are missing.
81-94% Severe	The key species appears to have been heavily utilized and there are indications of repeated use. There is no evidence of reproduction or current seedstalks.
95-100% Extreme	The key species appears to have been completely utilized. The remaining stubble is utilized to the soil surface.

Idaho Rangeland Health Standards 4, 5 and 6

The BLM has primarily utilized rangeland health field assessments, trend data, and utilization data associated with key areas that represent the entire pasture, to determine whether vegetation resource standards are being met (see Appendix F for methodologies). Determinations of rangeland conditions by allotment are summarized in Table ALLOT-2 in Section 1.3, with a full description in Appendix E. Table VEG-9 below describes the acres meeting or not meeting Idaho Rangeland Health Standards 4, 5 and 6. Each allotment was categorized down to the pasture level into Standard 4 Native Plant communities, Standard 5 Rangeland Seedings, or Standard 6 Exotic Plant Communities, other than Seedings. Acres described in Standards 4, 5 and 6 only reflect the BLM acres in those pastures. Some allotments have state and private acres associated with them; however, the BLM only manages the public acres on those allotments, and they are reflected in the table below by standard.

Table VEG-9: Acres by allotment and pasture meeting or not meeting Standards 4, 5 and 6

	GIS Acreage Calculations				Standard 4 Native Plant Communities		Standard 5 Seedings		Standard 6 Exotic Plant Communities	
Allotment and Pasture	**BLM**	**Private**	**State**	**Total**	**Meeting**	**Not Meeting**	**Meeting**	**Not Meeting**	**Meeting**	**Not Meeting**
Alkali-Wildcat	6,211	0	0	6,211	0	6,211	0	0	0	0
Baxter Basin										
1	331	0	0	331	331	0	0	0	0	0
2	586	0	0	586	586	0	0	0	0	0
3	506	0	0	506	0	0	0	0	506	0
Blackstock Springs										
1	6,927	32	639	7,598	0	6927	0	0	0	0
2	3,683	1,812		5,495	3,683	0	0	0	0	0
3	2,183	1,421	639	4,244	2,183	0	0	0	0	0
Burgess										
1	297	5	0	303	297	0	0	0	0	0
3	885	122	0	1007	885	0	0	0	0	0
Burgess FFR										
1	78	155	0	233	0	78	0	0	0	0
2	172	319	0	491	0	0	0	0	0	172
Chimney Pot FFR	24	1,256	0	1,280	24	0	0	0	0	0
Chipmunk Field FFR	559	12,379	32	12,970	559	0	0	0	0	0
Corral Creek FFR										
1	13	192	0	204	0	13	0	0	0	0
2	57	10	0	68	0	57	0	0	0	0
Cow Creek Individual										
1	791	21	0	812	791	0	0	0	0	0
2	3,684	34	0	3,718	0	3,684	0	0	0	0
3	1,184	15	2	1,201	1,184	0	0	0	0	0
4	794	41	0	835	794	0	0	0	0	0
5	1,386	4	0	1,389	1,386	0	0	0	0	0
Elephant Butte										
1	1,677	1,512	3	3,192	0	0	0	0	1,677	0
2	1,734	168	21	1,923	0	0	0	0	0	1,734
3	2,122	257	0	2,380	0	0	0	0	2,122	0
4	453	269	0	722	0	0	0	0	453	0
5	953	5	0	958	0	0	0	0	953	0

	GIS Acreage Calculations				Standard 4 Native Plant Communities		Standard 5 Seedings		Standard 6 Exotic Plant Communities	
Allotment and Pasture	**BLM**	**Private**	**State**	**Total**	**Meeting**	**Not Meeting**	**Meeting**	**Not Meeting**	**Meeting**	**Not Meeting**
Ferris FFR										
1	393	759	0	1,152	0	393	0	0	0	0
2	121	154	0	275	121	0	0	0	0	0
3	537	1,179	0	1,716	0	537	0	0	0	0
Franconi										
1	82	162	0	244	82	0	0	0	0	0
2	196	656	0	852	0	196	0	0	0	0
3	351	613	0	964	0	351	0	0	0	0
Jackson Creek										
1	1,375	30	0	1,405	0	0	0	0	0	1,375
2	601	0	0	601	601	0	0	0	0	0
3	1,181	210	0	1,391	1,181	0	0	0	0	0
4	2,050	656	1,154	3,859	2,050	0	0	0	0	0
5	618	309	2,586	3,513	618	0	0	0	0	0
Joint										
2	1,598	22	0	1,620	1,598	0	0	0	0	0
3	1,055	97	0	1,152	0	0	0	1,055	0	0
4	474	18	954	1,446	474	0	0	0	0	0
Lowry FFR	37	229	0	266	0	0	0	0	37	0
Madriaga										
1	2,576	116	0	2,692	0	2,576	0	0	0	0
2	1,379	35	0	1,414	0	1,379	0	0	0	0
Poison Creek	5,244	37	0	5,280	0	0	5,244	0	0	0
R Collins FFR	102	333	0	435	102	0	0	0	0	0
Rats Nest	4,891	0	640	5,531	0	4,891	0	0	0	0
Sands Basin										
1	1,438	0	389	1,828	0	0	1,438	0	0	0
2	2,929	662	250	3,841	0	0	2,929	0	0	0
3	1,903	77		1,980	0	0	0	0	0	1,903
4	4,590	642	640	5,873	0	4,590	0	0	0	0
Soda Creek										
1	217	827	59	1,103	217	0	0	0	0	0
2	296	330	4	630	296	0	0	0	0	0

	GIS Acreage Calculations				Standard 4 Native Plant Communities		Standard 5 Seedings		Standard 6 Exotic Plant Communities	
Allotment and Pasture	**BLM**	**Private**	**State**	**Total**	**Meeting**	**Not Meeting**	**Meeting**	**Not Meeting**	**Meeting**	**Not Meeting**
3	1,857	1,014	482	3,353	1,857	0	0	0	0	0
4	0	412	0	412	0	0	0	0	0	0
5	106	1,048	90	1,244	106	0	0	0	0	0
6	504	1,546	6	2,055	504	0	0	0	0	0
Stanford FFR	544	1,348	0	1,892	0	544	0	0	0	0
Texas Basin FFR										
1	31	624	0	655	31	0	0	0	0	0
2	60	1,282	0	1,342	60	0	0	0	0	0
Trout Creek										
1	2,095	23	0	2,118	0	2,095	0	0	0	0
2	383	9	0	392	0	383	0	0	0	0
3	883	54	0	937	0	883	0	0	0	0
Trout Creek/Lequerica										
1	696	323	0	1,019	696	0	0	0	0	0
2	37	87	0	124	37	0	0	0	0	0
TOTAL	**80,720**	**35,952**	**8,590**	**125,263**	**23,334**	**35,788**	**9,611**	**1,055**	**5,748**	**5,184**

Allotments Meeting Standard 4
The allotments that are currently meeting Standard 4 (native vegetation) are Baxter Basin, Burgess, Burgess FFR, Chimney Pot FFR, Chipmunk Field FFR, Jackson Creek, Joint, R Collins FFR, Soda Creek, Texas Basin FFR, and Trout Creek/Lequerica.

Allotments Meeting Standard 5
The allotments that are currently meeting Standard 5 (seeding treatments) are Poison Creek and pastures 1 and 2 of Sands Basin. These allotments are functioning to maintain life form diversity, production, native animal habitat, nutrient cycling, energy flow and the hydrologic cycle to maintain these rangelands.

Allotments Meeting Standard 6
The allotments that are currently meeting Standard 6 (exotic plant communities) are Baxter Basin, and Lowry FFR. These allotments meet the minimum requirements of soil stability and maintenance of existing native and seeded plants.

Allotments Not Meeting Standard 4 (livestock are a causal factor)
Current livestock grazing contributed to the failure to meet Standard 4 in the Rats Nest, Blackstock Springs, and Sands Basin allotments by failing to conform to guidelines for proper rest or deferment from grazing. Exotic species encroachment into native communities, recreational impacts, and wild horse grazing also contributed to the failure to meet Standard 4.

Allotments Not Meeting Standard 6 (livestock are a causal factor)
Current livestock grazing contributed to the failure to meet Standard 6 in pasture 2 of Burgess FFR, pasture 2 of Elephant Butte, pasture 1 of Jackson Creek, and pasture 3 of Sands Basin. Current livestock grazing has resulted in soil stability that does not meet the minimum requirements to maintain these communities.

Allotments Not Meeting Standard 4 (livestock are not a causal factor)
Wildfire frequency altered from the natural disturbance regime, exotic species encroachment into native communities, and historic livestock grazing all contributed to the failure to meet Standard 4 in the Alkali-Wildcat, Corral Creek FFR, Cow Creek, Franconi, Ferris FFR, Lowery FFR, Madriaga, Stanford FFR, and Trout Creek allotments.

Allotments Not Meeting Standard 5 (livestock are not a causal factor)
Historic exotic monoculture seeding contributed to the failure to meet Standards 4 and 5 in pasture 3 of the Joint allotment. The pasture is lacking diversity and structure, including any shrub structure, and is dominated by intermediate wheatgrass.

Existing Condition by Allotment

Alkali-Wildcat Allotment

Approximately 65 percent of this allotment has burned since the early 1960s, with the most recent fire in 2012. Post-fire seeding occurred in the 1960s, with only remnant crested wheatgrass remaining. This allotment is dominated by a sagebrush/rabbitbrush overstory, with Sandberg bluegrass and invasive annuals co-dominating the understory and bluebunch wheatgrass a minor component. Historic grazing practices, wildfire, and exotic vegetation are the drivers in failing to meet Standard 4. The RHFA data for the allotment identify a shift toward shallower-rooted bunchgrasses and evidence of soil surface erosion contributing to the departure from site potential and a lack of ecological balance. Trend data support RHFA findings with a documented short-term increase of annual grasses and sprouting shrubs. Two noxious weed sites of tamarisk are present, one of which was chemically treated recently. Both will continue to be monitored and treated as part of the Boise District weed program.

Baxter Basin Allotment

Of the three pastures in the Baxter Basin allotment, pastures 1 and 2 are dominated by native plant communities and evaluated under Standard 4 (Native Plant Communities), and pasture 3 is dominated by invasive annuals and evaluated under Standard 6 (Exotic Plant Communities). There is no long-term trend information available for this allotment.

Pasture 1: The native plant community, including shrubs, has reestablished following the 1960 wildfire and subsequent re-seeding. The plant community is characterized by scattered basin big sagebrush and antelope bitterbrush, with an understory consisting of Sandberg bluegrass, crested wheatgrass, bulbous bluegrass, bottlebrush squirreltail, and bluebunch wheatgrass. The invasive annual grass medusahead wildrye occurs in dense stands in small pockets in pasture 1. Overall, plant vigor and seedstalk production of shrubs and grasses are good and appear adequate to enable recruitment in response to favorable climatic events.

Pasture 2: The native plant community resembles reference condition, with minimal changes in the plant community composition, resulting in minimal deviation of organic matter content in the soil and residual plant material. Relative to the structural diversity of the plant communities, the soils are replenished with appropriate organic inputs, which are necessary for nutrient cycling and continued productivity of the soils and plant communities.

Pasture 3: The 1960 wildfire resulted in significant changes to the plant community structure and composition. This pasture is largely dominated by medusahead wildrye. Although this invasive annual has replaced the native plant community, the requirements for soil stability are being met. There is little indication of accelerated erosion occurring, and noxious weeds were not found in this pasture. The remnant perennial grasses appear vigorous and reproductively capable; however the populations do not appear large enough to compete with the medusahead wildrye, or to contribute to recruitment of native plant communities.

Blackstock Springs Allotment

All three pastures in the Blackstock Springs allotment are evaluated under Standard 4 (Native Plant Communities). Noxious weeds are present in the Blackstock Springs allotment and all are part of the Boise District weed program, through which they will continue to be monitored and treated as appropriate.

Pasture 1: In 1960, approximately 90 percent of this allotment burned and a portion was subsequently seeded with crested wheatgrass. Previously seeded areas have a shrub cover of Wyoming big sagebrush, horsebrush and rabbitbrush, which are common to scattered and Sandberg bluegrass, squirreltail, and invasive annuals in comparable amounts. Invasive annual weeds are scattered throughout the area, with concentrations in disturbed areas. Crested wheatgrass is present in minor amounts. The native portion of the pasture has low diversity of native perennial shrubs and grasses, with the shrub component (particularly rabbitbrush) and Sandberg bluegrass being higher than expected. Few native forbs are present. Invasive annual weeds have a common presence. This pasture is not meeting Standard 4, with current livestock management practices identified as a significant causal factor due to spring and fall cattle use in every year. The common presence of non-native annual weeds is also a significant causal factor in this pasture.

Pastures 2 and 3: Both pastures are located at higher elevation (4,500+'), which provides greater moisture and cooler temperatures, and therefore more resilience to cattle disturbance. Both pastures display a diverse array of shrub, grass and forb species. Trend data in pasture 2 identify an increase in

annual weeds, while annual weed invasion in pasture 3 was noted to be in trace amounts. Shrub composition is in balance, while the understory has a slight shift away from potential, with Sandberg bluegrass a strong component of the understory in pasture 2. Healthy, productive, and diverse populations of native plants are being maintained in both pastures to provide for proper nutrient cycling, hydrologic cycling, and energy flow. These pastures are meeting Standard 4.

Burgess Allotment

Pastures 1 and 3 are managed by the BLM. Pasture 2 is private land and therefore will not be discussed below. Both pastures are evaluated under Standard 4 (Native Plant Communities).

Pastures 1 and 3: Current vegetation in pastures 1 and 3 is a shrub overstory, with an understory of perennial grasses that are co-dominant with annual weeds. While a diversity of species is present, non-native presence is greater than expected in pasture 3. Trend data in pasture 3 show large bunchgrasses increasing significantly and therefore meeting Standards of Rangeland Health. Whitetop is known to occur in this allotment. The four sites (Table VEG-7) will continue to be monitored and treated as part of the Boise District weed program.

Burgess FFR Allotment

Of the two pastures in the Burgess FFR allotment, pasture 1 is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities); pasture 2 is dominated by invasive annuals and is not meeting Standard 6 (Exotic Plant Communities). There is no long-term trend information available for this allotment.

Pasture 1: Current vegetation of pasture 1 is a sagebrush overstory with an understory of perennial grasses with patches of annual weeds.

Pasture 2: This pasture is located in an old burn area and has been invaded by a host of annual grasses consisting of medusahead, cheatgrass, bulbous bluegrass, and North Africa grass. Annual grasses are common throughout the pastures, with some patches of total dominance. Shrub and bunchgrass cover are largely lacking but, when present, only in trace amounts.

Chimney Pot FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). An RHFA was established in 2011 and shows a none-to-slight departure from expected for the ecological site.

Chipmunk Field FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). The dominant visual aspect is a mix of mountain big sagebrush, antelope bitterbrush, and rabbitbrush, with bluebunch wheatgrass, Idaho fescue, squirreltail, and Sandberg bluegrass understory. Some cheatgrass is present, however the native plant community is vigorous and healthy and able to compete for resources. All indicators of biotic integrity are near expected conditions for this ecological site.

Corral Creek FFR Allotment

This one-pasture allotment is dominated by native plant communities and is not meeting Standard 4 (Native Plant Communities). The dominant visual aspect is sagebrush with Sandberg bluegrass dominating the understory, while bluebunch wheatgrass is less common. Shrub cover is slightly greater

than expected. Bur buttercup is scattered throughout the site and medusahead wildrye is found in localized areas.

Cow Creek Allotment

All five pastures of the Cow Creek allotment are evaluated under Standard 4 (Native Plant Communities). Pastures 1, 3, 4, and 5 are meeting the Standard and pasture 2 is not. Three noxious weed sites are known in the allotment but are not contributing factors in failing to meet Standard 4. Canada thistle and Scotch thistle are currently being monitored and treated by the Boise District weed program and will continue to be in the future.

Pasture 1: Pasture 1 was partially burned in 1960. In the 1970s, pasture 1 was seeded after a prescribed burn. The pasture is currently host to a mix of shrubs (bitterbrush, rabbitbrush, and sagebrush), perennial grasses (Sandberg bluegrass, crested wheatgrass), and forbs and annual grasses (medusahead, cheatgrass, six-week fescue). This pasture is meeting Standard 4. The trend in perennial grasses is generally static, and increases of six-week fescue and medusahead have been detected in the recent years.

Pasture 2: Two-thirds of this allotment burned in 1960. Vegetation trend data reflect a low sage canopy and an understory dominated by medusahead, squirreltail, field brome, and bluebunch wheatgrass. Trend in perennial grasses is mostly decreasing, with an increase in annual weeds (medusahead, field brome, and North Africa grass). Low sagebrush has a long-term decrease in frequency. The biotic integrity of this pasture is compromised due to the strong presence of invasive annuals and, therefore, is not meeting Standard 4.

Pastures 3, 4, and 5: All three pastures burned in 1960. A diversity of shrubs, perennial grasses, and forbs are present in each pasture in amounts similar to reference condition. The exception is the presence of bulbous bluegrass in trace amounts and greater-than-expected juniper presence in pastures 4 and 5. The strong understory of perennial grasses contributes to a stable soil surface. Vegetation trend data show a static to increasing frequency of bluebunch wheatgrass and a recent presence of cheatgrass in pasture 5. The overall biotic integrity of these pastures is being maintained and they are meeting Standard 4.

Elephant Butte Allotment

The dominating presence of non-native annual weeds is the determining factor for evaluating the rangeland health of the Elephant Butte allotment under Standard 6 (Exotic Plant Communities). Fire has affected all pastures except pasture 4. Pasture 1 was mildly affected by fire in the 1980s, with only 3 percent burning. Approximately 18 percent of pasture 3 burned in 2002. Pastures 2 and 5 have had multiple fires throughout several years, with 67 percent and 57 percent of area burned, respectively. There is no record of post-fire seeding occurring within the allotment. Invasive annuals dominate the understory of these pastures, with a subdominant overstory of mixed shrubs consisting of Wyoming big sagebrush, shadscale saltbush, spiny hopsage, or budsage. Remnant native vegetation is being maintained in pastures 1, 3, 4, and 5. These pastures are meeting Standard 6. Perennial grasses and annual weeds are mostly static, according to trend data, and shrub cover is mostly declining. Pasture 2 is not meeting Standard 6, with current grazing management practices identified as a significant causal factor due to spring use. Recent data show remnant native populations are degrading. Trend data within the native vegetation show a significant increase in cheatgrass in the short term and a static trend in perennial grasses. Shrub cover is decreasing for shadscale saltbush and increasing, at one site, for low sagebrush. Whitetop is present at one site in pasture 2, has been chemically treated, and will continue to be monitored and treated as a part of the Boise District weed program. This noxious weed site does not play a role in the pasture failing to meet Standard 6.

Ferris FFR Allotment

This allotment consists of three pastures. Pasture 1 is merged with Joint allotment pasture 5. All three pastures are dominated by native vegetation and were evaluated under Standard 4 (Native Plant Communities).

A wildfire in 1960 affected all three pastures, to varying degrees. Pastures 1 and 3 were burned over 70 percent or less, and 5 percent of pasture 2 was burned. Pastures 1 and 3 have a shrub overstory and understory of bunchgrasses, with interspaces occupied by annual invasive grasses. These two pastures are not meeting Standard 4 and due to the minor presence of bunchgrasses and common occurrence of invasive annual grasses such as cheatgrass, North Africa grass, medusahead, and bulbous bluegrass. Pasture 2 is not meeting Standard 4 due to moderate to extreme departure of functional and structural groups and increased invasive annuals. Five sites of whitetop occur in the allotment and are not a contributing factor for the allotment failing to meet Standard 4. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Franconi Allotment

All three pastures are dominated by native plant communities and are therefore evaluated under Standard 4 (Native Plant Communities).

Pasture 1: Overall, the indicators relating to native plant communities showed a slight departure from reference condition. Bulbous bluegrass was common. At the evaluation locations, the native plant communities were supporting proper functioning of ecological processes (i.e., energy and nutrient cycling). Plant vigor and seedstalk production of perennial species was adequate to enable reproduction and recruitment of plants in response to favorable climatic events. At these evaluation locations, there was adequate litter and vegetative cover present for site protection relative to site potential. This pasture is meeting Standard 4. A photo plot monitoring site was established in this allotment in 1989, and was re-evaluated in 2003. The photographs indicate that the native plant community has changed little in terms of species composition and abundance during this 14-year period. The perennial plants appear vigorous and reproductively capable.

Pastures 2 and 3: The 2006 Chubby Spain wildfire burned 57 percent of the BLM lands, which was re-seeded with a mixture of shrub, grass, and forb species prior to the 2007 growing season. The dominant visual aspect is grasses and invasive annuals (medusahead wildrye), and the pastures are therefore not meeting Standard 4. Trend photos indicate increased invasive annuals.

Jackson Creek Allotment

Of the five pastures in Jackson Creek allotment, pasture 1 is dominated by invasive annual weeds and pastures 2, 3, 4, and 5 are dominated by native plant communities. Therefore, pasture 1 was evaluated under Standard 6 (Exotics Other than Seedings) and pastures 2, 3, 4, and 5 were evaluated under Standard 4 (Native Plant Communities).

Pasture 1: This pasture does not have any previous fire history. The current dominant vegetation is a mix of annual weeds, North Africa grass, and medusahead, with Sandberg bluegrass and squirreltail as subordinates. This pasture is not meeting Standard 6 due to current grazing management practices identified as a significant causal factor, with spring grazing use every year. Historic livestock management and the common presence of annual invasive weeds are also causal factors for failing to meet this Standard. Sandberg bluegrass and squirreltail have been on a steady decline since 1990, continuing through 2012. Other perennial grasses are scarce to absent. Annual weeds have increased in the short and long term. Noxious weeds, including tamarisk and whitetop, have been chemically treated in

this pasture and will continue to be monitored and treated as a part of the Boise District weed program. The occurrences of noxious weeds in this pasture do not contribute to the failure to meet Standard 6.

Pastures 2, 3, 4, and 5: Pasture 2 has no fire history, pastures 3 and 5 have been burned in 5 percent or less of the total area, and one-third of pasture 4 was burned in 1960. No known post-fire seedings occurred in these pastures. The sites have a dominant shrub overstory (mountain big sagebrush, low sagebrush, snowberry, antelope bitterbrush, rabbitbrush), with Sandberg bluegrass dominating the understory and other larger perennial grasses, such as Idaho fescue and bluebunch wheatgrass, as subordinates. Annual invasive weeds are not common throughout the pastures but are present in disturbed areas, with some scattered populations. These pastures are meeting Standard 4. Vegetation trend data, only available for pastures 3 and 4, show a relatively static frequency of perennial grasses and shrub cover. The annual weed North Africa grass is has increased in pasture 3.

Joint Allotment

Pastures 2, 3, 4, and 5 are managed by the BLM, and pasture 5 is used in conjunction with Ferris FFR. Pastures 2 and 4 are dominated by native vegetation and are evaluated under Standard 4 (Native Plant Communities). Pasture 3 is dominated by a rangeland seeding and is evaluated under Standard 5 (Seedings). The noxious weed whitetop is present at 15 sites within the allotment. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Pastures 2 and 4: Both pastures burned in the 1960s – just under 50 percent of pasture 2 and all of pasture 4. Half of pasture 4 burned again in 2006 and was aerially seeded with a native seed mix. Seeded areas of pasture 4 were noted to be fully successful according to the Chubby Spain ESR (USDI BLM, 2006). Vegetation photo monitoring for pasture 6 and the unseeded portion of pasture 4 reflect a scattered canopy of mountain sagebrush and bitterbrush, with pockets of low sagebrush and rabbitbrush and an understory of squirreltail, Idaho fescue, bluebunch wheatgrass, and a scattered mix of annual grasses. These two pastures are meeting Standard 4.

Pasture 3: More than 90 percent of pasture 3 burned in 1960 and approximately 7 percent burned in 2006. The site was seeded with intermediate wheatgrass, which currently co-dominates the site with Sandberg bluegrass. This site is not meeting Standard 5. Species diversity is lacking with the absence of any shrub cover. Annual invasive grasses of North Africa grass, cheatgrass, medusahead, and sixweeks fescue have recently been detected.

Pasture 3 RHFAs data indicates that the Chubby Spain fire burned 90 percent of pasture 3, moderate departure for biotic attribute, annual weeds, soul surface loss, litter amount and functional structural group concern. The biotic integrity of pasture 3 is not meeting Standard 4. The pasture 3 community, as represented by the trend site, contains a dominant intermediate wheatgrass and Sandberg bluegrass, with a trace of medusahead. No shrub component has been recorded on the site.

Lowry FFR Allotment

This one-pasture allotment is dominated by invasive annual weeds and is meeting Standard 6 (Exotic Plant Communities). The community is dominated by low sagebrush, Sandberg bluegrass, invasive annuals, and medusahead wildrye. The shrub component is higher than expected. Minimum requirements of soil stability and maintenance are present and are therefore meeting Standard 6.

Madriaga Allotment

This two-pasture allotment is dominated by native vegetation and is evaluated under Standard 4 (Native Plant Communities).

Pastures 1 and 2: In 1960, one-third of pasture 1 burned. No fires for pasture 2 have been recorded. The majority of pastures 1 and 2 have low shrub cover with a Sandberg bluegrass and an invasive annual understory. Bluebunch wheatgrass and Idaho fescue are a minor component of the community. Both pastures were evaluated under Standard 4 and are not meeting due to high presence of, and increase in, annual invasive grasses. Shrub interspaces are dominated by Sandberg bluegrass and annual invasive grasses such as North Africa grass, bulbous bluegrass, and cheatgrass. The most recent data show an increase in North Africa grass, medusahead, bulbous bluegrass, and field brome. Trend data also reflect a recent decline in low sagebrush density. The noxious weed whitetop is present at five sites within the allotment. These sites are currently on the Boise District weed program and will continue to be monitored and treated as appropriate.

Poison Creek Allotment

In 2002, approximately 75 percent of this single-pasture allotment was burned by wildfire, and subsequently reseeded with a shrub/perennial grass mixture. The majority of the allotment is a healthy, productive, vigorous seeding (see the 2005 Trimbly fire ESR monitoring report, saved in the project record and available from the Owyhee Field Office by request) and therefore has been evaluated under Standard 5 (Seedings), which it is meeting. The diversity of species within the seeding is as expected, with perennial grasses dominating and trace amounts of shrubs and forbs. Trend data depict an expected decrease in shrub component and native perennial grasses post-fire, with an increased frequency of seeded grasses. In addition, invasive annual weeds have an increased presence post-fire but appear to be only lightly scattered throughout the seeding. The remaining native plant community is a sagebrush-dominated overstory with interspatial Sandberg bluegrass, squirreltail, and bluebunch wheatgrass. Species diversity is good, even though shrub cover is higher than expected. Noxious weeds within the allotment include seven different species (Table VEG-7). All are part of the Boise District weed program and will continue to be monitored and treated.

R Collins FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). The dominant visual aspect is sagebrush overstory and bluebunch wheatgrass understory resembling reference site conditions. Healthy, productive and diverse populations of native plants are maintained or promoted as appropriate to soil type, climate, and landform to provide for proper nutrient cycling, hydrologic cycling and energy flow. Plant vigor, including total plant production, seed and seedstalk production, and cover is adequate to enable reproduction and recruitment of plants in response to favorable climatic conditions.

Rats Nest Allotment

Approximately 57 percent of this allotment has been affected by wildfire since the 1970s. This allotment is predominately sagebrush overstory with Sandberg bluegrass understory. Invasive annual grass species are present in trace amounts. Although the RHFA data only indicate a slight to moderate reduction in deep-rooted bunchgrasses, the trend data identify an apparent decrease in deep-rooted bunchgrasses and shrub density at all sites and an increase of invasive annual weeds at half the sites. Livestock grazing during the critical growing period and season-long wild horse grazing are causal factors for failing to meet Standard 4 (Native Plant Communities). Russian olive and tamarisk are present in the northernmost portion of the allotment. These sites are currently on the Boise District weed program monitoring and treatment program and will continue to be treated in the future.

Sands Basin Allotment

Of the four pastures in the Sands Basin allotment, pastures 1 and 2 are dominated by range seedings, and pasture 4 is dominated by native plant communities. Much of pasture 3 has been seeded, but both the seeded and unseeded areas have been substantially invaded by annual grasses. Therefore, pastures 1 and 2 were evaluated under Standard 5 (Seedings), pasture 3 was evaluated under Standard 6 (Exotic Plant Communities) and pasture 4 was evaluated under Standard 4 (Native Plant Communities).

Pastures 1 and 2: Most of pasture 1 burned in 1960 and was aerially seeded after the fire. A majority of pasture 2 was burned and drill seeded with crested wheatgrass in the early 1980s. In pasture 1, Wyoming big sagebrush and rabbitbrush are dominant, with crested wheatgrass between shrubs. Few forbs and native grasses are present. Pasture 2 has a diversity of native perennial shrubs, forbs, and grasses intermixed with crested wheatgrass. Cheatgrass is found in patches on one side of the pasture. These pastures are meeting Standard 5 (Seedings). Vegetation trend data reflects a scattered canopy of big sagebrush with pockets of low sagebrush, and an understory dominated by Sandberg bluegrass, squirreltail, bluebunch wheatgrass, and crested wheatgrass. In pasture 1, trend in perennial grasses is mostly static, but an increased occurrence of cheatgrass has been detected in recent years. In pasture 2, both bluebunch wheatgrass and crested wheatgrass have declined since 1988, while Sandberg bluegrass has remained stable and the density and frequency of shrubs, including Wyoming big sagebrush, low sagebrush, and rabbitbrush, have increased. Noxious weeds including tamarisk, Canada thistle and Scotch thistle have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Pasture 3: In 2002 this pasture burned almost in entirety and was seeded after the fire. However, since treatment, this pasture has been substantially invaded by annual weeds, which now make up the dominant vegetation in much of the pasture. While there are some inclusions of intact seedings and native communities within pasture 3, the biotic integrity of the pasture has been dramatically compromised due to the dominance of exotic annual species and season-long wild horse use and fire. This pasture is not meeting Standard 6 (Exotic Plant Communities, other than Seedings). Species diversity is low, with trend data reflecting a decline in perennial grasses and shrubs and the increase in annual grasses. Noxious weeds, including Canada thistle and Russian olive, have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Pasture 4: Pasture 4 was evaluated under Standard 4 (Native Plant Communities) and found to not be meeting the Standard, with current grazing management practices identified as a primary causal factor due to spring and fall cattle use, coupled with season-long wild horse use. Wildfire also contributed as a causal factor, to a lesser degree. The majority of this pasture burned in the 1960s and was subsequently seeded with crested wheatgrass. The 2002 Trimbly fire affected approximately15 percent of the pasture, which was treated with a native seed mix. The existing condition for most of the pasture is dominated by a sagebrush/rabbitbrush overstory and Sandberg bluegrass, with invasive annuals scattered throughout the understory, according to the Trimbly fire ESR (USDI BLM, 2005b). Trend data show a decline in sagebrush, bluebunch wheatgrass, and squirreltail, but an increased occurrence of rabbitbrush has been detected in the most recent years. Noxious weeds including puncture vine, purple loosestrife, and whitetop have been chemically treated in this pasture and will continue to be monitored and treated as a part of the Boise District weed program.

Soda Creek Allotment

All four pastures are dominated by native plant communities and are therefore evaluated under Standard 4 (Native Plant Communities). The ecological potential for all pastures is dominated by mountain sagebrush overstory and bluebunch wheatgrass understory. The 1996 Cow Creek Fire burned approximately 30 percent of pasture 2, 90 percent of pasture 3, and 50 percent of pasture 4; the other half

of pasture 4 was burned by the 2006 Chubby Spain fire and was rested from grazing from 2007 to 2010. The 2009 monitoring report noted that the seedings had been fully successful, and livestock grazing resumed the following year. The site was reported to have good canopy and basal cover and correspondingly low susceptibility to wind or water erosion, according to the Chubby Spain ESR (USDI BLM, 2006). This whole allotment is at risk for invasive annuals because of the fires.

Pasture 1: Pasture 1 was evaluated under Standard 4 (Native Plant Communities) and was found to be meeting the Standard. The RHFA indicates functional structural group have good vigor age class and recruitment and the biotic integrity is meeting the Standard.

Pasture 2: Pasture 2 was evaluated under Standard 4 (Native Plant Communities) and was found to be meeting the Standard. The functional structural groups are higher than expected – Sandberg bluegrass and bluebunch wheatgrass dominate the interspaces, with Idaho fescue scattered, bulbous bluegrass common, and juniper scattered. The biotic integrity of pasture 2 is meeting Standard 4.

Pastures 3, 5 and 7: These three pastures were evaluated as one pasture but have been split into three different pastures. Functional structural groups are off slightly, due to wyethia dominating understory. Bluebunch wheatgrass has shown a short-term increase and long-term decrease in frequency in trend. Idaho fescue has shown a decrease and squirreltail has shown a short-term increase and long-term decrease in frequency since recorded. Sandberg bluegrass, cheatgrass, and bulbous bluegrass show an increase in frequency. Medusahead is starting to show up on the site. The biotic integrity of pasture 3 is meeting Standard 4, based on trend data.

Stanford FFR Allotment

This one-pasture allotment is dominated by native plant communities and is not meeting Standard 4 (Native Plant Communities). The rangeland health field assessment was conducted in a Shallow Claypan 11-13" ecological site; the main indicator relating to biotic integrity that is affecting the site is the functional and structural group. The site has transitioned to one dominated by annuals and lacks a deep-rooted cool season bunchgrass component. The reference native plant community for this site is low sagebrush/bluebunch wheatgrass. Bluebunch was present in trace amounts and both bluebunch wheatgrass and squirreltail were primarily isolated under shrub canopy. Historic livestock grazing is the causal factor in the failure to meet Standard 4.

Texas Basin FFR Allotment

This one-pasture allotment is dominated by native plant communities and is meeting Standard 4 (Native Plant Communities). The dominant visual aspect is a sagebrush overstory and a Sandberg bluegrass and bluebunch wheatgrass understory, with shrub cover lightly higher than expected and scattered cheatgrass. Although bluebunch wheatgrass vigor appeared to be reduced, seedhead production of Sandberg bluegrass was observed. Little recruitment of interspatial bluebunch wheatgrass plants was observed.

Trout Creek Allotment

Pastures 1, 2, and 3 have a dominance of native species and are evaluated under Standard 4 (Native Plant Communities). Wildfire has affected minor portions of pasture 1 (6 percent) and pasture 2 (20 percent), with pasture 3 remaining fire-free. Low sagebrush dominates the overstory, with perennial grasses and annual invasive grasses co-dominating in the understory. These pastures are not meeting Standard 4 due to the strong presence of annual invasive grasses and their increasing occurrence. Vegetation trend data reflect a generally static frequency of perennial grasses, with some species having slight decreases or increases in the short term. Medusahead, North Africa grass, and field brome appear to be the main increasing annual grasses. Density of low sagebrush is also on the decline. Noxious weeds, including

Scotch thistle (six sites) and whitetop (two sites), are present in the allotment and are currently part of the Boise District weed program, through which they will continue to be monitored and treated. These sites are not a causal factor in the failure to meet Standard 6.

Trout Creek/Lequerica Allotment

This two-pasture allotment has a dominance of native species and is evaluated under Standard 4 (Native Plant Communities). Historical plant communities at these sites were dominated by mountain and low sagebrush overstory with an understory of bluebunch wheatgrass and Idaho fescue. Current condition, as described below using RHFAs and trend data, has been altered as a result of past fires and various land management activities.

Pasture 1: The community, as represented by the photo site, is dominated by antelope bitterbrush, Wyoming big sagebrush and western juniper. Bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass make up the interspaces, with scattered forbs. RHFAs show none to slight departure from expected plant community and the pasture is therefore meeting Standard 4.

Pasture 2: The shrub component is too high, and low vigor of bunchgrasses occurs. There is a moderate departure from expected conditions due to invasive juniper presence on the site. The biotic integrity of pasture 2 is meeting Standard 4. The community, as represented by the photo site, is dominated by antelope bitterbrush and big sagebrush. Western wheatgrass and basin wildrye with scattered cheatgrass and forbs make up the interspaces.

3.3.2. Environmental Consequences

3.3.2.1. Effects Common to All Grazing Alternatives

Upland Vegetation/Noxious Weeds

Herbivores remove vegetation through foraging or trampling, altering the amount, condition, and vigor of the vegetation. Grazing influences individual species and plant communities, the magnitude of which is dependent on the intensity, frequency, season, and duration of grazing, as well as the resilience of the vegetation. In the long term, herbivores alter plant community composition, density, and structure, as well as nutrient cycling, hydrology, and energy flow. These changes would potentially result in reduced vegetative cover, reduced water infiltration rates, and increased soil erosion (Clary, 1995). Soil impacts from livestock grazing have direct and indirect affects to vegetative communities and would occur in localized, concentrated use areas, such as near water sources, salting areas, or frequently used gates or trails. Salting areas have a compounding effect of high salt concentration in the soils altering vegetation. Effects from increased disturbance include increased invasive annuals, weeds, and more disturbance-resistant communities.

Season of Use (including utilization)

Livestock impacts to public land resources are dependent on the season of use as it relates to timing of grazing during the growth cycle of plants (Table VEG-9; all dates referenced are approximations dependent on elevation and climatic conditions). Season of use influences the magnitude of grazing effects and is dependent on elevation, temperature, and precipitation timing and amount. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and providing at least 2 years of deferment of grazing use outside the active growing season for every year of active growing season use (Stoddart, 1946); (Blaisdell & Pechanec, 1949); (Mueggler, 1972); (Mueggler, 1975); (Miller, Seufert, & Haferkamp, 1994); (USDA NRCS, 2012), (Appendix F).

Winter Season (November 1 to March 31)
Upland herbaceous plants are mostly dormant during the winter season of use, with the exception of some photosynthesis by new growth after fall and winter precipitation and during warming weather trends, primarily on south-exposed slopes. Light to moderate utilization of standing cured herbaceous vegetation is moderate to low, improving when mixed with new growth or browse from palatable shrubs. Grazing of fall sprouting annual species may reduce competition with desirable perennial herbaceous species during the following growing season. Light to moderate utilization levels will retain adequate standing material and litter for soil protection from wind erosion, rainfall impact and late winter and spring runoff. Heavy utilization levels will expose the soil surface to these negative impacts.

Spring Season (April 1 to June 30)
Areas that would be grazed early in the season only, where livestock are removed prior to the critical growth period, would reproduce and set seed as the growing season progresses into the summer. Minimal impacts to plant vigor and health occur with light to moderate utilization of early growth when adequate soil moisture is available for regrowth and completion of the annual growth cycle. Moderate utilization in years with minimal soil moisture available for regrowth after use could deplete plant vigor and health, including removal of structural diversity valued for wildlife habitat, especially during periods of critical growth. Heavy to severe defoliation can expose the soil surface to future erosive forces and wind and water. Use of palatable annual species early in the period and reduce competition with desirable native perennial species when grazing removed and adequate soil moisture remains to complete growth cycles.

Summer and Fall Seasons (July 1 to October 31)
Summer season, fall season including regrowth, and dormant season grazing with no early season or critical growth period use would affect plant recruitment to plant communities; however, plants would be able to set seed. During these periods, large bunchgrasses would have increased capability to produce seed because grazing would occur after the species has produced much of its annual above-ground biomass. Livestock will tend to turn to palatable browse species, especially when herbaceous utilization becomes heavy late during this period. Overall plant vigor would be maintained by moderate grazing during the regrowth and dormant seasons because plants would be close to dropping, or already would have dropped, seed or become dormant. Localized impacts from defoliation and physical presence of livestock intensify, especially near water sources and other areas of concentrated activity.

Deferred and Season-based (rest) Grazing Use Periods
Deferred rotation grazing schedules provide for one or more years of grazing use after seed-set, following one or more years of growing season use. Rest-rotation schedules allow for similar opportunities for recovery, with one or more years of the grazing rotation in which no use is scheduled. At moderate utilization levels, either deferred or rest-rotation grazing systems can allow for adequate recovery of upland herbaceous root growth and associated carbohydrate storage following the impact of critical-season defoliation. Increased years of deferment or rest allow opportunity for recovery and maintenance of plan health and vigor to improve. Implementing grazing practices (deferment and rest) that improve or maintain native rangeland species to attain composition, density, foliar cover and vigor appropriate to site potential (USDI BLM, 1999b) can help achieve desired conditions for native plant communities. Most rest-rotation and deferred-rotation grazing schedules, designed for the physiological needs of herbaceous upland plants, can be successful within wide, low-gradient sedge-, rush-, and grass-dominated riparian sites, provided utilization levels in riparian communities are maintained within acceptable limits. These schedules promote species diversity and productivity, seed and root production, and seedling establishment. Improvement of vegetation composition may require recruitment of new individuals of desired species through seeding, planting, or natural regeneration from vegetation on the site. Establishment of desirable seedlings into a vegetation community may require a sequence of rest and or deferment years to avoid defoliation and physical impacts of livestock presence. Table VEG-10 below

describes the approximate timeframes of foraging behavior of livestock and vegetative phenology at time of foraging.

Table VEG-10: Factors influencing grazing regime and approximate timeframes

Season of Use	**Grazing Regime or Timing** **(+/- up to 2 weeks on either end)**	**Vegetative Phenology/Livestock foraging behavior**[1]
Early Season	April 1 to April 30	Post-dormant season; some green growth is evident; much of the available forage is from the previous year's residual growth. Livestock[2] distribute widely and have slow-growing early upland and riparian forage available that usually re-grow after grazing.
Critical Growth Period	May 1 to June 30	Period of most active growth, where plant is most sensitive to water deficit. Livestock distribute widely and have abundant upland and riparian forage available that usually re-grow after grazing.
Non-critical Growth Period	July 1 to July 15	Boot stage through flowering; livestock distribute closer to riparian areas and shade and have abundant upland and riparian plants available that can re-grow after grazing.
Hot Season	July 15 to September 1	Period of maturity to senescence; livestock distribute mostly in riparian areas and shade and have abundant upland and riparian plants available that usually exhibit minimal re-growth after grazing.
Regrowth	September 1 to October 31	Root and shoot regeneration occurs at this time. Livestock distribute mostly in riparian areas and shade and have abundant upland and riparian plants available that usually partially re-grow after grazing, depending on precipitation.
Dormant Season	November 1 to March 31	Period of non-growth; livestock distribute widely and have abundant dormant upland and riparian plants available that usually don't re-grow after grazing.

[1] Factors that influence season of use include temperature, precipitation, and elevation.
[2] Livestock are defined as sheep, cattle and horses; however, cattle usually graze more grass-like species, whereas sheep graze more forbs until the plants dry up. Horses seek higher elevations most of the year and graze more grass-like species.

Utilization

Allotment-specific utilization data is available in Section 3.3.1 above and Appendix B. Areas of repeated moderate to heavy grazing would result in decreased abundance of deep-rooted perennial grasses (e.g., bluebunch wheatgrass) and increased abundance of shallow-rooted grasses (e.g., Sandberg bluegrass). Areas of repeated moderate to heavy grazing during the early season through the hot season would remain static or degrade because repetitively grazed plants would have reduced vigor and recruitment. Areas of repeated light grazing would result in static or increased community diversity.

Intensity of grazing use includes a number of potential impacts to a variety of resource values. Generally, the vigor of forage grass species can be sustained with light or moderate utilization, while heavy utilization reduces photosynthetic tissue below levels needed to maintain root reserves, diminishing the vigor of utilized species. However, the timing of grazing use relative to plant phenology and the occurrence of repeat grazing of individual plants combine with utilization levels to affect the health and vigor of key species, as well as changes to vegetation community composition. Moderate utilization during periods when reserves and photosynthesis are limited for initial growth, during regrowth, or during seed formation will impact herbaceous species more than the same level of utilization during periods when the plant is not actively growing. A review of the literature by Anderson (1991), pertaining to the

effects of defoliation and vigor recovery of bluebunch wheatgrass, and research by (Ganskopp, 1988), pertaining to similar effects to Thurber's needlegrass, revealed a high sensitivity to utilization during the active growing season. Grazing use that occurred when the plant was entering the boot stage, a period early in its seed producing stage of growth, was the period of highest sensitivity. Utilization levels of 30 to 40 percent under deferred grazing systems or one-time utilization levels greater than 50 percent during the growing season have been shown to cause significant reductions in vigor and productivity. Time frames necessary for recovery may extend beyond the average 2-to-4-year cycle frequently used in grazing rotations. Researchers have recommended that desert ranges be stocked for around 30 to 35 percent use of forage production in an average year to meet both vegetation management and livestock production objectives (Holechek, Thomas, Molinar, & Galt, 1999) (Appendix F).

Heavy utilization can be detrimental to ecological sites in the Chipmunk Group allotments. This type of utilization leads to reduced vigor of the bunchgrasses. Commensurate with reduced vigor, recruitment of these species also declines. As these species decline, the vegetative community becomes susceptible to an increase in shrub species and potential invasion of noxious and invasive plants (Holechek, De Souza Gomes, Molinar, & Galt, 1998).

Improper grazing management can influence fire frequency with hoof disturbance creating a seedbed for increasing fine fuels. Fires become more frequent when cheatgrass increases as a result of improper grazing management and becomes co-dominant with Sandberg bluegrass and other annuals. Proper grazing management that addresses frequency, duration, and intensity of grazing can keep fine fuels from developing, thereby reducing annuals and fire frequency, as proposed in all grazing alternatives (Holecheck, Baker, Boren, & Galt, 2006).

Utilization effects to specific key forage species are described generally as the degree of increasing or decreasing presence in the vegetative community from grazing pressure. Bluebunch wheatgrass as a key forage species decreases with heavier grazing pressure while Sandberg bluegrass increases. Most sources recommend that bluebunch wheatgrass be grazed under a deferred, rotational grazing system to ensure plants remain healthy. Spring grazing should occur no more than 1 out of 3 years, and no more than 40 percent utilization should occur during rapid growth (Miller, Seufert, & Haferkamp, 1994) (USDA NRCS, 2012). Heavy early spring grazing is especially damaging and grazing should be delayed until at least mid-boot stage. No more than 60 percent utilization should occur after seed ripens.

Noxious Weeds

Livestock grazing can bring in noxious weed seed from outside the allotments and spread seed from any existing infestations within the allotments. Cattle may spread weed seed by ingesting and depositing seed in manure and carry seed in their fur and in mud on hooves (Nevada Agricultural Experiment Station, 2008).

Indirect effects from grazing include potential for weed increase from both noxious and other invasive plants, since these species (such as leafy spurge and cheatgrass) flourish with an increase in bare ground and reduction of perennial grass cover, and alien weeds may be more resilient to grazing than natives (Kimball & Schiffman, 2003). Bulbous bluegrass in particular is likely to continue to increase. This also presents a potential for invasion of noxious weeds, such as knapweeds, which would have substantial negative effects on native plant community integrity and ecosystem function (Dukes, 2002). Medusahead may also increase in existing areas and spread to other unoccupied areas.

Livestock Trailing

Effects on upland vegetation from implementing trailing would authorize 340 additional AUMs to the 2,303 AUMs annually authorized for trailing. This trailing could potentially trample 46 miles in short-term trailing events. The permitted AUMs for the cumulative effects area will have short-term direct

effects of removal and trampling of vegetation. The routes and miles directly affected by trailing make up less than 1 percent of the cumulative effect analysis area, and not all of these acres would actually be trailed upon.

Effects from livestock trailing/crossing would include minor trampling and 0 to 10 percent utilization. Due to the short duration of trailing, grazing effects from cattle trailing are expected to be minimal. Direct grazing from sheep trailing would occur where sheep are trailed off existing roadbeds. However, because both sheep and cattle trailing would occur on such a small proportion of the landscape and for a limited duration, effects from trailing are expected to be insignificant (USDI BLM, 2012c). A slight increase in the spread of weeds could occur, but the short distance and duration would limit the amount and possibility. Additionally, if noxious weeds are detected in the future, easy access would be available for treatment. Range readiness determinations are essential and would reduce mechanical damage to soils when soils are saturated early in the spring during the peak spring melt events. The duration of trailing activities to be authorized would require active trailing in most cases. Management actions as described above, if implemented, would allow upland plant communities to meet or make significant progress toward meeting Idaho Rangeland Health Standards and ORMP objectives.

3.3.2.2. Alternative 1 Effects

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives section. Any additional specific effects from this alternative will be described below by allotment.

Implementation of Alternative 1 would continue current livestock management. Section 3.3.1 Affected Environment describes the effects of Alternative 1 by creating the existing vegetation condition from current management. Section 3.3.1 also describes whether each allotment is meeting Idaho Rangeland Health Standards for native plant communities, seedings and exotics under current management. This alternative would generate little to no change to existing vegetation communities. Those allotments that are meeting Standards and ORMP objectives would continue to do so. Likewise, those allotments currently not meeting the Standards and ORMP objectives would continue to fail to meet the Standards under current grazing management, as described in Section 3.3.1 above. The repeated spring and summer grazing during the critical growing period will not allow ample deferment or rest to upland vegetation in areas currently not meeting vegetation Standards or ORMP objectives, nor will it promote shifting early seral bunchgrasses and invasive annual communities to later seral decreaser bunchgrasses (Holechek, Gomez, Molinar, & Galt, 1999). Vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas.

Idaho Rangeland Health Standard for upland native vegetative communities would continue to be met on 23,334 acres out of 59,122 acres (39 percent); 9,611 acres out of 10,666 would continue to meet the rangeland seedings Standard (90 percent); and 7,651 acres out of 5,748 would continue to meet the exotic plant community Standard (53 percent) (see Table VEG-8 in Section 3.3.2 above). These acres include only the BLM lands associated with the Chipmunk Group allotments.

3.3.2.3. Alternative 2 Effects

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives section. Any additional specific effects from this alternative will be described below by allotment, where effects are different than effects described in Alternative 1.

Alternative 2 will have generally the same effects as described in Alternative 1 (current management) with added flexibility in the grazing schedules and livestock numbers (see Appendix D for complete proposals by permittee). Although livestock numbers may change, season of use would remain the same

and authorized animal units by allotment would not be exceeded. Effects of these proposals would continue current existing conditions of vegetative communities. The repeated spring and summer grazing during the critical growing period would not allow ample deferment or rest to upland vegetation currently not meeting vegetation Standards, nor would it promote shifting early seral bunchgrasses and invasive annual communities to later seral decreaser bunchgrasses (Holechek, Gomez, Molinar, & Galt, 1999).Vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas.

The grazing effects of these proposals on fenced federal range (FFR) allotments would continue current existing conditions of vegetative communities; however, the permit would reflect a true discretionary use and authorize season of use as March 1 through February 28. This may change the livestock numbers to better reflect existing management.

Alternative 2 proposals would maintain the existing conditions of vegetative communities. Vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas.

Proposals for removal of terms and conditions of the stipulated settlement agreement would cause a downward trend in vegetation condition and health and would not meet ORMP vegetation management objectives or the Idaho Standards for Rangeland Health. Removing stubble height and woody browse requirements, coupled with the failure to make significant grazing management changes where needed, would not move the allotment toward meeting ORMP vegetation management objectives.

Franconi and Madriaga Allotments

The permittee's proposal for the Madriaga allotment increases livestock numbers from 160 to 225 head, but authorized AUMs and utilization levels would remain the same; thus, increased livestock numbers would reduce the season of use and have minimal effects to vegetative communities in the allotment, according to the grazing response index (Reed, Roath, & Bradford, 1999). The permittee's application proposes a grazing rotation system that would utilize the three Franconi pastures in conjunction with the two Madriaga pastures for a five pasture, 3-year rotation. Both allotments would incorporate a minimum 1 year of deferment in all pastures (except pasture 1 in Franconi).

The Madriaga allotment would continue to fail to meet Standard 4 for vegetative communities but would have the potential to slowly recover. The deferred grazing during the critical growing period would allow deferment one in three years to upland vegetation currently not meeting vegetation Standards where currently there is repeated spring grazing. This deferment would promote shifting early seral bunchgrasses and invasive annual communities to later seral decreaser bunchgrasses (Holechek, Gomez, Molinar, & Galt, 1999). Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Vegetation resources not meeting ORMP vegetation management objectives would have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition slowly on all areas as compared to Alternative 1 No Action.

Soda Creek Allotment

AUMs on the Soda Creek allotment would increase from 501 to 731 AUMs (46 percent increase) and continue existing grazing management with flexibility. Average actual use has been 431 AUMs since 1997, and this proposal has the potential to cause a downward trend in the vegetative communities by impacting the upland vegetation. The repeated spring and summer grazing during the critical growing period will not allow ample deferment or rest to upland vegetation, which could potentially shift vegetation into early seral bunchgrasses and invasive annuals, as suggested by grazing response index

(Reed, Roath, & Bradford, 1999). Although vegetative community standards are currently being met in the Soda Creek allotment, this proposal has the potential to increase the composition of non-native invasive species within the vegetative communities, which currently include invasive annuals. Increasing AUMs by 46 percent and increasing grazing management flexibility have the potential to cause these at-risk communities to decline to the point where the health and vigor of native perennial plants would not be maintained. Vegetation resources currently meeting ORMP vegetation management objectives would not have the opportunity to maintain satisfactory vegetation health and condition on all areas.

Trout Ceek and Trout Creek/ Lequerica Allotments

The application submitted by the permittee proposes a grazing rotation system that would utilize the three Trout Creek pastures in conjunction with the two Trout Creek/Lequerica pastures for a five pasture, 3-year rotation. If the two allotments were used in conjunction, the rotation would result in an 18 percent reduction in AUMs as compared to the permitted AUMs within the Trout Creek pastures, but the authorized AUMs would remain the same in the Trout Creek/Lequerica pastures.

Under current management, the Trout Creek allotment is not meeting Standard 4 due to invasive annuals, and the Trout Creek/Lequerica allotment is meeting Standard 4. Currently, the Trout Creek pastures are used during spring, summer, and fall over a 3-year rotation with no deferment or rest in two of the three pastures. The proposed schedule under Alternative 2 would incorporate 1 year of deferment in a 3-year rotation in all pastures. Increased years of deferment and a reduction of 18 percent in AUMs will allow opportunity to make significant progress toward meeting upland vegetation health and vigor and ORMP vegetation management objectives.

Similarly, in the Trout Creek/Lequerica allotment, the rotation proposed under Alternative 2 would implement 1 in 3 years of grazing deferment. This would not differ from current use for pasture 1 but would increase spring and critical growing season use in pasture 2, which has been grazed in late summer and fall over recent years. Taken together, both allotments are expected to continue to meet or make progress toward meeting the Standard under the proposed schedule in Alternative 2. However, with an increase of invasive annuals, the potential for adverse impacts to soil stability and hydrologic function is elevated. Vegetation resources currently meeting ORMP vegetation management objectives would continue to have the opportunity to maintain satisfactory vegetation health and condition on all areas.

Wild Rat & Elephant Butte Allotments

The proposal to create the Wild Rat allotment decreases AUMs (-7 percent); the move of 1,050 acres from the Alkali-Wildcat pasture to the Elephant Butte allotment would create a new pasture 6 in the Elephant Butte allotment and would also result in a 7 percent increase in AUMs in that allotment. The Wild Rat proposal includes a decrease to AUMs, season of use would remain spring grazing every year, and therefore no measurable effects to vegetative communities from current conditions would occur on the allotment. Acres would increase on the Elephant Butte allotment, and livestock numbers and season of use would be fall, winter and spring grazing, essentially the same as what is currently occurring. There are no measurable changes in effects to the Elephant Butte proposal to exotic communities that are currently not meeting the Standards. Alkali-Wildcat, Rats Nest and Elephant Butte allotments would continue to fail to meet the Standard for vegetative communities. However, vegetative standards in the Wild Rat allotment would move toward meeting Standards at a faster rate than Alternative 1. Vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas. However, for the Elephant Butte allotment, all 6 pastures are exotic communities and have crossed a threshold, so grazing influences at these levels are not expected to improve conditions. Only mechanical manipulation and seedings would improve these vegetative communities.

In addition, Ted Blackstock applied for TNR on the Elephant Butte allotment. This request was considered and dismissed from detailed analysis based on the lack of available site-specific forage production data (see Section 2.4 Alternatives Considered but Eliminated from Detailed Study).

Idaho Rangeland Health Standards for upland native vegetative communities would continue to be met on 23,334 acres out of 59,122 (39 percent). However 9,618 acres currently meeting would be at risk to additional impacts (16 percent); 9,611 acres out of 10,666 would continue to meet the rangeland seedings Standard (90 percent); and 5,748 acres out of 10,932 would continue to meet the exotic plant community Standard (53 percent). Vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas (see Table VEG-8 in Section 3.3.2 above). These acres include only the BLM lands associated with the Chipmunk Group allotments.

3.3.2.4. Alternative 3 Effects

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives section. Any additional specific effects from this alternative will be described below by allotment.

Implementation of Alternative 3 would institute a pasture rotation schedule that includes less-frequent use or deferred grazing during the critical growth periods when compared to Alternatives 1 and 2. Increased years of deferment or rest allow opportunity for recovery and maintenance of plant health and vigor to improve (Bailey & Brown, 2011). The decrease in the grazing frequency of growing-season use would allow native perennial species to complete the annual growth cycle more often in the absence of defoliation by livestock grazing and allow significant progress toward meeting upland vegetation health and vigor and ORMP objectives. This decrease in active grazing use would be achieved by reducing livestock numbers and/or season. In addition, stocking rates have been developed for vegetative communities not meeting management objectives where grazing intensity is lower than the management prescriptions in Alternatives 1 baseline (Appendix C-2). Table VEG-11 describes the effects of seasons of use and AUMs by allotment.

Table VEG-11: Alternative 3 effects by allotment

Allotment	Season of Use	Percent change in AUMs as compared to the current 10-year permit.	Effects in addition to those found in effects common to all grazing alternatives
Baxter Basin (530)	Spring or Summer grazing 2 years and rest the third year of a 3-year rotation.	-3%	Increased years of deferment or rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on average actual use by pasture; will allow adequate recovery to upland vegetation.
Blackstock Springs (515)	Spring grazing the first year, summer the second year, and during the fall the third year of a 3-year rotation.	-27%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on stocking rates from ESDs; will allow adequate recovery to upland vegetation.
Burgess (572)	Spring grazing the first year and during the summer the second year of a 2- year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because meeting upland health standards.
Burgess FFR (638)	Spring grazing the first year and summer grazing the second year of a 2-year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because meeting upland health standards.
Corral Creek FFR (602)	Spring and early summer grazing for 2 of 3 years, and deferred to fall grazing the third year.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because adequate stocking rates.
Cow Creek (562)	Spring and early summer grazing for 2 of 3 years, and rested the third year in a 3-year rotation	-17%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on stocking rates and rest; will allow adequate recovery to upland vegetation.
Elephant Butte (513)	Spring grazing 2 in 3 years and will be deferred to fall use 1 in 3 years. Pasture 2 spring grazing 1 in three years.	+7%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Increased stocking rates based on permittees proposal and increase of new pasture 6 with additional 1,050 acres; will allow adequate recovery to upland vegetation.
Ferris FFR (545)	Spring grazing one year and during the summer two years of a 3- year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because adequate stocking rates.
Franconi (558)	Spring and summer grazing for 2 of 3 years, and deferred to fall grazing the third year in a 3-year rotation	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because adequate stocking rates.
Jackson Creek (506)	Pastures 1-3 of the allotment would be grazed during the summer all three years of a 3-year rotation, and pastures 4 and 5 would be grazed during the fall every year	-17%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on average actual use by pasture; will allow adequate recovery to upland vegetation.
Joint (531)	Spring grazing 2 in 3 years and will be deferred to fall use 1 in 3 years.	-45%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are

Allotment	Season of Use	Percent change in AUMs as compared to the current 10-year permit.	Effects in addition to those found in effects common to all grazing alternatives
			based on average actual use by pasture and stocking rates from ESDs; will allow adequate recovery to upland vegetation.
Lowry FFR (477)	Spring and summer grazing for 2 of 3 years, and deferred to fall grazing the third year.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because adequate stocking rates.
Madriaga (557)	Summer grazing the first year and during the fall the second year of a 2-year rotation.	-25%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on average actual use by pasture; will allow adequate recovery to upland vegetation.
Poison Creek (603)	Spring grazing 2 in 3 years and will be deferred to fall use 1 in 3 years.	-2%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on average actual use; will allow adequate recovery to upland vegetation.
Sands Basin (521)	Spring grazing the first year and during the fall the second year of a 2-year rotation.	-9%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs are based on average actual use by pasture; will allow adequate recovery to upland vegetation.
Soda Creek (652)	Spring/Summer grazing for 3 of 3 years, and during the fall 1 in 3 years pasture 6 of a 3-year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because meeting upland health standards.
Stanford FFR (608)	Spring and summer grazing for 2 of 3 years, and deferred to fall grazing the third year.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because adequate stocking rates.
Texas Basin FFR (472)	Spring and early summer grazing for 2 of 3 years, and deferred to fall grazing the third year.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because adequate stocking rates.
Trout Creek (529)	Spring and summer grazing for 2 of 3 years, and deferred to fall grazing the third year in a 3-year rotation.	-53%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Reductions in AUMs based on average actual use by pasture; will allow adequate recovery to upland vegetation.
Trout Cr/Lequerica (560)	Summer grazing for 2 of 3 years, and during the fall the third year of a 3-year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. No reductions in AUMs because meeting upland health standards.
Wild Rat	Spring grazing 2 in 3 years and will be deferred to fall use 1 in 3 years.	-7%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor. Decreased AUMs is based on exchange of use to Elephant Butte allotment in pasture 6 that includes 1,050 acres; will allow adequate recovery to upland vegetation.

Idaho Rangeland Health Standards for upland native vegetative communities would continue to be met on 22,649 acres out of 58,437 acres (39 percent). Acres not currently meeting would maintain or slowly improve in 10 years; 9,611 acres out of 10,666 would continue to meet the rangeland seedings community Standard (90 percent); and 5,748 acres out of 10,932 would continue to meet the exotic plant community Standard (53 percent). Acres currently not meeting because of livestock grazing would continue to fail to meet because of other causal factors, because grazing prescriptions are adjusted in this alternative (see Table VEG-8 in Section 3.3.2 above). These acres include only the BLM lands associated with the Chipmunk Group allotments.

3.3.2.5. Alternative 4 Effects

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives section. Any additional specific effects from this alternative will be described below by allotment.

Implementation of Alternative 4 would institute pasture rotation schedules that include less-frequent use or deferred grazing during the critical growth period and rest, as compared to Alternatives 1, 2, and 3. Increased years of deferment or rest allow opportunity for recover and maintenance of plant health and vigor to improve (Bailey & Brown, 2011). The decrease in the frequency of growing-season use would allow native perennial species to complete the annual growth cycle more often in the absence of defoliation by livestock grazing and allow significant progress toward meeting upland vegetation health and vigor and ORMP objectives, faster than Alternative 3. In addition, lower stocking rates provide lower grazing intensities for vegetative communities that are not meeting management objectives than management prescriptions in Alternatives 1 and 2 (Appendix C-2). Table VEG-12 describes the effects of seasons of use and AUMs by allotment.

Table VEG-12: Alternative 4 effects by allotment

Allotment	Season of Use	Percent change in AUMs as compared to the current 10-year permit.	Effects in addition to those found in effects common to all grazing alternatives
Blackstock Springs (515)	Spring grazing the first year, summer/fall the second year, and rested third year of a 3-year rotation.	-50%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs are based on stocking rates from ESDs and rest; will allow adequate recovery to upland vegetation.
Burgess (572)	Spring/summer grazing the first year and rested the second and third years of a 3- year rotation.	-62%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs because of added rest.
Burgess FFR (638)	Spring grazing the first year and summer grazing the second and third year of a 3-year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. No reductions in AUMs because meeting upland health standards.
Cow Creek (562)	Pastures 1 & 2 Spring and early summer grazing for 1 of 3 years, and rested the second and third year in a 3-year rotation. Pastures 3, 4 and 5 summer grazing the first year and fall grazing in year 2 and 3.	-34%	Increased years of rest allow opportunity for recover and maintenance of upland health and vigor to slowly improve faster than Alt 3. Reductions in AUMs are based on stocking rates and rest; will allow adequate recovery to upland vegetation.
Elephant Butte (513)	Spring grazing 1 in 3 years and will be deferred to fall use 1 in 3 years. Rested 1 in three years. In a 5-pasture rotation.	-29%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs based on permittees proposal and rest; will allow adequate recovery to upland vegetation.
Ferris FFR (545)	Spring/summer grazing one year and during the fall two years of a 3- year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. No reductions in AUMs because adequate stocking rates.
Jackson Creek (506)	Pastures 1-3 of the allotment would be grazed during the spring 1 in 3 years, rested 2 in three years; pastures 4 and 5 would be grazed during the summer 1 in 3 years and fall 2 in years of a 3-year rotation	-41%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs are based on average actual use by pasture and rest; will allow adequate recovery to upland vegetation.
Joint (531)	Spring/summer grazing 1 in 3 years and will be deferred to fall use 2 in 3 years.	-45%	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs are based on average actual use by pasture and stocking rates from ESDs; will allow adequate recovery to upland vegetation.
Madriaga (557)	Summer grazing the first year and during the fall the second year and rested the third year of a 3-year rotation.	-48%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs are based on average actual use by pasture and rest; will allow adequate recovery to upland vegetation.
Poison Creek (603)	Spring grazing 1 in 3 years and will be rested 2 in 3 years.	-56%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3.

Allotment	Season of Use	Percent change in AUMs as compared to the current 10-year permit.	Effects in addition to those found in effects common to all grazing alternatives
			Reductions in AUMs are based on average actual use and rest; will allow adequate recovery to upland vegetation.
Sands Basin (521)	Spring grazing the first year and rested the second year of a 2-year rotation.	-53%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs are based on average actual use by pasture and rest; will allow adequate recovery to upland vegetation.
Soda Creek (652)	Spring/Summer grazing for 2 of 3 years, and during the fall the third year of a 3-year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. No reductions in AUMs because meeting upland health standards.
Trout Cr/Lequerica (560)	Summer grazing for 1 of 3 years, and during the fall 2 in three year of a 3-year rotation.	No Change	Increased years of deferment allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. No reductions in AUMs because meeting upland health standards.
Wild Rat	Spring grazing for 1 of 3 years and rest 2 of three years.	-63%	Increased years of rest allow opportunity to make significant progress toward meeting upland vegetation health and vigor faster than Alt 3. Reductions in AUMs are based on average actual use and rest; will allow adequate recovery to upland vegetation.

Idaho Rangeland Health Standards for upland native vegetative communities would continue to be met on 21,559 acres out of 52,825 acres (41 percent). Acres not currently meeting the Standard would maintain or improve faster than Alternatives 1, 2, and 3 in 10 years; 9,611 acres out of 10,666 would continue to meet the rangeland seeding Standard (90 percent); and 5,748 acres out of 10,932 would continue to meet the exotic plant community Standard (53 percent). Acres currently not meeting because of livestock grazing would continue to fail to meet because of other causal factors, because grazing prescriptions are adjusted in this alternative. Acres currently not meeting all vegetative standards would improve rangeland health faster than in Alternatives 1, 2, and 3 (see Table VEG-8 in Section 3.3.2 above). These acres include only the BLM lands associated with the Chipmunk Group allotments.

3.3.2.6. Alternative 5 Effects

Alternative 5 applies to Poison Creek allotment only. General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives section. Additional effects are described below for the Poison Creek allotment only.

Implementation of Alternative 5 would institute pasture rotation schedules that are the same as Alternative 3 above. Currently, the Poison Creek allotment is managed as a seeding, with grazing in the spring every year by cattle and sheep, and is meeting Standard 5. However, livestock type would be changed to authorize cattle and horses only; sheep would no longer be authorized to graze on the Poison Creek allotment, and authorized AUMs would decrease (-2 percent). In addition, deferment to fall use would occur 1 in 3 years. Cattle grazing effects as compared to sheep will increase distribution in the vegetative communities and concentrate more use in the riparian areas. More grass and grass-like species compared to forbs will be consumed (Holecheck, Baker, Boren, & Galt, 2006). Deferment of grazing to fall use 1 in 3 years, as compared to continuous spring grazing in current management, would allow native perennial species to complete the annual growth cycle more often in the absence of defoliation by livestock grazing, allowing significant opportunity for recovery of plant health and vigor to seeded communities; including meeting ORMP objectives. These rotations are available in Chapter 2 under Alternative 5 and in Appendix C-2.

The Idaho Rangeland Health Standard for rangeland seedings on the Poison Creek allotment would continue to be met; 5,244 acres out of 5,244 acres would continue to meet the seeding community Standard (100 percent) (see Table VEG-8 in Section 3.3.2 above). These acres include only the BLM lands associated with the Chipmunk Group allotments.

3.3.2.7. Alternative 6 Effects

Implementation of the no-grazing alternative would provide a more rapid rate of recovery toward ecological site potential than other alternatives considered, in those areas where livestock are the causal factor for a site not being at potential. In the absence of livestock grazing, growing season defoliation of native perennial species, including bunchgrass species that provide the majority of current forage for livestock grazing use, would be limited to use by native herbivores, including insects. Limited growing-season defoliation would allow bunchgrass species to complete their growth cycle annually without the need to replace grazed leaf material or grazed tillers midway through the growing season, and would thus regain health and vigor. Although restoration of vegetation communities consistent with the reference site described in ecological site descriptions is limited to a process that may take multiple decades, if not centuries, recovery would be initiated through the passive action of removing livestock grazing impacts. The degree to which state-and-transition models apply and transitions have been passed will limit opportunity in the absence of active vegetation manipulation for recovery toward the reference site described. The introduction of non-native and invasive species, fire suppression activities, and sources of

disturbance, other than livestock grazing and physical impacts from livestock that did not define the reference site, would continue, preventing full recovery even in the long term (decades, if not centuries).

The no-grazing alternative eliminates the risk of introducing noxious weeds and invasive species to public lands resulting from soils disturbance by livestock activity and the increased spread of existing incursions resulting from seed distribution in fur, on hooves, and in the livestock digestive system. The number of other vectors for seed dispersal and soil disturbance would continue to encourage the spread of weeds and provide a need for weed control programs coordinated across multiple ownership boundaries.

Implementing Alternative 6 would move vegetation in the allotments toward reference communities and would make progress toward meeting the Idaho Rangeland Health Standard for native plant communities. Seedings would transition back to native plant communities at a very slow rate. More native plants might increase in exotic plant communities, but the Burgess FFR, Elephant Butte, and Jackson Creek allotments would continue to fail to meet the Idaho Rangeland Health Standard for exotic plant communities based on soil conditions and increased litter. Progress toward a full complement of native perennial species more consistent with ecological site potential would result in the long term. Recovery of ecological site potential vegetation communities would not occur within the 10-year period of initial livestock exclusion because recovery of all vegetation functional-structural groups from the existing ecological condition in sagebrush steppe type occurs at a slow rate, requiring decades, if not centuries.

The Idaho Rangeland Health Standard for upland native vegetative communities would continue to be met on 23,334 acres out of 59,122 acres (39 percent); 9,611 acres out of 10,666 would continue to meet the seedings community Standard (90 percent); and 7,651 acres out of 10,932 would continue to meet the exotic community Standard (70 percent). Acres would continue a transition back to a native plant community with the absence of livestock (see Table VEG-8 in Section 3.3.2 above). These acres include only the BLM lands associated with the Chipmunk Group allotments.

3.3.2.8. Cumulative Effects

Cumulative Impacts Analysis Area

The vegetation resource cumulative impacts analysis area (CIAA) was set to the Chipmunk Group allotment boundaries (Map CMLV-1), which covers 125,262 total acres; effects will not occur to vegetation beyond the allotments. Past, present, and reasonably foreseeable future actions outside the Chipmunk Group allotment boundaries will have little direct or indirect impact on vegetation resources in the allotment (see tables CMLV-1 through CMLV-3 in Section 3.2 for a list of all actions). Plants, rooted in the soil, are not transient over long distances, with the exception of wind-distributed seeds. Indirect effects of actions affecting vegetation are spatially confined to a short distance from the action. The timeframe considers activities from past actions which have influenced current conditions, activities planned within the next 3 years, and the expected life of the permits (10 years).

Past, Ongoing, and Reasonably Foreseeable Activities

Past, present, and reasonably foreseeable future activities within the CIAA relevant to cumulative effects were determined using approximated BLM GIS data and are displayed in Section 3.2. Several of the same past activities that have created the current condition on upland vegetation, including noxious weeds, would continue in the cumulative impacts analysis area. Vegetation and soils effects are interrelated, so for more associated effects of vegetation, see Section 3.4 Soils of this EIS. Table VEG-13 displays the likely magnitude and type of effects of past and ongoing activities on upland vegetation, including noxious weeds, in the cumulative impacts analysis area.

Table VEG-13: Past and Ongoing Activities and potential effects on upland vegetation including noxious weeds in the CIAA

Activity	Magnitude of Effect on Vegetation	Type of Effect
Livestock Grazing	Moderate, widespread	Direct Effect: herbivory and trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect: change in vegetation composition, non-native weed invasion, altered fire regime.
Wild Horse Herd Management Area	Moderate to potentially high within WHMA	Direct Effect: trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect: change in vegetation composition, non-native weed invasion, altered fire regime.
Infrastructure (fences, reservoirs, troughs, structures, etc.)	Potentially high in a small percentage of vegetation CIAA acres	Localized elimination of individual plants and perhaps small occurrences; permanent degradation of vegetation
Roads	Potentially high in a small percentage of vegetation CIAA acres	Localized elimination of vegetation; permanent degradation of habitat
OHV	Moderate to high, localized to a small percentage of vegetation CIAA acres	Localized seedbank loss, elimination of individual plants.
Trailing	Likely minor to low in a small percentage of vegetation CIAA acres	Localized physical impact and elimination of individual plants
Noxious Weed Treatment	Likely low if at all in a small percentage of vegetation CIAA acres	Overspray potentially reducing vigor and reproduction of individuals and mortality of individuals
Wildfire & Fire Suppression	Low to moderate, widespread	Low elevation: Long-term (more than 10 years) shift to reduced species diversity, non-native weed invasion, and altered fire regime. High Elevation: Long-term (more than 10 years) shift from grass/forb/shrub community to localized late seral shrub dominated areas with reduced species diversity
Prescribed Burning	Likely moderate in a small percentage of vegetation CIAA acres	Short-term (less than 10 years) minor negative impact to habitat and change in competition; long-term (more than 10 years) shift from late seral shrub dominated community to grass/forb/shrub community
Mining Claims	Potentially high in a small percentage of vegetation CIAA acres	Localized physical impact and elimination of individual plants and perhaps small occurrences; permanent degradation of vegetation

Cumulative Effects Common to all Grazing Alternatives

Vegetation in the CIAA has been affected by historic livestock grazing because livestock selectively eat larger bunchgrasses, altering the species composition and amount of fine fuels, which changes the fire regime. Until recently, most of that grazing has been repeated spring use. Rest and deferred use of pastures have increased in more recent management. Native ungulates (deer and elk) are common in the CIAA. Localized disturbances from wildfires, prescribed fires, and seedings have altered vegetation in recent years. Cumulative effects to vegetation have occurred, with multiple factors influencing the change in vegetation structure and composition. These factors include historic and current grazing, drought, fire, insects, climate and soil disturbance. Non-native invasive plants have been introduced and spread. Synergistic interactions of these changes over time have stressed the ecosystem (Nevada Agricultural Experiment Station, 2008). An example of these interactions is the combination of increased non-natives, weeds, and selective grazing that affect late seral species. All of the projects, actions and activities that have occurred in the area to date have shaped or have had the potential to cumulatively shape or influence vegetation as it presently exist and is reflected in the descriptions of the affected environment conditions presented in Section 3.3.1.

Changes in species composition, with shifts toward early seral bunchgrass species and the presence of non-native plants and annual invaders, are evident across the 25 Chipmunk Group allotments, although some areas are dominated by non-natives. As a result, late seral bunchgrasses like bluebunch wheatgrass, which are expected to be co-dominant with sagebrush in most ecological sites, have been reduced (although not eliminated) across the landscape.

The reasonably foreseeable fence maintenance and noxious weed treatment would have small, short-term effects by removing vegetation within a limited area; within the cumulative effects area as a whole, this impact would be negligible.

Table VEG-8 above describes the BLM acres meeting or not meeting vegetative community Standards as compared to total CIAA acres.

Trailing

Cumulative effects on upland vegetation by implementing trailing would authorize 340 additional AUMs to the 2,303 AUMs annually authorized for trailing. This short-duration trailing could potentially affect approximately 46 miles in short-term trailing events. The permitted AUMs for the cumulative effects area will have short-term direct effects of removal and trampling of vegetation. The routes and miles directly affected by trailing would make up less than 1 percent of the cumulative effect analysis area, and not all of these acres would actually be affected. These additional AUMs would consume very little forage would when livestock are actively trailed, resulting in much less than the 340 AUMs authorized. Reasonably foreseeable projects are expected to have short-term disturbance to the cumulative effects analysis area. Trailing effects are limited in both time (short duration per year) and space, and so the cumulative effects of trailing on upland vegetation, when combined with the short-term disturbance but anticipated from foreseeable activities described in Section 3.2 above, is expected to be only slight. All other direct indirect and cumulative effects are the same as described in the 2012 Trailing EA (USDI BLM, 2012c). When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation conditions and health within the Chipmunk Group allotments would meet or move toward meeting ORMP vegetation

management objectives and the Idaho Standards for Rangeland Health. Progress would be made toward maintaining or improving vegetation condition below the threshold[15] of unacceptable change.

Noxious Weeds

The Hardtrigger Creek-Snake River, Reynolds Creek, and Upper Succor Creek watersheds have relatively high occurrence and richness of noxious weeds. The Jump Creek-Snake River and Trout Creek-Jordan Creek watersheds have relatively high richness but low occurrence of noxious weeds. The Jump Creek-Snake River, Trout Creek-Jordan Creek, and Upper Succor Creek watersheds contain occurrences of hardheads. Table VEG-14 below shows the noxious weed occurrences by watershed.

Table VEG-14: Noxious weed occurrences by watershed

Watershed	Broadleaved pepperweed	Canada thistle	Diffuse knapweed	Field bindweed	Gypsyflower	Hardheads	Leafy spurge	Poison hemlock	Puncturevine	Purple loosestrife	Rush skeletonweed	Scotch cottonthistle	Spotted knapweed	Tamarisk	Whitetop	Total
Hardtrigger Creek-Snake River	8	15							1		18	17		45	82	**186**
Headwaters Jordan Creek		2					1					8	8		55	**74**
Jordan Creek-Sheep Spring Creek															9	**9**
Jump Creek-Snake River		22	1	1		1			6	1		31		6	3	**72**
Reynolds Creek	13	8						1			1	12	10	59	95	**199**
Trout Creek-Jordan Creek		2	1		1	1	1					36			9	**51**
Upper Cow Creek												7	5		36	**48**
Upper Succor Creek	7	15	17			4	1	3	9		16	43	7	6	307	**435**
Total	**28**	**64**	**19**	**1**	**1**	**6**	**3**	**4**	**16**	**1**	**35**	**154**	**30**	**116**	**596**	**1,074**

Alternative 1 Cumulative Effects

The primary past, present and future activities that may cumulatively impact the vegetation communities are listed in Section 3.2 above. Native plant communities would continue to meet Standards on 55,774 of 99,339 CIAA acres (56 percent). Seeding communities would continue to meet the Standard on 10,949 of 12,101 CIAA acres (90 percent). Exotic plant communities would continue to meet the Standard on 8,024 of 13,823 CIAA acres (58 percent) (see Table VEG-8 in Section 3.3.2 above). These acres take into account all acres, including state and private lands associated with the Chipmunk Group allotments. The conclusions regarding whether BLM acres were meeting Rangeland Health Standards was extended to all acres in the pasture, including associated state and private lands, because all lands in the pasture are managed the same way.

[15] Cumulative effects concept of exceeding a "threshold" or "limit" is a key aspect of defining the significance of cumulative effects. The proposal may incremental push effects over a threshold of acceptable change that would cause the vegetative communities to move into not meeting a standard or moving a vegetative community into a new community phase that is away from potential natural community.

Upland vegetation in the CIAA acres would remain as described under the existing condition and the table above. Vegetative communities currently meeting or moving toward desired conditions would continue to do so because no changes would occur under this alternative. (See the Rangeland Vegetation, Including Noxious Weeds specialist report in the project record for specific trend information by allotment[16].) The repeated spring and summer grazing during the critical growing period will not allow ample deferment or rest to upland vegetation currently not meeting vegetation standards, which could potentially continue a shift in early seral bunchgrasses and invasive annuals. When these consequences are combined with the past, present and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas. The threshold for unacceptable change in the vegetation condition would be exceeded.

Alternative 2 Cumulative Effects

The primary past, present and future activities that may cumulatively impact the vegetation communities are listed in Section 3.2 above. Native plant communities would continue to meet Standards on 55,774 CIAA acres out of 99,339 (56 percent). However, 16,258 CIAA acres meeting would be at risk to additional impacts (16 percent); 10,949 CIAA acres out of 12,101 would continue to meet the seedings community Standard (90 percent); and 8,024 CIAA acres out of 13,823 would continue to meet the exotic community Standard (58 percent). However, the 1,903 CIAA acres meeting would be at risk to additional impacts (14 percent) (see Table VEG-8 in Section 3.3.2 above). These acres take into account all acres, including state and private lands associated with the Chipmunk Group allotments. The conclusion regarding whether BLM acres were meeting Rangeland Health Standards was extended to all acres in the pasture, including associated state and private lands, because all lands in the pasture are managed the same way.

Upland vegetation in the CIAA acres would remain the same as described under the existing condition and the table above, except for where current livestock grazing are the causal factor and there are no changes proposed; these acres are expected to remain the same or not continue to meet the Standard over the permitted period of 10 years. The repeated spring and summer grazing, during the critical growing period will not allow ample deferment or rest to upland vegetation currently not meeting vegetation standards and having the potential to continue a shift in early seral bunchgrasses and invasive annuals. When these consequences are combined with the past, present and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation resources not meeting ORMP vegetation management objectives would not have the opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas. The threshold for unacceptable change in the vegetation condition would be exceeded.

Alternative 3 Cumulative Effects

The primary past, present and future activities that may cumulatively impact the vegetation communities are listed in Section 3.2 above. Native plant communities would continue to meet the Standard on 41,089 CIAA acres out of 84,654 (49 percent). Acres not currently meeting would maintain or slowly improve in 10 years; 10,949 CIAA acres out of 12,101 would continue to meet the seedings community Standard (90 percent); and 8,024 CIAA acres out of 13,823 would continue to meet the exotic community Standard (58 percent). Proper livestock grazing, including deferment and rest, has been prescribed under this

[16] 2013 Rangeland Vegetation Including Noxious Weeds and Invasive Plants Report is saved in the project record and is available from the Owyhee Field Office upon request.

alternative; therefore, acres not meeting would continue to not meet because of other causal factors (see Table VEG-8 in Section 3.3.2 above). These acres take into account all acres, including state and private lands associated with the Chipmunk Group allotments. These acres take into account all acres including state and private lands associated with the Chipmunk Group allotments. The conclusion regarding whether BLM acres were meeting Rangeland Health Standards was extended to all acres in the pasture, including associated state and private lands, because all lands in the pasture are managed the same way.

Upland vegetation in the CIAA acres would continue to meet or move toward meeting vegetative Rangeland Health Standards. Alternative 3, with the implementation of seasonal constraints on periods of grazing use to meet resource objectives and with its reduction in livestock grazing use, would result in improved native perennial plant health and vigor. The allotments will make progress toward a full complement of native perennial species consistent with the reference site described in ecological site descriptions and will make progress toward meeting rangeland vegetative Standards within the 10-year term of the permit. The deferment and rest from grazing during the critical growing period will allow recovery to upland vegetation currently not meeting vegetation Standards. Slow recovery of vegetation will occur and shift toward a reference vegetation community. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation conditions and health within the Chipmunk Group allotments would meet or move toward meeting ORMP vegetation management objectives and the Idaho Standards for Rangeland Health. Progress would be made toward improving vegetation condition below the threshold of unacceptable change.

Alternative 4 Cumulative Effects

The primary past, present and future activities that may cumulatively impact the vegetation communities are listed in Section 3.2 above. Native plant communities would continue to meet standards on 37,931 CIAA acres out of 74,069 (51 percent). Acres not currently meeting would maintain or slowly improve in 10 years; 10,949 CIAA acres out of 12,101 would continue to meet seedings community standards (90 percent); and 6,720 CIAA acres out of 12,519 would continue to meet exotic community standards (54 percent). Proper livestock grazing has been prescribed under this alternative, deferment and rest; therefore, acres not meeting would continue to not meet because of other causal factors. However, acres currently not meeting vegetative standards would improve rangeland health faster than in Alternatives 1, 2 and 3. See Table VEG-8 in Section 3.3.2 above. These acres take into account all acres including state and private lands associated with the Chipmunk Group allotments. The conclusion regarding whether or not BLM acres were meeting a Rangeland Health Standard was extended to all acres in the pasture, including associated state and private lands, because all lands in the pasture are managed the same way.

Upland vegetation in the CIAA acres would continue to meet or move toward vegetative Rangeland Health Standards. Alternative 4 implements seasonal constraints on periods of grazing use (rest) and stocking rate adjustments to meet resource objectives; effects would result in improved native perennial plant health and vigor. The allotments will make progress toward a full complement of native perennial species consistent with the reference site described in ecological site descriptions and will make progress toward meeting rangeland vegetative Standards within the 10-year term of the permit. The deferment and rest from grazing during the critical growing period will allow ample recovery to upland vegetation currently not meeting vegetation Standards. Gradual recovery of vegetation will occur and shift toward a reference vegetation community, but at a faster rate than Alternative 3. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation conditions and health within the Chipmunk Group allotments would meet or move toward meeting ORMP vegetation management objectives and the Idaho Standards for Rangeland Health. Progress would be made toward improving vegetation condition below the threshold of unacceptable change.

Alternative 5 Cumulative Effects

Upland vegetation in the CIAA acres would continue to meet or move toward meeting vegetative Rangeland Health Standards on the Poison Creek allotment. Seeding communities would continue to meet standards and ORMP objectives on all 5,280 acres (100 percent). The deferment from grazing during the critical growing period will allow ample recovery to upland vegetation, including seedings. Slow recovery of seedings a shift toward a reference vegetation community will occur. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation conditions and health within the Chipmunk Group allotments would meet or move toward meeting ORMP vegetation management objectives and the Idaho Standards for Rangeland Health. Progress would be made toward improving vegetation condition below the threshold of unacceptable change (see Table VEG-8 in Section 3.3.2 above). These acres take into account all acres, including state and private lands associated with the Chipmunk Group allotments. The conclusion regarding whether BLM acres were meeting Rangeland Health Standards was extended to all acres in the pasture, including associated state and private lands, because all lands in the pasture are managed the same way.

Alternative 6 Cumulative Effects

Native plant communities would continue to meet Standards on 55,774 of 99,339 CIAA acres (56 percent). Acres not meeting Standards would move toward meeting Standards without the effects of livestock to BLM acres. Seeding communities would continue to meet the Standard on 10,949 of 12,101 CIAA acres (90 percent). The rangeland would continue a transition back to a native plant community with the absence of livestock. These acres take into account all acres, including state and private lands associated with the Chipmunk Group allotments. The conclusion regarding whether BLM acres were meeting Rangeland Health Standards was extended to all acres in the pasture, including associated state and private lands, because all lands in the pasture are managed the same way.

Exotic plant communities would continue to meet the Standard on 8,024 of 13,823 CIAA acres (58 percent); however, all acres in exotic plant communities may remain in exotic plant communities without mechanical manipulation, and livestock grazing would not influence this process (see Table VEG-8 in Section 3.3.2 above). These acres take into account all acres, including state and private lands associated with the Chipmunk Group allotments.

Progress toward a full complement of native perennial species more consistent with ecological site potential would result from 10 years of rest from livestock grazing. Livestock grazing would be eliminated from the effects of vegetation conditions. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, upward trend in the vegetation communities within the 25 Chipmunk Group allotments would meet or move toward ORMP vegetation management objectives and the Idaho Standards for Rangeland Health for vegetative communities.

Although improved conditions of vegetative communities would be most rapidly obtained under this alternative, a shift of livestock grazing timing, intensity and duration would likely occur, resulting in adverse impacts to other land ownerships. The magnitude of this potential effect depends on the degree to which current grazing is shifted to other areas and what level or intensity of management opportunities was applied. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted vegetation resources within the CIAA, vegetation conditions and health within the Chipmunk Group allotments would meet or move toward meeting ORMP vegetation management objectives and the Idaho Standards for Rangeland Health. Progress would be made toward improving vegetation condition below the threshold of unacceptable change.

3.4. UPLAND SOILS

3.4.1. Affected Environment

Introduction

A compilation of quantitative and qualitative data, along with aerial photography, GIS data, and site visits[17] contributed to the evaluation of conditions for the upland soil and watershed resource. Findings were compiled in the Soil Resource Specialist Report[18] that is available from the BLM Group 2 website noted in footnote 14 in Section 3.3.1. This specialist report provides the basis on which upland soil watershed conditions are based and serves as an integral supplemental document that, due to its size and detail for 25 allotments, is available in the project record. It discloses whether the Idaho Standards for Rangeland Health are met, provides rationales and causes for meeting or not meeting Standards, and supplies the background for alternative development. Equally important are the Determinations, which can be found in Appendix E.

Due to the limited amount of quantitative monitoring data and the variable nature of soil impacts associated with grazing management, it is difficult to allocate concrete disturbance acres with each alternative, especially since no range improvements are proposed that would offer an additional comparison of impacts. The following soils analysis therefore focuses on a qualitative rather than quantitative approach of analyzing the environmental effects of proposed grazing activities on the existing conditions of soil and upland resources for the Chipmunk Group allotments (Map GEN-1).

Existing Condition

Geology, Parent Material, and Soils

The 25 Chipmunk Group allotments are situated within the Middle Snake-Succor and Jordan sub-basins and encompass 125,263 acres. There are 67 different soil map units that represent a wide variety of inherent characteristics that influence vegetative growth, erosion potential, site productivity, drainage class, available water supply, and more. Soils within the analysis area have been mapped and are described in the Owyhee County Soil Survey (USDA NRCS, 2003) that delineates soil map units, landforms, and vegetation components and provides interpretive information on soil use and management. These soils are associated with ecological sites (Map ECOL-1, 2, 3) that are developed based on environmental factors such as vegetation, soils, and hydrology (Section 3.3 and Appendix F – Rangeland Ecology and Vegetation; (Caudle, DiBenedetto, Karl, Sanchez, & Talbot, 2013)).

Volcanic rocks, including rhyolite, welded tuff, and basalts, make up the majority of the source material for the soils and contribute, along with climate and other natural agents like fire, to an array of vegetative composition. Soil and hydrologic function are critical parameters for functioning upland areas. Chipmunk Group soils are shallow to moderately deep (with deeper inclusions) and generally have a xeric (arid) soil moisture regime and a mesic (moist) to frigid (cold) soil temperature regime (USDA NRCS, 2003).

Most soils are well drained, with the exception of portions of pastures 1 and 5 in the Elephant Butte allotment that are somewhat excessively drained (USDA NRCS, 2003). Moderate to slow infiltration rates are normal for the north- and southernmost portions of the Chipmunk Group allotments, while much of the low-to-mid-elevation allotments in the mid-section of the Chipmunk Group allotments can have very slow infiltration rates when thoroughly wet, especially if they have a high clay content and shrink-swell potential. As a result, high runoff is possible.

[17] Field reports are part of the project record and are available by request from the Owyhee Field Office.

[18] For additional, detailed information regarding upland soil and watershed conditions, see Group 2 Soil Specialist Report in the project record, available by request from the Owyhee Field Office.

Dominant soil textural classes in the Chipmunk Group area are gravelly loams, stony loams, and loams. Unweathered bedrock is present along the breaklands and steep slopes of main drainages, and also in the form of smaller outcrops and cliffs where abrupt elevation changes expose the volcanic parent material. Ash-influenced soils can be found in the Baxter Basin, Cow Creek, and Trout Creek allotments, along with several small inclusions throughout the project area.

Clay content is low (16 to 23 percent) to very low (less than 16 percent) in the northern pastures of Elephant Butte, which contain extensive calcareous soils. Clay content is also reduced in the Trout Creek and Split Rock vicinity and areas where outcrops and rockier soils dominate, especially below table tops, plateau rims, and steeper drainages. With increase in elevation, clay content increases to moderate levels (23 to 30 percent) across the undulating plateau and is highest (more than 30 percent) along the boundaries of the Sands Basin allotment and the low-to mid-elevations in the mid-section of the Chipmunk Group allotments.

Based on inherent soil characteristics, the potential erosion hazard from water in the Chipmunk Group allotments is rated as 29 percent slight and 63 percent moderate. Soils rated at moderate erosion potential levels are found along steeper mountainous terrain that ranges between 15 to 30 percent slope on average. Increased erosion potential, especially from disturbed ground, can lead to movement of sediments and deplete soil productivity due to the removal or degradation of the surface horizon.

Severe erosion hazards are present in 6 percent of Chipmunk Group soils and are associated with very steep (around 30 to 60+ percent) tributaries and streams, including Willow, Little McBride, Coyote, Jackson, Trout Creek, and Chimney Pot Creek. It also includes uplands of Rats Nest and Sands Basin, areas of Flattop Butte in pasture 3 of Blackstock Springs, pasture 2 of Cow Creek, most of pasture 1 in Burgess FFR, and the Split Rock vicinity in the Trout Creek allotment.

Very severe erosion hazards are present on less than 1 percent of the Chipmunk Group allotments, primarily in the finer textured soils in pastures 1 and 5 of Elephant Butte. Naturally, erosion hazard potential on any slope greater than 30 percent increases and is closely tied to inherent soil characteristics and ground cover for protection in the form of litter, vegetation, biological soil crusts, and rock fragments. Wind erosion hazard is rated low to moderate, with the exception of high to moderately high rates in the Elephant Butte allotment and one pocket of high wind erodibility in the Split Rock area of the Trout Creek allotment.

Idaho Rangeland Health Standard 1

Existing conditions in the Chipmunk Group allotments are a reflection of past and present management activities and natural processes. Detailed information and assessments for each allotment, its general setting, desired conditions, individual data compilation by pasture, and more detailed rationales are available in the Soil Resource Specialist Report. Summaries of findings reflecting current conditions for Standard 1 can also be found in the Determinations in Appendix E for each of the allotments. The following section groups the 25 allotments by identifying whether they are meeting Standard 1, and if not, whether current livestock grazing is a causal factor for failing to meet the Standard.

The compilation and analysis of all data and information available for an allotment describes the current rangeland health conditions and identifies changes or trends in rangeland health over time. Twelve of the 17 indicators utilized in the rangeland health field assessments (RHFAs) are related to Standard 1 - Watershed Health (USDI BLM, 2000) (USDI BLM, 2005b). The analysis of watershed condition considers both soil stability and hydrologic indicators and displays a natural range of physical and vegetative characteristics.

Tables SOIL-2, -4, and -6 at the beginning of the following sections summarize all indicator ratings and corresponding percentages related to Standard 1 by allotment (detailed breakouts by pasture are available in the Soil Resource Specialist Report along with a complete display of indicator and attribute ratings). The ratings for the indicators are expressed in degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site (USDI BLM, 2000) (USDI BLM, 2005).

Ground cover trend from nested frequency plots provided additional quantitative short- and long-term information (depending on assessment years) and also played a vital part in evaluating Standard 1. Due to the difficulty in displaying these data in a summarized fashion, they can be reviewed in the Soil Resource Specialist Report.

The term *at risk* has been applied to several pastures that are meeting Standard 1, meaning that watershed health is satisfactory but that it is near a point where soil and hydrologic function are susceptible to degradation. This takes into consideration a lag in response time, specifically between soils and vegetation, where soils may be resilient enough to withstand resulting adverse effects of declining vegetation conditions over a longer time before showing a measurable divergence from reference conditions. Similarly, soils may be the first to show declining conditions while the vegetation community is still relatively robust.

At-risk pastures are more susceptible to unpredictable stressors such as drought, wildfire, weed invasion, and climate change. These already compromised pastures have lower resilience to livestock grazing when coupled with unpredictable stressors and the subsequent potential to move toward failing to meet Standards.

The intention of such a label is to identify those pastures that deserve increased attention, with the idea of altering management when needed to avoid the degradation of conditions that may cause the allotment to fail to meet the Standard in the future. While being labeled at-risk for Standard 1 was not a main driver for developing the alternatives, the majority of the identified at-risk allotments/pastures are failing other Standards and thus are captured in Alternatives 3 and 4, which require improvement of resource conditions. As a result, the benefits that come with the grazing management changes proposed under Alternatives 3 and 4 will be beneficial to upland soil and watershed function.

Allotments Meeting Standard 1

Available data were reviewed (Soil Resource Specialist Report; Appendix E) and show that 13 allotments are meeting Rangeland Health Standard 1 for upland watershed soils. These include Baxter Basin, Burgess, Chimney Pot FFR, Chipmunk Field FFR, Cow Creek Individual, Ferris FFR, Lowry FFR, Poison Creek, R Collins FFR, Soda Creek, Texas Basin FFR, Trout Creek, and Trout Creek/Lequerica (Table SOIL-1).

Table SOIL-1: Summary of allotments (by pasture) meeting Standard 1; italics represent allotments with previously signed Determinations

Allotment Name	Pastures Meeting but Considered to be at Risk	No Additional Risks Identified
Baxter		*x*
Burgess		x
Chimney Pot FFR		*x*
Chipmunk Field FFR		*x*

Allotment Name	Pastures Meeting but Considered to be at Risk	No Additional Risks Identified
Cow Creek Individual	P 2	P 1, 3, 4, 5
Ferris FFR	P 3	P2
Lowry FFR		*x*
Poison Creek*	x	
R Collins FFR		*x*
Soda Creek	all 6 pastures	
Texas Basin FFR		*x*
Trout Creek		*x*
Trout Creek/Lequerica		x

*single pasture allotment P = Pasture

Table SOIL-2 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for RHFAs. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site.

Table SOIL-2: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators for RHFAs; italics represent allotments with previously signed Determinations

Allotment Name	Departure of Watershed Function Indicators from Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Baxter	*73*	*21*	*4*	*2*	*0*
Burgess*	58	33	10	0	0
Chimney Pot FFR	*100*	*0*	*0*	*0*	*0*
Chipmunk Field FFR	*67*	*33*	*0*	*0*	*0*
Cow Creek Individual*	66	27	6	1	0
Ferris FFR	61	30	9	0	0
Lowry FFR	*33*	*42*	*25*	*0*	*0*
Poison Creek	65	28	8	0	0
R Collins FFR	*75*	*25*	*0*	*0*	*0*
Soda Creek	61	30	9	0	0
Texas Basin FFR	*50*	*17*	*33*	*0*	*0*
Trout Creek	*61*	*28*	*9*	*2*	*0*
Trout Creek/Lequerica	80	20	0	0	0

*Ground cover trend for several sites is stable or upward and informed the conclusion of meeting Standard 1

Poison Creek Allotment

In the Poison Creek allotment, soils are meeting Standard 1 but are considered to be at risk due to post-fire recovery from the 2002 Trimbly fire that affected approximately 74 percent of the allotment (Map FIRE-1). Where mechanical rather than aerial seeding occurred after the fire, soils are hardened and compacted in localized areas, and the lack of plant diversity shows reduced capture, storage, and management of moisture as compared to reference communities, so that sites are considered to be at risk. The seeding provides protection and added soil stability to the landscape so that Standard 1 is met but is at risk should post-fire conditions decline over the long term (more than 10 years).

Ferris FFR, Cow Creek Individual, and Soda Creek Allotments

Biotic function is reduced in portions of the Ferris FFR, Cow Creek, and Soda Creek allotments due to a departure of the plant community from reference conditions and replacement by invasive species, especially annual grasses, which have a tendency to alter soil infiltration and water holding capacity over time. Although these allotments are identified to be at risk, soil and hydrologic indicators still show adequate watershed function and site stability and suggest that proper nutrient, hydrologic, and energy cycling are maintained. Based on this information, current livestock management is compatible with the attainment of Standard 1.

Burgess and Trout Creek/Lequerica Allotments

Burgess and Trout Creek/Lequerica are meeting upland soils and watershed Standard 1 but are identified as failing other Standards and thus are captured in Alternatives 3 and 4, which require management changes intended to enable improvement of resource conditions. As a result, the benefits that come with the grazing management changes proposed under Alternatives 3 and 4 will be beneficial to upland soil and watershed function.

Chimney Pot FFR, Chipmunk Field FFR, Lowry FFR, R Collins FFR, Texas Basin FFR, and Trout Creek Allotments

Chimney Pot FFR, Chipmunk Field FFR, Lowry FFR, R Collins FFR, Texas Basin FFR, and Trout Creek were identified as meeting Standard 1 with previously signed Determinations (Appendix E).

Allotments and FFRs not Meeting Standard 1 – Livestock is Not a Casual Factor

The available data (Soil Resource Specialist Report; Appendix E) show that the upland watershed Standard is not being met due to reasons other than current livestock grazing management practices in four allotments. These include Alkali-Wildcat, Corral Creek FFR, Stanford FFR, and Franconi allotments (Table SOIL-3).

Table SOIL-3: Summary of allotments (by pasture) not meeting Standard 1 with livestock grazing management practices not being a factor; italics represent allotments with previously signed Determinations

Allotment Name	Causes for Not Meeting Standard 1	
	Historic Grazing Practices	Fire and Associated Changes
Alkali-Wildcat*#	x	x
Corral Creek FFR	*P2*	
Franconi		*P2 and 3*
*Stanford FFR**	*x*	

*single pasture allotment #part of Wild Rat allotment in Alts 2, 3 and 4 only P = Pasture

Table SOIL-4 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for RHFAs. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site. Pre-fire monitoring records in the Franconi allotment are not applicable due to the 2006 Chubby Spain fire (Map FIRE-3). The previously signed Determination (Appendix E) utilized burned area rehabilitation records and on-site observations to conclude that the allotment is not meeting Standard 1.

Table SOIL-4: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators for RHFAs; italics represent allotments with previously signed determinations

Allotment Name	Departure of Watershed Function Indicators from Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Alkali-Wildcat#	57	20	23	0	0
Corral Creek FFR	*50*	*42*	*8*	*0*	*0*
Franconi	*No RHFA data available due to 2006 fire*				
Stanford FFR	*67*	*33*	*0*	*0*	*0*

#part of Wild Rat allotment in Alts 2, 3 and 4 only

Alkali-Wildcat, Corral Creek FFR, Franconi, and Stanford FFR Allotments

In the Alkali-Wildcat, Corral Creek FFR, and Stanford FFR allotments, Standard 1 is not being met because hydrologic function and soil/site stability attributes are not properly functioning. A transition of native deep-rooted vegetation to more shallow-rooted bunchgrasses caused by historic grazing practices reduces infiltration, which leads to surface runoff, soil surface sealing, and erosion. Biotic conditions are further degraded in the Stanford FFR due to a dominance of invasive annuals in the vegetative community brought on by historic grazing practices.

The Franconi allotment is not meeting Standard 1 due to ongoing recovery from wildfire effects caused by the 2006 Chubby Spain fire (Map FIRE-3). Soils in pastures 2 and 3 are at risk from accelerated erosion and are vulnerable to degradation until adequate vegetation and litter cover is established. A recent fire in 2012 also impacted portions of the Alkali-Wildcat allotment and will be rested from grazing for a minimum of two growing seasons in the burned area. For these four allotments, current livestock grazing management practices are not determined to be a significant contributing factor in not attaining Standard 1.

Allotments and FFRs Not Meeting Standard 1 – Livestock is a Causal Factor

The available data (Soil Resource Specialist Report; Appendix E) shows that watershed standards are not being met in eight allotments. These include Blackstock Springs, Burgess FFR, Elephant Butte, Jackson Creek, Joint, Madriaga, Rats Nest, and Sands Basin (Table SOIL-5).

Table SOIL-5: Summary of allotments (by pasture) not meeting Standard 1, with livestock grazing management practices being a significant contributing factor

Allotment Name	Pastures Not Meeting Due to Current and Historic Grazing Practices	Pastures Meeting but Considered to be at Risk	Pastures with No Additional Risks Identified
Blackstock Springs	P1 and P2		P3
Burgess FFR	P2		P1
Elephant Butte	P2	P1, 3, 4, 5 (and P6 - for Alts. 2, 3 & 4 only)	
Jackson Creek	P1	P3	P2, 4, and 5
Joint	P2 and 3	P4	
Madriaga	P2	P1	

Allotment Name	Pastures Not Meeting Due to Current and Historic Grazing Practices	Pastures Meeting but Considered to be at Risk	Pastures with No Additional Risks Identified
Rats Nest*#	x		
Sands Basin	P3 and P4		P1 and 2

*single pasture allotment #part of Wild Rat allotment in Alts 2, 3 and 4 only P = Pasture

Table SOIL-6 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for RHFAs. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site.

Table SOIL-6: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators for RHFAs

Allotment Name	Departure of Watershed Function Indicators from Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Blackstock Springs	53	36	7	4	0
Burgess FFR	48	13	25	15	0
Elephant Butte	80	11	5	4	0
Jackson Creek	59	24	13	3	0
Joint	37	24	30	9	0
Madriaga**	56	40	2	2	0
Rats Nest*#	90	5	5	0	0
Sands Basin	63	22	11	3	1

*Ground cover trend is downward and defined the call for not meeting
**Call includes observation of deteriorating conditions during 2012 field trip
#part of Wild Rat allotment in Alts 2, 3 and 4 only

Blackstock Springs, Burgess FFR, Elephant Butte, Jackson Creek, Joint, Madriaga, Rats Nest, and Sands Basin Allotments

The above allotments are not meeting Standard 1 due to signs of impaired watershed function (Table SOIL-6) indicative of soil surface erosion, water runoff, and litter movement. Increased pedestaling of plants, and in some cases rocks, along with mechanical damage to soils by livestock hoof action, have affected soil structure, while localized compaction in a number of allotments inhibits plant growth and has led to a loss in infiltration capacity. As a result, soil surface loss and degradation has occurred, as evidenced in increased historical and active erosional patterns and localized bare ground.

Biological soil crusts are variable from being present to being greatly reduced or absent. Since microbiotic crusts are a primary contributor of site stability and nitrogen, their loss has contributed to increased erosion and a potential reduction of soil fertility.

In some cases, such as in the Rats Nest allotment, RHFAs identified fewer soil or hydrologic concerns (Table-SOIL-6). However, ground cover data from long-term range-monitoring trend sites contradict these observations and provide evidence of declining conditions, along with little indication of improvement (Soil Specialist Report). Wild horse grazing in the Sands Basin, Rats Nest, and portions of Elephant Butte allotments also add impacts to upland soils.

While not all pastures within the allotments are failing (Table SOIL-5), some are functioning with reduced resilience and indicate increased susceptibility to soil and hydrologic disturbance events. As shown by the reduced frequency in deep-rooted native bunchgrasses and adverse changes in plant communities (Section 3.3; Upland Vegetation Specialist Report), the impending soil degradation could worsen over time and are a concern.

Additional pastures in the Elephant Butte, Joint, and Madriaga allotments are considered at risk due to the invasion of annual grasses and the resulting extreme departure from expected vegetative conditions (Section 3.3; Upland Vegetation Specialist Report). It is difficult to display the hidden risk factors to soils associated with sites that are dominated by a monoculture of annual invasives, such as cheatgrass and medusahead. On the positive side, invasive annuals provide short-lived spring forage for livestock, offer cover for watershed protection by reducing raindrop energy, and protect from wind erosion. On the negative side, the presence of annuals negatively affects soil hydrology and deep percolation due to a lack of root diversity and root depth.

Soil protection is variable due the short growing period variability of annual production and lack of above-ground shrub structure for capturing snow and ameliorating wind effects at the soil surface. The biological and chemical changes and competitive advantages of invasive over native species can therefore have long-lasting effects on soil watershed health. These are often difficult to assess because they are not readily observable, like mechanical damage, or are only measurable with additional equipment or laboratory analysis.

Much of the decline in soil stability and hydrologic function, however, can be associated with a change in deep-rooted bunchgrasses to more shallow-rooted species. Historic and current livestock grazing practices, including spring and critical growing season use, often with little or no rest, contribute to reduced watershed function that is amplified by a lack of species diversity. The localized invasion of annuals often worsens already compromised replenishment of soil nutrients.

This decreased ecological function leads to a lack of capability for proper nutrient cycling, hydrologic cycling, and energy flow and indicates that soil and hydrologic function are compromised, and conclude that the eight allotments (Table SOIL-5) are not meeting Standard 1 and that current livestock grazing is a significant contributing factor.

3.4.2. Environmental Consequences

Analyses of the alternatives are based on consequences of seasons and intensities of livestock grazing use (Soil Resource Specialist Report; Appendix B) that have led to the current conditions for soil as displayed above. Consequently, Alternatives 2 to 6 are compared against Alternative 1 (current condition) to assess the different level of effects on soil and upland watershed conditions. The following section provides ecological, physical, and biological concepts for expected soil impacts resulting from livestock management practices and is common to all grazing alternatives.

A detailed discussion of rangeland vegetation inventory and ecology and the concepts of the state-and-transition model can also be found in Appendix F. More site-specific information on vegetative communities for the allotments is available in the Upland Vegetation Section 3.3. For processes involving upland soils and sediments and their effects on water resources, riparian areas, and wetlands, please refer to Water Resources Section 3.5.

3.4.2.1. Impacts to Soils Common to Alternatives

Introduction

The effects and consequences of grazing on soil resources are related to the intensity, season, and duration of use by livestock. Livestock primarily affect soils via two methods. First, the consumption of vegetation can indirectly alter plant composition, ecological function, and community structure, health, and diversity. Second, impacts from hoof action physically affect soils directly through trampling and compaction. All impacts can lead to changes in soil physical, chemical, and/or biological properties.

Soil physical properties include soil bulk density, erosion, surface crusts, infiltration, and others. Soil chemical properties consist of soil organic carbon, nitrogen, phosphorus, pH, and others. Soil biological properties include micro- and macroorganisms that can have considerable influence on soil structure and nutrient availability. Alterations to any of these properties from inappropriate grazing management practices can affect the fertility, productivity, and sustainability of soils and associated native plant communities and managed rangelands.

Soils and Vegetative Cover

Vegetation controls soil erosion by means of its canopy, roots and litter components, but erosion also influences vegetation in terms of composition and structure of the plant community as well as growth pattern (Gyssels, Poesen, Bochet, & Li, 2005). Vegetation protects the soil against wind and water erosion by the physical binding of soil by stems and living roots, raindrop interception, and the retention of runoff. Consequently, soil surface and ground cover disturbance from grazing reduces the capability of a site to withstand the loss of soil resources by wind and water erosion and essentially leads to higher nutrient loss (Rietkerk & van de Koppel, 1997). With ongoing reduction in plant density, plant growth can be reduced below grazing induced plant losses, thereby adversely affecting the stability of the grazing system; as part of a downward cycle, the negative plant/soil interaction can lead to further degradation.

When bunchgrass communities transition from deep-rooted species to shallow-rooted plant communities or when invasive annuals dominate, soil erosion potential increases. Soil loss results from the combined effect of aboveground biomass and roots (Gyssels, Poesen, Bochet, & Li, 2005) because of the reduced protective cover and soil binding capabilities from diminished root depth and strength. A decline in cover increases bare ground that initiates larger and more connected surface water flow patterns. The resulting accelerated erosion and movement of sediments leads to soil loss and degradation, changes in infiltration patterns, and loss of organic matter and persistent litter (Lusby, 1965) (McCalla, II, Blackburn, & Merrill, 1984), (Meeuwig, 1970), (Meeuwig, 1971). This makes it increasingly more difficult for herbaceous cover to regenerate and maintain, so that nutrient cycling, soil stability, and hydrologic function are further altered over the long-term, leading to additional decline in rangeland health.

Soil stability is a primary control over the fertility, productivity, and sustainability of managed ecosystems and serves as a major indicator of long-term range productivity and health. Disturbance to surface soils by livestock grazing can adversely influence ecosystems through the alteration of vegetation cover, soil physical properties, microbial communities, carbon cycling, nitrogen fixation, and hydrologic properties (Schlesinger, Raikes, Hartley, & Cross, 1996).

Where livestock utilization levels are increased, the quantity of vegetative material is reduced and canopy cover declines. Additionally, deposition of protective plant litter to the soil surface, incorporation of litter into the soil, and the density and distribution of plant roots in the soil profile are decreased. As a result, a reduction in vegetative material allows for increased runoff due to reduced infiltration capacities and elevated erosion potential (Pluhar, Knight, & Heitschmidt, 1987) (Thurow, Blackburn, & Taylor, Jr.,

1986). The effects of changes in the amounts of available soil water can, therefore, be expressed by changes in the biomass of grasses and of woody vegetation, and of infiltration rate (Walker, Ludwig, Holling, & Peterman, 1981).

Seasonal Effects on Soils

Physical Impacts

Impacts on soils and upland watershed resources vary during different grazing seasons and from changes in vegetation due to annual use of a pasture (Table SOIL-7). During the winter, frozen soils are more resilient to mechanical hoof damage and compaction. However, when grazing occurs during the spring and early summer season on wet or saturated soils, the physical impacts of compaction and pugging (plunging hoofs into wet soil, forming a void) create long-lasting consequences (Warren, Thurow, Blackburn, & Garza, 1986) (Eldridge S. , 2004). These impacts not only inhibit water infiltration and increase puddling, surface runoff, and erosion, they reduce vegetative growth because the modification of soil structure and sealed soil pores restrict the movement of water, air, and roots (Bilotta, Brazier, & Haygarth, 2007).

Table SOIL-7: Summary of seasonal grazing effects on several soil related variables; seasons may overlap based on elevation, aspect, and topographic differences

Season of Use	Soil Moisture	Grazing Effects					
		Vegetation	**Pugging***	**Biological Soil Crusts**	**Compaction Potential***	**Erosion Potential**	**General Effects**
Early Spring Grazing (Feb. – Mar.)	available for veg growth; some frozen soils	low - annuals available; most others dormant	low to high depending on freeze/melt conditions	low/mod*	high – increased during thaw	low/high*	**low/high**
Upland Growing Season Grazing (Mar. - July)	reduced to no availability as season progresses; increasingly less regrowth potential	high - critical growth and seed production; reduced ground cover w. grazing	high at first, reduced in early summer	mod/high	high – increased during wetter months	low/mod*	**high**
Summer Grazing (July – Oct.)	limited to no availability for regrowth	low/mod – minimal growth; reduced ground cover w. grazing	low	high	low/mod – increased congregation near water sources	low	**low/mod**
Fall Grazing (Oct. – Nov.)	available	low/mod - emerging annuals	low/mod	mod/low	low/mod	low/mod	**low/mod**
Winter Grazing (Dec. – Feb.)	available; frozen soils	low – emerging annuals; most others dormant	low/mod	low*	moderate/high – increased with freeze thaw	low/mod	**low/high**

*can be excessive with high or prolonged precipitation event

Medium to heavy-textured soils, typically clay, are especially prone to damage during the early seasons because they tend to have high moisture-holding capacity, are usually at or near field capacity, or have higher water content due to snow melt (Warren, Thurow, Blackburn, & Garza, 1986). Severe weather conditions, such as snow storms, may also limit animal distribution and can result in heavy localized congregation that leads to utilization or elimination of the remaining plant cover, thus increasing the susceptibility to localized compaction, pugging, and pedestaling.

Physical impacts are always more damaging where the soil is bare, so maintenance of good vegetative cover is essential to lessen the effect of cattle hooves on soil. In areas of water, shade, salt, or mineral locations, compaction from livestock congregation and trail networks can initiate runoff and result in accelerated short- or long-distance movement of sediments.

Biological Soil Crusts

Mechanical impacts from livestock not only disturb soil structure, they negatively affect biological soil crusts that function as living mulch, retain soil moisture, provide stability, influence nutrient cycling, and discourage annual weed growth. Biological soil crust condition and spatial extent is an indicator of the ecological health of the plant community; thus, disturbance that results in even small losses of microbiotic crusts can dramatically reduce site fertility and soil productivity, soil moisture retention, and further reduce soil surface stability and soil organic matter (Eldridge & Greene, 1994) (Belnap & Gillette, 1998).

Season of use by livestock has a significant effect on microbiotic soil crust cover values and species richness (Marble & Harper, 1989). As crustal species are only metabolically active when wet and are brittle when dry, physical disturbance during the summer season is generally more destructive, and organisms do not recover as easily as when disturbed in wet seasons. Although microbiotic soil crusts are not as fragile during moist periods of time and may continue to grow from late winter through early spring with favorable soil water conditions, growth can be disrupted if heavy livestock surface disturbance persists during that time.

Utilization

Impacts on soils from changes in vegetation due to utilization of a pasture vary depending on the season. Heavy continuous grazing is generally most impactful to soil hydrologic function, while the effects of moderate to light continuous grazing are significantly less deleterious and frequently not significantly different from each other (McCalla, II, Blackburn, & Merrill, 1984). Heavy to severe defoliation exposes the soil surface to erosive forces of wind and water and affects the soil moisture regime. Moderate utilization, in years with minimal soil moisture availability for regrowth after use, can deplete plant vigor and health, especially during periods of critical growth. Light to moderate utilization (see Table VEG-8) of early vegetative growth has minimal impacts on regrowth when adequate soil moisture is available for completion of the annual growth cycle.

Livestock Congregation

Although native upland communities are less susceptible to negative impacts from defoliation during the summer, livestock will often congregate near water developments or riparian sources during the hot season and can intensify localized impacts on upland and riparian soils within areas of concentrated activity (Clary & Webster, 1989). While riparian zones within managed rangelands generally only account for a minor proportion of the overall area, they are a critical source of diversity and productivity. During heavy winter storms, similar patterns can be expected. Disproportional congregation of livestock during any season therefore promotes the potential of impacts to protective ground cover, resulting in compromised soil stability and hydrologic function in localized areas compared to remaining portions of the pastures.

Soils and Invasive Species

The dominance or extensive spread of cheatgrass and other invasive annual species in several of the Chipmunk Group allotments is reflected in the monitoring data and was evident during field visits[19]. Invasive annuals modify the ecosystem attributes of soil temperature and soil water distribution, provide less root mass and soil stability than perennial bunchgrasses, reduce the diversity and cover of microbiotic crusts, out-compete native plants, and adversely alter fertility and organic matter from shortened fire intervals and their associated impacts (Pellant, 1996). Also, deep percolation is limited when shrubs and deep-rooted bunchgrasses are reduced or absent. Increased bare ground and gaps in perennial vegetation may serve as an early warning indicator of when cattle grazing or other stressors are compromising resistance of a sagebrush ecosystem to annual invasives; maintaining and conserving bunchgrass cover and community structure therefore continues to be of highest priority (Reisner, Grace, Pyke, & Doescher, 2013).

Using cattle to reduce herbaceous biomass to levels that would strongly influence fire behavior under extreme fire conditions would require reductions and utilization levels that would potentially degrade shrub and grassland communities and compromise sustained livestock production (Launchbaugh & Walker, 2006). This is especially critical for soils as targeted grazing generally occurs during the late winter and spring season when wet soils are especially susceptible to impacts. Alternative 8 in Section 2.4 addresses wildfire fuels reduction through targeted grazing in greater detail.

Although invasive annuals provide spring forage for livestock and cover for watershed protection by effectively reducing raindrop energy and protecting from wind erosion, they can affect the biological and chemical aspects of soils and long-term (more than 10 years) rangeland health. Besides recreation and transport from motorized vehicles, soil disturbance resulting from livestock concentration adjacent to water sources, salting areas, and routes of travel provides increased sites for establishment of weeds and invasive species. As a result, livestock are expected to contribute to the spread of weeds through transport and defecation across the Chipmunk Group allotments, especially if grazing during the critical growing season reduces the competitive potential presence of the remaining native vegetation.

Climate Change

Climate variability can directly drive soil changes where, depending on the resilience of the system, certain rangelands may be able to adapt to change by exploiting instabilities, rather than the ability to absorb disturbances by returning to a steady state after being disturbed (Walker, Ludwig, Holling, & Peterman, 1981). In some areas of the allotments, heavy grazing or lack of deferment combined with climate change may exacerbate the effects of drought on vegetative condition by further weakening plants, increasing invasive annuals, accelerating shifts in plant species composition, and promoting the deterioration of soils and rangeland. Where a water-limited system is present, any reduction in the rate of water infiltration to soil is critical (Walker, Ludwig, Holling, & Peterman, 1981).

The altered future climate may not provide soil conditions that are favorable for current plant species where they presently occur; over time, these climate induced imbalances will promote shifts and associated changes in soil. At this point, global climate change does not have a clear cause-and effect-relationship with the proposed action or alternatives. Although rotational grazing may not prevent deterioration of soils and rangeland with a series of drought years, it may decrease the rate of deterioration and reduce the effects of a decline in soil quality and productivity (Teague, Dowhower, & Waggoner, 2004).

[19] For detailed information, see the 2011 and 2012 Soil Field Reports and 2013 Group 2 Resource Specialist Report for soils and vegetation (available on the BLM website http://www.blm.gov/id/st/en/prog/nepa_register/owyhee_grazing_group/grazing_permit_renewal0.html), and 2013 Determinations (Appendix E)

Trailing

The 2012 Trailing EA (USDI BLM, 2012c) discussed the majority of trailing that occurs across the Chipmunk Group allotments. However, 48 additional miles of the routes through Strodes Basin, Rats Nest, Rockville, and Boulder Flat (Section 2.1.2; Map RNGE-4) were not analyzed in that EA and are therefore discussed here.

The effects of trailing on upland soils on the four new routes (approximately 48 miles total) would depend on livestock type (cattle or sheep) in relation to pounds per square inch of impact, trailing frequency and timing, as well as the climatic conditions during and after trailing. Livestock trailing is comprised of relatively rapid movement of animals (at least 5 miles per day for cattle and 3 to 5 miles per day for sheep), whereas overnighting livestock increases the magnitude of spatial and temporal impact on soils within a localized area.

The majority of trailing along approximately 32 miles would occur along established paved, gravel, or native surface roads and their associated borrow ditches. The remaining 16 miles occur on cross-country or unknown surface trailing routes. Animals may spread out up to an eighth of a mile on each side of the routes (total ¼-mile width), potentially impacting about 7,620 acres of soil and vegetated areas once or several times over each route within a year.

Roughly 1,230 acres (16 percent) of the soil surface within trailing corridors are classified as sandy, 3,700 acres (48 percent) are classified as silty, and 2,400 acres (31 percent) are classified as clayey (USDA NRCS, 2003). Soil susceptibility to wind erosion is low (Wind Erodibility Index), and the potential for sheet and rill erosion by water ranges from low to high (K-factor, whole soil, based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity). Soil information was obtained from the Natural Resources Conservation Service's erosion hazard potentials (USDA NRCS, 2003) and Soil Data Viewer. Refer to the 2012 Trailing EA (USDI BLM, 2012c) that adequately identifies impact ratings under different soil conditions.

Watershed and soil disturbance associated with trailing varies by such factors as slope, aspect, soil type, precipitation, and plant community composition and distribution. Impacts to soils from livestock trailing would include a potential loss of ground cover, such as biological soil crusts, litter, and vegetation when trailing occurs off existing roads and trails. Trampling can cause soil compaction and erosional pedestals, especially where ground cover has been reduced or removed and when soils are wet. In annual or shallow-rooted dominated plant communities, soil erosion potential risk increases.

Overall effects on watersheds and soils due to trailing are minor because effects occur on a relatively small proportion of the landscape and are of very short durations (1 to 2 days). Consequently, the impacts are not expected to have lasting upland watershed or soil effects for the long-term. Adherence to range readiness criteria (Appendix K) would prevent much of the compaction issues by restricting trailing on wet (saturated) soils in addition to limiting trailing to existing roads.

Effects on watersheds and soils due to trailing in overnighting areas would be the same as mentioned above, except they would be more concentrated and for a longer duration (although not more than one night per location). Thus, more trampling and soil disturbance is expected to occur within these areas, resulting in a higher probability of plant mortality, soil compaction, and increased erosion. Because use would be limited to one night per site, regrowth of remaining plants is expected but depends on available soil moisture.

Livestock trailing would occur every year as needed and is not dependent on whether an allotment or pasture is rested or deferred during the time of trailing. With the exception of Alternative 6, where trailing would be prohibited, the same effects as discussed in this section and in the 2012 Trailing EA would apply to each of the Chipmunk Group alternatives. The analysis is incorporated here by reference (Section 3.1 of the 2012 Trailing EA (USDI BLM, 2012c)).

3.4.2.2. Alternative 1 Effects

Alternative 1 would continue to authorize grazing under the same terms and conditions and the same AUMs as in the current permit (see Section 2.2.1 above). Flexibility in the established grazing schedule as recently implemented between 1997 and 2011 has led to the existing condition and would continue (Appendix B) if permitted. Grazing season of use would primarily include wet spring and early summer season and critical growing season use (Table SOIL-8) and would continue to reflect existing conditions.

Table SOIL-8: Grazing rotation and generalized season of use under Alternative 1 for the 12 allotments not meeting Standard 1 (see impacts associated with each season of use in Table SOIL-7)

Allotment		Year 1	Year 2	Year 3
Alkali-Wildcat		spring	spring	NA
Blackstock Springs	Pasture 1	spring, summer, and fall	spring, summer, and fall	spring, summer, and fall
	Pasture 2	summer	fall	summer
	Pasture 3	late summer to fall	summer to early fall	late summer to fall
Burgess FFR		no restriction	no restriction	no restriction
Corral Creek FFR		no restriction	no restriction	no restriction
Elephant Butte (5 pastures total)		spring	spring	winter
Franconi FFR		no restriction	no restriction	no restriction
Jackson Creek	Pastures 1-3	spring	spring	summer
	Pastures 4-5	summer to fall	summer to fall	summer to fall
Joint		spring and/or summer	spring and/or summer	spring and/or summer
Madriaga	Pastures 1-2	spring or summer	spring or summer	spring or summer
	Pasture 3	late summer	late summer	late summer
Rats Nest		spring	spring	NA
Sands Basin	Pastures 1-2	spring and/or fall	spring and/or fall	spring and/or fall
	Pastures 3-4	spring	spring	spring
Stanford FFR		no restriction	no restriction	no restriction

NA = Not applicable due to 2-year rotation

As shown by the declining frequency in deep-rooted bunchgrasses and overall reduced cover in the summary of trend data (Section 3.3; Upland Vegetation Specialist Report), continual critical-growing-season grazing has caused or contributed to a deterioration of upland soil and watershed health. The Soil Resource Specialist Report and the Determination (Appendix E) identify that 12 of the 25 Chipmunk Group allotments do not meet the Idaho Standards for Rangeland Health - Standard 1 for upland watersheds and that ORMP objectives are not met. Eight allotments do not meet the Standard due to current livestock grazing (Table SOIL-5); historic grazing management practices, past fires, and invasive species are the causal factors for failing the remaining four (Table SOIL-3).

Although range readiness criteria (Appendix K) applies under Alternative 1, the spring and early summer grazing prescribed under the alternative would have the potential of physical impacts from hoof action on wet or saturated soils. The continuous annual impacts would impair plant vigor and promote soil pugging and compaction during the wetter season. This would also increase the risk of spreading noxious weeds that often thrive when early-season pugging and trampling provide establishment opportunities.

For the eight allotments, the primary causes for failing to meet the Standard include spring season use during wet soil conditions and continued grazing during the critical growth period with minimal to no rest or deferment. The resulting adverse effects on soil stability and hydrologic function are associated with physical soil impacts and departures from expected conditions in the plant community, as previously discussed in Section 3.4.1 under existing conditions. In addition, some allotments have been impacted by past and more recent fires (see Maps FIRE-1, 2, and 3), recreational use, and wild horses (in the Elephant Butte, Rats Nest, and Sands Basin allotments; see Map ACEC-1).

The implementation of Alternative 1 would continue existing conditions (Section 3.4.1) and provide little to no improvement to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts currently exist, conditions would remain impaired or display a downward trend and affect soil stability, productivity, and hydrologic function at various levels as described in the Impacts Common to All Grazing Alternatives (Section 3.4.2.1).

Alternative 1 Summary

Of the 25 allotments to which Alternative 1 applies, the 12 allotments that are currently not meeting Standard 1 are not anticipated to make progress toward meeting Rangeland Health Standard 1 and ORMP soil objectives over the life of the permit. The 13 allotments that are meeting may continue to do so, while those that contain pastures identified to be at risk (Table SOIL-1) have the potential to show increased declines in soil and hydrologic function that could move from them from meeting to not meeting in the future.

3.4.2.3. Alternative 2 Effects

With the exception of the Alkali-Wildcat, Elephant Butte, Franconi, Madriaga, Rats Nest, Soda Creek, Trout Creek, and Trout Creek/Lequerica allotments (Table SOIL-9), the grazing schemes proposed by the permittees under Alternative 2 (Section 2.2.2; Appendix D) would be the same as the current management (Alternative 1). Thus, the impacts associated with the remaining allotments under Alternative 2 would be the same as those described above under Alternative 1.

In general, livestock grazing for the Chipmunk Group allotments occurs during the wet spring months and the critical growing season, with limited to no periodic rest. These factors deteriorate upland soil and watershed health because they increase physical impacts to soils in the spring and early summer from hoof action, and decrease the ability of native plant communities to remain healthy, vigorous, and productive during active growth.

Where soil impacts currently exist as outlined in the affected environment section, effects as described in Impacts to Soils Common to All Grazing Alternatives (Section 3.4.2.1) apply, with little to no change in place to improve resource values and to provide opportunity for recovery over the life of the permit. In the absence of changing seasonal use, progress toward improved soil and upland watershed resource issues and associated impacts is not expected to allow for an upward trend to positively affect soil stability, productivity, and hydrologic function over the short- and long term. Where active AUMs are reduced, improvements may be possible but likely remain too small to make significant progress in the absence of rest and/or deferment.

The permittees' applications identified changes in the following allotments, as displayed in Section 2.2.2 (and Appendix D) and are therefore discussed under Alternative 2.

Table SOIL-9: Grazing rotation and generalized season of use where application for permit renewal differs from Alternative 1 under Alternative 2 for allotments not meeting Standard 1 (see impacts associated with each season of use in Table SOIL-7)

Allotments		All Years
Wild Rat (Pastures Alkali-Wildcat and Rats Nest)*		spring
Elephant Butte (6 pastures total)		fall, winter, and spring
Franconi	Pasture 1	undisclosed year round
	Pasture 2	spring to fall 2 yrs, summer to fall 1 yr
	Pasture 3	fall to late winter 2 yrs, spring to fall 1 yr
Madriaga	Pasture 1	summer to fall 2 yrs, spring to summer 1 yr
	Pasture 2	spring to summer 2 yrs, summer to fall 1 yr
Soda Creek		spring or early summer to fall
Trout Creek	Pasture 1	spring to summer 2 yrs, summer to fall 1 yr
	Pasture 2	spring to summer 2 yrs, summer to fall 1 yr
	Pasture 3	spring to summer 2 yrs, fall 1 yr
Trout Creek/Lequerica	Pasture 1	late spring to summer 2 yrs, late summer to fall 1 yr
	Pasture 2	late spring 2 yrs, fall 1 yr

*previously two separate allotments

Alkali-Wildcat and Rats Nest - Conversion to Wild Rat Allotment

The new Wild Rat allotment would be established by converting Rats Nest and two-thirds of the original Alkali-Wildcat allotment into a two-pasture system in one allotment. Although a slight reduction in livestock numbers and a decrease in active AUMs would occur, the season and duration of use would not change and would remain similar to Alternative 1 every year. However, a direct comparison to Alternative 1 cannot be made due to the reconfiguration.

In addition, the natural boundary allocated to separate the Alkali-Wildcat pasture from the new pasture 6 of Elephant Butte is not expected to be effective and may allow trespass that could negatively affect watershed health through increased removal of vegetation and physical soil impacts. With the continuation of use during the wet spring and grazing during the critical growing season in the absence of rest and/or deferment, the previously existing conditions are expected to remain and would not lead the allotment to make progress toward improving soil and hydrologic function to meet Standard 1.

Elephant Butte Allotment

Increasing the acreage and adding a sixth pasture (1,050 acres from Alkali-Wildcat) as a result of creating the Wild Rat allotment would not provide any benefits to upland soils and watershed health. In addition, the natural boundary allocated to separate the Alkali-Wildcat pasture from the new pasture 6 of Elephant Butte is not expected to be effective and may allow trespass that could negatively affect watershed health through increased removal of vegetation and physical soil impacts.

Currently, the Elephant Butte allotment is not meeting Standard 1, primarily due to decreased soil stability from wet spring season use in pasture 2. An additional critical issue is the dominance of cheatgrass and the resulting vegetation community shift in composition from native species to invasive annuals in several pastures. The allotment is also susceptible to high to moderately high wind erosion and has very severe erosion hazard potential in the finer textured soils in pastures 1 and 5.

The grazing proposal suggests a reduction in livestock numbers and an increase in active AUMs with fall-to-spring grazing occurring at the discretion of the permittee in the absence of rest and/or deferment. This system is similar to the current management that has led to the existing conditions of not meeting

Standard 1. Alternative 2 thus provides no progress and would not lead the allotment toward improving soil and hydrologic function.

Franconi and Madriaga Allotments

The permittee's application proposes a grazing rotation system that would utilize the three Franconi pastures in conjunction with the two Madriaga pastures for a five pasture 3-year rotation. Both allotments would incorporate a minimum 1 year of deferment in all pastures (except pasture 1 in Franconi). In the Madriaga allotment, AUMs would remain the same with the option to increase cattle numbers (see Section 2.2.2 for details).

Under current management, the Madriaga allotment is not meeting Standard 1; Franconi allotment is not meeting due to past fire impacts. Under Alternative 2, soils in both allotments would benefit from not grazing during the wet spring and critical summer growing season. As a result, deferment would reduce physical impacts during the wet season and provide for opportunities to increase and maintain vegetative vigor of native perennial bunchgrasses. This would benefit two of the three Franconi pastures that have been impacted by past fire. However, grazing intensity in the Madriaga pastures would increase with elevated livestock numbers and would negatively affect upland soil and watershed health in the Madriaga allotment. The allotment would not make progress toward improving soil and hydrologic function to meet Standard 1.

Soda Creek Allotment

The proposed increase in number of cattle, AUMs, and season of use by the applicant would increase physical impacts on upland soil and watershed health. When combined with annual use during the critical growing season, increased utilization could adversely affect the plant community composition and structure, thus elevating the potential for negative impacts to upland soil and watershed health as discussed in Section 3.4.2.1. Soil and hydrologic function are not expected to maintain or improve over time under Alternative 2 and may display a decline due to a deteriorating plant community, moving the allotment from meeting to not meeting in the future.

Trout Ceek and Trout Creek/ Lequerica Allotments

The application submitted by the permittee proposes a grazing rotation system that would utilize the three Trout Creek pastures in conjunction with the two Trout Creek/Lequerica pastures for a five pasture 3-year rotation. If the two allotments were used in conjunction, the rotation would result in an 18 percent reduction in AUMs as compared to the permitted AUMs within the Trout Creek pastures, but the authorized AUMs would remain the same in the Trout Creek/Lequerica pastures. However, when the requested AUMs under Alternative 2 are compared to the average actual use, it results in a 57 percent increase (see Section 2.2.2 for details).

Under current management, the Trout Creek and Trout Creek/Lequerica allotments are meeting Standard 1. Currently, the Trout Creek pastures are used during spring, summer, and fall over a 3-year rotation with no deferment or rest in two out of three pastures. The proposed schedule under Alternative 2 would incorporate one year (out of a three year rotation) of deferment in all pastures. While soils would benefit from not grazing during the wet spring and critical growing season periodically, the increase in actual use during the remaining years could elevate negative impacts to watershed health.

Similarly in the Trout Creek/Lequerica allotment, the rotation proposed under Alternative 2 would implement one in three years of grazing deferment. This would not differ from current use for pasture 1 but would increase spring and critical growing season use in pasture 2, which has been grazed in late summer and fall over recent years. Taken together, both allotments are expected to continue to meet the

Standard because the proposed schedule in Alternative 2 is similar to the current use. However, with an increase of 57 percent in actual use level, the potential for adverse impacts to soil stability and hydrologic function is elevated.

Alternative 2 Summary

Out of the 24 allotments to which Alternative 2 applies, 10 allotments that are currently not meeting Standard 1 (Tables SOIL-3 and 5) are not anticipated to make progress toward meeting Rangeland Health Standard 1 and ORMP soil objectives under this alternative. One of the allotments not meeting due to reasons other than livestock grazing would benefit from added deferment. The 13 allotments that are currently meeting (Table SOIL-1) may continue to do so with one of them facing added risks for adverse impacts from increased actual use levels. Allotments that contain pastures identified to be at risk have the potential to show declines in soil and hydrologic function that could move them from meeting to not meeting in the future.

3.4.2.4. Alternative 3 Effects

Alternative 3 would improve existing condition when compared to Alternative 1, in part by incorporating grazing schedules for 21 allotments of the Chipmunk Group (Section 2.2.3) that would defer grazing for a minimum of one critical growing season of use in the rotation. This alternative also combines the Alkali-Wildcat and Rats Nest allotments into one new two-pasture allotment called Wild Rat which, subsequently, adds a new pasture 6 to the Elephant Butte allotment due to boundary changes to the Alkali-Wildcat allotment (Section 2.2.3).

Under the grazing scheme proposed in Alternative 3 (Section 2.2.3), 11 of the 21 allotments that are part of Alternative 3 do not meet upland watershed Standard 1 (Tables Soil-3, 5 and 10) and would be subject to the impacts described in Table SOIL-7. The impacts would vary according to the season of use.

Table SOIL-10: Grazing rotation and season of use under Alternative 3 for the 12 allotments not meeting Standard 1 (see impacts associated with each season of use in Table SOIL-7)

Allotments		Year 1	Year 2	Year 3
Blackstock Springs		spring	summer	fall
Burgess FFR		spring	summer	NA
Corral Creek FFR	Pasture 1	spring	spring	late summer to winter
	Pasture 2	late summer to winter	late summer to winter	spring
Elephant Butte	Pastures 1 and 5	fall	spring	spring
	Pastures 2-4	spring	spring	fall
Franconi	Pasture 1	spring	spring	fall
	Pasture 2	summer	summer	fall to winter
	Pasture 3	fall to winter	fall to winter	spring to summer
Jackson Creek	Pastures 1-3	summer	summer	summer
	Pastures 4-5	fall	fall	fall
Joint	Pastures 2-3	spring	spring	fall
	Pasture 4	summer	summer	fall
Madriaga		summer	fall	NA
Sands Basin		spring	fall	NA
Stanford FFR		spring to summer	spring to summer	fall to winter
Wild Rat (Alkali-Wildcat and Rats Nest)		spring	spring	fall

NA = Not applicable due to 2-year rotation

Incorporation of a deferred season of use would lessen livestock impacts on upland soils in all affected allotments. This would allow for increased recovery and maintenance of bunchgrass health which, in turn, promotes soil stability and hydrologic function. Where active AUMs have also been reduced (Appendix C-2), additional improvements to watershed health are expected and would promote vegetation soil cover, decrease bare ground, and generally reduce the susceptibility to accelerated erosion. However, only limited reduction of grazing in riparian areas during the height of the summer is in place and, similar to Alternative 1, could increase livestock congregation along nearby uplands and promote sediment movement into streams from concentrated use. Improvements proposed with Alternative 3 are therefore expected to be better as compared with Alternatives 1 and 2, though not as rapid as Alternatives 4 and 6.

Although range readiness criteria (Appendix K) apply under Alternative 3, the periodic spring and early summer grazing prescribed under the alternative would have the potential of physical impacts from hoof action on wet or saturated soils, as described in Alternative 1. However, the deferment year(s) would allow for recovery potential, promote plant vigor, and reduce impacts from soil pugging and compaction during the wetter season compared to Alternative 1. This would also reduce the risk of spreading noxious weeds that often thrive when early-season pugging and trampling provide for favorable seedbeds. Pastures or allotments that avoid spring grazing would benefit the most (Table SOIL-10).

As a result, soil stability, productivity, hydrologic function, nutrient cycling, and energy flow would be positively affected over the short and long term and provide an opportunity to enhance ecological function and site potential to upland soil and watershed conditions. This would allow for an upward trend over the life of the permit, though not as consistently as Alternative 4 and 6.

Wild Rat and Elephant Butte Allotment Reconfiguration

Alternative 3 identifies changes in the following allotments as displayed in Section 2.3 (and Appendix D) and are therefore discussed separately. Since the Elephant Butte and Wild Rat allotments will have a new boundary configuration, the application as proposed under Alternative 2 will serve as the baseline. In addition, the natural boundary allocated to separate the Alkali-Wildcat pasture from the new pasture 6 of Elephant Butte is not deemed to be effective and may lead to trespass that could negatively affect watershed health through increased removal of vegetation and physical soil impacts.

Wild Rat Allotment
Alternative 3 for the new Wild Rat allotment is similar to Alternative 2, as it results in a slight reduction in livestock numbers and a decrease in active AUMs. However, the Alternative 3 deferment of grazing until fall for one year during the 3-year rotation that would eliminate use during the wet spring and grazing during the critical growing season provides more benefits than Alternative 2. Consequently, the newly configured allotment would progress toward improving soil and hydrologic function, though not as fast as Alternatives 4 and 6.

Elephant Butte Allotment
Alternative 3 would be similar to Alternative 2, as it would not change active AUMs or livestock numbers in the newly configured allotment that adds less than one-third of Alkali-Wildcat allotment as a new pasture 6 to the already existing five pastures of Elephant Butte. The greatest benefit comes from the seasonal restriction of use due to grazing deferment until fall for one year within the 3-year rotation, as described earlier. Alternative 3 would therefore make greater progress toward improving upland watershed health compared to Alternative 2, but not as much as Alternatives 4 and 6.

Alternative 3 Summary

Of the 21 allotments to which Alternative 3 applies, the eight allotments that are currently failing to meet Standard 1 due to livestock management (Table SOIL-5) are anticipated to make significant progress

toward meeting Rangeland Health Standard 1 and ORMP soil objectives compared to Alternatives 1 and 2. The three allotments not meeting due to reasons other than livestock management (Table SOIL-3) would benefit from added restrictions imposed by Alternative 3, though not as much as with Alternatives 4 and 6. The 10 allotments that are meeting, along with their associated pastures identified to be at risk (Table SOIL-1), would continue to meet with improving soil and hydrologic function.

3.4.2.5. Alternative 4 Effects

The leading difference between Alternative 4 and Alternative 1 is the incorporation of grazing schedules for 14 allotments of the Chipmunk Group (Section 2.2.4) that would rest and/or defer grazing outside of critical growing season use more often than any other grazing alternative considered, generally for a minimum of 2 years within a 3-year rotation. This alternative also combines the Alkali-Wildcat and Rats Nest allotments into one new two-pasture allotment called Wild Rat which, subsequently, adds a new pasture 6 to the Elephant Butte allotment due to boundary changes to the Alkali-Wildcat allotment (Section 2.2.4).

Under the grazing scheme proposed in Alternative 4 (Section 2.2.4), eight of the 14 allotments that are part of Alternative 4 do not meet upland watershed Standard 1 (Tables SOIL-5 and -11) and would be subject to the impacts described in Table SOIL-7. The impacts would vary according to the season of use.

Table SOIL-11: Grazing rotation and season of use under Alternative 4 for allotments not meeting Standard 1 (see impacts associated with each season of use in Table SOIL-7)

Allotments		Year 1	Year 2	Year 3
Blackstock Springs		spring	fall	rest
Burgess FFR (Pasture 1)		spring	fall	fall
Elephant Butte		spring	fall	rest
Jackson Creek	Pastures 1-3	spring	rest	rest
	Pastures 4-5	summer and fall	fall	fall
Joint		spring	fall	fall
Madriaga		summer	fall	rest
Sands Basin		spring	rest	NA
Wild Rat		spring	rest	rest

Alternative 4 would make the most significant progress toward desired conditions compared to all remaining grazing alternatives for allotments that are not meeting due to livestock grazing. While Alternative 3 provides for improved watershed function through seasonal deferment, Alternative 4 also periodically eliminates grazing through the incorporation of rest rather than deferment for most allotments, generally for 2 consecutive years within a 3-year rotation. As a result, shorter grazing periods and reduced critical-growth-period grazing result in a reduction of active AUMs (Appendix C-2). Compared to Alternative 3, however, Alternative 4 does not include seven allotments where current livestock grazing is not the cause for failing several standards.

Implementation of increased rest and/or periodic deferment outside of critical-growing-season use is expected to increase and maintain vegetative vigor of native perennial bunchgrasses. This would positively affect soils because improved upland vegetation communities provide added soil stability, hydrologic function, litter, and nutrients. The restricted seasons, compared to Alternative 1, would result in a decrease in active AUMs over the life of the permit (Appendix C-2). Upland vegetation communities would have an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion.

Adjustments in seasonal use would also reduce grazing in riparian areas during the height of the summer and move grazing into the later summer and fall season, generally two out of three years. This would benefit soils by reducing livestock congregation along nearby uplands that could otherwise promote sediment movement into streams from concentrated use.

Although range readiness criteria (Appendix K) apply under Alternative 4, the periodic spring and early summer grazing prescribed under the alternative would have the potential of physical impacts from hoof action on wet or saturated soils as described in Alternative 1. However, the additional rest and/or deferment year(s) would increase opportunities to promote plant vigor and reduce impacts from soil pugging and compaction during the wetter season compared to Alternatives 1, 2, and 3. This would also reduce the risk of spreading noxious weeds that often thrive when early-season pugging and trampling provide for favorable seedbeds. Pastures or allotments that avoid spring grazing would benefit the most (Table SOIL-11).

As a result, soil stability, productivity, hydrologic function, nutrient cycling, and energy flow would be positively affected over the short and long term and provide an opportunity to enhance ecological function and site potential to upland soil and watershed conditions. This would allow for a greater opportunity for upward trend over the life of the permit compared to the previous alternatives.

Wild Rat and Elephant Butte Allotment Reconfiguration

Alternative 4 identifies changes in the following allotments as displayed in Section 2.2.4 (and Appendix D) and are therefore discussed separately. Since the Elephant Butte and Wild Rat allotments would include a new boundary configuration, the application as proposed under Alternative 2 will serve as the baseline. In addition, the natural boundary allocated to separate the Alkali-Wildcat pasture from the new pasture 6 of Elephant Butte is not deemed to be effective and may lead to trespass that could negatively affect watershed health through increased removal of vegetation and physical soil impacts.

Wild Rat Allotment
Under current management, the allotment is grazed annually during the spring without rest and/or deferment. Alternative 4 proposes 2 years of rest during a 3-year rotation that would eliminate use during the wet spring and grazing during the critical growing season. Consequently, under this alternative the newly configured allotment would make the fastest progress toward improving soil and hydrologic function compared to Alternatives 2 and 3, though not as rapid as Alternative 6.

Elephant Butte Allotment
Alternative 4 would retain the same livestock numbers as Alternative 2, but active AUMs would be reduced due to restrictions in seasonal use. When combined with one year of rest and one year of deferment within the 3-year rotation, this would eliminate spring grazing during wet conditions and critical growing season use for two out of three years. Thus, Alternative 4 would make greater progress toward improving upland watershed health compared to Alternatives and 2 and 3, but not as much as Alternative 6.

Alternative 4 Summary

Of the 14 allotments to which Alternative 4 applies, the eight allotments that are currently failing to meet Standard 1 due to livestock management (Table SOIL-5) are anticipated to make the fastest progress (aside from Alternative 6) toward meeting Rangeland Health Standard 1 and ORMP soil objectives compared to Alternatives 1, 2, and 3. The three allotments that are not meeting due to reasons other than livestock management (Table SOIL-3) would remain unchanged, as they are not included in this alternative. The six allotments that are meeting, as well as the pastures identified to be at risk (Table

SOIL-1), would maintain or improve in soil and hydrologic function and are expected to continue to meet in the future.

3.4.2.6. Alternative 5 Effects

The implementation of Alternative 5 would convert the current combination of sheep and cattle grazing to cattle grazing only in the Poison Creek allotment, and a deferred year of fall season use would be incorporated every third year to reduce continuous spring and critical growing season use (Table SOIL-12). Rangeland Health Standard 1 and ORMP soil objectives in the Poison Creek allotment are currently being met although the potential risk for a decline in upland soil and watershed health has been identified (Table SOIL-1).

Table SOIL-12: Grazing rotation and season of use under Alternative 5 for allotments not meeting Standard 1 (see impacts associated with each season of use in Table SOIL-7)

Allotment	Year 1	Year 2	Year 3
Poison Creek	spring	spring	fall

The allotment is currently at risk from localized soil impacts associated with post-fire drill seeding. The conversion from sheep to cattle grazing could benefit soils by reducing browsing of establishing shrubs and forbs that are preferred by sheep. This could lead to improvements in the seeding by providing more canopy cover, root establishment, and organic material that would benefit soil and hydrologic function.

It is unclear which has greater potential for more mechanical soil impacts – higher concentrated numbers of lighter weight sheep or reduced numbers of heavier cattle in more widespread patterns. The increased weight of the heavier cattle may negatively affect upland watershed health and add to soil impacts where resource issues currently exist. However, sheep herding patterns and concentrated use, especially in overnighting areas, have the potential to increase physical soil damage, particularly since parts of the relatively small allotment would be visited numerous times during the grazing season.

Although AUMs would remain the same, the number of livestock in Alternative 5 would be reduced by two-thirds compared to the sheep and cattle numbers under Alternative 1. This would lessen the number of hooves and potential mechanical impacts to soils, but cattle weigh more and, with increased pressure, can cause deeper structural damage and soil disturbance. However, since overall hoof numbers are significantly reduced and cattle grazing patterns are not as concentrated as sheep that generally occupy one area with much larger numbers, soil surface disturbance may be reduced. Application of range readiness criteria (Appendix K) is therefore of great importance.

The sheep/cattle to cattle-only conversion therefore provides some benefit to ecological function for upland soil and watershed conditions but is very dependent on climatic conditions and range readiness. Impacts during wet conditions may be similarly damaging between both livestock types because their relative impacts balance out as discussed above. However, under dry conditions, the more concentrated use of a greater number of sheep or cattle may increase localized soil and vegetation impacts compared to fewer total animals (all cattle) that do not congregate as heavily as sheep.

As a result, upland soil and watershed health would have a higher potential to improve under Alternative 5 compared to Alternatives 1 and 2 due to the incorporation of a deferred growing season to the rotation. Under Alternative 5, soil and upland watershed resource issues and associated impacts consistent with ecological site potential would benefit from a conversion from sheep/cattle to cattle-only when compared to Alternative 3, although not as much as with Alternative 4, where spring grazing would only occur once in a 3-year rotation.

3.4.2.7. Alternative 6 Effects

Under Alternative 6, the elimination of livestock impacts would permit the unhindered expansion of the existing vegetation cover. Soil conditions would make progress over time more than under any of the other alternatives, though recovery would depend on soil and site characteristics, including capability of existing plant communities, and may not be immediately evident in all locations.

Natural processes of recovery would be achieved through cycles of wetting and drying, shrinking and swelling, freeze and thaw, root growth, and bioturbation of compacted layers. Plant canopies and root masses would fully enlarge and plant litter would accumulate on soil surfaces where additional soil organic matter protects against the effects of wind and water erosion.

Additional fuel availability from the build-up of litter and plant expansion would combine to form a more continuous fuel for wildfires than under Alternative 1 or any of the other alternatives. Under these conditions, fire in allotments with extensive invasive annual monocultures could be more difficult to contain and control than at present. The probability of extensive, stand-replacing fires increases and could adversely impact soils and upland watershed function.

Taken together, suspending livestock grazing for 10 years would eliminate physical soil impacts from hoof action and improve the vegetative cover and microbiotic soil development and promote recovery and upland watershed health for 25 allotments. Livestock trailing, however, would occur every year as needed and is not dependent on whether an allotment is rested during the time of trailing. Rangeland Health Standard 1 and ORMP soil objectives would be met and allow for an upward trend over the life of the permit and positively affect soil stability, productivity, and hydrologic function over the short and long term.

3.4.2.8. Cumulative Effects

3.4.2.8.1. Cumulative Impact Analysis Area, Temporal Timeframe, and Baseline

The cumulative impact analysis area (CIAA) for upland soils and watershed is the extent of the 25 Chipmunk Group allotments and their associated pastures. This is an appropriate scale for assessing cumulative soil environmental effects because soil productivity is a site-specific attribute of the land and is not dependent on the productivity of an adjacent area. Similarly, if one acre of land receives incremental soil impacts – i.e., reduced soil porosity, water holding capacity, aeration, long-term productivity, etc. – and a second management activity is planned for that same site, then cumulative effects to soil are possible. The CIAA was selected because the effects of grazing management on upland soils, as well as hydrologic function and energy flow, only apply within the allotment boundary. With increasing distances from the allotment, it becomes difficult to determine impacts due to the dilution effect that comes with increased acreage.

Through erosional and depositional processes, upland soils provide the sediment that enters riparian areas and is transported within stream systems throughout the watershed and beyond. While the watershed level was initially considered to serve as the CIAA for upland soils, soil and hydrologic function are site-specific. To the extent that soil movement in stream channels affects resources outside of the allotment, the direct/indirect effects and cumulative effects are considered in detail in the Water Resources Section 3.5.

Past, present, and reasonably foreseeable future activities within the analysis area relevant to cumulative effects were analyzed using approximated BLM GIS data and are displayed in Section 3.2. The Idaho

Standards for Rangeland Health (Appendix A), ground cover trend (Soil Specialist Report), and the ORMP (USDI BLM, 1999a) were used as a basis for setting thresholds for measurable or observable soil properties or conditions. The threshold values, along with aerial extent limits, serve as an early warning signal of reduced soil and hydrologic function. Significant changes in soil productivity of the land are indicated by changes in soil properties that are expected to result in a reduced productive capacity over the planning horizon. Likewise, declining conditions for rangeland vegetation contribute to deteriorating soil and hydrologic function. Therefore, vegetation serves as the primary indicator of upland watershed health.

Additionally, in Section 3.4.2, influences on soils and watershed function from grazing of vegetative cover, season of use, and invasive species are discussed in greater detail. While they do not address every issue, the intent is to provide an overview of commonly observed impacts, trends, and potential consequences associated with range management. These impacts are relevant to all alternatives and provide the background for the comparison of effects.

Analysis timeframes for cumulative effects include past and present activities that have created the present conditions, including historic grazing over the past century, and reasonably foreseeable future activities planned within the next 3 years, including the expected duration of short- and long-term effects from current and future activities. Reasonably foreseeable actions include activities with completed NEPA, scoping, or decisions, and with implementation planned within 3 years. For this evaluation, short-term effects are those that occur approximately within the first 10 years following permit renewal, long-term effects are those that expand 10 years or beyond.

3.4.2.8.2. Existing Conditions

The CIAA for upland soils is delineated by the allotment boundaries that lie within portions of the Jump Creek-Snake River, Hardtrigger Creek - Snake River, Upper Succor Creek, Reynolds Creek, Upper Cow Creek, Headwaters Jordan Creek, Jordan Creek - Sheep Spring Creek, and Trout Creek - Jordan Creek watersheds, and encompasses a total of 125,263 acres (Table SOIL-13). Soil conditions throughout the analysis area are as described in Section 3.4.1 and are generally related to elevation, precipitation, and animal use levels.

Table SOIL-13: Chipmunk Group allotment acre distribution by watershed

5th Field HUC	Allotment Use Acres within Watershed	Percent of Watershed Affected
Jump Creek-Snake River	27,997	12
Hardtrigger Creek - Snake River	14,954	<1
Upper Succor Creek	29,829	4
Reynolds Creek	259	22
Upper Cow Creek	37,349	<1
Headwaters Jordan Creek	843	8
Jordan Creek - Sheep Spring Creek	4,555	30
Trout Creek - Jordan Creek	9,477	24
Total	**125,263**	

Over the past decades, livestock grazing has been the dominant land use activity in the area. Wildfires have caused localized disturbances, while recreation has had limited effects due to its localized and small geographic extent. Wild horses within the Hardtrigger and Sands Basin Herd Management Area have also impacted Elephant Butte, Rats Nest, and Sands Basin allotments.

Current and past fire and fire-suppression activities have had an additional influence on the allotments. Consequently, the CIAA has been altered from what would be expected under a natural disturbance regime, mainly as a result of an increase in invasive annuals (Section 3.3; Upland Vegetation Specialist Report). No records of prescribed burning and juniper treatments are available, though it can be assumed that these activities have taken place in the past. The allotments have been primarily grazed throughout the spring and summer and a variety of range improvement projects, such as spring developments, fences, cattle guards, and troughs have been implemented across the landscape to aid in grazing management.

The movement of upland sediment across the landscape is initiated by erosion and, over time, enters a water source that allows for further transport. Erosion rate, amount, and magnitude are dependent on slope, topography, climatic events, parent material, soil characteristics, vegetation, and potential localized impacts. As previously mentioned, the majority of erosion potential within the CIAA is slight to moderate (Section 3.4.1). The greatest cumulative effects occur where uplands encounter non-functioning degraded riparian areas, especially perennial streams that are not meeting water quality standards (Water Resources Section 3.5; Water Resources Specialist Report).

However, grazing management on BLM-administered lands periodically changes in order to meet Standards, which have been in place since 1997, to assess grazing activities and their impacts on resources. These periodic management changes to meet or make significant progress toward meeting standards are put in place to improve overall resource conditions.

3.4.2.8.3. Past, Ongoing, and Reasonably Foreseeable Activities

The table of past, present, and reasonably foreseeable future actions (Section 3.2 - Table CMLV-2) within the analysis area relevant to cumulative impacts was calculated using BLM GIS data. The data used represent the best available information and the calculations based on the data are approximate. Table SOIL-14 attempts to serve a as a quick reference that summarizes soil specific effects to past, present, and reasonably foreseeable future actions for the soils CIAA.

Table SOIL-14: Chipmunk Group allotment CIAAs – summary of effects on soils (also see Section 3.2 - Table CMLV-2)

Type of Activity	Timeframe	Degree	Extent	Magnitude of Effect on Soils	Type of Effect
Livestock Grazing	Ongoing, continuous	Approx. 12,100 active AUMs	Across entire analysis area	Moderate	Physical impacts to soils; upland watershed health changes due to shift in less desirable veg species composition
Herd Management Areas	Ongoing, continuous	On 17,633 acres in Rats Nest, Elephant Butte, and Sands Basin only	Across an entire pasture/allotment	Moderate	Physical impacts to soils; upland watershed health changes due to shift in less desirable veg species composition
Fences	Most constructed before 1980; few additions each decade	About 219 miles of fence on BLM land	Distributed across analysis area, but cumulatively covering a small percentage of area	Low	Short-term, localized construction and maintenance disturbance; chronic cattle trails often compact soils along fences
Range Improvements	Most constructed before 1980; some additions each	Minimum of 63 reservoirs and troughs; 119 acres of exclosures	Distributed across analysis area, but cumulatively covering a small percentage	Low to Moderate	Short-term, localized construction and maintenance disturbance; chronic cattle congregation trampling soils

Type of Activity	Timeframe	Degree	Extent	Magnitude of Effect on Soils	Type of Effect
	decade				
Fire Suppression	Ongoing, continuous	Moderately effective given distance to fire facilities, etc.	Across entire analysis area	Moderate	Pros: maintains stabilizing ground cover on soils; Cons: long-term shift from grass/forb/shrub community to localized late seral shrub dominated areas with reduced watershed function
Roads	Nearly all in place before 1980	About 404 miles of roads and routes total	Distributed across analysis area, but cumulatively covering a small percentage of area	High but localized; overall moderately low	Physical soil impacts; increased bare soils, decreased soil stability, hydrologic function, and reduced nutrient flow
Trailing	Spring and/or fall	Primarily on existing paved, gravel, or native surface roads and trails	Approximately 9,280 acres along about 58 miles	Low to moderate (herding); mod. to high (overnight)	Localized physical impacts (compaction, pugging etc.); limited duration and spatial extent; greater impacts in overnight locations; dust
Recreation	Ongoing, continuous	Low to mod. visitor use; hunting season off-road travel and dispersed camping	Mostly along roads	Low to high in local areas; low across entire area	Localized physical soil impacts
Weed Treatments	Ongoing, continuous	90 percent of sites measure between <0.1 to 1 acre, few up to 5 acres	Patchy, mostly along main routes	Low	Increased soil moisture, nutrients, and stability
Structures/ Powerlines	Nearly all in place before 1980	About 206 power line poles along 21 miles of transmission and power lines	Far reaching but small scale; isolated	Mod. high in local areas; low across entire area	Localized physical soil impacts; can include a service road
Mining Claims & Gravel Pits	Most constructed over the past century; ongoing	About 616 acres	Localized; sizes range between 3 to 315 acres	High	Complete removal of topsoil; reduced productivity

Range Improvements: Most range improvements are in the form of reservoirs, troughs, and fences (Table SOIL-14; Section 3.2 - Table CMLV-2). Impacts to soils are greatest when mechanical equipment is used to create or maintain reservoirs and stock tanks. Troughs are less impacting since generally a smaller area is affected. Removal and construction of exclosures and fences have impacted soil quality in the past depending on time and duration of activities; however, the disturbance is temporary and localized.

In many cases, livestock tend to congregate along fence lines so that the adjacent soils often show increased impacts. Fence lines can also accumulate weeds and add to increased fuel loads, especially in wind-prone areas. The construction of these different range improvements can add an initial short-term negative disturbance to soil quality while localized indirect impacts over small portions of the allotment can continue over the long-term. Although the current permitting process is not considering range improvements, it is anticipated that they will continue to be part of the landscape into the future, and that some lesser number will be added and/or modified to meet the needs of the livestock grazing industry.

Herd Management Areas: Wild horses have been grazing on 17,633 acres in the Elephant Butte, Rats Nest, and Sands Basin allotments (Map ACEC-1) that are part of the Hardtrigger and Sands Basin herd management areas (HMA). Wild horse grazing will continue with similar numbers in the Sands Basin HMA although implementation of a population treatment and removal gather is planned in the foreseeable future to reduce herds to the low appropriate management level (AML) for the Hardtrigger HMA (Section 3.1; (USDI BLM, 2012a)).

Mechanical damage to the soil surface and structure by hoof imprints occurs where wild horses tend to concentrate, such as at water developments, salting sites, and riparian areas (Table SOIL-14). While wild horses do congregate in these areas, their use pattern varies from livestock in that they have a tendency to only stay for short periods of time. Large numbers of wild horses exceeding the AMLs would lead to poor overall watershed conditions due to less standing vegetation and litter to reduce raindrop impacts, increasing the potential for accelerated erosion and adverse hydrologic function.

Wildfires and Fire Suppression: Wildfires have burned and re-burned a total of approximately 58,983 acres in the analysis area between 1960 and 2012 and mainly affected the northern and southern thirds during the 1960s, as well as during the Trimbly fire in 2002 and the Chubby Spain fire in 2006 (Map FIRE-1, 2, 3; Section 3.1 - Table CMLV-2). Consequent resource damage from mechanized suppression activities and burn severity have caused short-duration disturbances to soils that range from negligible to severe, depending on location, size, and severity of burn (Table SOIL-14).

Lower elevation wildfires make up most of the burned acres and have resulted in vegetation shifted almost entirely to invasive annuals. When wildfires have burned across upland soils, the compounding impacts from temporary loss of infiltration capacity, overland flow, and increased soil erosion, have occurred in localized areas but generally decrease within 1 to 6 years (DeBano, 1981) (Dyrness, 1976) (Huffman, MacDonald, & Stednick, 2001). The change in vegetation, however, can be long-term.

Primary risks from fires in the foreseeable future are associated with upland water erosion from breaklands, steep slopes, and roads, especially at stream crossings (Section 3.5). Wind erosion can transport soil over large distances while burned and disturbed landscapes are particularly susceptible to the spread of annual grasses. Loss of soil productivity could be extended depending on burn severity, location, and post-fire climate characteristics. Following a severe fire, rehabilitation efforts to mitigate the fire's effects on erosion and sediment delivery could occur and reduce potential negative effects. Grazing may also be suspended for a minimum of two growing seasons to allow vegetation to recover and would reduce additional impacts to soils.

Long-term effects to soils from wildfire are favorable where juniper has been removed from sagebrush ecosites and deep-rooted native bunchgrasses have re-established. Past and current fire suppression, however, has influenced fire frequency contributing to an increase in juniper across the landscape. The continual incremental effects of juniper encroachment, primarily affecting the south-easternmost allotments of Chipmunk Group, contribute to a cumulative increase in upland erosion since juniper suppresses understory vegetation. If juniper encroachment is allowed to progress to the point where understory vegetation is lost, soil erosion and degradation is expected to increase.

Weed Treatments: There are 198 documentations of weed infestations in the analysis area (Table SOIL-14; Section 3.2 - Table CMLV-2). Disturbed soils, for example, around salting areas or water developments, provide an optimal location for weed establishment and subsequent invasion and have the potential to increase localized erosion, deplete soil moisture, and alter nutrient levels. Approximately 90 percent of the sites are recorded as being smaller than 1 acre, with the majority receiving chemical treatment. Activities associated with the small areas impacted by weed treatments would have no measurable effect on upland soils and watershed health.

Trailing: Cattle and sheep trailing have occurred in the past and are currently taking place on about 60 miles of existing routes (Table SOIL-14; Section 3.2 - Table CMLV-2; not including the added 48 miles analyzed with this EIS). All possible segments are reviewed on an annual basis so that changes to routes, AUMs, and livestock type may change in the foreseeable future. The Owyhee Field Office recently finalized the 2012 Trailing EA; the analysis specific to soils is incorporated here by reference (Sections 3.1 and 3.8.3 of the 2012 Trailing EA (USDI BLM, 2012c)).

Effects to upland soils and watershed health from trailing would be minor when cattle are actively herded along established routes, although increased physical soil impacts are possible in overnight locations, especially if soils are wet and vegetation is removed. Cumulative effects of trailing are slight because they disturb a small proportion of the landscape (less than 8 percent of the CIAA) over very short durations. Consequently, cumulative impacts from trailing are not expected to have lasting adverse effects on watershed and upland soils.

Roads: The construction of roads on public lands has resulted in the removal of soils from the productive land base on approximately 404 miles of gravel, native, and paved roads that traverse the analysis area (Table SOIL-14; Section 3.2 - Table CMLV-2). Depending on location, the amount of traffic that occurs on a given road, road conditions, and movement of soils, allow for sediment transport over various distances at a local or broad-scale level. This adds to localized accelerated erosion across the analysis area but cumulatively covers only a small percentage of the CIAA.

Road Maintenance: Additional soil impacts from proposed road maintenance activities such as grading, drainage improvements, and surfacing on existing dedicated roads will be ongoing and would produce localized soil disturbance associated with the use of heavy equipment. Some roads will receive little to no maintenance, especially if restricted or gated.

Recreation, OHV Use, and Other Activities: The analysis area is open for general motorized use that allows for hunting, fuel wood gathering, collection of miscellaneous products, camping, and motorized touring on established roads. Recreation has had localized resource effects by exposing or compacting soil due to driving, dispersed camping, or by impacting vegetation. Those areas that are frequented by recreationists are disturbed where soils and associated vegetation are permanently or semi-permanently altered from heavy use (Table SOIL-14). Off-highway vehicle (OHV) use does occur in some areas and will continue to have localized impacts on upland soils, especially when it involves unauthorized cross-country trails. Cumulatively, they are of little issue in the Chipmunk Group CIAA.

However, with the increase in population in the Treasure Valley and the surge in OHV use, current and future pressures on upland soils are expected to increase, especially if vehicular use and recreation illegally expands beyond existing roads and trails. Unauthorized OHV routes have been responsible for loss of vegetation, accelerated soil erosion, and establishment and spread of invasive and noxious weeds in the analysis area. Although travel management planning and enforcement has reduced this expansion, effects to soils and vegetation continue along the Owyhee Front, which has received the greatest cumulative disturbance from recreational use.

A transportation plan for Owyhee County is expected in the near future and may alleviate some concerns associated with OHV use because routes would be designated, reducing cross country and unauthorized travel. However, products resulting from travel management, such as maps and signage, are likely to result in greater visitor use, which may increase pressure on upland soils and watershed resources.

Structures/Powerlines: There are approximately 206 power pole structures along 21 miles of transmission and power lines within the allotments (Table SOIL-14; Section 3.2 - Table CMLV-2).

Transmission structures and power line construction have high-intensity but short-term effects on vegetation and soils. Vegetation is set back to an earlier, native seral stage for a few years, and soils are moved and/or compacted; however, these areas usually grow back and become stable with a mature native plant community, except where a service road is present.

Mining Claims and Gravel Pits: There are approximately 616 acres impacted by mining activities within the CIAA (Table SOIL-14; Section 3.2 - Table CMLV-2). The size of each claim or operation ranges from 3 to 315 acres and has resulted in variable disturbances from physical surface impacts to complete removal of topsoil. It is unlikely that new mining activity would begin in the foreseeable future, though the past and current long-term impacts on soil productivity and potential mobilization of sediment sources continues.

3.4.2.8.4. Alternatives 1 and 2 Cumulative Effects

Alternatives 1 and 2 would have direct and indirect effects to upland watershed soil and hydrologic function as described in Section 3.4. When added to the past, present, and reasonably foreseeable future actions that will affect vegetation and associated upland watershed health, Alternatives 1 and 2 would continue current conditions and cumulatively have incremental negative effects on upland soils and their associated processes.

Past and present livestock grazing has affected soils in the CIAA by reducing and altering vegetative cover with the utilization of key forage species during critical growth periods and by increasing physical soil disturbance. The reduction in vegetative cover and the increase in compaction result in reduced infiltration of water and exposed soils, making them susceptible to accelerated wind and water erosion. These impacts are most prevalent in easily accessible terrain or livestock congregation areas.

Other activities that continue to occur within the CIAA include range improvements, wild horse use, wildfires, weed and vegetation treatments, trailing, roads, recreation, and mining (Table SOIL-14). Since the grazing proposed under the alternatives would contribute to a decrease in soil stability and hydrologic function, it would add to the overall impacts within the CIAA.

While the cumulative effects would be small, the negative effects of the grazing scheme would contribute to a cumulative increase in soil and hydrologic impacts and promote upland erosion. The continued poor conditions within the allotments would add to overlapping impacts from activities within the CIAA and contribute to the decline in upland watershed health.

3.4.2.8.5. Alternatives 3, 4, 5, and 6 Cumulative Effects

Alternatives 3, 4, 5, and 6 would have direct and indirect effects to upland watershed soil and hydrologic function as described in Section 3.4. Specifically, the alternatives would improve plant communities at increasing magnitudes and result in improved soil and hydrologic function that reduce erosion potential at the corresponding levels. When added to cumulative actions that will affect vegetation and associated upland watershed health, Alternatives 3, 4, 5, and 6 would cumulatively have small incremental improving effects on upland soils and their associated processes.

Alternative 3 and Alternative 5 (sheep-to-cattle conversion) incorporate deferment of grazing during the critical growing season and would have beneficial effects on soils, even in the absence of decreased stocking rates, because recovery of plant species composition and biodiversity of key forage species would be enabled. The resulting increased soil surface protection and decrease in sediments would improve upland soil and watershed health. Considering the past, present, and reasonably foreseeable future actions influencing soils in the CIAA, the impacts from Alternatives 3 and 5 would have a positive

cumulative effect by reducing soil impacts and by decreasing sediment movement that would otherwise be destined to reach riparian areas and streams.

Alternative 4 is expected to have similar positive cumulative effects as Alternative 3; however, because restrictions to grazing during the critical growth season and wet spring months would further benefit upland soils by providing extended rest and deferment as well as result in reduced active AUMs for some allotments, Alternative 4 would provide additional protection compared to the implementation of Alternative 3.

Alternative 6 would provide extended rest from livestock grazing over the life of the permit. The improvements would be similar to Alternatives 3 and 4, though the incremental effects associated with the recovery of soil stability, hydrologic function, and nutrient cycling affecting upland soils and watershed health would be faster. Despite a potential increased risk of wildfire where monocultures of invasive annuals dominate, Alternative 6 would cumulatively offer the greatest benefits to the CIAA.

All four alternatives would maintain and benefit upland soils to varying degrees and result in the increased capture, storage, and safe release of precipitation, as well as improve energy flow and nutrient cycling in the analysis area. When these effects are considered in conjunction with the past, present, and reasonably foreseeable future actions that also affect soils in the CIAA, Alternatives 3, 4, 5, and 6 would have positive cumulative effects on upland soils and watershed function.

3.5. WATER RESOURCES AND RIPARIAN/ WETLAND AREAS

3.5.1. Affected Environment

Desired Condition, Resource Objectives, & Assessment/Monitoring Methods

The resource objective specified in the Owyhee Resource Management Plan (ORMP) for both riparian-wetland areas and stream channels is to maintain or improve riparian-wetland areas to attain proper functioning and satisfactory conditions. Riparian-wetland areas include streams, springs, seeps, and wetlands. The BLM has primarily utilized the lotic and lentic[20] proper functioning condition (PFC)[21] protocol to determine whether the objective is being met. The PFC assessment is a qualitative determination that refers to a consistent approach for considering hydrology, vegetation, and erosion/deposition (soils) attributes and processes to assess the condition of riparian-wetland areas. Essentially, a PFC determination rates the state of resiliency that will allow a riparian area to maintain integrity during a high-flow event, which then allows the area to provide desired values.

Leonard and Karl (1995) state, “Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bed load, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize stream banks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. Even though this definition emphasizes lotic areas, it can be applied to lentic areas with minor modification. For example, instead of ’adequate vegetation...present to dissipate stream energies...’ an assessment would determine whether adequate vegetation, etc., is present to dissipate wind and wave energies.”

[20] Lotic = flowing water. Lentic = standing water, e.g. a seep or pond.
[21] PFC Assessments are based on Interagency Technical Reference 1737-15, *A User Guide to Assessing Proper Functioning Condition and Supporting Science for Lotic Areas* and 1737-16, *A User Guide to Assessing Proper Functioning Condition and Supporting Science for Lentic Areas*

The BLM employs several additional assessment methods that aid in interpreting the condition of the water and riparian resources and thus determine whether the ORMP objective is being met. In 2011, the multiple indicators monitoring method (MIM)[22] was finalized. MIM is a quantitative monitoring and analysis method used to assess the long-term trend of a designated stream reach. MIM can be used to help evaluate livestock grazing management (i.e., timing, duration, and frequency of grazing) by determining how the vegetation and stream channels are impacted by herbivore use. Monitoring data is gathered for ten indicators to assess the existing condition and trend of the stream banks, channel, and vegetation. From the gathered data, an evaluation is made for the stream reach in relation to the following three capability groups: 1) ecological status, 2) vegetation-erosion resistance (i.e., stream bank stability), and 3) site wetland status. Depending on the objectives for an area or stream, the MIM method can also be modified (MMIM) allowing the observers to collect either the three short-term indicators (stubble height, woody browse, and bank alteration) or any of the indictors of interest.

The ORMP objective for water quality is to meet or exceed State of Idaho water quality standards on all Federally administered waters. To assess and interpret whether this objective is met for an area, a stream, and/or a stream segment, the BLM utilizes watershed information collected by IDEQ and collects water temperature and bacteria information internally.

Watersheds

The Chipmunk Group allotments fall within both the Jordan and Middle Snake-Succor subbasins (Table RIPN 3, 4, and 5, Map CMLV-1). The Jordan Creek subbasin encompasses a large area in southwest Idaho and southeast Oregon. The headwaters of Jordan Creek originate in the western section of the Owyhee Mountains, in southwest Idaho, then flow mostly west into Oregon, entering near the community of Jordan Valley. The general flow characteristics of the Jordan Creek watershed are from east to west, with most of the headwaters within Idaho. The major topographic features include the Silver City Mountain Range to the north, South Mountain to the south and Combination/Antelope Ridges to the east. The subbasin contains three 5th level HUCs: the Trout Creek/ Jordan Creek, Jordan Creek/ Sheep Creek Spring, and Upper Cow Creek watersheds (Idaho DEQ, 2009) and 11 of the Chipmunk Group allotments.

The Middle Snake-Succor is an arid subbasin characterized by hot summer temperatures. The streams within the watershed are tributaries to the Snake River and are generally low-volume streams that have a combination of high ambient temperatures, poor shading, low flow volume, flow alteration, and naturally warm springs, which often lead to exceedances of the temperature standard. Other issues identified that affect the streams in the watershed are nutrient loading and in-stream channel erosion causing sediment loading (Idaho DEQ, 2013). The subbasin also contains 13 of the Chipmunk Group allotments.

Table RIPN-3: IDEQ subbasins, assessment units, and 303(d) streams within the Chipmunk Group 2 allotments

Subbasin (4th Field HUC)	IDEQ Assessment Unit	Allotment	303(d) Streams on BLM lands[23]
Middle Snake- Succor	ID17050103SW005_02 ID17050103SW005_03	Alkali-Wildcat	None
	ID17050103SW003_02 ID17050103SW004_02 ID17050103SW007_02	Blackstock Springs	McBride Creek Little McBride Creek Deadhorse Creek Willow Fork

[22] MIM: Interagency Technical Reference 1737-23, *Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation*
[23] 303(d) streams are water quality limited and are in Category 5

Subbasin (4th Field HUC)	IDEQ Assessment Unit	Allotment	303(d) Streams on BLM lands[23]
	ID17050103SW003_03	Burgess FFR	None
	ID17050103SW003_02 ID17050103SW003_03 ID17050103SW009_02	Chipmunk Field FFR	None
	ID17050103SW007_02	Corral Creek FFR	None
	ID17050103SW006_02 ID17050103SW007_02 ID17050103SW007_03	Elephant Butte	None
	ID17050103SW003_02 ID17050103SW003_03 ID17050103SW004_02	Jackson Creek	Unnamed Creek
	ID17050103SW005_02 ID17050103SW005_03	Poison Creek	None
	ID17050103SW007_02 ID17050103SW007_03	Rats Nest	None
	ID17050103SW004_02 ID17050103SW005_02 ID17050103SW005_03	Sands Basin	Tribs to McBride Creek
	ID17050103SW004_02	Texas Basin FFR	Unnamed Creek
Jordan	ID17050108SW020_02 ID17050108SW023_02	Baxter Basin	None
	ID17050108SW021_02	Burgess	Tribs to Cow Creek
	ID17050108SW021_02	Burgess FFR	Unnamed Creek
	ID17050108SW019_02 ID17050108SW022_02 ID17050108SW023_02	Cow Creek Individual	none
	ID17050108SW021_02 ID17050108SW021_03 ID17050108SW021_04 ID17050108SW022_02 ID17050108SW022_03	Ferris FFR	Cow Creek
	ID17050108SW021_02 ID17050108SW022_02	Franconi	Cow Creek
	ID17050108SW021_02	Jackson Creek	Coyote Creek Jackson Creek Little Cow Creek Little Jackson Creek
	ID17050108SW020_02 ID17050108SW021_02 ID17050108SW021_04 ID17050108SW022_02 ID17050108SW022_03	Joint	Posey Creek
	ID17050108SW019_02	Lowry FFR	none
	ID17050108SW021_02	Madriaga	Posey Creek Spring Branch Creek Trib to Posey Creek

Subbasin (4th Field HUC)	IDEQ Assessment Unit	Allotment	303(d) Streams on BLM lands[23]
	ID17050108SW019_03	R Collins FFR	none
	ID17050108SW004_02 ID17050108SW021_02 ID17050108SW022_02	Soda Creek	Cold Spring Creek Cow Creek Little Cow Creek Jacks Creek Unnamed Trib
	ID17050108SW021_02	Stanford FFR	Jackson Creek
	ID17050108SW019_02 ID17050108SW019_03	Trout Creek	none
	ID17050108SW019_02	Trout Creek/ Lequerica	none

Table RIPN-4: Jordan Sub-basin IDEQ information:

Hydrologic Unit Code	**17050108**
Size	Approximately 385,000 acres in Idaho (approximately 740,000 acres total)
§303(d) Listed Stream Segments	Jordan Creek (2 Segments), Cow Creek, Soda Creek, Rock Creek, Spring Creek, Louisa Creek, Louse Creek
Beneficial Uses Affected	Cold-water aquatic life, primary contact recreation, salmonid spawning, special resource water
Pollutants of Concern	Sediment, bacteria, flow alteration, oil and grease, pesticides, metals, pH, mercury, temperature
Major Land Uses	Irrigated agriculture, rangeland, forest, mining, riparian

Table RIPN-5: Middle Snake-Succor Sub-basin IDEQ information:

Hydrologic Unit Code	17050103
Size	2,002 square miles
§303(d) Listed Stream Segments	Snake River (3 segments), Birch Creek, Brown Creek, Castle Creek, Corder Creek, Cottonwood Creek, Hardtrigger Creek, Jump Creek, McBride Creek, North Fork Castle Creek, Pickett Creek (2 segments), Poison Creek, Rabbit Creek, Reynolds Creek, Sinker Creek, South Fork Castle Creek, Squaw Creek, Squaw Creek Unnamed Tributary, Succor Creek (2 segments)
Beneficial Uses Affected	Cold-water aquatic life, salmonid spawning, primary contact recreation, drinking water supply, special resource water
Pollutants of Concern	Bacteria, dissolved oxygen, flow alteration, nutrients, pH, sediment, temperature
Major Land Uses	Rangeland, irrigated agriculture

Streams and Springs/ Riparian-Wetland Areas

The National Hydrography Dataset (NHD) was produced between 1996 and 2000 via a collaborative effort among the Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), and other federal, state and local agencies. The NHD is a comprehensive set of digital geospatial data about surface water features such as streams, rivers, lakes and springs/seeps and is maintained by the USGS. According to the NHD, the Chipmunk Group allotment contains approximately 22 miles of perennial and 240 miles of intermittent streams[24] (Table RIPN-4). The NHD does not differentiate between intermittent and ephemeral streams; thus, many of the intermittent streams are ephemeral drainages that do not

[24] Perennial: Contains water throughout the year, except for infrequent periods of severe drought
Intermittent: Contains water for only part of the year, but more than just after rainstorms and at snowmelt
Ephemeral: Flows in normal water years only in direct response to precipitation and channel is above the water table at all times

support riparian vegetation (USDA FSA, 2011). Major perennial streams located all or in part within the allotments include Chimney, Cold Spring, Cow, Coyote, Jacks, Jackson, Jump, Little Cottonwood, Little Cow, Little Jackson, Little McBride, Little Squaw, Little Succor, McBride, Poison, Soda, Squaw, Succor, Trout, and Willow Creeks. Additionally, the NHD identifies 90 springs/seeps that occur within the allotments (Table RIPN-4).

Table RIPN-6: Total miles of perennial and intermittent stream, and number of springs (derived from the NHD) that occur on BLM lands within the Chipmunk Group allotments

Allotment	Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
Alkali-Wildcat		**25.87**	**0.16**	**1**
Baxter Basin		**5.86**	**0.82**	**7**
	Baxter 1	2.75		1
	Baxter 2	0.75	0.82	3
	Baxter 3	2.36		3
Blackstock Springs		**46.16**	**2.93**	**15**
	Blackstock 1	12.53	1.57	4
	Blackstock 2	30.74	0.78	8
	Blackstock 3	2.89	0.57	3
Burgess		**1.6**	**0**	**0**
Burgess FFR		**0.80**	**0.35**	**0**
	Burgess FFR 1	0.04	0.35	0
	Burgess FFR 2	0.76		0
Cow Creek Individual		**19.04**	**0.08**	**5**
	Cow Creek 1	3.62		0
	Cow Creek 2	10.24		2
	Cow Creek 3	0.56	0.02	3
	Cow Creek 4	1.33	0.06	0
	Cow Creek 5	3.27		0
Elephant Butte		**8.85**	**0.47**	**4**
	Elephant Butte 1	1.24		0
	Elephant Butte 2	0.23	0.47	3
	Elephant Butte 3	5.08		1
	Elephant Butte 4	0.56		0
	Elephant Butte 5	1.74		0
Ferris FFR		**12.72**	**0.23**	**0**
	Ferris FFR 1	2.05		0
	Ferris FFR 2	1.81		0
	Ferris FFR 3	8.86	0.23	0
Franconi		**1.43**	**0.48**	**2**
	Franconi 1	0.18		2
	Franconi 2	0.89		0
	Franconi 3	0.35	0.48	0
Jackson Creek		**6.78**	**4.49**	**11**
	Jackson Creek 1	2.49		2
	Jackson Creek 2	0.69		1
	Jackson Creek 3	2.05	0.96	1
	Jackson Creek 4	1.55	2.98	7
	Jackson Creek 5		0.55	0
Joint		**8.36**	**0.18**	**8**
	Joint 1	1.11		1

Allotment	Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
	Joint 2	0.01		0
	Joint 3	4.74		6
	Joint 4	2.49	0.18	1
Madriaga		**9.53**	**0.17**	**10**
	Madriaga 1	4.16	0.17	5
	Madriaga 2	5.37		5
Poison Creek		**23.75**	**1.41**	**0**
Rats Nest		**17.55**	**0.70**	**8**
Sands Basin		**38.06**	**1.44**	**4**
	Sands Basin 1	5.65		0
	Sands Basin 2	11.88	0.20	0
	Sands Basin 3	7.00		1
	Sands Basin 4	13.53	1.24	3
Soda Creek		**5.79**	**2.74**	**11**
	Soda Creek 1	0.49	0.29	0
	Soda Creek 5	0.39		0
	Soda Creek 2		2.07	0
	Soda Creek 3	4.91	0.38	11
Trout Creek		**4.28**	**4.55**	**0**
	Trout Creek 1	1.28	1.97	0
	Trout Creek 2	3.00	0.83	0
	Trout Creek 3		1.75	0
Trout Creek/Lequerica		**2.29**	**0.36**	**0**
	Trout Creek/Lequerica 1	1.06	0	0
	Trout Creek/Lequerica 2	0.26	0.28	0

Existing Conditions

All Allotments

Owyhee Resource Management Plan

The ORMP identified perennial and fish-bearing streams that occur on public lands and included an assessment of the mileage present and the condition at the time (1999) (Table RIPN-7). The ORMP refers to streams and riparian-wetland areas in unsatisfactory condition as those that were either functional-at-risk or non-functional.

Table RIPN-7: Chipmunk Group allotments with ORMP-identified perennial stream condition

Allotment	Stream Name	Condition	Perennial Miles
Alkali-Wildcat	Jump Creek	unsatisfactory	0.93
Blackstock Springs	Little McBride Creek Little Squaw Creek McBride Creek	unsatisfactory unsatisfactory unsatisfactory	0.98 0.39 0.06
Burgess FFR	Succor Creek	unsatisfactory	0.34
Cow Creek	EF Trout Creek	unsatisfactory	0.71
Elephant Butte	Squaw Creek	unsatisfactory	0.5
Franconi	Cow Creek	unsatisfactory	0.07
Jackson Creek	Succor Creek	unsatisfactory	0.95
Poison Creek	Jump Creek	unsatisfactory	0.6
Rats Nest	Squaw Creek	unsatisfactory	0.72

Allotment	Stream Name	Condition	Perennial Miles
Sands Basin	Jump Creek	unsatisfactory	0.29
Soda Creek	Cow Creek Little Cow Creek	unsatisfactory unsatisfactory	0.99 0.78
Trout Creek	Trout Creek Trout Creek	unsatisfactory satisfactory	0.99 0.97

Specialist Reports & Idaho Rangeland Health Standards[25]

If an allotment is not specified below, Standards 2, 3 and 7 do not apply because there are no riparian or water resources present on the BLM portion of the allotment.

A specialist report details the allotments that occur within each of the subgroups (Jump, Succor, and Cow Creek subgroups), as compiled in 2012, and additional details regarding the information presented in the current EIS can be found in the report. The BLM used this information to assess and evaluate current rangeland health conditions, and this section details the information as it pertains to Standard 2 (Riparian Areas and Wetlands), Standard 3 (Stream Channels and Floodplains), and Standard 7 (Water Quality).

The current document reflects changes made to Standards 2, 3, and/or 7 based on the comments received regarding the DEIS and updated IDEQ information (also see Table ALLOT-2). The Alkali-Wildcat and Cow Creek allotments were previously not meeting Standard 7 due to current livestock and are now meeting the Standard, and therefore are in conformance with the Guidelines for Livestock Grazing Management. The Burgess FFR, Joint, and Madriaga allotments were previously not meeting Standard 7 due to current livestock management and are still not meeting, but not due to livestock. Finally, the Poison Creek allotment was previously not meeting Standards 2, 3, and 7 due to current livestock grazing. In the FEIS, the allotment is making progress toward meeting Standards 2 and 3, and is meeting Standard 7.

Alkali-Wildcat Allotment[26]

Table RIPN-8a: Total miles of perennial and intermittent streams and springs that have been assessed, their condition, and the issues identified for the Alkali-Wildcat allotment

Stream Name and Flow Type	Alkali-Wildcat Pasture 1	Assessment Issues/ Impacts Identified	Total Miles
Jump Creek Intermittent Miles	1.5 (FAR)	inadequate hydric vegetation, lack of deep-rooted hydric species, over widening of channel	1.5
	0.8 (PFC)		0.8
Jump Creek Perennial Miles	0.75 (FAR)	inadequate hydric vegetation, lack of deep-rooted hydric species, over widening of channel	0.75
Total Miles Assessed	**3.05**		**3.05**

Table RIPN-8b: Springs Assessed, Condition, & Issues Identified

Stream Name	PFC Condition	Assessment Issues/Impacts Identified
Wildcat Spring	NF	inadequate hydric vegetation, non-functioning trough

[25] For additional, detailed information regarding the condition of the streams and springs, the associated riparian-wetland areas, and the water quality, see the Riparian and Water Resources Specialist Reports (Jump, Succor, and Cow Creek Subgroups) available by request at the Owyhee Field Office.

[26] Part of the Wild Rat allotment environmental consequences sections under Alternatives 2, 3, and 4 below

Baxter Basin Allotment[27]

Table RIPN-9a: Total miles of perennial and intermittent streams and springs that have been assessed, their condition, and the issues identified for pastures 1 and 2 of the Baxter Basin allotment

Stream Name and Flow Type	Baxter Basin-1	Baxter Basin-2	Assessment Issues/ Impacts Identified	Total Miles
Baxter Creek Intermittent Miles	0.3 (FAR)	0.5 (FAR)	low flows, lack of surface water, lack of hydric vegetation and age class, presence of noxious weeds, upland watershed contributions	**0.8**

Table RIPN-9b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	Condition (Year)	Assessment Issues/ Impacts Identified
1A	1	FAR (2003)	low flows, lack of surface water, lack of hydric veg and age class, presence of upland species, water diverted
1B	1	FAR (2003)	low flows, lack of surface water, lack of regeneration and recruitment of shrubs
1C	1	FAR (2003)/ FAR (2012)	low flows, lack of surface water, hoof shearing, development
Unnamed # 2	1	PFC (2012)	
2A	2	FAR (2003)	upland species encroachment, hoof alteration of wet soils
2B	2	FAR (2003)	lack of surface water, hoof alteration of wetland soils
2C	2	FAR (2003)	decadent hydric veg, hoof alteration of wetland soils
Unnamed # 4	2	not assessed (2012)	upland species moving into riparian-wetland area; area shrinking
Poacher Spring	3	PFC (2003)/PFC (2012)	evidence of hoof alteration, bare ground, presence of thistle/ nonfunctional trough, headcuts

Blackstock Springs Allotment

Table RIPN-10a: Total miles of perennial and intermittent stream, and springs that have been assessed/ monitored, their condition, and the issues identified for pastures 1-3 of the Blackstock Springs allotment

Stream Name	Flow Type	Blackstock Springs-1	Blackstock Springs-2	Blackstock Springs-3	Assessment Issues/ Impacts Identified	Total Miles
Little McBride Creek	Intermittent Miles		0.8 (FAR)		high % of bare ground, heavy herbivory of veg, altered flow patterns, low plant vigor	**0.8**
	Perennial Miles		1.0 (PFC)			**1.0**
Little McBride Creek Tributary	Intermittent Miles		1.3 (FAR – PFC)			**1.3**
Little Squaw Creek	Intermittent Miles	0.4 (FAR)			poorly vegetated banks, lateral and vertical instability, high use of veg. altered flow patters	**0.4**
	Perennial Miles	0.6 (FAR)				**0.6**

[27] See *BaxterBasin_SGassessment_20060822.PDF* in the project record for additional details on the condition of this allotment

Stream Name	Flow Type	Blackstock Springs-1	Blackstock Springs-2	Blackstock Springs-3	Assessment Issues/ Impacts Identified	Total Miles
McBride Creek	Perennial Miles		1.2 (FAR)	0.6 (FAR)	lateral and vertical instability, noxious weeds/ channel incised, lack of deep rooted hydric species, high % bare ground	**1.8**
	Total Miles Assessed	**1.0**	**4.3**	**0.6**		**5.9**

Table RIPN-10b:MIM Site Metrics

Stream Name	Median SH (inches)	Mean SH (inches)	Bank Alteration (%)	Woody Use (%)	Bank Stability (%)	Bank Cover (%)
Willow Fork Creek	8.0	9.5	21	6.7	66	93
Little Squaw Creek	8.0	9.4	15	20	99	100
McBride Creek	10.0	11.7	0	4.2	78	100

Table RIPN-10c: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring	1	PFC- FAR	livestock trampling, altered flow patterns
Unnamed Spring	1	PFC	
Unnamed Spring	1	FAR	eroded berm, invasive species, inadequate amount of hydric species
Unnamed Spring	1	NF	heavy use of veg, invasive species
Unnamed Spring	1	FAR	altered flow patterns, livestock trails, sloughing, erosion, and deposition
Unnamed Spring	1	NF	altered surface flow and vegetation patterns
Blackstock Spring	1	PFC	Non-functioning trough
Unnamed Spring	1	FAR	altered flow patterns, high use of veg, erosion, low plant vigor
Unnamed Spring	1	FAR	livestock grazing and trampling
Unnamed Spring	1	NF	
Unnamed Spring	1	PFC	
Unnamed Spring	1	NF	
Unnamed Spring	1	PFC	
Unnamed Spring	2	PFC	
Unnamed Spring	2	FAR	altered flow patterns, moderate grazing,
Unnamed Spring	2	not assessed NA	water piped to troughs
Bush Ranch Complex	2	FAR	altered flow patterns, drying hummocks, vertical instability
Unnamed Spring	3	not assessed NA	developed and piped to non-functioning trough, no hydric veg present
Unnamed Spring	3	PFC	

<u>Burgess Allotment</u>

Standards 2 and 3 are not applicable in the Burgess allotment, and Standard 7 is not being met. The 1.6 miles of intermittent stream that traverse BLM lands within the Burgess allotment have not been assessed

using the BLM PFC protocol. However, the streams support very small, intermittent reaches of riparian-wetland areas (USDA FSA, 2011). Both pastures contain segments of stream that are identified by IDEQ as impaired waters (303(d) listed).

Burgess FFR Allotment

Table RIPN-11: Total miles of perennial and intermittent stream, and springs that have been assessed, their condition, and the issues identified for pastures 1 and 2 the Burgess FFR allotment

Stream Name and Flow Type	Burgess FFR-1	Burgess FFR-2	Assessment Issues/ Impacts Identified	Total Miles
Succor Creek Perennial Miles	0.35 (FAR-2006)	0	Lack of binding, deep-rooted vegetation, bank instability	0.35
Westgate Gulch Ephemeral Miles		0.10 (not assessed-2012)	erosion, upland species encroaching	0.10
Unnamed Creek Ephemeral Miles		0.30 (not assessed-2012)	eroding banks, headcuts, upland species encroaching	0.30
Total Miles Assessed	**0.35**	**0.40**		**0.75**

Corral Creek FFR Allotment[28]

The BLM has not assessed the streams that occur on public lands within the allotment, and IDEQ identifies that they are fully supporting the watershed's beneficial uses. Therefore, it has been determined that Standards 2, 3, and 7 are not applicable for the Corral Creek FFR.

Cow Creek Allotment

Table RIPN-12a: Total miles of perennial and intermittent stream, and springs that have been assessed/ monitored, their condition, and the issues identified for pasture 2 of the Cow Creek allotment

Stream Name and Flow Type	Cow Creek-2	Assessment Issues/ Impacts Identified	Total Miles Assessed
Split Rock Canyon	1.2 (FAR)	bank instability, lack of deep-rooted hydric species, skewed age distribution, headcuts	1.2
Trout Creek	1.1 (PFC)		1.1

Table RIPN-12b: MIM Site Metrics[29]

Stream Name	Median SH (inches)	Mean SH (inches)	Bank Alteration (%)	Woody Use (%)	Bank Stability (%)	Bank Cover (%)	Woody Species Regeneration Seedlings/ Young/ Mature(%)
Split Rock Canyon	4.0	5.0	31	16	87	95	21/59/21
Chimney Creek	4.5	5.6	0	NA	40	-	-

[28] See *CorralCreekFFR_SGevaluationDetermination_20080917.PDF* in the project record for additional details on the condition of this allotment

[29] See capability groups in Table RIPN-11

Table RIPN-12c: MIM Capability groups (see grouping ratings below in table RIPN-16) for Split Rock Canyon

Stream Name	Greenline Ecological Rating	Vegetation Erosion Index	Site Wetland Rating
Split Rock Canyon	69- Late	7.45- High	84-Good

Table RIPN-12d: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture/ Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring	1/2003	PFC	scattered invasive species
Unnamed Spring	1/2011	FAR	altered flow patterns/ loss of soil moisture and hydric species
Unnamed Spring	2/2002 & 2011	NF & FAR	lack of species composition, heavy browse, hoof shearing and trailing, developed
Trail Spring	3/2002 & 2011	FAR & PFC	lack of woody regeneration and herbaceous community, bare ground, trampling/ trailing
Kiyi Spring/Reservoir	5/ 2002 & 2011	NF & PFC	reservoir/ overflow
Unnamed Spring/Reservoir	5/ 2002	NF	reservoir

Tables RIPN-13: Multiple Indicator Monitoring (MIM) Capability Groups

Greenline Ecological Status Rating

Summary Value	Condition Rating
0-15	Very Early
16-40	Early
41-60	Mid
61-85	Late
85+	PNC

Vegetation-Erosion Resistance Status Rating

Summary Value	Condition Rating
0-2	Very Low
3-4	Low
5-6	Moderate
7-8	High
9-10	Very High

Site Wetland Status Rating

Summary Value	Condition Rating
0-15	Very Poor
16-40	Poor
41-60	Fair
61-85	Good
85+	Very Good

Elephant Butte Allotment

Table RIPN-14a: Total miles of perennial and intermittent stream, and springs that have been assessed, their condition, and the issues identified for pastures 2 and 3 of the Elephant Butte allotment

Stream Name and Flow Type	Elephant Butte-2	Elephant Butte-3	Assessment Issues/ Impacts Identified	Total Miles
Squaw Creek Perennial Miles	0.5 (PFC)			0.5
Unnamed Creek/ Rats Nest Gulch Intermittent Miles		0.1 (FAR)	small segment of larger reach that was assessed in the Rats Nest Allotment: loss of herbaceous and woody hydric veg, imbalanced w/d, sediment, and sinuosity ratios, lack of bank protection	0.1
Total Miles Assessed	**0.5**	**0.1**		**0.6**

Table RIPN-14b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Alkali Spring	2	not assessed/ source area enclosed	upland and weedy species, water piped to troughs
Unnamed Spring	3	not assessed/ source area enclosed	upland and weedy species, water piped to troughs

Ferris FFR Allotment

Table RIPN-15: Springs that have been assessed, their condition, and the issues identified for the Ferris FFR allotment

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring # 1	2	not assessed (2012)	developed, damaged trough, outside factors (private land)
Unnamed Spring # 2	3	FAR (2012)	erosion, livestock trailing, loss of spring area extent
Unnamed Spring # 3	3	FAR (2012)	developed, damaged springhead, altered flow patterns, loss of spring area extent

Franconi Allotment[30]

Table RIPN-16a: Total miles of perennial and intermittent stream that have been assessed, their condition, and the issues identified for pasture 3 of the Franconi allotment

Stream Name and Flow Type	Franconi-3	Assessment Issues/ Impacts Identified	Total Miles
Wildcat Canyon Intermittent Miles	0.25 (FAR)	lack of herbaceous veg and regeneration, heavy browse, decadent mature shrubs, lack of surface water, banks in poor condition	
Total Miles	0.25		**0.25**

Table RIPN-16b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
5583A	3	PFC	

Jackson Creek Allotment

Table RIPN-17a: Total miles of perennial and intermittent stream that have been assessed/ monitored, their condition, and the issues identified for pastures 3 and 4 of the Jackson Creek allotment

Stream Name	Flow Type	Jackson Creek-3	Jackson Creek-4	Assessment Issues/ Impacts Identified	Total Miles
Unnamed Creek (Wildcat Canyon)	Perennial Miles		1.0 (FAR-PFC)	lack of binding veg, heavily foraged, low plant vigor, high % bare ground	**1.0**
	Ephemeral Miles		0.3 (not assessed)		**0.3**
Jackson Creek	Perennial Miles		1.2 (PFC)		**1.2**
Succor Creek	Perennial Miles	1.0 (FAR)		Heavy erosion and deposition, lack of bank	**1.0**

[30] See *Franconi_IARRHA_20061212.PDF* in the project record for additional detail on the condition of this allotment

Stream Name	Flow Type	Jackson Creek-3	Jackson Creek-4	Assessment Issues/ Impacts Identified	Total Miles
				binding veg, over widening and incisement of channel	
	Ephemeral Miles	0.3 (not assessed)			**0.3**
Coyote Creek	Ephemeral Miles		0.4 (not assessed)		**0.4**
	Total Miles Assessed	**1.3**	**2.9**		**4.2**

Table RIPN-17b: MMIM Site Metrics

Stream Name	Pasture	Median Stubble Height (inches)	Bank Alteration (%)	Woody Use (%)	Bank Stability (%)	Bank Cover (%)	% Hydric Plants	Greenline-greenline width (m)
Succor Creek	3	4.0	32	23.2	53	96	36	5.92
Little Jackson Creek	4	4.0	46	10	28	83	42	1.34

Table RIPN-17c: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Mud Spring	1	not assessed (2012)	
Unnamed Spring # 1	1	FAR (2012)	headcuts present, erosion, loss of extent
Unnamed Spring # 2	2	FAR (2012)	developed, loss of extent, soil shearing
Texas Basin Spring	3	FAR (2003)	heavily grazed, invasive species, developed, non-functioning trough
Unnamed Spring # 1	3	FAR (2008)	losing extent, upland species, disrupted flow patterns
Unnamed Spring # 5	4	FAR (2008)/ FAR (2012)	2008--low hydric species composition, soil compaction 2012--heavy browse, excessive soil shear, eroding edge, losing extent
Unnamed Spring # 8	4	FAR (2008)/ not assessed (2012)	2008--low hydric species composition, soil compaction 2012-- developed, edges eroding, excessive soil shearing
Unnamed Spring # 5 & 6	4	not assessed (2012)	

Joint Allotment

Table RIPN-18a: Total miles of perennial and intermittent stream, and the number of springs that have been assessed, their condition, and the issues identified for pastures 3 and 4 of the Joint allotment

Stream Name and Flow Type	Joint-2	Joint-3	Assessment Issues/ Impacts Identified
Posey Creek Intermittent Miles	0.8 (FAR)		incised channel, unstable stream banks, non-riparian species
Long Draw Intermittent Miles	1.1 (PFC)		
Soda Creek Intermittent Miles		0.5 (FAR)	over widened channel

Stream Name and Flow Type	Joint-2	Joint-3	Assessment Issues/ Impacts Identified
Total Miles Assessed	**1.9**	**0.5**	

Table RIPN-18b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Turner Spring	2	FAR	developed; upland species encroaching; trough non functional; thistle abundant around trough
5312A	2	FAR	altered flow paths and thistle invasion
5312B	2	FAR	headcut near the top of the spring; wetland area is degrading/incising; highly altered flow paths; upland species encroaching
5312C	2	FAR	altered flow paths; invasion of thistle and upland species
5312D	2	FAR	developed stock pond; spillway stable; highly altered flow paths; invasion by Canada and scotch thistle
5312E	2	NF	severely altered drainage patterns; invasion by thistle
Grace Spring	3	NF	developed; lack of surface water; altered flow patterns, upland species invasion
Chubby Spring	4	NF	developed; altered flow patterns; edge shearing, high % of bare ground

Madriaga Allotment

Table RIPN-19a: Total miles of perennial and intermittent stream, and springs that have been assessed, their condition, and the issues identified for pasture 1 of the Madriaga allotment

Stream Name and Flow Type	Madriaga-1	Assessment Issues/ Impacts Identified	Total Miles Assessed
Posey Creek Intermittent Miles	1.6 (FAR)	Lack of hydric veg, incised channel, headcuts, lateral/vertical instability	1.6

Table RIPN-19b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	Condition	Assessment Issues/ Impacts Identified
Blue Clay Pit	1	NF	high % bare ground, hoof shearing, invasive species present
Stanford	1	NF	dewatered by development, does not support hydric veg
Summer Camp	1	NF	dewatered by development, does not support hydric veg
1X	1	FAR	low plant vigor, invasive species present
1A	1	PFC	historic pugging
2A	2	NF	dewatered by development, does not support hydric veg
2C	2	NF	dewatered by development, does not support hydric veg
2B	2	FAR	lack of surface water to support hydric veg

MIM capability ratings[31] for Cow and Jacks Creeks on pasture 2 of the Soda Creek allotment

Stream Name	Pasture	Greenline Ecological Rating	Vegetation Erosion Status	Site Wetland Rating
Cow Creek	2	79- Late	8.31- High	53- Fair
Jacks Creek	2	69- Late	7.98- High	60- Fair

[31] See Table RIPN- 11 for MIM Capability Groups

Poison Creek Allotment

Table RIPN-20: Total miles of perennial and intermittent stream that have been assessed, their condition, and the issues identified for pasture 1 of the Poison Creek allotment

Stream Name and Flow Type	Poison Creek-1	Assessment Year (s)	Assessment Issues/ Impacts Identified	Total Miles Assessed
Poison Creek Perennial Miles	1.6 NF & PFC	2002 & 2013	bare banks, lack of deep root binding veg, weedy species, over widening of channel, inability of flows to inundate floodplains	**1.6**

Rats Nest Allotment[32]

Table RIPN-21a: Total miles of perennial and intermittent stream, and springs that have been assessed, their condition, and the issues identified for pasture 1 of the Rats Nest allotment

Stream Name and Flow Type	Rats Nest-1	Assessment Issues/ Impacts Identified	Total Miles
Squaw Creek Perennial Miles	0.7 (PFC)		0.7
Unnamed Creek/ Rats Nest Gulch Intermittent Miles	3.5 (FAR)	lack of deep rooted veg, active lateral cutting of channel, altered flow patterns, noxious weed presence	3.5
Total Miles Assessed	**4.2**		**4.2**

Table RIPN-21b: Springs Assessed, Condition, & Issues Identified

Spring Name	PFC Condition	Assessment Issues/ Impacts Identified
Coyote Spring	FAR	downward trend, developed, sloughing and erosion occurring, livestock trails and hoof shearing
Bathtub Spring	not assessed; developed	source not exclosed
Upper Rats Nest Spring	NF	no hydric species, weedy, lost form and function

Sands Basin Allotment

Table RIPN-22a: Total miles of perennial and intermittent stream, and springs that have been assessed/ monitored, their condition, and the issues identified for pastures 2 and 4 of the Sands Basin allotment

Stream Name and Flow Type	Sands Basin-2	Sands Basin-4	Assessment Issues/ Impacts Identified	Total Miles
Jump Creek Intermittent Miles	1.0 (FAR); 1.3(PFC)		lack of hydric veg, unstable stream banks, lack of riparian plant vigor and regeneration, over widening of channel, lack of appropriate sinuosity	2.3
Jump Creek Perennial Miles		1.09 (FAR)	lack of hydric veg, unstable stream banks	1.09
Total Miles Assessed	**2.3**	**1.09**		**3.39**

[32] Part of the Wild Rat allotment under the environmental consequences sections of Alternatives 2, 3, and 4 below

Table RIPN-22b: MMIM Site Metrics

Stream Name	Pasture	Median Stubble Height	Bank Alteration
Jump Creek	2	10.0	
Jump Creek	4	2.0	59%

Table RIPN-22c: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Sands Basin Complex	4	FAR	vertical instability (headcuts), lack of woody component

Soda Creek Allotment

Table RIPN-23a: Total miles of perennial and intermittent stream, and springs that have been assessed/ monitored, their condition, and the issues identified for pasture 2 of the Soda Creek allotment

Stream Name	Flow Type	Soda Creek-2	Assessment Issues/ Impacts Identified
Cow Creek	Perennial Miles	1.06 (FAR-2002)	lack of hydric veg, skewed sinuosity and w/d ratios, hoof shearing
	Perennial Miles	0.72 (PFC-2009)	lack of herbaceous
Little Cow Creek	Perennial Miles	0.71 (FAR-2002)	
	Perennial Miles	0.23 (PFC-2009)	
	Total Miles Assessed	**2.72**	

Table RIPN-23b: MMIM Metrics[33]

Stream Name	Pasture	Median SH (inches)	Mean SH (inches)	Bank Alteration (%)	Woody Use (%)	Bank Stability (%)	Bank Cover (%)	Seedlings & Young (%)	Mature (%)	Hydric (%)
Cow Creek (2009)	2	6.5	6.8	20	9.6	76	85	17	83	25
Jacks Creek (2009)	2	4.0	4.7	16	18.9	78	93	18	8	58

Table RIPN-23c: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
6523A	3	PFC	
6523B	3	PFC	
6523C	3	PFC	
6523D	3	PFC	
6523E	3	PFC	
6523F	3	PFC	
6523G	3	NF	developed, lack of hydric veg, instability from burns
6523X	3	NF	
6523Y	3	PFC	
Bucket Spring	3	NF/ PFC	
Lower Flat Spring	3	FAR/ PFC	

[33] See capability groups in Table RIPN-11

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Unname001_sodackallot	3	PFC	
Unname002_sodackallot	3	PFC	
Unname003_sodackallot	3	PFC	
Unname004_sodackallot	3	PFC	
Unname005_sodackallot	3	PFC	
Unname006_sodackallot	3	PFC	
Unname007_sodackallot	3	PFC	
Willingger Spring 01	3	PFC/ PFC	
Willingger Spring 02	3	PFC	

Trout Creek Allotment[34]

Table RIPN-24a: Total miles of perennial and intermittent stream, and springs that have been assessed, their condition, and the issues identified for pastures 1-3 of the Trout Creek allotment

Stream Name and Flow Type	Trout Creek-1	Trout Creek-2	Trout Creek-3	Assessment Issues/ Impacts Identified	Total Miles
Slick Rock Canyon Perennial Miles		1.8 (FAR-2000)		noxious weeds present, lack of hydric veg and age class, incised channel, reduced floodplain inundation and water storage capacity	1.8
Trout Creek Perennial Miles	1.2 (PFC-2000 & 2011)				1.2
Perennial Miles	0.9 (FAR-2000)			widened channel, lack of riparian shrubs, lack of hydric veg on banks, lack of hydric veg composition	0.9
Wood Creek Perennial Miles			0.8 (FAR-2000; PFC-2011)	2000-early seral community, lack of shrub regeneration, presence of upland species, livestock trailing and bank erosion, floodplain inundation and water storage capabilities reduced, 50% unstable banks 2011- wood and rock armored, vigorous herbaceous community	0.8
Total Miles Assessed	2.1	1.8	0.8		4.7

Table RIPN-24b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Five Springs	1	FAR	developed, presence of upland species, altered surface flow
5294A	3	FAR	presence of upland species, livestock hummocking of wetland soils, developed, shrinking riparian area,
5294C	3	FAR	upland species dominant, lack of riparian shrubs, altered surface flow,

[34] See TroutCr_SGAssessment_Final_20060928.PDF in the project record for additional details on the condition of this allotment

Trout Creek/ Lequerica Allotment

Table RIPN-25a: Total miles of perennial and intermittent stream, and springs that have been assessed, their condition, and the issues identified for pastures 1 and 2 of the Trout Creek/Lequerica allotment

Stream Name and Flow Type	Trout Cr/ Lequerica -1	Trout Cr/ Lequerica-2	Assessment Issues/ Impacts Identified	Total Miles Assessed
West Fork Trout Creek Intermittent Miles	0.4 (NF)		undesirable vegetation, overwidening of channel, lack of hydric plants,	0.4
Unnamed Creek (Nichols Creek Trib) Intermittent Miles	1.0 (FAR)		bank instability, lack of hydric vegetation, sheared/slumped banks, erosion	1.0
Unnamed Creek (Split Rock Canyon) Intermittent Miles		0.3 (FAR-PFC)	incised channel, unbalanced erosion/deposition	0.3
Total Miles Assessed	**1.4**	**0.3**		**1.7**

Table RIPN-25b: Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture	PFC Condition	Assessment Issues/ Impacts Identified
Nichols Spring	1	PFC	hoof shearing and livestock trampling

Idaho Rangeland Health Standards 2, 3, and 7

All Allotments

A specialist report detailing the allotments that occur within Group 2 was compiled in 2012 (see the BLM website noted above) and additional details regarding the information presented in the current EIS can be found in the document. In using this information to assess and evaluate current rangeland health conditions, BLM has made conclusions regarding whether Standard 2 (Riparian Areas and Wetlands), Standard 3 (Stream Channels and Floodplains), and Standard 7 (Water Quality) are being met (Table ALLOT-2).

Meeting Standards 2, 3, and 7

Elephant Butte Allotment

Approximately 0.5 perennial miles of Squaw Creek occur in pasture 2 of the allotment. The stream is inaccessible to livestock and has twice been assessed in PFC. The two springs that occur in pastures 2 and 3 are developed, with the water source supplying cattle troughs. The riparian-wetland areas that would be associated with the springs/seeps have lost their form and function and were not assessed using the PFC protocol. The two areas are currently occupied by upland species and weeds. Standard 7 is being met because IDEQ has identified that all of the streams that traverse BLM lands within the allotment are fully supporting the beneficial uses assigned to the watershed. Therefore, it was determined that current livestock grazing management practices conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standards 2, 3, and 7. However, the ORMP objective for all riparian-wetland areas to achieve or maintain PFC also applies. For example, the two springs could be identified for rehabilitation in the future.

Franconi Allotment

There is one spring in pasture 3 within the Franconi allotment that was in PFC at the time of assessment, and it had adequate hydric vegetation cover and site stability. About 0.25 mile of Wildcat Canyon

traverses BLM lands in pasture 3. The stream is intermittent and generally goes dry early (late June or early July). Willows and other hydric vegetation are supported, and the banks appear to be stable for the system. Temperature was monitored in Wildcat Canyon and IDEQ's criteria for cold-water aquatic life (the watershed's beneficial use) were met (MDMT = 21.4°C, MDAT = 16.5°C). The criteria, as defined by the State, sets a Maximum Daily Maximum Temperature (MDMT) of 22° C and a Maximum Daily Average Temperature (MDAT) of 19° C. Therefore, current livestock grazing management practices conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standards 2, 3, and 7.

Not Meeting Standards 2, 3, and 7, but Making Significant Progress Toward Meeting

Baxter Basin Allotment

Baxter Creek is the primary drainage in the allotment that supports riparian-wetland vegetation. About 0.8 mile of Baxter Creek was assessed FAR. Within the three pastures, a total of nine springs were identified for assessment: six were FAR, two were in PFC, and one was visited, but was not assessed. Two of the springs that were assessed in 2003 were revisited in 2012 and both were given the same rating (Table RIPN-5). Two additional springs were assessed in 2012; one was rated in PFC and the other was not assessed because the observers classified the spring as an area where the PFC protocol would not be applicable.

Soda Creek Allotment

The Soda Creek allotment is not meeting Standards 2, 3, and 7. The portions of both Cow and Little Cow Creek that occur within pasture 2 were assessed FAR in 2002 because the streams lacked hydric vegetation, there were imbalanced sinuosity and width/depth ratios, and hoof shearing of wetland soils was present. However, smaller segments of both Cow and Little Cow Creeks that traverse pasture 2 were rated in PFC in 2009, and the metrics associated with the two MIM sites indicate the streams are resilient to erosion, have a late seral plant community, and are generally stable. Eighteen of the 20 springs that occur on BLM lands within pasture 3 were most recently in PFC; they appear to have generally stable riparian-wetland areas, moderately low impacts from livestock, and are composed of healthy hydric vegetation communities, all allowing the systems to function properly.

Standard 7 is currently not being met in pastures 2 and 3 of the Soda Creek allotment; however, the streams that occur on BLM land are in conformance with the Guidelines for Livestock Grazing Management because the streams are 303(d) listed for flow alteration and mercury which cannot be attributed to livestock. The Standard is being met in pastures 1 and 5 because the streams have been de-listed for temperature and sediment (see specialist report for further details).

Trout Creek Allotment

The Trout Creek allotment is not meeting Standards 2, 3, and 7, but is making significant progress toward meeting the Standards. The reach of Trout Creek that occurs in pasture 1, the reach of Split Rock Canyon that occurs in pasture 2, and the reach of Wood Creek that occurs in pasture 3 were all FAR in 2000, primarily based on a lack of hydric species and an increase in upland and undesirable species, as well as incised stream channel and reduced floodplain inundation and water storage capacity. Additionally, all three springs that occur within the allotment were FAR because there were upland species present, altered surface flows from livestock trailing and hoof shearing, and two of the springs were developed.

In 2011, Wood Canyon and Trout Creek were re-assessed; both streams were in PFC. The condition of Wood Canyon was improving with an increase in both herbaceous and woody cover and regeneration. The reach of Trout Creek is a heavily rock armored stream that is geologically confined within steep

canyon walls making the majority of the stream inaccessible to grazers and all riparian plant species showed high vigor and reproduction.

The streams that traverse the allotment have not been assessed by IDEQ for water quality standards; however, the watershed's beneficial uses have been established. The beneficial uses assigned to the watershed include cold-water aquatic life, primary contact recreation, salmonid spawning, and special resource water. Cold-water aquatic life water bodies are defined as water quality appropriate for the protection and maintenance of a viable aquatic life community for cold-water species. BLM has monitored water temperatures in Split Rock Canyon and Trout Creek in pastures1 and 2; the reaches of Split Rock Canyon within pasture 2 were meeting the temperature criteria, and the reach of Trout Creek in pasture 1 was not meeting the temperature limits set by the State (see Specialist Report in the project record for further details).

Current livestock grazing management practices are not significant causal factors for not meeting Standards 2, 3, and 7 in the Baxter Basin, Soda Creek, and Trout Creek allotments. Livestock use in the allotment appears appropriate for progress and the current livestock grazing appears to be promoting stream recovery. As conditions improve and the allotments make progress with Standards 2 and 3, it is anticipated that they will also show improvement with Standard 7. Therefore, current livestock grazing management practices conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standards 2, 3, and 7.

Not Meeting Standards 2 and 3 but Making Significant Progress Toward Meeting; Meeting Standard 7

Poison Creek Allotment

Poison and Little Poison Creeks are the primary drainages in the Poison Creek allotment that support riparian-wetland vegetation. About 1.5 miles of Poison Creek were assessed NF in 2002. The Trimbly fire that occurred the same year as the assessment makes it difficult to determine how much of the condition is attributable to the fire. However, specific issues identified include long term indicators that the stream lacks the deep-rooted vegetation necessary to stabilize streambanks and that weedy species are increasing. The same reach was visited in 2013 and recovery was evident. The stream occurs in a relatively deep canyon and is currently well armored with woody species that are protecting the stream banks and channel. Therefore, the allotment is making significant progress toward meeting Standards 2 and 3, and is in conformance with the Guildelines for Livestock Grazing Management associated with those Standards.

Standard 7 is currently being met in the Poison Creek allotment, and the streams that occur on BLM land are in conformance with the Guidelines for Livestock Grazing Management because the streams have been removed from the 303(d) listed for sediment and are not listed for flow alteration.

Not Meeting Standard 7 (Livestock are not a Causal Factor)

Burgess Allotment

Standard 7 is currently not being met in the Burgess allotment. However, the allotment is in conformance with the Guidelines for Livestock Grazing Management because the streams that occur within AU# ID17050108SW021_02 are 303(d) listed for flow alteration which cannot be attributed to livestock.

Ferris FFR Allotment

Standard 7 is currently not being met in pasture 1 of the Ferris FFR allotment, but it is in conformance with the Guidelines for Livestock Grazing Management because the streams are 303(d) listed for flow alteration which cannot be attributed to livestock. The Standard is not applicable in pasture 2 because

there are no streams, and is being met in pasture 3 because the streams have been removed from the 303(d) list.

Not Meeting Standards 2 and 3 (Livestock are a Causal Factor), but meeting Standard 7

Alkali-Wildcat Allotment

(Part of the Wild Rat allotment under the environmental consequences sections of Alternatives 2, 3, and 4 below) Jump Creek, its tributaries, and the tributaries of Squaw Creek are the primary drainages in the Alkali-Wildcat allotment that support riparian-wetland vegetation. About 3 miles of Jump Creek are excluded from livestock grazing, are in a relatively steep canyon, and are assumed to be in PFC. The portions of Jump Creek that are accessible to livestock were assessed FAR in 1999; the lower reach was re-assessed in PFC in 2011, indicating progress toward meeting the minimal requirements for the Standards. Wildcat Spring has lost its form and function as a riparian-wetland area, lacks any hydric vegetation, and is NF. Standard 7 is being met because none of the streams that occur within the allotment are on IDEQ's 303(d) list of impaired waters.

Cow Creek Allotment

Standards 2 and 3 are not being met on the Cow Creek allotment. Approximately 1.2 intermittent miles of Split Rock Canyon that occur in pasture 2 of the Cow Creek allotment were assessed FAR because of bank instability, lack of deep-rooted hydric species, a skewed age distribution, and the presence of headcuts. A 1.1-mile reach of the East Fork of Trout Creek was assessed in PFC in 2011 because the stream is armored against erosion by large boulders and riparian vegetation appeared healthy and occurred as expected intermittently with the flow. Five springs have been assessed throughout the allotment: one was in PFC, two were FAR, and three were NF. Two of the NF springs are developed reservoirs to which the PFC protocol is not applicable; however, the spring sources have been altered and no longer provide the form and function associated with riparian-wetland areas. Standard 7 is being met because none of the streams that occur within the allotment are on IDEQ's 303(d) list of impaired waters.

Rats Nest

(Part of the Wild Rat allotment under the environmental consequences sections of Alternatives 2, 3, and 4 below) Squaw Creek and Rats Nest Gulch are the primary drainages in the Rats Nest allotment that support riparian-wetland vegetation. About 3.5 miles of Rats Nest Gulch were determined to be FAR because there was a high (more than 30 percent) proportion of noxious weeds present, lateral cutting of the stream channel was occurring, and there was a lack of deep-rooted plant species. The three springs that have been evaluated range from NF to FAR. Coyote Spring was recently re-assessed FAR with a downward trend because there were sloughing and erosion impacts occurring from livestock trailing and hoof shearing, and the spring is developed, with the trough placed at the spring source. Upper Rats Nest Spring was rated NF because the riparian-wetland area has lost its extent, form, and function, and there are no hydric species present or the saturated soils to support them.

Wild horses and current livestock grazing management practices are significant causal factors for not meeting Standards 2 and 3. The grazing schedules that have been implemented in recent years have not provided rest years, and the residual vegetation has not been sufficient to maintain or improve riparian-wetland function. Therefore, current livestock grazing management practices do not conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standards 2 and 3.

Standard 7 is currently being met in the Rat's Nest allotment because the streams are fully supporting the watershed's beneficial uses.

Trout Creek/ Lequerica Allotment

The Trout Creek/Lequerica allotment is not meeting Standards 2 and 3, and Standard 7 is not applicable because IDEQ has not monitored any of the streams. The reach of the West Fork of Trout Creek that traverses pasture 1 was assessed NF, and the reaches of both Nichols Creek tributary and Split Rock Canyon were assessed FAR. The issues identified in the assessments suggest that neither short- or long-term riparian-wetland area indicators are being met. For example, the incised channel on Split Rock Canyon and the change in plant community along the West Fork Trout Creek are indications that prolonged impacts have occurred. However, the reach of Split Rock Canyon in pasture 2 was re-assessed in 2011 and was in PFC, indicating the Standard is now being met in that pasture.

Within the Trout Creek/Lequerica allotments, current livestock grazing management practices are significant causal factors for failing to meet Standards 2 and 3. Residual vegetation has not been sufficient to maintain or improve riparian-wetland function, and the streams lack the hydric vegetative cover and bank-stabilizing species necessary for the maintenance of stable stream channels. The recent grazing schedule has not allowed for rest years, and the spring developments were not designed to protect the ecological function of the riparian-wetland areas.

Standard 7 is currently not applicable in the Trout Creek/ Lequerica allotment because none of the streams have been assessed by IDEQ.

Not Meeting Standards 2, 3, and 7 (Livestock are a Causal Factor for 2 and 3, but not for 7)

Burgess FFR Allotment

Standards 2, 3, and 7 are not being met on the Burgess FFR allotment. There are about 0.35 perennial miles of stream that occur within pasture 1 of Burgess FFR that have twice been rated FAR (2002 and 2011) due to issues with bank instability, a lack of riparian vegetation, and erosion/deposition caused by overland flows. Additionally, two reaches of an unnamed stream were assessed in pasture 2 in 2012. Both were identified as ephemeral streams; thus, the lotic PFC protocol was not applied. However, issues with erosion, the presence of headcuts, and upland species encroachment into the riparian area were noted. Standard 7 is not being met because there are streams on IDEQ's 303(d) list of impaired waters. However, they are listed due to flow alteration which cannot be attributed to livestock.

Joint Allotment

Standards 2, 3, and 7 are not being met on the Joint allotment. Both the reach of Posey Creek that traverses pasture 2 and the reach of Soda Creek that occurs in pasture 3 within the Joint allotment were rated FAR based on issues with channel instability, incision, and over-widening. The springs that occur within the allotment were assessed either FAR or NF because there were concerns with the presence of undesirable species, non-maintained developments, altered flow patterns, and vertical instability. Standard 7 is not being met because there are streams on IDEQ's 303(d) list of impaired waters; however, they are listed due to flow alteration, which cannot be attributed to livestock.

Madriaga Allotment

Standards 2, 3, and 7 are not being met on the Madriaga allotment. Approximately 1.6 miles of Posey Creek that occur within the Madriaga allotment were assessed FAR because there was a lack of hydric vegetation, the stream channel was incised, there was lateral and vertical instability, and there were headcuts present. Eight springs have been assessed within the two pastures on the Madriaga allotment. Five were non-functional, two were FAR, and one was in PFC. Standard 7 is not being met because there are streams on IDEQ's 303(d) list of impaired waters; however, they are listed due to flow alteration which cannot be attributed to livestock.

Not Meeting Standards 2, 3, and 7 (Livestock are a Causal Factor)

Within the nine allotments that are not meeting Standards 2, 3, and 7, current livestock grazing management practices are significant causal factors. The grazing schedules that have been implemented in recent years have not provided rest years, and the residual vegetation has not been sufficient to maintain or improve riparian-wetland function. Livestock developments were not designed to protect the riparian-wetland water source, and the streams lack the hydric vegetative cover and bank-stabilizing species necessary for the maintenance of stable stream channels. Finally, grazing management practices have not provided for meeting Idaho's water quality standards. Therefore, current livestock grazing management practices do not conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standards 2, 3, and 7.

Blackstock Springs Allotment

The three pastures of the allotment contain about 9 miles of named streams (Deadhorse, Little McBride, McBride, Little Squaw Creeks, and Willow Fork) and 15 NHD identified springs. Six miles of the streams have been assessed and 3.6 miles (about 60 percent) were rated FAR. Specific issues identified include poorly vegetated banks, both lateral and vertical instability, altered surface flows caused by excessive hoof action, and high use of vegetation. MMIM sites were established on both Little Squaw Creek and Willow Fork. Both sites exceeded the bank alteration objective set in the ORMP (15 and 21 percent respectively).

Seventeen springs have been assessed within the three pastures; seven (40 percent) were FAR and four were NF (25 percent). Specific issues identified in the recent assessments included heavy livestock impacts in the form of vegetation use, pugging, and wetland soil loss. The surface flow patterns have been altered by hoof action creating high and dry pedestals and eroding soils, and the plant community had low vigor.

Standard 7 is currently not being met in the Blackstock Springs allotment. The allotment is not in conformance with the Guidelines for Livestock Grazing Management because the streams that occur within AU# ID17050103SW004_02 are 303(d) listed for sediment and temperature, and livestock are a contributing factor for both pollutants (see the specialist report in project record for details).

Jackson Creek Allotment

Coyote, Jackson, Little Cow, and Succor Creeks, and Westgate Gulch are the primary drainages in the allotment that support riparian-wetland vegetation. Approximately 1 mile of Succor Creek, 1 mile of Wildcat Canyon, and 1.2 miles of Jackson Creek have been assessed. Both Jackson Creek and Wildcat Canyon are in relatively deep canyons, are well-armored with rock and a mature willow community, and were assessed in PFC. However, the reach of Succor Creek was at risk because there was a lack of bank-binding vegetation, as well as over-widening and incision of the stream channel. Three additional reaches on Succor, Coyote, and Wildcat Canyon were identified for assessment in 2012. The three were classified as ephemeral streams; thus, the PFC protocol was not applied. The reaches of stream are all geologically confined, well armored with rock and dense willows, and primarily inaccessible to livestock. Additionally, two MMIM sites were established on Succor and Little Jackson Creeks (Table RIPN-12). Both sites exceeded the bank alteration criteria set in the ORMP with alterations of 32 percent and 46 percent respectively.

The NHD identifies 11 springs that occur on BLM lands within the allotment. Three of the springs were assessed at risk in 2008 because there was a low composition of hydric species and the soils were compacted by hoof action. A fourth spring was assessed at risk in 2003 because more than 40 percent of

the available forage had been grazed and 35 to 45 percent of the site was covered in undesirable herbaceous species. Six springs were identified for assessment in 2012, and three of them were not assessed using the PFC protocol, based on the degree of development and disrepair of troughs and pipelines as well as the loss of extent of the riparian-wetland area. One of the springs that was previously assessed FAR was revisited in 2012 and again assessed FAR. Issues of concern included livestock shearing wetland soils, causing erosion and a loss of extent of the riparian-wetland area. Two additional springs that had not been visited previously were assessed FAR in 2012. One of them is developed, with the trough and pipeline in disrepair, there is shearing and erosion occurring from excessive livestock presence, and the riparian-wetland area is losing extent. The second one has headcuts present, causing vertical instability, erosion, and loss of extent of the riparian-wetland area.

Standard 7 is currently not being met in the Jackson Creek allotment. The streams that occur on BLM land in pasture 3 are not in conformance with the Guidelines for Livestock Grazing Management because the streams are 303(d) listed for both sediment and temperature and livestock are a contributing factor. The streams that occur in pastures 1, 2, 4, and 5 are in conformance with the Guidelines because they are 303(d) listed for flow alteration which cannot be attributed to livestock (see specialist report in project record for details).

Sands Basin Allotment

Jump Creek is the primary perennial drainage in the Sands Basin allotment that supports riparian-wetland vegetation. The stream traverses both BLM and private lands in pastures 2 and 4. About 1.0 mile of Jump Creek that traverses BLM lands was determined to be FAR because there was insufficient deep-rooted, bank stabilizing plant species present to protect the system during high flows. Sands Basin Spring Complex was rated FAR based on the presence of headcuts that compromise the vertical stability of the wet meadow area. Standard 7 is currently being met in pasture 4 of the Sands Basin allotment, and the streams that occur on BLM land are not in conformance with the Guidelines for Livestock Grazing Management because the streams are 303(d) listed for sediment and temperature. The Standard is being met in pastures 1, 2, and 3 because the streams have been de-listed for sediment and are not 303(d) listed for flow alteration.

Not Meeting Standard 2 (Livestock are a Causal Factor)

Ferris FFR Allotment

According to the NHD, there are almost 13 miles of stream and two springs on BLM land within the Ferris FFR allotment. None of the streams have been assessed; thus, there is no information available regarding their condition. Recent aerial imagery indicates the streams are likely ephemeral and there are very few riparian-wetland areas associated with them. One spring that occurs in pasture 2 and two springs in pasture 3 were identified for assessment in 2012. Based on the influences of the adjacent private land, the PFC protocol was not applied to the spring in pasture 2. However, issues with the damaged trough were noted. The two springs in pasture 3 were rated FAR because both of the riparian-wetland areas are losing extent because livestock trailing and soil shearing have altered the flow patterns, drying the wetland soils and allowing upland species to outcompete hydric vegetation. Also, the disrepair of the developments at both springs was noted. Both Cow Creek and an unnamed tributary are on IDEQ's 303(d) list of impaired waters. Additionally, BLM has internal information that Cow Creek exceeded the water temperature criteria (MDMT = 38.1°C and MDAT =25.2°C).

Current livestock grazing management practices are significant causal factors for failing to meet Standard 2. Residual vegetation has not been sufficient to maintain or improve riparian-wetland function, the recent grazing schedule has not allowed for rest years, and the spring developments were not designed to protect the ecological function of the riparian-wetland areas. Therefore, current livestock grazing management

practices do not conform with the Idaho Guidelines for Livestock Grazing Management applicable to Standard 2.

3.5.2. Environmental Consequences

3.5.2.1. Common to All Grazing Alternatives

Direct and Indirect Effects - Introductory Information

The term *riparian* denotes both a landscape position and a specific type of ecosystem; riparian areas are located next to a body of water or wetland. Riparian areas are widely recognized as the most biologically diverse and productive of all ecosystems (Kauffman, Krueger, & Vavra, 1984) (Powell, Cameron, & Newman, 2000). Riparian areas filter sediment, stabilize soil and stream banks, regulate water temperature and flow, and provide many significant habitat attributes for terrestrial and aquatic wildlife (Stevens, McArthur, & Davis, 1992). Because they generally offer gentle slopes, cool microclimate, available water, and abundant forage, livestock often concentrate in riparian areas (Powell, Cameron, & Newman, 2000).

The riparian areas that occur within the allotments have both structural and functional diversity; thus, there is a need to characterize and quantify the effects of grazing management practices on the stream and spring riparian communities and the maintenance of hydrologic systems. The impacts discussed below under each alternative focus primarily on differences among season of use because there is no conclusive evidence and information is speculative regarding impacts on riparian-wetland areas from livestock numbers (Powell, Cameron, & Newman, 2000).

The streams and springs that occur within the allotments are unique in their particular setting: stream characteristics, valley bottom type and soils, potential vegetation, relationship to upland topography and vegetation. Therefore, each area will require a unique strategy to accomplish desired conditions and meet objectives. There are no one-size-fits-all prescriptions for livestock grazing in riparian areas; however, authors agree that any successful grazing strategy will at a minimum:

- Limit grazing intensity and season of use to provide sufficient rest to encourage plant vigor, regrowth, and energy storage;
- Ensure sufficient vegetation during periods of high flow to protect stream banks, dissipate energy, and trap sediments; and
- Control the timing of grazing to prevent damage to stream banks when they are most vulnerable to trampling.

Table RIPN-26: Effects of livestock grazing on aquatic and riparian habitats by alternative and season of use (*Adapted from* (Bellows, 2003) *and* (Belsky, Matzke, & Uselman, 1999)*)*

Alternative(s)	Season of Use	Issue	Impacts (P denotes primary impact and S denotes secondary set of impacts)
1, 2, 3, 4 and 5	Spring (March- May)	Soil compaction Selective grazing on palatable species	P Increased erosion P Sediment loading of riparian areas and streams S increased flooding S reduced groundwater recharge S lowered water table S increase stream bank erosion S removal of submerged vegetation S reduced aquatic habitat S reduced fish spawning habitat P Decreased herbaceous cover P Decreased species and age diversity S less shade and higher stream temperatures S decrease in stream bank stability S less sediment trapping S decreased water infiltration S impaired aquatic and fish habitat
1, 2, 3, and 4	Summer (June- Aug.) Fall (Sep.-Nov.) *these impacts are in addition to those listed under all seasons	Browsing on trees and shrubs	P Decreased tree and shrub cover S decline in stream bank stability S less shade and higher stream temperatures S loss of wildlife habitat S impaired fish habitat
1 and 2	Season Long (March-Sept) *includes all of the impacts described in the spring, summer, and fall sections as well as 'Continuous Grazing'	Continuous grazing	P Decreased species and age diversity P Decreased herbaceous cover S less shade and higher stream temperatures S decrease in stream bank stability S less sediment trapping S decreased water infiltration S impaired aquatic and fish habitat
1, 2, 3, 4, and 5	All Seasons	Loss of herbaceous vegetation Loss of stream bank stability	P Decreased stream bank stability P Change in channel shape, structure, and form S Reduced water infiltration S increased runoff

Alternative(s)	Season of Use	Issue	Impacts (P denotes primary impact and S denotes secondary set of impacts)
			S increased water velocity S increased flooding S reduced groundwater recharge S lowered water table S increased stream bank erosion S removal of submerged vegetation S reduced aquatic habitat S reduced fish spawning habitat
		Manure deposition in and near streams In-stream trampling and congregation	P Nutrients, pathogens, and bacteria additions P Sediment loading of riparian areas and streams S increased water temperature S reduced habitat quality for fish and aquatic species S increase in nutrients and pathogens from manure S human health impacts

Table RIPN-27: Season of use associated with alternative within each Chipmunk Group allotment and pasture (see impacts for each season of use in Table RIPN-26)

Allotment & Pasture	Alternative[1]	Alternative 2[2]	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Alkali-Wildcat	spring (all yrs)	spring (all yrs)	spring (2 yrs), fall (1 yr)	spring (1 yr), rest (2 yrs)	NA[3]	none
Baxter Basin	**P 1-2:** spring & early summer (1 yr, rest 1 yr) **P 3:** spring & early summer (all yrs)	**P 1-2:** spring & early summer (1 yr, rest 1 yr) **P 3:** spring & early summer (all yrs)	NA	NA	NA	none
Blackstock Springs	spring, summer, & fall (all yrs)	spring, summer, & fall (all yrs)	spring (1yr), summer (1 yr), fall (1 yr)	summer (1 yr), rest (1 yr), fall (1 yr)	NA	none
Burgess FFR	winter (all yrs)	winter (all yrs)	spring & summer (1 yr), summer & early fall (1 yr)	**P1**: spring & early summer (1 yr), fall (2 yrs) **P2**: summer & early fall (1 yr), fall (2 yrs)	NA	none
Cow Creek	spring, summer & early fall (all yrs)	spring, summer & early fall (all yrs)	**P 1-2**: spring & early summer (2 yrs), rest (1 yr) **P 3-5**: summer & fall (all yrs)	**P 1-2**: spring & early summer (1 yr), rest (2 yrs) **P 3-5**: summer & fall (2 yrs), rest (1 yr)	NA	none
Elephant Butte	spring & fall (all yrs)	fall, winter, & spring (all yrs)	**P 1,3,4 & 5:** spring (2 yrs), fall (1 yr) **P 2**: spring (1 yr), fall (2 yrs)	spring (1 yr), fall (1 yr), rest (1 yr)	NA	none
Ferris FFR	winter (all yrs)	winter (all yrs)	spring & summer (1 yr), summer & fall (2 yrs)	summer (1 yr), fall (2 yrs)		none
Franconi	winter (all yrs)	year-round (all yrs)	NA	NA		none
Jackson Creek	spring, summer, & fall (all yrs)	spring, summer, & fall (all yrs)	**P 1-3**: summer (all yrs) **P 4-5**: fall (all yrs)	**P 1-3**: spring (1 yr), rest (2 yrs) **P 4-5**: summer & fall (1 yr), fall (2 yrs)	NA	none
Joint	spring & summer	spring & summer	**P 2 & 3**: spring (2 yrs),	**P 2**: spring (1 yr),	NA	none

Allotment & Pasture	Alternative[1]	Alternative 2[2]	Alternative 3	Alternative 4	Alternative 5	Alternative 6
	(all yrs)	(all yrs)	fall (1 yr) **P 4**: summer (2 yrs), fall (1 yr)	fall (2 yr) **P 3 & 4**: early spring & summer (1yr), fall (2 yrs)		
Madriaga	spring, summer & early fall (all yrs)	summer & early fall, spring (all yrs)	spring & summer (1 yr), summer & fall (1 yr)	fall (1 yr), summer (1 yr), rest (1 yr)	NA	none
Poison Creek	spring (all yrs)	spring (all yrs)	spring (2 yrs), fall (1 yr)	spring (1 yr), fall (1 yr), rest (1 yr)	spring (2 yrs), fall (1 yr)	none
Rats Nest	spring (all yrs)	spring (all yrs)	spring (2 yrs), fall (1 yr)	spring (1 yr), rest (2 yrs)	NA	none
Sands Basin	spring & fall (all yrs)	spring & fall (all yrs)	spring (1 yr), fall (1 yr)	spring (1 yr), rest (1 yr)	NA	none
Soda Creek	summer & fall (all yrs)	summer & fall (all yrs)	summer (2 yrs), summer & fall (1 yr)	summer (2 yrs), fall (1 yrs)	NA	none
Trout Creek	spring, summer & early fall (all yrs)	spring, summer & early fall (all yrs)	NA	NA	NA	none
Trout Creek/Lequerica	summer & fall (all yrs)	summer & fall (all yrs)	summer (1 yr), fall (1 yr)	summer (1 yr), fall (2 yrs)	NA	none

[1]The seasons of use represent the permitted season; for details regarding recent actual use, see Appendix C-2 and Appendix B
[2]For details on the permittees' applications see Section 2.2 and Appendix D
[3]The Alternative was not applied to the allotment

Impacts Associated with Season of Use

Spring (March-May)

Adverse impacts from spring use are the result of grazing when soils are typically wet. The static load of a cattle hoof is reported to range from 2.8 to 10.9 kg/cm^2 and can increase by 2 to 4 times when the animal travels (Powell, Cameron, & Newman, 2000); thus, when the soils are saturated, the physical damage to the stream banks increase. The increased soil compaction causes an increase in erosion and sediment loading that could impair water quality and thus fish and aquatic habitat.

Additionally, during the spring months as herbaceous vegetation is growing and green, livestock selectively graze on the most palatable species. This could directly lead to both decreased herbaceous cover and decreased species and age diversity. The loss of herbaceous cover indirectly causes less shade and higher stream temperatures, a decrease in stream bank stability, less sediment trapping, decreased water infiltration, and thus impaired aquatic and fish habitat (Bellows, 2003), (Belsky, Matzke, & Uselman, 1999).

Summer (June-August)

Livestock grazing during the summer months creates both direct and indirect impacts. Because upland grasses are often dry and temperatures are warmer during the summer months, livestock make disproportionate use of riparian areas and riparian herbaceous vegetation is preferred (Powell, Cameron, & Newman, 2000), (Bailey & Brown, 2011). Once the riparian herbaceous vegetation is used to a level ranging from 45 to 90 percent, willows and other riparian shrubs are browsed at various levels. If both the herbaceous and shrub cover decline, a compounding set of impacts can occur: because shade has been reduced, water temperatures increase; vegetative structure and cover for fish and wildlife is lost; stream bank stability decreases increasing erosion, sediment and stream velocity; a loss of hydric, deep-rooted species that aid in bank stability occurs; and riparian plant species may be replaced by weedy and/or upland plant species (Green & Kauffman, 1995), (Belsky, Matzke, & Uselman, 1999).

Additionally, when riparian areas are grazed during the growing season, livestock congregate close to water where it is cooler and the forage is more palatable (Bryant, 1982), (Smith, Rodgers, Dodd, & Skinner, 1992), (Liggins, 1999). Once livestock have congregated along the floodplain, in riparian-wetland areas, and in the stream channel, further impacts associated with stream bank trampling (Kauffman, Krueger, & Vavra, 1984), soil compaction (Marlow & Pogacnik, 1985), and water quality (Taylor, Gillman, & Pendretti, 1989) occur (Table RIPN-26). In-stream trampling, disturbance and erosion from denuded banks, reduced sediment trapping by vegetation, loss of bank stability, and increased peak flows lead to reduced habitat quality for both fish and aquatic species, reduced infiltration, and lowered water tables (Stevens, McArthur, & Davis, 1992). An increase in soil compaction created by congregated livestock causes an increase in erosion, decreased water infiltration rates and more runoff, reduced plant productivity and thus less vegetative cover (Clary, 1995). Finally, impacts associated with water quality include a potential increase in nutrient concentrations, bacteria, sediment, and water temperatures. Direct fecal deposition into and near water, runoff from disturbed stream banks, and hoof churn up of contaminated sediments increase nutrient and bacteria concentrations (Taylor, Gillman, & Pendretti, 1989).

In semi-arid rangelands where forage growth is limited primarily by precipitation, ensuring that riparian area grazing does not occur during the critical late summer period may be more beneficial than rotational systems that defer livestock use throughout the grazing season (Bailey & Brown, 2011). Since the Chipmunk Group allotments occur in an arid region, Alternatives 1-4 analyze both scenarios.

Fall (September-November)
Where woody species occur, fall grazing increases the occurrence of browse on woody riparian species because both upland and riparian herbaceous forage have dried and/or been used (Elmore, 1994). The amount of time available for both herbaceous and woody species regrowth would be reduced. For example, a study in eastern Oregon showed that the density of cottonwood saplings and the height of both cottonwood and willows increased significantly within a gravel bar community after 2 years of rest (Kauffman, Krueger, & Vavra, 1984).

During the fall season, vegetation growing in the riparian zones is generally more palatable and of higher nutritive quality than the upland vegetation. Kauffman and others (1984) found that once the herbaceous component of the riparian area was reduced, a definite shift to less-palatable species occurs. In their study, the composition of woody species was higher in ungrazed compared to grazed areas in a wet meadow community, and plant dormancy occurred up to 2 weeks later in the ungrazed areas. Similarly, (Holland, Leinnger, & Trilica, 2005) found that recent grazing exclusion resulted in an increase in canopy cover, height growth, and stem density during the 11 years of a study in Colorado, indicating that these variables respond positively to removal of livestock grazing.

A fall system of grazing would be beneficial for the improvement of the riparian areas when stream bank temperatures are cool enough to discourage animals from congregating in the riparian areas (Bellows, 2003). Additionally, in areas that are not saturated late in the season, the potential for compaction damage and the physical damage to the soils would be reduced.

Trailing
Effects to riparian areas and water quality as analyzed in the 2012 Trailing EA (USDI BLM, 2012c) are applicable and provide the background to the affected Chipmunk Group allotments (Lowry FFR (on private), Rats Nest, Baxter Basin, and Cow Creek) and 12 allotments outside of the Chipmunk Group area (see Livestock Trailing Section 2.1.2; Map RNGE-4).

The majority of trailing along about 32 miles would occur along established paved, gravel, or native surface roads and their associated borrow ditches with the remaining miles occurring on cross-country or unknown surface trailing routes. Animals may spread out up to one-eighth of a mile on each side of the routes (total ¼-mile width), potentially impacting streams and springs they cross once or several times over each route within a year.

Since trailing would be authorized regardless of an allotment/pasture's scheduled rest or deferment, the effects specific to the three affected allotments would be the same for Alternatives 1-5. Approximately 0.5 mile of Baxter Creek and two springs within the Baxter Basin allotment, two springs in the Cow Creek allotment, and five springs in the Rats Nest allotment would fall within the trailing buffer. Thus, short-duration impacts would occur in the form of vegetation removal and trampling. Overall, effects on riparian areas and water quality due to trailing are minor because they affect a relatively small proportion of the landscape and livestock do not congregate on the streams and springs. Trailing on the existing roadways greatly reduces impacts to riparian areas and water quality.

3.5.2.2. Alternative 1 Effects

<u>All Allotments</u>

Under the grazing scheme proposed in Alternative 1 (for details see Section 2.2.1), 16 of the Chipmunk Group allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-24. The impacts would vary according to the season of use.

Table RIPN-28: Grazing rotation, season of use, and stream mileage[35]/number of springs impacted by allotment under Alternative 1

Allotment & Pasture (s)	Season of use for all years	Perennial Miles	Intermittent Miles[1]	Springs
Alkali-Wildcat	spring	0.2	1.3	1
Baxter Basin	spring & early summer (1yr), rest (1 yr)	0.8	4.5	9
Blackstock Springs	spring, summer & fall	2.9	6.4	15
Burgess FFR	winter	0.4	0.4	0
Cow Creek	spring, summer, & early fall	0	3.8	4
Elephant Butte Pastures 1-5	spring & fall	0.5	1.0	2
Franconi FFR	year-round	0.5	0	1
Jackson Creek Pastures 1-5	spring, summer & fall	4.5	3.5	11
Joint	spring, summer, & fall	0.2	4.3	2
Lequerica/ Trout Creek	summer & fall	0.4	1.6	0
Madriaga	spring, summer, & early fall	0.2	3.3	2
Poison Creek	spring	1.4	2.6	0
Rats Nest	spring	0.7	3.5	8
Sands Basin Pastures 1-4	spring & fall	1.4	2.8	4
Soda Creek	summer & fall	2.7	1.8	2
Trout Creek	spring, summer, & early fall	4.5	1.0	3

[1]Intermittent miles are an estimate of miles that support riparian vegetation (based on field assessments and 2011 NAIP)

Alkali-Wildcat, Elephant Butte, Poison Creek, Rats Nest, and Sands Basin Allotments

Under Alternative 1, the Alkali-Wildcat, Poison Creek, and Rats Nest allotments would be grazed during the spring continuously without rest or growing season deferment and the Elephant Butte and Sands Basin allotments would incur the impacts associated with both spring and fall grazing every year (see Table RIPN-26 and Section 3.4.2 for specific impacts). Consequently, within the allotments, 3.75 miles of perennial stream, 14 miles of intermittent stream, and 15 springs would be affected by the impacts associated with spring grazing. Additionally, 1.7 miles of perennial stream, 3 miles of intermittent, and 6 springs would be affected by both the spring impacts as well as those associated with fall grazing.

The Alkali-Wildcat, Poison Creek, Rats Nest, and Sands Basin allotments are not meeting the Standards associated with the riparian and water resources under current management. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives. Therefore, these five allotments would not meet the riparian/water quality Standards under this alternative.

The Elephant Butte allotment is currently meeting Standards 2, 3, and 7. Thus, although continuous spring grazing is not preferred for the health of the riparian areas, the current management has allowed for Standards to be met. Since the management under Alternative 1 is the same as what currently occurs, the Standards would continue to be met.

[35] The miles presented do not include all of the NHD mileage; but only those reaches of stream that support riparian vegetation

Blackstock Springs, Cow Creek, Jackson Creek, Joint, Madriaga, and Trout Creek Allotments

Six of the allotments (Blackstock Springs, Cow Creek, Jackson Creek, Joint, Madriaga, and Trout Creek) would be grazed every year during the spring, summer, and fall seasons. Consequently, within the allotments, 10.2 miles of perennial stream, 26.8 miles of intermittent stream, and 46 springs would be affected by the impacts associated with spring, summer, and fall grazing (see Table RIPN-26 and Section 3.4.2 for impacts).

The Blackstock Springs, Cow Creek, Jackson Creek, Joint, and Madriaga allotments are not meeting the Standards associated with the riparian and water resources under current management. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives. Since the grazing management proposed under this alternative is the same as the current management, the Standards (2, 3, and 7) would not be met.

Although the Determination for the Trout Creek allotment suggests progress is being made toward meeting the Standards associated with the riparian/water resources, they are not currently being met. The assessment information available for both the streams and springs indicate some improvement; however, the ORMP objective for all riparian areas to be in PFC is not currently accomplished. Since the current grazing management is not attaining the Standards, it was concluded that implementation of this alternative could make very slow progress, but would not meet Standards 2 and 3.

Baxter Basin, Burgess FFR, Franconi FFR, Lequerica/ Trout Creek, and Soda Creek Allotments

Implementation of this alternative would allow spring and summer season grazing the first year, and rest the second year of a two year rotation within the pastures that contain the riparian area in the Baxter Basin allotment. The Burgess and Franconi FFRs would be grazed at the discretion of the permittee who owns the private land associated with the FFR. Under current management, this has been season-long grazing. Finally, the Soda Creek and Lequerica/ Trout Creek allotments would be grazed during the summer and fall seasons (see Table RIPN-26 and Section 3.4.2 for impacts). Consequently, each year, all of the riparian areas and stream channels within these allotments (9.7 miles of perennial stream, 20.3 miles of intermittent stream, and 23 springs) would be affected by impacts associated with summer grazing. Additionally, the impacts associated with spring use would also be applicable to the 5.6 miles of perennial stream, 16.9 miles of intermittent stream, and 21 springs that occur within all of the allotments except the Soda Creek and Trout Creek/Lequerica allotments. Finally, with the exception of Baxter Basin, all of the allotments streams and springs would also be affected by the impacts associated with fall grazing.

Three of the allotments (Burgess FFR, Soda Creek, and Lequerica/ Trout Creek) are not meeting the Standards due to livestock associated with the riparian and water resources under current management. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives. Since the grazing management proposed under this alternative is the same as the current management, the Standards (2, 3, and 7) would not be met for these three allotments.

The Franconi allotment is meeting the Standards under current management; thus, it was concluded that a continuation of the grazing scheme would allow the riparian/water resources to continue to meet Standards and ORMP objectives.

Within the Baxter Basin allotment, although the Standards are not currently being met, it was determined that progress is being made toward meeting the Standards associated with the riparian/water resources, and livestock were not identified as a causal factor. The assessment information available for both the streams and springs indicate some improvement; however, the ORMP objective for all riparian areas to be

in PFC is not currently being accomplished. However, it was concluded that implementation of this alternative would maintain the current conditions, and the Standards would continue to make progress toward being met.

3.5.2.3. Alternative 2 Effects

All Allotments

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives Section 3.5.2.1. Any additional specific effects from this alternative will be described below by allotment.

With the exception of the Elephant Butte, Madriaga, Soda Creek, and Wild Rat (combines two-thirds of Alkali-Wildcat and Rats Nest) allotments, the grazing schemes proposed by the permittees under Alternative 2 (for details, see Section 2.2.2) would be the same as the current management (Alternative 1). Thus, the impacts associated with the remaining 19 allotments under Alternative 2 would be the same as those described above under Alternative 1.

Table RIPN-29: Grazing rotation, season of use, and stream mileage/ number of springs impacted by allotment under Alternative 2 (see impacts associated with each season of use in Table RIPN-26)

Allotment & Pasture (s)	Season of use for all years	Perennial Miles	Intermittent Miles[1]	Springs
Elephant Butte Pastures 1-6	fall, winter, & spring	0.5	1.0	2
Soda Creek Pastures 1-8	summer & fall	2.7	1.8	2
Franconi FFR	spring, summer, & fall	0.5	0	1
Madriaga	spring, summer, & fall	0.2	3.3	2
Trout Creek	spring, summer, & fall	4.5	1.0	3
Trout Creek/ Lequerica	summer & fall	0.4	1.6	0
Wild Rat Pastures: Alkali and Rats Nest	spring	0.9	4.8	9

[1]Intermittent miles are an estimate of miles that support riparian vegetation (based on field assessments and 2011 NAIP)

Wild Rat Allotment (combines Alkali and Rats Nest)

Approximately one-third of the existing Alkali-Wildcat allotment would be combined with the Rats Nest allotment to form a new, two-pasture Wild Rat allotment. This would allow for a rotational grazing system and the potential to protect riparian areas during the vulnerable seasons. However, under this alternative, both pastures would be grazed during the spring every year. Therefore, approximately 1.5 miles of perennial stream, 5.8 miles of intermittent stream, and nine springs would be influenced by the impacts associated with spring grazing. Since this is the same system and season of use that has led to the current situation, the Standards associated with the riparian and water resources (2, 3, and 7) would not be met.

Elephant Butte Allotment

The remaining two-thirds of the existing Alkali-Wildcat allotment would form a sixth pasture to be added to the Elephant Butte allotment. This alternative proposes to allow livestock grazing within all six

pastures from November 1 to May 31 every year. This system is very similar to the current management and about 0.5 miles of perennial stream and two springs would be influenced by impacts associated with fall, winter and spring grazing. Under current management (use during spring and fall of every year), the riparian/water Standards are being met in the Elephant Butte allotment. However, they are not being met in the portion of Alkali-Wildcat that would be added. Thus, under this alternative's prescription, the riparian areas would require monitoring and collaboration between the permittee and the BLM to make progress.

Madriaga and Franconi Allotments

The application submitted by the permittee proposes a grazing rotation system that would utilize the three Franconi pastures in conjuction with the two Madriaga pastures for a five pasture three year rotation. AUMs would remain the same in the Madriaga pastures with the option to increase cattle numbers, while the Franconi pastures would be utilized at the permitees discretion with AUMs not to exceed those authorized (see section 2.2.2 for details). As a result, grazing intensity could be increased within the Madriaga pastures where Standards are currently not being met. With the elevated livestock numbers, the riparian/water resource conditions would degrade on the 0.2 miles of perennial, 3.3 miles of intermittent, and 2 springs, especially since grazing would continue to occur during the wet spring and critical growing season without incorporating rest and/or deferment. Thus, the allotment would not make progress toward meeting the Standards associated with the riparian and water resources (2, 3, and 7). Standards are being met in the three Franconi pastures under current management, which is at the discretion of the permittee; thus, it can be assumed that they would continue to be met under the rotation and AUMs proposed for Alternative 2.

Soda Creek Allotment

The proposed 31 percent increase in AUMs, and change in season of use proposed by the applicant (see Section 2.2.2) would increase impacts on the riparian areas. When combined with annual use during the riparian area's growing season, increased utilization could potentially alter the plant community composition and structure, thus elevating the potential for adverse impacts to riparian area health as discussed under Alternative 1. Consequently, riparian function is not expected to maintain or improve over time under Alternative 2.

Trout Ceek and Trout Creek/ Lequerica Allotments

The application submitted by the permittee proposes a grazing rotation system that would utilize the three Trout Creek pastures in conjuction with the two Trout Creek/ Lequerica pastures for a five-pasture 3-year rotation. If the two allotments were used in conjunction, the rotation would result in an 18 percent reduction in AUMs as compared to the permitted AUMS within the Trout Creek pastures, but the authorized AUMs would remain the same in the Trout Creek/ Lequerica pastures. However, when the requested AUMs under Alternative 2 are compared to the average actual use, the result is actually a 57 percent increase (see Section 2.2.2 for details).

It was determined that under current management, the Trout Creek allotment is making progress toward meeting Standards. Currently, the pastures are used during spring, summer, and fall over a 3-year rotation with no rest. The proposed schedule under Alternative 2 would be very similar, and very slow progress toward meeting Standards would be expected. The Trout Creek/ Lequerica allotment is not currently meeting the riparian Standards under a summer/ fall rotation. Although the rotation proposed under Alternative 2 would implement one in three years of grazing deferment, it would not be expected to meet the Standards because the schedule is very similar to the current use. Additionally, the proposal does not include any changes in cattle or AUM numbers.

3.5.2.4. Alternative 3 Effects

All Allotments

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives Section 3.5.2.1. Any additional specific effects from this alternative will be described below by allotment.

Under Alternative 3, a deferred grazing system is proposed that would generally allow grazing during the spring and/or summer for 2 out of every 3 years, and fall grazing the third year. Thus, it was estimated that the impacts would be eliminated approximately 20 percent of the time and about 20 percent of the streams currently not meeting the Standard would make progress toward meeting (i.e., streams would be in PFC). The total mileage of streams meeting or making progress toward meeting the Standards would increase from 31 miles to approximately 42 miles out of the total of 67 miles (Table ALT-6.1).

Under the grazing scheme proposed in Alternative 3 (see Section 2.2.3 for details), 16 of the Chipmunk Group allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-26. The impacts would vary according to the season of use.

Table RIPN-30: Grazing rotation, season of use, and stream mileage/number of springs impacted by allotment under Alternative 3 (see impacts associated with each season of use in Table RIPN-26)

Allotment & Pasture	Year 1	Perennial Miles	Intermittent Miles[1]	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Baxter Basin	spring & early summer	0.8	4.5	7	spring & early summer	0.8	4.5	7	rest	0.8	4.5	7
Blackstock Springs	spring	2.9	6.4	15	summer	2.9	6.4	15	fall	2.9	6.4	15
Burgess FFR	spring	0.4	0.4	0	summer	0.4	0.4	0	NA[2]			
Cow Creek	spring & early summer	0	2.7	4	spring & early summer	0	2.7	4	rest	0	2.7	4
Elephant Butte **Pastures 1-6**	Spring	0.5	1.0	4	Spring	0.5	1.0	4	Fall	0.5	1.0	4
Ferris FFR **Pasture 3**	spring	0	0	2	summer	0	0	2	summer	0	0	2
Franconi **Pasture 1**	spring	0	0	2	spring	0	0.2	2	fall	0	0.2	2
Franconi **Pasture 3**	fall/winter	0	0.5	0	fall/winter	0.35	0.5	0	winter/ spring/ summer	0.35	0.5	0
Jackson Creek **Pastures 1-3**	summer	1.0	2.0	4	summer	1.0	2.0	4	summer	1.0	2.0	4
Jackson Creek **Pastures 4&5**	Fall	3.5	1.5	7	fall	3.5	1.5	7	fall	3.5	1.5	7
Joint **Pasture 2 & 3**	spring	0.2	4.2	2	spring	0.2	4.2	2	fall	0.2	4.2	2
Joint **Pasture 4**	summer	0	0.3	6	summer	0	0.3	6	fall	0	0.3	6
Madriaga	summer	0.2	3.3	2	fall	0.2	3.2	2	NA[2]			
Poison Creek	spring	1.4	2.6	0	spring	1.4	2.6	0	fall	1.4	2.6	0

Allotment & Pasture	Year 1	Perennial Miles	Intermittent Miles[1]	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Sands Basin **Pastures 1-4**	spring	1.4	2.8	4	fall	1.4	2.8	4	NA[2]			
Soda Creek	summer	2.7	1.8	2	summer	2.7	1.8	2	fall	2.7	1.8	2
Trout Creek	summer	4.5	1.0	0	summer	4.3	1.2	0	fall	4.3	1.2	0
Trout Creek/ Lequerica	summer	0.4	1.6	0	summer	0.4	1.6	0	summer & fall		1.6	0
Wild Rat (combines 2/3Alkali-Wildcat and Rats Nest)	spring	0.9	4.8	8	spring	0.9	4.8	8	fall	0.9	4.8	8

[1]Intermittent miles are an estimate of miles that support riparian vegetation (based on field assessments and 2011 NAIP)
[2]The allotment would be under a 2-year rotation

Baxter Basin and Cow Creek Allotments

Under this alternative, the riparian areas would be affected by grazing during the spring and early summer for 2 of 3 years, and rested the third year in a 3-year rotation. Specifically, 3.5 miles of perennial stream, 3.7 miles of intermittent stream, and 11 springs would be influenced by this system of grazing. Current management, which allows annual grazing during the spring, summer, and fall, is not providing enough recovery time for the riparian Standards to be met. The grazing scheme, along with 17 and 29 percent reductions (respectively) in AUMs over the life of the permit proposed with this alternative, would allow progress toward improved conditions and meeting Standards since one full year of recovery would be incorporated.

Blackstock Springs Allotment

As proposed under Alternative 3, the Blackstock Springs allotment would be grazed during the spring the first year, during the summer the second year, and during the fall the third year of a 3-year rotation. Therefore, there would be 2.9 miles of perennial stream, 6.4 miles of intermittent stream, and 15 springs affected by the impacts associated with these seasons of use. This management would allow one year of deferred grazing as compared to the current system which allows spring, summer, and fall use every year; thus, the riparian area's most vulnerable time (June-August) would be avoided 1 of every 3 years. The fall-only use during the third year coupled with a 27 percent reduction in AUMs over the life of the permit would allow the allotment to make progress toward meeting the Standards associated with the riparian and water resources (2, 3, and 7).

Burgess FFR, Madriaga, and Sands Basin Allotments

Alternative 3 proposes a 2-year rotation for the three allotments. The Burgess FFR allotment (0.4 miles of intermittent and 0.4 miles of perennial) would be used one spring and one summer, the Madriaga allotment (0.2 miles of perennial stream, 3.3 miles of intermittent stream, and two springs) would be used one summer and one fall, and the Sands Basin allotment (1.2 miles of perennial stream, 3.0 miles of intermittent stream, and the four springs) would be used one spring and one fall. Under current management (season-long; and spring, summer, and fall use), none of the allotments are meeting the Standards associated with the riparian areas. Within the Madriaga and Sands Basin allotment, the alternative would incorporate one year of deferment and the riparian areas would be rested during the most vulnerable time; thus, slow progress would be made toward meeting the Standards associated with the riparian and water resources (2, 3, and 7).

Under current management, the Burgess FFR allotment could be grazed year-round at the discretion of the permittee, and pasture 1 is not meeting the riparian/water Standards. The two-year rotation under this alternative would provide some structure and late-season grazing 1 of 2 years, providing some rest during the growing season.

Elephant Butte Allotment

Alternative 3 proposes a 3-year rotation for the six pastures that would make up the newly configured Elephant Butte allotment. Livestock grazing would occur during the spring of 2 years and during the fall of the third year. Consequently, 0.5 miles of perennial stream, 1.0 miles of intermittent stream, and four springs would be affected by the impacts of spring grazing during 2 years, and by fall grazing during the third year.

Since the Elephant Butte allotment proposes a new pasture boundary configuration, the application as proposed under Alternative 2 will serve as the baseline. Currently, Elephant Butte is grazing annually during the spring and summer and Alkali-Wildcat is grazed annually during the spring. Under Alternative 3, the allotment would become a six-pasture allotment by combining approximately two-thirds of the

Alkali-Wildcat allotment and the original five pastures of the Elephant Butte allotments. Under current management, this configuration is not meeting the riparian Standards within the portion of Alkali that would make up pasture 6. Since the other five pastures are meeting the Standards and the alternative would have one year of deferred grazing, the newly configured allotment would make progress toward meeting Standards.

Ferris FFR

The Ferris FFR contains small parcels of BLM-managed lands and two springs within pasture 3 that are not meeting Standards. Under this alternative, the allotment would be used one spring and two summers of a 3-year rotation. Since, under current management, the allotment is grazed year-long, the defined seasons of use would allow some progress toward meeting the Standards.

Franconi Allotment

The Franconi allotment contains small parcels of BLM-managed lands within three pastures. Pasture 1 contains two springs and pasture 3 contains approximately 0.5 miles of stream that are meeting Standards. Pasture two does not contain measureable riparian areas. Under this alternative, pasture 1 would be used two springs and one fall, and pasture 3 would be utilized year-round over a 3-year rotation. Since under current management, the allotment is grazed year-long, the defined seasons of use would allow the allotment to continue meeting the riparian Standards.

Jackson Creek Allotment

Under this alternative, pastures 1-3 of the allotment would be grazed during the summer all 3 years of a 3-year rotation, and pastures 4 and 5 would be grazed during the fall every year. Thus, 1.0 mile of perennial stream, 2.0 miles of intermittent stream, and four springs would be affected by impacts associated with summer grazing for the three years. Additionally, within pastures 4 and 5, 3.5 miles of perennial, 1.5 miles of intermittent stream, and seven springs would be impacted by fall use all years of the rotation.

Under current management, the allotment is grazed during the spring, summer, and fall every year, and the riparian-water Standards are not being met. Therefore, the deferment under this alternative, along with the 17 percent reduction in AUMs over the life of the permit, would allow the riparian areas to make slow progress toward meeting the riparian and water quality Standards.

Joint (Pastures 2 & 3), Poison Creek, and Wild Rat Allotments

Under the management proposed in Alternative 3, pasture 2 of the Joint allotment, Poison Creek, and the Wild Rat would be under a 3-year rotation that would allow grazing during the spring 2 of 3 years, and would defer grazing until fall of the third year. Consequently, 2.5 perennial miles of stream, 11.6 intermittent miles of stream, and 11 springs would be affected by the impacts associated with spring grazing two of the years, and by fall grazing one of the years.

Within the Joint and Poison Creek allotments, this system would allow for one year of deferment as compared to the current management (annually spring, summer and fall), accompanied by small reductions (0 to 16 percent) in AUMs. Therefore, there would be slow progress toward meeting the Standards associated with the riparian and water resources (2, 3, and 7).

Since the Wild Rat allotment proposes a new pasture boundary configuration, the application as proposed under Alternative 2 will serve as the baseline. Under Alternative 3, the Wild Rat allotment would become a two-pasture allotment by combining approximately one-third of the Alkali-Wildcat and the Rats Nest allotments. Under current management, this configuration is not meeting the riparian Standards. Since the

alternative would have one year of deferred grazing, the newly configured allotment would make slow progress toward meeting Standards.

Joint Allotment (pasture 4)

This alternative proposes to graze pasture 4 of the Joint allotment during the summer of 2 years and defer until the fall of the third year within a 3-year rotation. Consequently, 0.3 miles of intermittent stream and six springs would be influenced by the impacts associated with these seasons of use. The riparian-water Standards are not currently being met within the allotment; however, the deferment proposed in this alternative coupled with a 33 percent reduction in AUMs over the life of the permit would allow slow progress toward improved condition.

Soda Creek, Trout Creek, and Trout Creek/Lequerica Allotments

Under this alternative, the pastures would be grazed during the summer for 2 of 3 years, and during the fall the third year of a 3-year rotation. Thus, 7.3 miles of perennial stream, 2.8 miles of intermittent stream and two springs would be affected by the impacts associated with livestock use during the summer months for two consecutive years, and by fall use for the third year. The riparian areas that occur in pasture 2 in the Soda Creek allotment are not meeting the Standards under current management (summer and fall use every year). Similarly, both pastures within the Trout Creek/Lequerica allotment contain streams that are not meeting Standards 2 and 3. Since this alternative would implement a rotational system with one year of deferment, some progress toward meeting Standards would occur. The Trout Creek allotment is not meeting the riparian Standards but is making significant progress under current management (annual spring, summer, and fall); thus, under this alternative, one year of deferred grazing would allow the riparian areas to continue to make progress toward meeting the Standards.

3.5.2.5. Alternative 4 Effects

All Allotments

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives Section 3.5.2.1. Any additional specific effects from this alternative will be described below by allotment.

Under Alternative 4, a season-based grazing system is proposed that would generally allow grazing during the spring and/or summer for 1 out of every 3 years. Rest and/or fall grazing would be implemented the remaining 2 years Thus, it was estimated that the impacts would be eliminated about 50 percent of the time and approximately 50 percent of the streams currently not meeting the Standard would make progress toward meeting (i.e., the streams would be in PFC). The total mileage of streams meeting or making progress toward meeting the Standards would increase from 31 miles to approximately 52 miles out of the total of 67 miles (Table ALT-6.1).

Under the grazing scheme proposed in Alternative 4, 13 of the Chipmunk Group allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-26. The impacts would vary according to the season of use.

Table RIPN-31: Grazing rotation, season of use, and stream mileage/number of springs impacted by allotment Alternative 4 (see impacts associated with each season of use in Table RIPN-26)

Allotment & Pasture	Year 1	Perennial Miles	Intermittent Miles[1]	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Blackstock Springs	spring	2.9	6.4	15	fall	2.9	6.4	15	rest	2.9	6.4	15
Burgess FFR **Pasture 1**	spring	0.4	0.4	0	fall	0.4	0.4	0	fall	0.4	0.4	0
Cow Creek **Pastures 1-2**	spring & early summer	0	2.7	2	rest	0	2.7	2	rest	0	2.7	2
Cow Creek **Pastures 3-5**	summer & fall	0	0	2	fall	0	0	2	fall	0	0	2
Elephant Butte **Pastures 1-6**	spring	0.5	1.0	4	fall	0.5	1.0	4	rest	0.5	1.0	4
Ferris FFR **Pasture 3**	summer	0	0	2	fall	0	0	2	fall	0	0	2
Jackson Creek **Pastures 1-3**	spring	1.0	2.0	4	rest	1.0	2.0	4	rest	1.0	2.0	4
Jackson Creek **Pastures 4-5**	summer & fall	3.5	1.5	7	fall	3.5	1.5	7	fall	3.5	1.5	7
Joint	spring	0.2	4.2	8	fall	0.2	4.2	8	fall	0.2	4.2	8
Madriaga	summer	0.2	3.3	2	fall	0.2	3.3	2	rest	0.2	3.3	2
Poison Creek	spring	1.4	2.6	0	fall	1.4	2.6	0	rest	1.4	2.6	0
Sands Basin	spring	1.4	2.8	4	rest	1.4	2.8	4	NA[2]			
Soda Creek	summer	2.7	1.8	2	summer	2.7	1.8	2	fall	2.7	1.8	2
Trout Creek/ Lequerica	summer	0.4	1.6	0	fall	0.4	1.6	0	fall	0.4	1.6	0
Wild Rat (combines 2/3 of Alkali-Wildcat and Rats Nest)	spring	0.9	4.8	8	rest	0.9	4.8	8	rest	0.9	4.8	8

[1]Intermittent miles are an estimate of miles that support riparian vegetation (based on field assessments and 2011 NAIP)
[2]The allotment would be under a 2-year rotation

Jackson Creek (pastures 1-3) and Wild Rat Allotments

Alternative 4 proposes to allow grazing one spring in a 3-year rotation within these three allotments. This would allow the 1.9 miles of perennial stream, 6.8 miles of intermittent stream, and 13 springs to be rested from the impacts associated with grazing 2 years of a 3-year rotation. The impacts associated with spring grazing would only occur 1 in every 3 years, and the Standards associated with the riparian and water resources would make progress toward being met. Implementation of the rest years would facilitate AUM reductions over the life of the permit (61 and 62 percent respectively). The progress toward meeting the Standards would occur the most quickly under this grazing alternative.

Since the Wild Rat allotment proposes a new pasture boundary configuration, the application as proposed under Alternative 2 will serve as the baseline. Under Alternative 4, the Wild Rat allotment would become a 2-pasture allotment by combining approximately one-third of the Alkali-Wildcat allotment with the Rats Nest allotment. Under current management, the allotment is grazing annually during the spring and this configuration is not meeting the riparian Standards. This alternative proposes 2 years of rest during a 3-year rotation along with subsequent AUM reductions, and progress toward meeting Standards would occur the most quickly.

Blackstock Springs, Elephant Butte, and Poison Creek Allotments

Under Alternative 4, the allotments would be grazed one summer, one fall, and rested one year of a 3-year rotation. Over the life of the permit, this system would equate to a 40, 16, and 75 percent reduction in AUMs, respectively. Additionally, 4.8 miles of perennial, 10.0 miles of intermittent, and 19 springs would be affected by the impacts associated with both spring and fall grazing during the 1 year of use. Implementation of the year of rest and the 2 years that avoid grazing during the riparian area's most vulnerable time would allow the resource condition to move the most quickly toward meeting the riparian and water Standards (2, 3, and 7).

Since the Elephant Butte allotment proposes a new pasture boundary configuration, the application as proposed under Alternative 2 will serve as the baseline. Under Alternative 3, the allotment would become a six-pasture allotment by combining approximately two-thirds of the Alkali-Wildcat allotment and the original five pastures of the Elephant Butte allotments. Currently, Elephant Butte is grazed annually during the spring and summer and Alkali-Wildcat is grazed annually during the spring. Under current management, this configuration is not meeting the riparian Standards within the portion of Alkali-Wildcat that would make up pasture 6. Since the other five pastures are meeting the Standards and the alternative would have one year of rest and one year of deferment from grazing, the newly configured allotment would meet the riparian Standards.

Burgess and Ferris FFRs

The riparian areas associated with two springs occur in pasture 3 of the Ferris FFR allotment, and a short segment of stream occurs in pasture one of the Burgess FFR allotment. Under Alternative 4, pasture 3 in the Ferris FFR would be grazed during the summer of 1 year and during the fall of 2 years over the course of a 3-year rotation. Pasture 1 of the Burgess FFR would be used during the spring 1 year and during the fall 2 years during a 3-year rotation. The proposed management does not include any AUM reductions. Current management allows use of the public lands at the discretion of the permittee, and in recent years, the use has occurred year-round. The incorporation of a deferred rotation system would prohibit grazing during the riparian area's most vulnerable time 2 of 3 years; thus the allotment would make progress under this alternative toward meeting the Standards (2, 3, and 7) associated with the riparian and water resources.

Cow Creek Allotment

The riparian areas associated with both the streams and the springs occur in pastures 1-3 of the allotment. This alternative proposes to graze pastures 1 and 2 during the spring and early summer of 1 year and rest the pastures for 2 years of a 3-year rotation. Pastures 3 through 5 would be grazed summer and early fall for 1 year and rested for 2 years of a 3-year rotation. Consequently, the 2.7 miles of intermittent stream would be impacted by effects associated with spring and early summer grazing for 1 of 3 years, and the four springs would be affected by spring, summer, and fall use 2 of the 3 years.

Since current management allows livestock to graze the riparian pastures every year during the spring, summer, and fall seasons, the implementation of a rotational system with rest years would allow the riparian and water resources 2 out of every 3 years to recover from the impacts associated with the seasons of use proposed. Additionally, over the life of the permit, this alternative would result in a 50 percent reduction in AUMs. Thus, this alternative would allow the allotment to move the most quickly toward meeting Standards (2, 3, and 7).

Jackson Creek Allotment

Alternative 4 would allow pastures 1, 2, and 3 to be grazed during the spring 1 year and rested 2 years of a 3-year rotation, and pastures 4 and 5 would be grazed during the summer and fall of 1 year and during the fall of 2 years of the rotation. Therefore, 1.0 miles of perennial streams, 2.0 miles of intermittent streams, and four springs would be affected by the impacts associated with spring grazing in pastures 1 through 3 1 year in every 3. Additionally, 3.5 miles of perennial, 1.5 miles of intermittent, and seven springs that occur in pastures 4 and 5 would be influenced by summer and fall grazing impacts 1 in every 3 years and by those impacts from fall use 2 in every 3 years. This rotational system would equate to a 61 percent reduction in AUMs over the life of the permit. Since the current management allows grazing in all pastures, every year during the spring, summer, and fall, the incorporation of rest and/ or deferment would allow the allotment to make the quickest progress toward meeting riparian and water Standards.

Joint Allotment

Under this alternative, the Joint allotment would be on a 3-year rotation with use during the spring of 1 year and during the fall of 2 years. Therefore, 0.2 miles of perennial, 4.2 miles of intermittent, and two springs would be impacted by effects associated with livestock use during these times. Incorporating livestock deferment for 2 of the 3 years would remove use during the riparian area's most vulnerable time and would lead to a 33 percent reduction in AUMs over the life of the permit. Since the current management authorizes livestock use during the spring, summer, and fall every year, this alternative would allow the riparian and water resources to make slow progress toward meeting Standards 2, 3, and 7.

Madriaga Allotment

Alternative 4 proposes to allow livestock use in the allotment during the spring of one year, the summer of the second year, and rested the third year of a 3-year rotation. Consequently, these seasons of use would be impactful to 0.2 miles of perennial, 3.3 miles of intermittent, and two springs that occur within the allotment. This new rotational system would also result in a 48 percent reduction in AUMs over the life of the permit. Currently, the livestock management that occurs every year during the spring, summer, and fall is not allowing the riparian and water Standards to be met. The implementation of one year of rest and one year of deferment that restricts livestock use during the riparian area's most vulnerable time along with AUM reductions would allow the Standards to make significant progress toward being met.

Sands Basin Allotment

Alternative 4 proposes to implement a 2-year rotation for the Sands Basin allotment with 1 year of spring use and 1 year of rest. Consequently, 1.4 miles of perennial stream, 2.8 miles of intermittent stream, and four springs would be affected by the impacts associated with spring grazing once every 2 years. Implementing a year of rest and only allowing spring use compared to spring and fall use would allow the riparian areas and water resources that occur in pastures 2 and 4 to meet Rangeland Health Standards 2, 3, and 7. If this alternative were implemented, there would be a 44 percent reduction in AUMs over the life of the permit, which when coupled with the seasonal grazing restrictions, would allow quicker progress toward attaining desired conditions.

Soda Creek Allotment

Under this alternative, the allotment would be grazed during the summer of 2 years and during the fall of 1 year over the course of a 3-year rotation. Therefore, the impacts associated with the seasons of use would affect 2.7 miles of perennial, 1.8 miles of intermittent, and two springs that occur within the allotment. The system would not result in any AUM reductions. Current management allows livestock use in all pastures every year during the summer and fall, and the Standards are not being met in pasture 2 due to livestock. Since the riparian and water Standards 2, 3, and 7 are being met elsewhere in the allotment, and grazing would be deferred for 2 out of every 3 years in pasture 2, Standards would continue to be met in pastures 1, 3, and 5, and would make progress in pasture 2.

Trout Creek /Lequerica Allotment

Alternative 4 proposes to implement a 3-year rotation with livestock use in the summer of 1 year and during the fall of 2 years. Therefore, 0.4 miles of perennial stream and 1.6 miles of intermittent stream would be affected by the impacts associated with the seasons of use every other year. The system would not result in any AUM reductions. Under current management, neither of the pastures is meeting the riparian Standards and the allotment is used during the summer and fall every year. The implementation of 2 years of deferment that restricts livestock use during the riparian area's most vulnerable time would allow the allotment to make progress toward meeting Standards 2 and 3.

3.5.2.6. Alternative 5 Effects

All Allotments

General impacts of livestock grazing are discussed in the Effects Common to All Grazing Alternatives Section 3.5.2.1. Any additional specific effects from this alternative will be described below by allotment.

Poison Creek Allotment

Alternative 5 applies only to the Poison Creek allotment and proposes to convert the sheep AUMs to the same number of cattle AUMs. The alternative also proposes to implement a 3-year rotation with 1 year of deferred livestock use. Thus, use would occur during the spring of two years and during the fall of the third year. Thus, 1.4 miles of perennial stream and 2.6 miles of intermittent stream would be affected by impacts associated with the seasons of use.

The current management has allowed sheep to graze every year during the spring and the riparian and water Standards are not being met. The 1 year of deferment would remove grazing during the riparian area's most vulnerable time; however, sheep tend to remain more evenly distributed between the upland and riparian areas, whereas during warmer months especially, cattle congregate in the riparian areas (Bailey & Brown, 2011). Therefore, the implementation of this alternative would be unlikely to make progress toward meeting the Standards associated with the riparian and water resources (2, 3, and 7).

3.5.2.7. Alternative 6 Effects

All Allotments

Under Alternative 6, all of the Chipmunk Group allotments would be rested from grazing for the duration of the 10-year permit. Thus, none of the riparian-wetland areas associated with the streams and springs would be impacted by livestock grazing.

Table RIPN-32: Grazing rotation, season of use, and stream mileage/number of springs impacted by allotment under the Alternative 6

Allotment & Pasture	All Years	Perennial Miles	Intermittent Miles	Springs
All Allotments	no grazing	15.5	35.0	55

Under Alternative 6 (for details, see Section 2.2.6), the elimination of grazing for a period of 10 years would restore the riparian ecosystem because the rest from livestock grazing would allow for the recovery of the stream bank and a functional riparian plant community. Information is lacking on the length of rest required for recovery of riparian vegetation; however, shrubs often require longer periods of recovery than herbaceous vegetation (Powell, Cameron, & Newman, 2000). Improvement in stream channel form and function would only occur if the channel is at a stage where improvement is possible; for example, downcut systems would need to reach a new base level and widening would have to occur to allow vegetation establishment sufficient to resist higher flows (Leonard & Karl, 1995). Recovery would also be dependent on the levels of degradation and the climatic variables (Bellows, 2003). Since the allotments occur in a semi-arid region and the riparian areas are degraded, 10 years of rest would not always generate riparian-wetland areas that historically existed. However, research has found that in ungrazed areas, streams experienced decreased widths and depths (Clary, 1999), vegetation cover increased two-fold, stream bank stability increased by 50 percent (Scrimgeour & Kendall, 2002), and stream bank erosion was 3.3 times less in an ungrazed area compared to an area grazed at a moderate stocking rate and level of use (Kauffman, 1982).

However, wild horse use would continue to occur in the Sands Basin, Elephant Butte, and Rats Nest allotments year-round. Thus, the impacts during the vulnerable time (July-September) would continue. Also, those impacts associated with spring and fall use would occur.

The implementation of this alternative would have the greatest benefit for the riparian and water resources because the riparian ecosystem would recover much of the structural and functional diversity that occurs within the allotment. Thus, the allotments would make progress toward meeting Standards 2, 3, and 7 associated with the water and riparian resources. Additionally, the ORMP objective to maintain or improve riparian-wetland areas to attain PFC for all lotic and lentic systems would be achievable. Similarly, the allotments would make progress toward attaining the ORMP objective to meet or exceed State water quality standards.

3.5.2.8. Cumulative Effects by Alternative

Cumulative Impact Analysis Area

A cumulative effect is defined as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). The cumulative impacts focus on the aggregate effects of the past, present, and reasonably foreseeable future actions.

The water and riparian resource CIAA was set to the eight IDEQ 5th field HUCs (watersheds) (Table RIPN-33, Map CMLV-1) that incorporate and extend beyond the Chipmunk Group allotments boundary. The watersheds comprise assessment units that were established to incorporate groups of similar streams with the same stream order, and with similar land use practices, ownership, or land management.

The watersheds that make up the CIAA include Hardtrigger Creek-Snake River, Headwaters Jordan Creek, Jordan Creek-Sheep Spring Creek, Jump Creek-Snake River, Reynolds Creek, Trout Creek-Jordan Creek, Upper Cow Creek, and Upper Succor Creek. The BLM chose this CIAA because the direct and indirect effects of grazing management on riparian and watershed resources, as well as on specific impacts such as stream sediment and water temperature, would be experienced within these IDEQ 5th field HUCs. Outside of this area, however, direct and indirect effects of the grazing scheme would not be experienced and/or would be too small to create identifiable cumulative effects.

Analysis timeframes include past activities that have created the present conditions, and future activities planned within the next 3 years, including the expected duration of effects from current and future activities (generally up to 10 years).

Table RIPN-33: IDEQ 5th field hydrologic unit codes for the Chipmunk Group allotments

5th Field HUC (watershed)	Watershed Acres
Hardtrigger Creek-Snake River	85,299
Headwaters Jordan Creek	73,400
Jordan Creek-Sheep Spring Creek	133,648
Jump Creek-Snake River	112,331
Reynolds Creek	88,408
Trout Creek-Jordan Creek	85,220
Upper Cow Creek	118,770
Upper Succor Creek	111,575
Total Acres	**808,651**

Past, Ongoing, and Reasonably Foreseeable Activities

The figures in the tables of past, present, and reasonably foreseeable future actions (see Section 3.2 and Tables CMLV-1 and -2) within the analysis area relevant to cumulative impacts were calculated using BLM GIS data. The data used represent the best available information and the calculations based on the data are approximate.

Livestock: Livestock grazing is the dominant land use activity in the area, and almost all of the land area is managed for grazing (Table CMLV-3). There are 135 grazing allotments that are contained fully or partially within the CIAA and 25 allotments are analyzed in the direct and indirect effects. In the 1990s, BLM initiated a series of range reform activities in response to poor range conditions. Since the Standards were implemented in 1997, Idaho BLM has reviewed and issued grazing permits on approximately half of the available allotments in the general area. The final decisions for these allotments have been implemented to make significant progress toward meeting Standards. Currently, the allotments in the area are primarily grazed throughout the spring and summer. The allotments in the analysis area are in various stages of the 10-year permit cycle, and as expiration dates approach, each allotment will be evaluated for rangeland health and progress toward meeting Standards prior to the authorization of a new permit. Overall, past and current grazing in the CIAA has had an adverse effect on riparian and watershed resources (Table ALLOT-2 and Appendix A) because grazing has primarily occurred during the spring and summer months when the riparian area soil and vegetation are most vulnerable. Reasonably

foreseeable future grazing is expected to improve the condition of the riparian areas and watersheds at a minimum to make significant progress toward meeting the Idaho Rangeland Health Standards.

Range Improvements: Additionally, a variety of range improvement projects such as spring developments, fences, cattle guards, and troughs have been implemented across the landscape to aid in livestock grazing management. Idaho's current range improvement database identifies 41 reservoirs, 17 troughs, and 227 miles of fenceline within the allotments. Although the current permitting process is not considering range improvements, it is anticipated that they will continue to be part of the landscape into the future, and that some lesser number will be added and/or modified to meet the needs of the livestock grazing industry. The development of reservoirs and troughs across the landscape has impacted the natural state of the springs, often reducing the other values they provide (i.e., ground water infiltration and wildlife habitat).

Trailing: Multiple livestock trailing routes currently traverse the Chipmunk Group allotments as well as the CIAA (Tables CMLV-1 and -2, and Map CMLV-1). There are 375 miles of trails documented in the CIAA and 103 within the allotments. Livestock would typically be allowed to trail on existing roadways for 1 day during the spring and a second day during the fall. It was assumed that the routes would continue to be authorized into the future. Trailing would occur regardless of the scheduled use within a pasture (i.e., use would occur when pastures are otherwise rested). However, this amount of use would not have discernible effects on the riparian and water resources because the cattle are required to trail on existing roadways and would not congregate in the streams and/or springs.

Herd Management Areas: There are three wild horse and burro Herd Management Areas (Black Mountain, Sands Basin and Hardtrigger HMAs) that occur within the northern portion of the CIAA and within the Sands Basin, Elephant Butte, and Rats Nest allotments (Table CMLV-1 and -2, and Map ACEC-1). The herd numbers are managed and at ultimate numbers should total about 192 horses. To a large extent, horses utilize the same resources as livestock and thus impact the riparian and water resources similarly. There are 130,609 acres (16 percent of CIAA) that overlap with the watersheds and the three allotments. The additional impact is particularly notable within the Sands Basin and Rats Nest allotments, but also influences the drainages downstream of the HMAs.

Wildfires: Wildfire records maintained by the Idaho BLM State Office indicate that 115,187 acres (19 percent of CIAA) burned through the 2012 fire season within the analysis area (Table CMLV-1 and -2, and Maps FIRE-1, FIRE-2, FIRE-3). Wildfires have caused disturbances within the watersheds, increasing the potential for overland flows, soil erosion, and increased stream sedimentation. When wildfires have burned and removed riparian vegetation, the compounding impacts such as increased stream temperatures, loss of water infiltration, decreased bank stability, and impaired aquatic species habitat have occurred within the CIAA.

Recreation & OHV Use: Increasing population in the Treasure Valley and an increasing popularity of off-highway vehicles (OHVs) are creating additional pressures on the water-riparian resources from recreation uses. The recent Wilderness and Wild and Scenic River designation is also expected to increase recreation use of this general area. There are approximately 2,485 miles of unpaved roads traversing the analysis area (Table CMLV-1 and -2, and Maps RNGE-1, RNGE-2, RNGE-3). Depending on the amount of traffic that occurs on a given road, the stream crossings increase erosion and sedimentation, and disturb vegetation and aquatic species both on a site specific scale as well as downstream of the crossings.
A transportation plan for Owyhee County is expected in the near future, which may alleviate OHV resource concerns because routes would be designated, reducing cross country and unauthorized travel. However, products resulting from travel management such as maps and signage are likely to result in increased visitor use, which may increase pressure on the water/ riparian resources.

Mining Claims and Gravel Pits: The CIAA area contains both historic as well as active mining. There are about 10,743 acres of mining claims recorded within the CIAA, and 480 within the allotments. Additionally, OFO records indicate there are 55 abandoned mine sites within the CIAA. It is unlikely that new mining activity would begin in the foreseeable future. However, the past and current activity has impacted the riparian condition and the water quality within the CIAA. The streams adjacent as well as those downstream would be influenced by the mining activity. The IDEQ assessment for the Jordan Sub-basin (Table RIPN-32), which encompasses the southern watershed and allotments, lists mining as one of the major land uses within the area.

Existing Conditions and Baseline

The water-riparian resource cumulative impact analysis area is 808,651 acres, consists of eight 5th field HUCs, and contains about 165 miles of perennial streams, 1,268 miles of intermittent streams, and 670 springs (NHD). As discussed in the affected environment section, many of the streams designated as intermittent are actually ephemeral and are covered in the watershed/soils Sections (3.3.1 and 3.3.2). There are 218 miles of streams meeting the IDEQ-assigned beneficial uses and water quality standards, 42 miles that have not been assessed, and 555 miles that are water quality-impaired. Beneficial uses are assigned by the IDEQ on a sub-basin scale and within the CIAA they include: cold-water aquatic life, salmonid spawning, drinking water supply, special resource water, and primary and secondary contact recreation. Additionally, of the water quality-impaired streams, 238 miles have been through the beneficial use reconnaissance process (BURP) and have been placed on the 303(d) list by the State (Maps RIPN-1, RIPN-2, RIPN-3; (Idaho DEQ, 2013)).

All of the streams and springs within the CIAA and the allotments have been influenced by various land use activities, including livestock grazing (as noted above). The majority of the streams in the area are not meeting IDEQ water quality standards, primarily due to high water temperatures and sedimentation. Tables RIPN-32 and -33 provide an overview and the pollutants of concern for the Jordan and Middle-Snake Succor sub-basins.

Seventeen of the 25 Chipmunk Group allotments contain measurable streams (NHD). The allotments contain approximately 67 miles of stream that support hydric species (USDA FSA, 2011) and field assessment information). Currently, approximately 31 miles (46 percent) of these are not meeting Standards 2 and 3 (are not in PFC).

The Idaho Rangeland Health Standards 2 and 3, as well as the ORMP objective for riparian-wetland areas, state that the riparian-wetland areas are to be maintained or improved to attain proper functioning condition. Proper functioning condition is a minimal standard and since all streams, springs, seeps, and wetlands should attain PFC, the baseline for the cumulative effects analysis was set to PFC. Although there is natural variability for the riparian systems, streams in PFC would have the resiliency to withstand high water flows because deep-rooted vegetation would be present to stabilize streambanks and shorelines and the morphological indicators (width/depth ratio, gradient, and sinuosity) would be appropriate for the valley bottom type, hydrology and soils. Additionally, the presence of hydric vegetation would control erosion, shade water to reduce stream temperature, filter sediment, aid in floodplain development, delay flood water, and increase recharge of groundwater.

Table RIPN-34: Jordan Sub-basin information

Hydrologic Unit Code	17050108
Size	Approximately 385,000 acres in Idaho (approximately 740,000 acres total)
§303(d) Listed Stream Segments	Jordan Creek (two segments), Cow Creek, Soda Creek, Rock Creek, Spring Creek, Louisa Creek, Louse Creek

Beneficial Uses Affected	Cold-water aquatic life, primary contact recreation, salmonid spawning, special resource water
Pollutants of Concern	Sediment, bacteria, flow alteration, oil and grease, pesticides, metals, pH, mercury, temperature
Major Land Uses	Irrigated agriculture, rangeland, forest, mining, riparian

Table RIPN-35: Middle Snake-Succor Sub-basin information

Hydrologic Unit Code	17050103
Size	2,002 square miles (approximately 1,499,220 acres total)
§303(d) Listed Stream Segments	Snake River (three segments), Birch Creek, Brown Creek, Castle Creek, Corder Creek, Cottonwood Creek, Hardtrigger Creek, Jump Creek, McBride Creek, North Fork Castle Creek, Pickett Creek (two segments), Poison Creek, Rabbit Creek, Reynolds Creek, Sinker Creek, South Fork Castle Creek, Squaw Creek, Squaw Creek Unnamed Tributary, Succor Creek (two segments)
Beneficial Uses Affected	Cold-water aquatic life, salmonid spawning, primary contact recreation, drinking water supply, special resource water
Pollutants of Concern	Bacteria, dissolved oxygen, flow alteration, nutrients, pH, sediment, temperature
Major Land Uses	Rangeland, irrigated agriculture

Table RIPN-36: Miles of stream accomplishing and not accomplishing the cumulative effects baseline

Allotment	Perennial & Intermittent Streams Supporting Hydric Vegetation[36] (miles)	Perennial & Intermittent Streams Assessed	Condition	% of Total
Alkali-Wildcat	1.5	0.9	FAR	60
Baxter Basin	1.5	0.8	Protocol NA	55
		0.5	PFC	35
Blackstock Springs	9.3	3.2	FAR	36
		0.9	PFC	10
Burgess FFR	0.8	0.3	FAR	43
		0.3	Protocol NA	47
Burgess	0.5	0	--	0
Cow Creek	3.8	1.0	FAR	26
Elephant Butte	1.5	0.1	FAR	6
		0.3	PFC	21
Franconi	0.5	0.3	FAR	73
Jackson Creek	3.5	1.8	FAR	52
		1.2	PFC	35
		1.1	Protocol NA	30
Joint	4.5	2.3	FAR	40
		1.1	PFC	35
Madriaga	3.5	1.5	FAR	43
Poison Creek	4.0	0.8	FAR	20
		1.6	NF	40
		0.3	PFC	7
Rats Nest	4.2	3.2	FAR	77
		0.7	PFC	16
Sands Basin	4.2	1.7	FAR	41

[36] 2011 NAIP imagery was used along with the field assessment information to estimate the miles of stream that appear to support hydric vegetation

Allotment	Perennial & Intermittent Streams Supporting Hydric Vegetation[36] (miles)	Perennial & Intermittent Streams Assessed	Condition	% of Total
		1.4	PFC	33
	4.5	1.9	FAR	42
		0.8	PFC	20
Soda Creek		0.2	Protocol NA	4
	2.0	1.2	FAR	58
Trout Creek/Lequerica		0.4	NF	20
	6.5	5.2	FAR	77
Trout Creek		1.3	PFC	23

Cumulative Effects Common to all Grazing Alternatives

A network of overlapping effects from the proposed action and alternatives as well as the past, present, and foreseeable activities were developed (Table RIPN-37). Only the activities where effects overlap with effects from other activities and those impacts are displayed.

Table RIPN-37: Past, present, and foreseeable activities and the overlapping effects

Other Activities	Impacts
Livestock Grazing	• Increased erosion • Soil Compaction • Sediment loading of riparian areas and streams • Decreased vegetation • Manure deposition in and near streams • In-stream trampling and congregation • Decreased stream bank stability • Change in channel shape, structure, and form • Reduced water infiltration • increased flooding • reduced groundwater recharge • lowered water table • increase stream bank erosion • removal of submerged vegetation • increased runoff • increased water velocity • less shade and higher stream temperatures • less sediment trapping • decreased water infiltration • reduced aquatic habitat • reduced fish spawning habitat • loss of wildlife habitat
Herd Management Areas	same as livestock grazing
Range Improvements	• trampling and congregation • decreased vegetation • increased erosion • decreased stream bank stability • loss of form and function

Other Activities	Impacts
Fires	• Decreased vegetation • Increased erosion • Decreased stream bank stability • Change in channel shape, structure, and form • increased erosion • increased runoff • less shade and higher stream temperatures • less sediment trapping • reduced aquatic habitat • reduced fish spawning habitat • loss of wildlife habitat
Roads/ OHV use	• increased erosion • decreased stream bank stability • higher sediment & stream temperatures • reduced aquatic habitat
Mining	• increased erosion • flow alteration • increased nutrients: metals, pH, mercury • increased temperature

Alternatives 1, 2, and 5 Cumulative Effects

As described above in the direct and indirect effects Sections 3.5.2.2, 3.5.2.3, and 3.5.2.6, the general theme of the alternatives would be to authorize livestock use during the spring, summer, and fall. Specifically, approximately 22 miles of perennial streams, 242 miles of intermittent streams, and 90 springs would be affected by the impacts associated with those seasons of use. The alternatives would continue to degrade the riparian areas because the removal of riparian vegetation, deposition of fecal matter, and livestock trampling would continue. Furthermore, the associated secondary impacts, including sedimentation, increased water temperatures, lowered water table, and decreased suitability of aquatic species habitat, would also remain the same.

All of the streams within the analysis area have been affected by past and present livestock grazing because the allotments within the CIAA have been and continue to be grazed during the vulnerable riparian area growing season, and livestock congregate in riparian areas during the hot season. Under Alternatives 1, 2, and 5, the streams in the Chipmunk Group allotments would continue to be impacted by grazing during the riparian area's vulnerable time, and the continued impacts, when combined with those occurring on the other allotments within the analysis area, would continue to alter stream banks because deep-rooted riparian vegetation would be removed and channels would be trampled.

Past and present range projects such as spring developments, fences, cattle guards, and troughs occur across the landscape to aid in livestock grazing management. The development of reservoirs and troughs across the landscape has impacted the natural state of the springs, often reducing the other values they provide (i.e., ground water infiltration and wildlife habitat). BLM has authorized spring developments, fencing, and the placement of watering troughs in an attempt to re-distribute livestock away from the spring sources. However, currently, many of the developments are not maintained and are in disrepair. The spring source may be excluded, but often the area fenced is too small to protect the riparian area fully and the majority of the water is piped to troughs away from the source, causing a loss of functionality and values. Additionally, livestock concentrate around the troughs causing compaction of soils, altered flow patterns, and loss of vegetation.

Within the northern portion of the CIAA and the Rats Nest and Sands Basin allotments, there would be the added pressure of wild horse forage and trampling of the riparian areas and streams. An individual wild horse is expected to have similar impacts as one head of livestock. The impacts from the HMAs overlap with the proposed action and alternatives within the northern portion of the CIAA. Specifically, there are 130,609 acres of overlap and the herd size is projected to be 192 animals.

Present and future proposed changes in grazing management within the CIAA to make progress toward meeting Rangeland Health Standards could improve wetlands and riparian areas by increasing woody and herbaceous plant communities. As plant communities change, stream banks would stabilize due to increases in deep-rooted riparian vegetation that bind the stream banks. Fine sediments would decrease and stream shade would increase due to the development of riparian communities. Eventually the channels would narrow and deepen and aquatic habitat conditions would improve as channel form recovers. The continued degradation from the action expected within the allotment would be added to the expected improvements occurring in the adjacent allotments. However, overall, the small improvements expected in the adjacent allotments would not be enough to offset the continued poor condition of the riparian and watershed conditions within the allotment under these alternatives, and the conditions within the CIAA would continue to be degraded.

A general impact associated with both roads crossing streams and the loss of vegetation caused by wildfires is an increase in sediment and stream temperatures and thus less-suitable aquatic species habitat. The sediment increase from roads occurs where the roads cross the streams, after which the effect is apparent downstream of the crossings. The sediment increase caused by fires occurs because erosion increases when overland flows increase due to the loss of vegetation. Past fires have overlapped with riparian areas and have impacted about 19 percent of the CIAA and the streams and springs that occur within that area. Since the grazing proposed under the alternatives would contribute to an increase in sediment and stream temperatures, it would add to the sediment increase caused by stream crossings and loss of vegetation due to fires and would increase the overall impact within the CIAA. The cumulative impact would be small, but when added to the impact from the other activities, the condition of the riparian areas and watersheds would continue to be degraded.

Mining claims and surface gravel pits occupy approximately 10,700 acres or 1 percent of the CIAA. Active mining impacts the water quality of streams through the introduction of heavy metals and pollutants. Stream temperatures and sediment levels increase reducing the aquatic species habitat quality. Since these impacts overlap with some of those caused by livestock use, the overall impact within the CIAA would add to the poor condition of the streams.

Overall, implementation of any of the alternatives would continue degradation of the riparian-wetland areas within the allotments, and 31 miles (about 54 percent) of the streams would continue to fail to meet the Standards associated with the riparian-wetland areas. The continued poor conditions within the allotments would add to overlapping impacts from activities within the larger CIAA and contribute to the streams and springs not attaining the PFC baseline.

Alternatives 3 and 4 Cumulative Effects

The direct and indirect effects from Alternatives 3 and 4 (described in Sections 3.5.2.4 and 3.5.2.5) would allow sufficient herbaceous and woody vegetation to remain after the growing season to protect the stream banks during high flow events, allow vegetation to regenerate, and protect riparian soils from physical alterations. When the direct and indirect effects of the Alternatives are added to the other past, present, and reasonably foreseeable future actions described above, the condition of the streams, springs, and associated riparian-wetland areas within the analysis area watersheds would see an overall small improvement. The improvements in the condition of the streams and springs would lead to increased riparian area function (i.e., increased water infiltration and improved aquatic and fish habitat).

Past and current livestock grazing within the CIAA generally occurs during the spring and summer months, degrading the riparian areas because streams are trampled and herbaceous and woody riparian vegetation are removed during the vulnerable riparian area growing season. Although there would be an incremental improvement from the implementation of either of these alternatives, it would be small overall when related to the livestock grazing within the CIAA because the past and current practices in the adjacent allotments are degrading the riparian habitat. However, since future proposed changes in grazing management to make progress toward meeting Rangeland Health Standards is expected to occur, there would be an improvement in the condition of the wetlands and riparian areas because an increase in the riparian woody and herbaceous communities would occur. As the plant communities change, stream banks would stabilize due to increases in deep-rooted riparian vegetation that bind the stream banks. Fine sediments would decrease and stream shade would increase due to the development of riparian communities. Eventually the channels would narrow and deepen and aquatic habitat conditions would improve as channel form recovers. Overall, the improvements expected within the allotment as well as within the adjacent allotments would lead to an overall improvement in the condition of the riparian areas and watersheds within the CIAA.

Other activities that have and continue to occur within the CIAA and have impacts that affect the riparian areas and that overlap with those caused by livestock grazing include wild horse use, wildfires, roadways that cross streams, off-road OHV use, and range projects (Table RIPN-37).

The improvement resulting from the implementation of either of the alternatives would help offset the impacts from the other activities occurring within the CIAA, and the condition of the streams and springs that occur within the analysis area would make progress toward an improvement in condition and attaining the baseline.

Alternative 6 Cumulative Effects

Under Alternative 6 (for details, see Section 2.2.6), the elimination of grazing for a period of 10 years would restore the riparian ecosystem because the rest from livestock grazing would allow for the recovery of the stream bank and a functional riparian plant community. Information is lacking on the length of rest required for recovery of riparian vegetation; however, shrubs often require longer periods of recovery than herbaceous vegetation (Powell, Cameron, & Newman, 2000). Improvement in stream channel form and function would only occur if the channel is at a stage where improvement is possible; for example, downcut systems would need to reach a new base level and widening would have to occur to allow vegetation establishment sufficient to resist higher flows (Leonard & Karl, 1995). Recovery would also be dependent on the levels of degradation and the climatic variables (Bellows, 2003). Since the allotments occur in an arid region and most of the riparian areas are degraded, 10 years of rest would not generate riparian-wetland areas that historically existed. However, research has found that in ungrazed areas, streams experienced decreased widths and depths (Clary, 1999), vegetation cover increased two-fold, stream bank stability increased by 50 percent (Scrimgeour & Kendall, 2002), and stream bank erosion was 3.3 times less in an ungrazed area compared to an area grazed at a moderate stocking rate and level of use (Kauffman, 1982).

The implementation of this alternative would have the greatest benefit for the riparian and water resources within the allotments and the CIAA because the riparian ecosystem would recover most of the structural and functional diversity that should occur within the allotments. Thus, the allotments would make progress toward meeting the water and riparian Standards 2, 3, and 7. Additionally, the ORMP objective to maintain or improve riparian-wetland areas to attain PFC for all lotic and lentic systems would be achievable the most quickly. Similarly, progress would be made toward meeting the ORMP objective to meet or exceed State water quality standards.

3.6. FISH AND WILDLIFE/SPECIAL STATUS ANIMAL SPECIES

3.6.1. Affected Environment – Special Status Terrestrial and Aquatic Animal Species

Wildlife Species

Many wildlife species utilize a variety of habitats in the Chipmunk Group allotments. These habitats provide forage, nesting substrate, and cover for a variety of bird, mammal, amphibian, reptile, and fish species common to southwestern Idaho and the Northern Great Basin region. Although all of these species are important members of native communities and ecosystems, most are common and have wide distributions within the allotments, state, and region. Consequently, the relationship of most of these species to the permit renewal process is not discussed here in the same depth as species upon which the BLM places management emphasis.

There are no threatened or endangered species listed under the Endangered Species Act (ESA) or critical habitat known to occur within or reasonably close to the Chipmunk Group allotments; however, the greater sage-grouse and the Columbia spotted frog are candidate species that occur within the analysis area and are warranted for potential listing under the Endangered Species Act by the U.S. Fish and Wildlife Service (USFWS).

The BLM, USFWS, and Idaho Department of Fish and Game (IDFG) maintain an active interest in other special status species that have no legal protection under the ESA. BLM special status species are: 1) species listed or proposed for listing under the ESA, and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA (USDI BLM, 2008a), which are designated as sensitive by the BLM State Director(s). Special status wildlife species discussed in this document include those listed on the Idaho BLM State Sensitive Species List (USDI BLM, 2003) and those afforded protection under the Bald and Golden Eagle Protection Act (BGEPA) (USDI USFWS, 1940) and the Migratory Bird Treaty Act (MBTA) (USDI USFWS, 1918) with potential to occur within the Chipmunk Group allotments and whose habitat may be affected by grazing activities.

One bird and one amphibian species are listed as candidates under the ESA. Eight mammals, 11 birds, four reptiles, one amphibian, and one fish with special status potentially occur within these allotments and may be affected by grazing activities. Common and scientific names of special status wildlife species, their status, and occurrence potential within each Chipmunk Group allotments are summarized in Appendix G, Table G-1.

With the exception of a few well-studied species, current occurrence and population data for most special status animal species within the Chipmunk Group allotments are limited due to a deficiency of surveys and directed research. Therefore, only a few focal special status animal species will be discussed in detail individually. These species include greater sage-grouse, Columbia spotted frog, Columbia River redband trout and California bighorn sheep. Other special status animal species, migratory birds, raptors, and species of socio-economic importance (e.g., big game) will be included in a general discussion by taxonomic grouping.

Wildlife Habitat

The dominant upland wildlife habitats in these allotments include sagebrush steppe, native grasslands, annual grasslands, juniper woodlands, mountain shrublands, and sparsely vegetated rocky outcrops and canyons (Maps WDLF-1 and -2). Juniper encroachment is occurring within mid-elevation sagebrush-steppe communities in allotments to the south. Riparian/wetland wildlife habitats include wet meadow complexes and woody/herbaceous riparian areas along perennial and intermittent streams and around springs, seeps, and reservoirs. Annual grasslands dominated by exotic species such as cheatgrass and

medusahead are prevalent at low to mid-elevations. See Sections 3.3 (Upland Vegetation/Noxious Weeds), Section 3.4 (Upland Soils), and Section 3.5 (Water Resources and Riparian/Wetland Areas) for additional ecological information regarding upland and riparian communities, soils, geology and topography.

Changes in vegetation communities occurring over the past 150 years have resulted in modified wildlife habitats within these allotments. The introduction of Eurasian annual grasses (cheatgrass and medusahead) into the western United States in the latter part of the 1800s has greatly modified wildlife habitats, and these invasive species continue to expand to this day. This has resulted in a significant increase in fire fuels and frequency of wildfires, leading to reductions of sagebrush cover on the landscape on the lower elevation drier habitats (Miller, et al., 2011). At higher elevations, there has been an increased encroachment of western juniper into sagebrush communities following post-European settlement. This increase coincided with the introduction of large numbers of livestock in the 1800s (Miller & Rose, 1999), (Heyerdahl, Miller, & Parsons, 2006). Juniper woodlands encroach into sagebrush communities when the intervals between fires become long enough for juniper to become established and mature. The probability of western juniper being killed by fire decreases with age of trees (Burkhardt & Tisdale, 1976), (Bunting, Kilgore, & Bushey, 1987), (Miller & Rose, 1999).

Desired Conditions for Wildlife and Special Status Animal Species Habitat
Special status species and their habitats should be managed to increase or maintain populations at levels where their existence is no longer threatened and listing under the ESA is unnecessary. Grazing management practices should provide sufficient residual vegetation to improve, restore, or maintain the physical and biological conditions (e.g., hydrologic cycle, nutrient cycle, and energy flow) necessary to sustain wildlife habitats in properly functioning, structurally appropriate, and diverse native upland and riparian plant communities. Guiding land management objectives are set by the Owyhee Resource Management Plan that states:

- **Wildlife habitats:** Maintain or enhance the composition, structure, extent/juxtaposition, and connectivity of plant communities to support local wildlife populations. In addition, perennial/intermittent stream and riparian areas should be improved or maintained to provide satisfactory conditions to support native fish and amphibians.

- **Special Status Species:** Manage special status species and their habitats to increase or maintain populations at levels where their existence is no longer threatened and there is no need for listing under the Endangered Species Act of 1973, as amended.

- **Fishery Habitat:** Improve and maintain perennial stream/riparian areas to attain satisfactory conditions to support native fish.

Idaho Standards for Rangeland Health and the Guides for Livestock Grazing Management (Appendix A) were approved in 1997. Standard 8 (Threatened and Endangered Plants and Animals) of the Idaho Standards for Rangeland Health and the Guides for Livestock Grazing Management requires that habitats be suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.

Focal Special Status Animal Species

Greater sage-grouse

On March 5, 2010, the USFWS (2010) published a finding in the Federal Register which found that listing the greater sage-grouse was warranted but precluded by the need to take action on other species

facing more immediate and severe extinction threats. The finding has changed the status of sage-grouse from a BLM Type 2 sensitive species to a candidate species under the ESA.

The greater sage-grouse is a sagebrush-obligate species that requires large areas of relatively undisturbed sagebrush steppe habitat. Sage-grouse were once abundant and concomitant with sagebrush steppe ecosystems across western North America (Schroeder, Young, & Braun, 1999). Currently, their distribution has been reduced to nearly half of what it was historically (Schroeder, et al., 2004). Despite long-term population declines, sage-grouse persist across more than 250,000 square miles of the sagebrush ecosystem in the western United States (Schroeder, et al., 2004). Within this requisite sagebrush landscape, important seasonal habitats (e.g., wet meadows, higher elevation mesic shrublands) are also necessary (Connelly, Schroeder, Sands, & Braun, 2000).

Sage-grouse traditionally congregate on communal strutting grounds (i.e., leks) from April to early May. The nesting season occurs soon after, extending from May to early June. Broods remain with females for several more months, and as seasonal changes occur, they move from early brood-rearing areas (e.g., forb- and insect-rich upland areas surrounding nest sites) to late brood-rearing and summer habitats (e.g., wet meadows and riparian areas) from June to August. Based on information about locations acquired through lek surveys, telemetry studies, and incidental observations, sage-grouse seasonal ranges associated with breeding (i.e., lekking, nesting, and early brood-rearing), late brood-rearing/summer, and winter habitats occur within the Chipmunk Group allotments to varying degrees.

Because sage-grouse are a broadly distributed species, dependent on a diversity of heterogeneous seasonal habitats, and some populations are wide-ranging, they are expected to be vulnerable to changes to the sagebrush ecosystem. Due to these factors, the focal species concept (Mills, 2007) is applicable because sage-grouse can serve as an umbrella species for broader conservation of the sagebrush habitats across the West (Hanser & Knick, 2011). It is expected that this concept will benefit other sagebrush-dependent species such as pygmy rabbit, sage sparrows, and sage thrashers, as well as generalist species such as mule deer and pronghorn antelope.

The Chipmunk Group allotments are located in the Western Association of Fish and Wildlife Management Agencies (WAFWA) Snake River Plain Management Zone (MZ; (Stiver, et al., 2006)). The Northern Great Basin population within the Snake River Plain MZ (Garton, et al., 2011) is a large population in Nevada, southeastern Oregon, southwestern Idaho, and northwestern Utah (Map CMLV-2). Of the three subpopulations identified by Connelly et al. (2004) within the Northern Great Basin population, the north-central Nevada/southeast Oregon/southwest Idaho (hereafter Owyhee) subpopulation overlaps the Chipmunk Group allotments (Map CMLV-2).

Habitat conditions have deteriorated or been altered to some degree throughout the entire distribution of sage-grouse by a combination of man-made and natural forces (e.g., livestock management, wildfire, fire suppression, and natural progression) on the plant community over time. This has resulted in the loss of native bunchgrasses and the increased dominance of short-statured species such as Sandberg bluegrass and exotic species such as cheatgrass and medusahead (Section 3.3). These forces have further contributed to increasing the frequency of wildfire in some ecological community types at low-to-mid elevations removing sagebrush, and affecting sagebrush regeneration and reestablishment; increasing the spread of invasive species; and at mid-to-higher elevation ecological communities (i.e., savanna woodland ecological community types) increasing the distribution and density of western juniper with increased encroachment into sagebrush habitats at these elevations. This has caused local extirpations or declines in sage-grouse populations throughout their historical range and in the Chipmunk Group allotments and surrounding area. An Idaho population analysis conducted by Connelly et al., (2004) suggests a long-term decline for sage-grouse within the state. More recently, Garton et al. (2011) conducted a population analysis of the Northern Great Basin population based on data from 1965 to 2007.

During the assessment period, the proportion of active leks decreased and average number of males per active lek declined by 17 percent (Garton, et al., 2011).

Idaho BLM initiated a modeling effort to identify sage-grouse preliminary priority habitat (PPH) and general priority habitat (GPH) within the Snake River Plain MZ (Makela & Major, 2012). Preliminary priority habitat includes breeding, late brood-rearing and winter concentration areas. General priority habitat are lands that may serve as important corridors between PPH and habitat islands within corridors, or occupied habitats characterized by low lek densities (Makela & Major, 2012). The BLM collaborated with respective state wildlife agencies to identify these areas. Modeling results indicate that the Chipmunk Group allotments encompass large and contiguous areas of PPH (Map WDLF-3 and Table WDLF-1).

Table WDLF-1: Acres[1] and portions of preliminary priority and general priority habitat within each allotment (Map WDLF-3)

Allotment Name	Acres of PPH Sagebrush Habitat in Allotment[2]	Acres of PPH Perennial Grassland in Allotment	Acres of PPH Juniper Encroachment in Allotment	Acres of PGH in Allotment	Portion of Allotment in PPH/PGH
Alkali-Wildcat	4,247	0	0	1,413	91%
Baxter Basin	1,422	0	0	0	100%
Blackstock Springs	14,781	2,556	0	0	100%
Burgess	1,161	0	0	0	89%
Burgess FFR	723	0	0	0	100%
Chimney Pot FFR	1,266	0	15	0	100%
Chipmunk Field	12,835	0	136	0	100%
Corral Creek FFR	193	79	0	0	100%
Cow Creek	7,255	57	395	186	99%
Elephant Butte	112	0	0	1,935	22%
Ferris FFR	2,914	0	229	0	100%
Franconi	1,457	602	0	0	100%
Jackson Creek	5,590	15	4,240	913	100%
Joint	3,443	774	0	0	100%
Lowry FFR	266	0	0	0	100%
Madriaga	3,943	0	0	0	96%
Poison Creek	3	0	0	3,372	64%
R Collins FFR	244	0	191	0	100%
Rats Nest	1,899	0	0	1,385	59%
Sands Basin	5,480	0	0	8,043	100%
Soda Creek	1,709	4,068	2,159	861	100%
Stanford FFR	1,892	0	0	0	100%
Texas Basin FFR	1,366	631	0	0	100%
Trout Creek	1,793	1	1,626	25	100%
Trout Creek/Lequerica	1,009	0	135	0	100%
TOTAL ACRES	**77,003**	**8,783**	**9,126**	**18,133**	**113,045**

[1]PPH/PGH habitat acreage totals include public lands, state lands, and private property.
[2]PPH sagebrush can also include small amounts of perennial grasslands, conifer encroachment, and non-habitat.

Columbia Spotted Frog

The Great Basin DPS of the Columbia spotted frog occurs in eastern Oregon, southwestern Idaho, and northern Nevada. The species is highly aquatic and is seldom found far from water. They are most often found in herbaceous wetland plant communities comprised of sedges, rushes, and grasses, and use thick floating algae and riparian vegetation for cover (Tait & Vetter, 2008). Frogs require well-oxygenated water for hibernation, and springs or saturated burrows are used as over-wintering sites. For Great Basin populations, breeding occurs in March and April in lower elevations and from April through mid-May at higher elevations. Columbia spotted frogs lay their eggs in the shallows of permanent water associated with pond edges, stream margins, and inundated floodplain areas. The eggs are deposited in spherical clusters of up to 1,300 eggs, which are allowed to float freely. In very shallow waters, the egg clusters protrude above the water, which can result in egg mortality due to freezing and desiccation (Tait & Vetter, 2008).

Spotted frog population declines are attributed to habitat loss through conversion of wetlands to irrigated pastures, de-watering of rivers for irrigation uses, drying of ponds due to drought or overuse, and reduction of riparian habitat quality due to overgrazing (IDFG, 2009). Improper grazing of the wetlands results in severely hummocked surfaced soils, the breaking up the dense sod, exposing mineral soil and leading to erosion potential and weed invasion. These disturbances lead to soil compaction, streambank sloughing, damage to vegetation, and pre-mature drying of the soil surface (Engle & Munger, 2003).

Known locations and potential habitat of Columbia spotted frogs occur within the Chipmunk Group allotments (Map WDLF-4). Implementing the focal species concept, assessing grazing impacts to riparian/wetland habitat associated with seeps, springs, and streams will benefit a variety of aquatic and riparian dependent species. Conclusions on whether riparian habitat conditions or water quality parameters along streams, wetlands, and springs are providing for sustainable Columbia spotted frog populations will be dependent upon proper functioning condition assessments provided in discussions of Standards 2, 3, and 7.

Columbia River Redband Trout

Redband trout of the Columbia River Basin are a BLM Type 2 sensitive species. BLM manages the habitats that support the species to prevent future ESA listing as threatened or endangered.

Columbia River Basin redband trout are a sub-species of rainbow trout and are the resident life form of steelhead trout. They are found in a wide range of stream habitats from desert areas in southwest Idaho to forested mountain streams in central Idaho. Spawning occurs in the spring from February to June, depending on temperature and location (IDFG, 2005). They eat mainly streamside and benthic (bottom dwelling) macroinvertebrates (USDI USFWS, 2013).

Similar to other species of trout, redband trout abundance is strongly correlated with riparian cover components, including undercut banks, large woody debris, and overhanging vegetation. Productive redband trout habitat is associated with higher gradient channels, often in riffles or with substrates dominated by boulders, cobbles, and pocket water. Redband trout also occupy pools in lower gradient streams that provide important holding and rearing habitat, resting places, over-wintering areas, and refuges from floods, drought, and extreme temperatures. Spawning habitat includes loose gravelly substrates to provide for oxygenation of eggs and embryos in redds in streams (USDI USFWS, 2013).

Redband trout have been documented in various rivers and streams in and around the Chipmunk Group allotments (Map WDLF-4). In the Owyhee Uplands, redband trout prefer cool streams with temperatures below 70° F (21° C). However, they can survive daily cyclic temperatures up to 80° F (27° C) for a short period of time (IDFG, 2006). Habitat loss and fragmentation are the major threats to population viability.

Functional stream habitat conditions includes a vigorous and diverse riparian habitat that includes overhanging vegetation with deep root systems that secures banks and filters sedimentation and provides woody debris for stream structure and controls flow.

Under the focal species concept, assessing grazing impacts to Columbia River redband streams and near-stream habitat conditions will benefit a variety of aquatic- and riparian-dependent species. Conclusions on whether stream or near-stream habitat conditions are providing for sustainable populations of Columbia River redband trout are dependent upon proper functioning condition assessment findings provided in discussions of Standard 2, 3, and 7.

California Bighorn Sheep

California bighorn sheep are an Idaho BLM sensitive species. As a BLM sensitive species, California bighorn sheep and their habitats are managed to promote their conservation and reduce the likelihood and need for the species to be listed pursuant to the ESA. Bighorn sheep are managed as big game species in both Idaho and Oregon, and controlled hunting opportunities are provided in each state. In managing bighorn sheep habitat in Idaho, BLM works closely with the IDFG.

California bighorn sheep is a subspecies of bighorn sheep native to North America. They are usually smaller than their cousins the Rocky Mountain bighorn sheep, with a less-bulky build and smaller horns. Prior to western expansion, California bighorn sheep occupied all of the dry mountain ranges west of the Rocky Mountains and east of the Cascade and Sierra ranges, and from British Columbia to California. California bighorn sheep (hereafter bighorn sheep) are generally found in arid mountain ranges below 8,000 feet (ODFW, 2003). Distribution of bighorn sheep within the study area of southwest Idaho and southeast Oregon can be reviewed on Map WDLF-5. In Idaho, bighorn sheep ranges are identified as population management units (PMUs), and in Oregon, as herd management areas.

Historically, bighorn sheep ranged widely in Idaho and are believed to have been a common game animal in the state until the late 1800s (IDFG, 2010a). Beginning in the 1870s, bighorn sheep experienced severe declines that led to extirpation of the species in Oregon in 1915 (ODFW, 2003) and the Owyhee River area of Idaho by 1940 (IDFG, 2010a). Extirpation coincided with western expansion and growth by settlers and the unregulated hunting and domestic livestock grazing that accompanied it. Grazing domestic sheep not only compete with wild bighorn sheep for forage, but also have the potential to transmit disease.

To restore populations, bighorn sheep from British Columbia were transplanted in the East Owyhee River drainage in 1963 (IDFG, 2010a), and from 1954 through 1985, were also transplanted across Oregon, including the Leslie Gulch area (ODFW, 2003). Both areas continue to support populations, and the East Owyhee River population has been used to contribute to other transplanting efforts. Management objectives in both states are to maintain and improve bighorn sheep populations and distribution. Eight core habitat home ranges (CHHR) have been identified within the vicinity of the Chipmunk Group allotments. Map WDLF-5 provides the location of the CHHRs and Table WDLF-2 provides current populations and sex ratios obtained from IDFG and ODFW during coordination meetings.

Table WDLF-2: Populations and ram/ewe ratios of bighorn sheep within core habitat home ranges

Core Habitat Home Range[1]	Population	Ram/Ewe Ratio
Reynolds Creek	25	46:100
Federal Butte	5	10:0
Castle Creek/Jack's Creek	300	46:100
Owyhee River	350	50:100
Leslie Gulch	298	68:100

Core Habitat Home Range[1]	Population	Ram/Ewe Ratio
Juniper Ridge	12	23:100
Round Mountain	15	46:100
Three Forks	32	23:100

[1]Names of Core Habitat Home Ranges are unique names created by the BLM specifically for the analysis of this EIS and may not be consistent with Population Management Areas (PMUs) and Herd Management Areas used by IDFG and ODFW.

In general, bighorn sheep prefer rugged, open habitats with high visibility of their surroundings. Survival is positively correlated with amount of cliffrock, rimrock, and rocky outcroppings present on the landscape. Rocky outcrops are particularly important for lambing and escape from predators. Breeding occurs in October and November, and lambing occurs in April and May. Large, dense stands of juniper can reduce visibility and increase predator effectiveness and generally have a negative effect to bighorn sheep movement (ODFW, 2003). Rams commonly congregate in male groups away from ewe and lamb herds in the summer. In the late fall and during the time of rut, rams will disperse to areas occupied by ewes to breed.

Bighorn sheep in the Owyhee Mountain Region are non-migratory (ODFW, 2003); however, individuals are known to irregularly foray (i.e., sporadically range or explore) outside identified CHHRs. Larger groups may immigrate to other herd areas following large landscape events such as wildfire. Telemetry data obtained by the Hells Canyon Bighorn Sheep Restoration Committee (unpublished data) used for the Payette National Forest Record of Decision (USDA USFS, 2010a) show that one Rocky Mountain bighorn sheep ram in the Hells Canyon/Salmon River country forayed up to 35 kilometers (about 22 miles); however, that data indicate that the vast majority of forays ended at 26 kilometers (about16 miles). Information from Idaho reported that some Oregon bighorns moved approximately 56 to 80 kilometers (about 35 to 50 miles) from Oregon and into Idaho (into the Owyhee Mountains) following the transplanting of individuals and major wildfire. Big game biologists believe that this is how bighorns established the Owyhee Front population in Idaho, and they suspect individual bighorns originated from the Leslie Gulch herd in Oregon in the 1980s (Jake Powell, personal communication 2013, notes saved in the project record and available from the Owyhee Field Office upon request).

Current bighorn sheep populations in both Idaho and Oregon are below IDFG and ODFW management objectives. Present-day stressors on bighorn sheep individuals and populations include habitat degradation, recreation, predation, competition with livestock and wild horses, and disease (IDFG, 2010a). Disease transmitted from domestic sheep is identified as a primary threat and is recognized by IDFG as a key factor in the recovery of bighorn sheep populations in Idaho (IDFG, 2010a).

Free-ranging bighorn sheep are susceptible to many diseases. The most important of these is bronchopneumonia, which is usually associated with bacteria *Mycoplasma ovipneumonia*, *Pasteurella multocida*, *Mannheimia haemolytica* (formerly in the genera *Pasteurella*) and *Bibersteinia trehalosi* (*Pasteurella genera*). Pneumonia caused by these bacteria is attributed to die-offs that can kill some, many, or all adult bighorn sheep in a herd. Outbreaks of pneumonia are often followed by subsequent years or decades of sporadic cases of pneumonia in adult sheep and annual epizootics of pneumonia in lambs (Besser, et al., 2012). This results in reduced lamb recruitment and continued low populations of bighorn sheep, further impairing population recovery and stability. Bighorn sheep lambs are born healthy, then subsequently sicken and die after several weeks, presumably after loss of protection via passive immunity from the mother's colostrum. Once *M. ovipnuemonia*, *Pasteurella* spp. and *Mannheimia spp.*, have been introduced into bighorn sheep populations, it is speculated that the disease can become endemic and continue to cycle for decades (Besser, et al., 2012).

The prevailing theory for the susceptibility of bighorn sheep to the above pathogens is attributed to the concept that New World sheep (bighorns) did not co-evolve with the above same pathogens and have not developed an effective immunity against the bacteria. Old World sheep (domestics), through centuries of husbandry and natural selection, have developed a resistance against the bacteria but carry them within their blood. Both species are gregarious by nature and have a natural attraction for each other. Subsequently, when the two species come into contact and the pathogens are transmitted, the bighorns have little defense.

In 2012, two bighorn sheep adult rams were recaptured in the Reynolds Creek herd in Idaho to replace radio collars. The individuals were tested for bacteria and found positive for *Mycoplasma ovipnuemonia*, *Pasteurella multocida* and *Mannheimia haemolytica*. Another hunter-harvested adult ram from the Jack's Creek herd was sampled in the same year and tested positive for elevated levels of *Mannheimia haemolytica*. However, the final diagnosis from the laboratory reports stated that the individuals tested were healthy animals (IDFG, 2012), although the elevated levels of *Mannheimia haemolytica* in the Jack's Creek animal is a concern. Lamb recruitment in these herds, based on the 2010 Idaho Bighorn Sheep Plan, appears to be favorable.

In Oregon, a similar situation occurs. Twenty yearling females were captured from the Leslie Gulch herd in late November 2012 and were tested for pneumonic bacteria. The lab reports documented that all the individuals tested positive for *Mannheimia haemolytica* and/or *Bibersteinia trehalosi* and all were negative of *Mycoplasma ovipneumonia*. The final diagnosis was that all the individuals were healthy (ODFW, 2013). However, bighorn sheep numbers in the Upper Owyhee River prior to 2007 numbered 200 individuals and have declined to an estimated 45 individuals (includes both the Round Mountain and Three Forks CHHRs) currently. There is no information on lamb recruitment at this time, but the population of the herd is currently depressed and not rebounding from the 2008 decline. No bacteria samples were collected to determine what might be the cause of the decline[37].

Bighorn sheep can carry pneumonia bacteria without showing clinical signs or becoming fatally sick. However, conclusive understanding of how pneumonia bacteria is introduced, persists, and fades in a population is still under much investigation. Cassirer et al. (2013) discussed that bighorn sheep exposed to pneumonia bacteria initially incurred large die-offs in naïve (non-infected) populations, subsequently followed by years of low lamb recruitment infected by pathogen-carrying ewes, and sporadic small/large mortalities of infected adults over a period of years (Miller, et al., 2012) (Subramaniam, et al., 2011). A combination of factors, including exposure to hosts (domestic sheep or infected bighorn sheep), the type/strain of bacteria, virulence of the pathogen, and seasonal behavioral movements and exposure to environmental stressors that can compromise the immune system, all play a role in how an infection of pneumonia bacteria can be transmitted, then persist and fade within a population (Cassirer, et al., 2013), (Wehausen, Kelly, & Ramey, II, 2011), (Dassanayake, et al., 2009), (Besser, et al., 2008), (Cassirer & Sinclair, 2007). A healthy bighorn sheep individual may be able to overcome a less-virulent species of bacteria over a greater period of time but could be re-infected with a more virulent strain of bacteria and could perish within days, requiring that even though healthy infected populations of bighorn sheep can exist, so separation of domestic sheep and bighorn sheep still needs to occur (Cassirer, et al., 2013) (Besser, et al., 2012) (Wehausen, Kelly, & Ramey, II, 2011) (Subramaniam, et al., 2011) (Dassanayake, et al., 2009). Environmental stressors such as added infections (i.e., lungworm or mites), nutritional deficiencies, poor forage quality and quantity, harassment, along with density dependent factors resulting from overcrowding may compromise the health of an individual and contribute to their vulnerability of succumbing to a pneumonia outbreak (Miller, et al., 2012), (Malmberg, Nordeen, & Butterfield, 2008).

[37] Based on discussion during an interagency meeting with Idaho BLM, ODFW and the Oregon BLM Vale District Office to discuss bighorn sheep, held at the Vale District Office in Vale, Or. 9-26-12

Studies conducted by Dixon et al. (2002) have demonstrated in a controlled environment and by Besser (2013) in pen trials indicate that there is also the potential for selected strains of *Pasteurella* spp.to be transmitted aerially. This suggests that physical contact between the two species does not necessarily need to occur to transmit bacteria associated with pneumonia. Research on this subject is ongoing, with the goal of further isolating and understanding the bacterial agents and mechanisms associated with disease transmission and pneumonia outbreaks.

Miller et al. (2012) discussed the management challenges and uncertainties of respiratory disease die-offs in bighorn sheep populations. In his review, he discusses multiple environmental, host, and agent factors that have been hypothesized as limiting to bighorn sheep populations and/or contributing to disease outbreaks. They further identify limitations of the current knowledge base and recommend research needs to progress understanding the relationship of disease and environmental, host, and agent factors. In particular, there has not been documented a "clear, invariant relationship shown between a single agent and field outbreaks." However, more recent diagnostic research findings by Besser and others (Besser, et al., 2013), (Besser, T.E., 2013) (Besser, et al., 2012), (Besser, et al., 2012) have shown that *Mycoplasma ovipneumonia* is a primary agent in pneumonic bighorn sheep die-offs and acts to induce secondary infection with other opportunistic pathogens such as *Pasteurella multocida*, *Mannheimia haemolytica* and *Bibersteinia trehalosi* (each of which can also result in the mortality of BHS by themselves). These findings are consistent with the association of disease outbreaks and contact with domestic sheep, although further research into the prevalence, infectivity, and virulence of *Mycoplasma ovipneumonia* will need to continue (Besser, et al., 2013), (Besser, et al., 2012).

The transmission of disease from domestic sheep to bighorn sheep is a complex and controversial issue. Although there is circumstantial evidence linking bighorn sheep die-offs in the wild to contact with domestic sheep, and controlled experiments where healthy bighorn sheep exposed to domestic sheep displayed subsequently high mortality (Besser, et al., 2012), (Besser, et al., 2008), (George, Martin, Lukacs, & Miller, 2008), (Wehausen, Kelly, & Ramey, II, 2011), (Lawrence, et al., 2010), there are opponents to this evidence that have argued that transmission of disease from domestic sheep to bighorn sheep has not indisputably been proven in the wild, that the disease risk is exaggerated, and that grazing restrictions should be eased. Largely, these discussions are driven by the economic consequences of restricting domestic grazing that have polarized the debate (O'Laughlin & Cook, 2010). However, a majority of the current research findings strongly suggest that the co-mingling and contact of domestic sheep and bighorn sheep is largely acknowledged to be the causal factor for the transmission of these bacteria and that separation of the two species is the only effective tool to prevent disease transmission (Western Association of Fish and Wildlife Agencies, 2012).

Throughout the analysis of this EIS, the assumption will be carried forward that the co-mingling of domestic sheep and bighorn sheep creates a risk to the viability and sustainability of bighorn sheep populations. This assumption is based on:

- The BLM's responsibility to provide habitats on public land that support viable populations of bighorn sheep;
- The extent of peer-reviewed and published science that in controlled settings has demonstrated that the transmission of disease from domestic sheep to bighorn sheep can occur (Besser, et al., 2012) (Besser, et al., 2012), (Wehausen, Kelly, & Ramey, II, 2011), (Lawrence, et al., 2010), (Dassanayake, et al., 2009), (Foreyt, Snipes, & Kasten, 1994), (Onerka & Wishart, 1988);
- The results of comparative field investigations that have shown the presence and absence of pneumonic agents in infected vs. non-infected bighorn sheep herds (Besser, et al., 2012), (Besser, et al., 2008), (George, Martin, Lukacs, & Miller, 2008); (Cassirer & Sinclair, 2007); and

- The absence of evidence falsifying the hypothesis of disease transmission from domestic sheep to bighorn sheep and the magnitude of any interaction.

Fundamental to the analysis will be to use a Bighorn Sheep Risk of Contact Tool (RCT) (USDA USFS, 2013a) to quantify the probability of a bighorn sheep intersecting a segment of a trailing route or an allotment used for grazing of domestic sheep. The version used in this EIS has been adapted for California bighorn sheep in the basin/range topography characteristic of southwest Idaho and southeast Oregon. The model does not consider the attraction between domestic sheep and bighorn sheep, travel distances of stray domestic sheep and potential contact with bighorn sheep, transmission of disease after contact, or the overlap of bighorn sheep forays from multiple CHHRs. The RCT model user guide (USDA USFS, 2013a) and technical report (USDA USFS, 2013b) are available from the BLM Idaho State Office upon request.

Modeling criteria for summer source habitat for the Owyhee region was similar to that used by the Payette National Forest, with one deviation – the de-emphasis of the factor of slope, which was still considered in the ruggedness component. Differences in terrain between the dense sheer cliff faces of the Hell's Canyon area, as explained in the RCT report (USDA USFS, 2013b), and the dispersed rim rock faces of the Owyhee area were the basis for the de-emphasis of a slope factor. Upon comparison with telemetry and other animal observation data, modeling a modified slope produced habitat areas that more closely matched the topography in the Owyhee region with bighorn sheep occupation. Connectivity habitat was modeled using the RCT process described in the technical report (USDA USFS, 2013b) with no deviations. All modeling and comparison to animal observation data for the Owyhee area was conducted at the Idaho State Office of the Bureau of Land Management. The BLM coordinated with IDFG and ODFW biologists to obtain herd information (i.e., populations and sex ratios) (Table WDLF-2) and confirm core habitat home ranges (CHHRs) (Map WDLF-5).

Both Idaho and Oregon have management objectives to maintain and increase the populations of bighorn sheep within their states. Both states are aware of domestic sheep grazing/trailing and have management objectives to reduce or eliminate the potential for contact between the two species. Both states have removal objectives (through the culling of potentially exposed individuals) if bighorn sheep and domestic sheep are known to be in close proximity. Oregon has an objective to remove any wild sheep east of the Lower Owyhee River herd area and Idaho has taken steps through a Separation Agreement with the Poison Creek Grazing Association that provides BMPs and contact information (Appendix H) if bighorn sheep are observed during an operator's activities. The BLM Owyhee Field Office, as a signator, also has a Separation Agreement with the permittee (very similar to IDFG's agreement) that requires the permittee to notify the BLM so that IDFG can be contacted. Implementation and effectiveness of the BMPs in the current BLM Separation Agreement are questionable and are being elevated to Boise District terms and conditions to emphasize their importance. To date, no bighorn sheep have been removed from either Idaho or Oregon near the Poison Creek allotment or along the domestic sheep trailing route although bighorn sheep have been documented within the general vicinity (Table WDFL-4) and well within foray distance of 35 kilometers (about 22 miles) used by the RCT model (USDA USFS, 2013a) .

Migratory Birds, Raptors, and other Birds (including Special Status Species)

A variety of special status bird species occur or are likely to occur within the Chipmunk Group allotments (Appendix G, Table G-1). The majority of these species are associated with shrub steppe, grassland or riparian habitats. Brewer's sparrow, sage sparrow, and sage thrasher are heavily reliant on sagebrush steppe for nesting and foraging. Loggerhead shrike, black-throated sparrow, and green-tailed towhee are less reliant on sagebrush but are dependent on shrubland habitat. Grassland species include long-billed curlew and grasshopper sparrow. Brewer's blackbird, calliope hummingbird, and willow flycatcher typically are associated with riparian areas, and black tern, white-faced ibis and Wilson's phalarope are

associated with ponds and wetlands. Cassin's finch, Lewis' woodpecker, and red-naped sapsucker prefer forest habitat. As per the Migratory Bird Treaty Act (MBTA) and under a signed Memorandum of Understanding with the USFWS (USDI, 2010), the BLM has a responsibility to "as practical, protect, restore, and conserve habitat of migratory birds, addressing the responsibilities in Executive Order 13186" (USDI, 2010).

The North American Bird Conservation Initiative (NABCI) is a comprehensive instrument by which government agencies, such as the BLM, and private partners can promote and achieve integrated continental bird conservation as specified by Executive Order 13186 and the BLM-USFWS MOU. One product of the NABCI is the designation of Bird Conservation Regions (BCR) across North America. BCRs are ecologically distinct regions with similar avian communities, habitats, and management concerns developed as the primary unit within which issues are resolved, sustainable habitats are designed, and priority projects are initiated (NABCI-US, 2012). On a regional scale, the Chipmunk Group allotments fall within the Great Basin BCR and the more localized Owyhee Bird Habitat Conservation Area (BHCA). The Owyhee BHCA has been identified by the Intermountain West Joint Venture as an area of statewide importance for priority bird species where the opportunity for effective conservation activities exists. Within the Great Basin BCR and the Owyhee BHCA, partner agencies and organizations have compiled a list of continentally important bird species, based on a variety of bird initiatives and plans. Among birds, grassland and shrubland species are declining faster than any other group of species in North America (Dobkin & Sauder, 2004).

Riparian habitats support the most diverse migratory bird communities in the arid and semiarid portions of the Intermountain West (Knopf, Johnson, Rich, & Samson, 1988) (Dobkin, 1994) (Dobkin, 1998). In addition, healthy riparian areas sustain high densities of breeding migratory birds (Mosconi & Hutto, 1982). In Idaho, 60 percent of migratory landbirds are associated with riparian habitats (IDFG, 1992), and one of the main reasons for the decline of migratory landbirds is the loss of riparian habitat (DeSante & George, 1994).

An assortment of raptor species occur or potentially occur within the Chipmunk Group allotments. The juniper woodlands, rock outcrops, and shrub steppe located within the Chipmunk Group allotments provide nesting and foraging substrate for many of these species. Generally, raptors return to areas in which they have nested in the past, often using the same nesting territories. Nesting activities may be initiated in mid-February to late April, depending upon species. Nest occupation continues until chicks are fledged, which usually occurs from early June to mid-August. Raptor nesting is expected to occur in suitable habitats within these allotments.

Eagle species are afforded additional protection under the Bald and Golden Eagle Protection Act. Although bald eagles have been documented near the allotments during winter months, their use of the area is not well known. It is doubtful that bald eagles nest within any of the Chipmunk Group allotments; however, winter migrants foraging on carrion are probable.

Golden eagles, prairie falcons, ferruginous hawks, and Swainson's hawks prefer open shrub steppe, sagebrush and grassland habitats. Golden eagles, ferruginous hawks, and prairie falcons nest on cliffs and rocky outcrops throughout southwest Idaho. All three species breed and forage in and/or around the Chipmunk Group allotments. Documented nest sites and potential nesting habitat for these species is abundant in the uplands and nearby deep canyons. Prairie falcons prey on small mammals, especially ground squirrels, but a large portion of their diet also can be comprised of birds. Eagles and hawks will prey upon small mammals, reptiles, and birds.

The *Accipiter* species (northern goshawk, Cooper's hawk and sharp-shinned hawk) and most owls prefer mixed open forest to more dense forest. In semiarid areas, these species often focus hunting efforts in

riparian areas due to the abundance of prey found in these habitat types. At higher elevations, juniper woodlands provide suitable *Accipiter* foraging habitat for other birds and small mammals.

Several species of owls that potentially occur within these allotments include great horned owl, long-eared owl, northern saw-whet owl, and western screech owl. These species generally are associated with greater tree cover found in woodlands, forest, and riparian areas. Flammulated owls prefer dense forest and probably have occupied the area recently as juniper has expanded and become thicker.

A number of raptor species prefer open woodland or shrub steppe to dense forest. American kestrel, northern harrier, red-tailed hawk, short-eared owl, and western burrowing owl usually are found in more open areas such as sagebrush steppe, grasslands, meadows, or open riparian areas and prey on a wide variety of small mammals, reptiles, birds, and insects. Northern harriers and short-eared owls are ground nesters and need adequate cover for suitable nest sites. Burrowing owls nest in burrows dug by other animals, usually badgers, and they hunt in grasslands and sagebrush steppe areas. Expansion of juniper woodlands probably has restricted the distribution of these open habitat species within parts of the Chipmunk Group allotments.

Big Game and other Mammals (including Special Status Species)

Several special status mammal species have been documented or have the potential to occur within the Chipmunk Group allotments (Appendix G, Table G-1). Special status bat species occurring or potentially occurring within these allotments include fringed myotis, spotted bat, and Townsend's big-eared bat. Although these species have been detected in the general area, research conducted in the juniper woodlands in the Owyhee Uplands suggests that bat populations are not numerous and species diversity is low (Perkins & Peterson, 1997). Quality day-roosting habitat (particularly caves and large, mature, live cottonwoods and snags) appears to be a limiting factor for bats in the area. Although abundant, the cliffs, rock outcrops, and seral junipers found in the portions of the allotments only provide marginal roosting habitat (Perkins & Peterson, 1997). Because the effects of livestock grazing on bats are not well-known and old growth junipers would remain the most abundant day roost substrates in the area, effects of grazing to bats are expected to be negligible to none. However, bats do require open water and will utilize livestock developments with limited risk if designed and maintained properly with minimal flight path obstructions.

Kit fox and various special status small mammal species including the Piute ground squirrel, dark kangaroo mouse, and Wyoming ground squirrel have the potential to occur within the Chipmunk Group allotments. These species prefer open habitats including sagebrush steppe, salt desert scrub, grasslands, meadows and other productive bottomlands. As well as being major constituents to biodiversity, small mammals serve as predators, prey, seed dispersers, and grazers. An abundant and diverse small mammal community can be an indicator of a healthy and functioning ecosystem (Fricke, Kempema, & Powell, 2009).

The Chipmunk Group allotments have long supported populations of a wide variety of big game species. Rocky Mountain elk, mule deer, and pronghorn use portions of the area yearlong. However, some areas are used specifically as seasonal ranges (i.e., spring, summer, fall, and winter). Most elk and mule deer within the Chipmunk Group allotments migrate to lower elevations in the winter and to areas in Oregon. Nevertheless, mule deer are common year-round in the uplands and canyonlands and pronghorn occur year-round throughout the uplands in much of these allotments. While juniper does provide hiding and thermal cover for elk and deer, juniper encroachment reduces forage and habitat diversity. Browse species important to deer, such as mountain big sagebrush, mountain mahogany, and bitterbrush, have decreased in juniper encroachment areas.

The Chipmunk Group allotments are located within the IDFG game management unit (GMU) 40. Current population data for elk and mule deer are lacking because surveys have not been conducted within GMU 40 for several decades (IDFG, 2000a) (IDFG, 2000b). Elk in GMU 40 are managed as part of the greater Owyhee-South Hills Zone. IDFG estimated the 2002 population at approximately 450 elk within GMUs 40 and 42. IDFG does not have any current population estimates for mule deer in GMU 40 and managers have identified population information within the GMU as a primary data need in the future (IDFG, 2010b). The IDFG objective for mule deer within GMU 40 is to increase populations within these important herds (IDFG, 2010b). No pronghorn surveys have been conducted in GMU 40, although pronghorn are known to occur within these allotments. Besides maintaining a variety of hunting opportunities and average horn lengths, IDFG has no explicit population objectives for pronghorn within GMU 42 (IDFG, 2010c).

Large predators that occur within the Chipmunk Group allotments include bobcat, coyote, and mountain lion. These predators are quite secretive and elusive. Because of their secretive nature, predator densities are difficult to determine. However, predators are closely tied to their prey, and if prey numbers are low, predator numbers reflect corresponding low numbers as well. Because these species are relatively common and abundant habitat exists in the area, they will not be discussed further.

Beavers are not as widespread throughout the area as they once were. Riparian habitat along many of the streams has deteriorated to the point that only remnant populations may remain. Loss of aspen, cottonwood, and willow trees will affect beaver by reducing suitable forage and material for building dams to create pond habitat. The loss of beavers throughout much of the area is suspected of leading to declines in spotted frog numbers.

Amphibians and Reptiles (including Special Status Species)
Several special status amphibians and reptiles, including the northern leopard frog, western toad, and common garter snake, have been documented or have the potential to occur within the Chipmunk Group allotments (Appendix G, Table G-1). All three species prefer habitats in proximity to water, including springs, streams, wetlands, and meadows. Loss and degradation of riparian/wetland habitats are the most serious threats to the maintenance of viable populations of these species. Because very little is known about amphibian (with the exception of spotted frogs) and reptile populations in the Chipmunk Group allotments, individual species will not be discussed in detail further. Amphibian and reptile habitat in general will be included in discussions under spotted frogs and in the broader context of upland and riparian habitat conditions.

Fisheries

Other fish species that occur or potentially occur within streams in the Chipmunk Group allotments include dace (*Rhinichthys* spp.), redside shiner (*Richardsonius bateatus*), and sculpin (*Cottus* spp.). Fish habitat is degraded within the majority of the streams due to grazing effects along the stream channel and riparian areas (see Section 3.4.1). These species will not be discussed further, as fish habitat and effects in general will be discussed in more under Columbia redband trout.

IDAHO STANDARDS FOR RANGELAND HEALTH, STANDARD 8 – WILDLIFE

3.6.1.1. Allotments Meeting Standard 8

The only allotments within the Chipmunk Group allotments that are meeting Standard 8 are Chimney Pot FFR, Chipmunk Field FFR, and R Collins FFR. There is no site-specific wildlife assessment information available for these allotments; however, given that there is not any wildlife habitat information available to aid in characterizing condition of composition and structure (i.e., sage-grouse breeding habitat

assessments), an assumption is being made that if Standard 4 is being met, then the native plant community should be providing, at a minimum, adequate upland overstory/understory composition and structure for identified focal and other shrub steppe associated species and will be considered to meeting Standard 8.

If there is no riparian information available or if there are no issues identified in Standards 2, 3, and 7 and there is no information to characterize habitat conditions, then an assumption is being made that riparian, wetland and spring habitats are providing, at a minimum, adequate conditions for focal and other shrub steppe riparian associated terrestrial and aquatic species.

3.6.1.2. Allotments Not Meeting Standard 8

A majority of the allotments are not meeting Standard 8 (Table WDLF-3), whether it be undesirable conditions in the uplands identified by Standard 4, 5, and 6; inadequate functional stream, spring, wetland, riparian and water quality conditions identified in Standards 2, 3, and 7; and/or unsuitable focal species habitat conditions identified in Standard 8 are not meeting objectives identified in the ORMP to sustain wildlife population. Twenty-two of the 25 allotments are not providing a full range of adequate upland/riparian vegetation composition, structure, or function to provide for terrestrial and aquatic species sustainability (Table WDFL-3).

Table WDLF-3: Chipmunk allotments that are not meeting Idaho Rangeland Health Standard 8 and their relationships to Upland Habitat, Riparian Habitat, and Focal Species

Allotment Name	Upland Habitat			Riparian Habitat	Focal Species			
	Native Comm.	Seeded Comm.	Exotic Comm.		Greater Sage Grouse	Columbia Redband Trout	Columbia Spotted Frog	California Bighorn Sheep
Alkali-Wildcat	x			x	x	x		
Baxter Basin			x	x	x		x	
Blackstock Springs	x			x	x			
Burgess					x[1]			
Burgess FFR			x	x	x			
Chimney Pot FFR					ND			
Chipmunk Field					ND			
Corral Creek FFR	x				x			
Cow Creek	x			x	x		x	
Elephant Butte			x		x			
Ferris FFR	x			x	x		x	
Franconi FFR	x				x[2]			
Jackson Creek			x	x	x	x	x	
Joint		x		x	x		x	
Lowry FFR			x		x			
Madriaga	x			x	x		x	
Poison Creek		x		x	x	x		x
R Collins FFR					ND			
Rats Nest	x			x	x			
Sands Basin	x		x	x	x			
Soda Creek				x		x	x	
Stanford FFR	x				x			
Texas Basin FFR					x[3]			
Trout Creek	x			x	x	x	x	
Trout				x	x		x	

Allotment Name	Upland Habitat			Riparian Habitat	Focal Species			
	Native Comm.	Seeded Comm.	Exotic Comm.		Greater Sage Grouse	Columbia Redband Trout	Columbia Spotted Frog	California Bighorn Sheep
Creek/Lequerica								
	11	2	6	15	21	5	9	1

ND = No Data Available
x = identifies habitat values within an allotment that are not meeting Idaho Rangeland Health Standards or ORMP objectives.
Blank cells = identifies habitat values within the allotment that are meeting Idaho Rangeland Health Standards or that the resources do not exist and Standard 8 does not apply.
x^1= Standard 4 found this allotment to be meeting. The new 2012 sage-grouse habitat assessment data found this allotment to be not meeting Standard 8. Data for pasture 1 supported meeting Standard 4; no nested frequency trend data exists for pasture 2, but photo plot information supports meeting Standard 4. The differences in the two conclusions is due to the type of data available (e.g. qualitative vs. quantitative; frequency trend vs. habitat assessment) and different transect locations that can capture site variability and create discrepancies at times in assessments and determinations.
x^2=Sage-grouse breeding habitat assessment information was only available in 1 of the 3 pastures and rated the allotment as suitable. Standard 4 determined that the allotment was not meeting. The allotment was determined to be not meeting Standard 8 for sage-grouse and other sagebrush steppe species due to Standard 4 not meeting (see Upland Habitat discussion below).
x^3= Standard 4 found this allotment to be meeting. New 2012 sage-grouse assessment data found this allotment to be unsuitable and therefore not meeting Standard 8. This is inconsistent with the 2008 Determination that found this allotment meeting Standard 8; however, there was no sage-grouse habitat assessment information available in 2008 and the rating was made consistent with Standard 4. The rating in 2008, because of the absence of any other vegetation data, assumed at least minimum habitat conditions were occurring.

Upland Habitat

Overall, 18 of the 25 allotments are not meeting Standards 4, 5, and 6; and are failing to provide adequate upland habitat values for wildlife, and therefore are not meeting Standard 8. In Standard 4 (Native Plant Community), a common theme in 10 of 25 allotments not meeting Rangeland Standards and Guidelines for Standard 8 is a shift in the plant community composition from larger bunchgrasses, such as bluebunch wheatgrass and Idaho fescue, to more grazing-tolerant, smaller bunchgrasses such as Sandberg bluegrass, and exotics such as cheatgrass and medusahead (Section 3.3). The observed composition and structure of the vegetation in these areas indicates reduced availability of effective nesting, hiding, escape, and foraging cover for wildlife and increases the risk of discovery and predation. The ten allotments not meeting upland wildlife habitat conditions because they failed to meet Standard 4 include: Alkali-Wildcat, Blackstock Springs, Corral FFR, Cow Creek, Ferris FFR, Franconi FFR, Madriaga, Rats Nest, Sands Basin, and Trout Creek (Table WDLF-3).

Two of the 25 allotments (Joint and Poison Creek allotments) assessed under Standard 5 (Seedings) are not meeting upland habitat conditions for wildlife (Table WDLF-3). These seeding areas are dominated by introduced species, such as crested wheatgrass, that provides structural/functional conditions resembling bluebunch wheatgrass and Idaho fescue in the understory. Although not identical to native bunchgrasses in girth, shape, and stature, the robustness of crested wheatgrass can provide nesting, hiding, escape, and foraging cover for wildlife; however, the primary reason that seedings are not meeting Standard 8 is the reduced abundance or absence of sagebrush in the overstory. Depending on the age of the seeding or the seed mix applied, sagebrush may be absent or in reduced occurrence. In time, it can be anticipated that sagebrush will eventually recolonize in these stands and become an effective contributor to improved habitat conditions, although establishment may be years (e.g., 20 years or more) in development and wildlife habitat value for sagebrush steppe species will remain reduced. Until a sagebrush component can become reestablished, the upland community remains patchy and fragmented with reduced connectivity between areas of suitable habitat.

Six of the 25 allotments assessed under Standard 6 (Exotic Communities) contribute little to habitat composition and structure for wildlife overall (Table WDLF-3). Altered plant composition from a native

plant community to a landscape dominated by exotics, such as cheatgrass and medusahead, provides little in the way of habitat structure and function for nesting, hiding, escape, and foraging cover for wildlife, leaving species vulnerable to increased predation and reduced forage. Spatially, these communities create large areas of open space with little to no shrub and large bunchgrass cover resulting in habitat loss and fragmentation. Regardless of whether the community is meeting Standard 6, it is not meeting Standard 8 due to limited resources and habitat value for wildlife. The five allotments not meeting upland wildlife habitat conditions managed under Standard 6 include Baxter Basin, Burgess FFR, Elephant Butte, Jackson Creek, Lowry FFR and Sands Basin (Table WDLF-3).

Riparian Habitat

Riparian habitats are vigorous and dynamic vegetation communities within the wetted zone of streams, springs, seeps, and mesic swales that support hydric vegetation and increased forb availability. Eleven of the 25 allotments have impaired riparian conditions and are not meeting Standard 8. A functional riparian zone, although variable in site location, plant community, soils, and hydrology, exhibits a multi-structural community of hydric vegetation comprising of various forbs, sedges, and grasses, along with a complement of shrubs and trees that stabilize banks, filter sediment, regulate stream flow, increase the water table, shade the stream, deliver woody debris, and provide foraging, nesting, escape, and security cover for a wide range of wildlife species. The eleven allotments not meeting the standard in part due to inadequate or less-than-properly functioning riparian conditions include Alkali-Wildcat, Baxter Basin, Cow Creek, Ferris FFR, Jackson Creek, Joint, Madriaga, Poison Creek, Soda Creek, Trout Creek, Trout Creek/Lequerica (Table WDLF-3 and Section 3.5).

Focal Species

Sage-grouse

Sage-grouse habitat assessments (includes breeding, upland summer, riparian summer, and late brood-rearing habitat assessments) have been collected inconsistently since 2000 and have varied by number, location, and allotment. Depending on the year the habitat assessment information was collected, information may vary from 2000 to 2012 and represents the most current data available. The methods used to collect this information follows the Sage-grouse Habitat Assessment Frameworks used from 2000 to 2012 and have been used to characterize breeding (i.e., lekking, nesting and early brood-rearing), late brood-rearing/summer, and winter habitats. Information regarding the protocols and specific allotment/pasture assessments can be reviewed within the Wildlife Specialist Report[38] and the BLM 2012 Sage-grouse Habitat Assessment Framework (Makela & Major, 2012). The Sage-grouse Habitat Assessment Framework is located within the project record and is available from the Owyhee Field Office upon request. Appendix G Table G-2 summarizes the sage-grouse habitat assessment information that was available for each allotment.

Overall, 21 of the 25 allotments are not meeting favorable habitat conditions for sage-grouse and are not meeting Standard 8 (Table WDLF-3). A common theme for the allotments not meeting Standard 8 in sage-grouse habitat is the absence or reduced occurrence of large perennial grasses in the understory (Section 3.3). This scenario is often associated with a shift in the reference community to smaller, more grazing-tolerant grasses such as Sandberg bluegrass and invasive species such as cheatgrass and medusahead, which results in less structural and functional cover for nesting, hiding, escaping, and foraging sage-grouse. The twenty allotments not meeting Standard 8 include: Alkali-Wildcat, Baxter Basin, Blackstock Springs, Burgess, Burgess FFR, Corral Creek FFR, Cow Creek, Elephant Butte, Ferris

[38] The Wildlife Specialist Report and the other specialist reports for the Group 2 allotments are available on the BLM website at http://www.blm.gov/id/st/en/prog/nepa_register/owyhee_grazing_group/grazing_permit_renewal0.html.

FFR, Franconi FFR, Jackson Creek, Joint, Lowry FFR, Madriaga, Poison Creek, Rats Nest, Sands Basin, Stanford FFR, Texas Basin FFR, Trout Creek, Trout Creek/Lequerica (Table WDLF-3).

Columbia River Redband Trout and Columbia Spotted Frog
Eleven of 25 allotments are not meeting Standard 2, 3, and 7 (Section 3.5) for riparian habitat and water quality and are therefore not meeting Standard 8 for redband trout, spotted frogs and other aquatic species (Table WDLF-3). Redband trout and spotted frog require functioning riparian areas associated with streams, wetlands, springs, seeps and mesic habitats. Since there are no specific species assessments conducted for redband trout or spotted frogs, for the purpose of this document, an assumption is being made that if a riparian community is functioning properly, then there is a high likelihood the habitat needs for these species are adequately being provided, and that their habitat needs are not being provided if the riparian area has been assessed as functioning-at-risk or non-functioning. The eleven allotments not meeting Standard 8 for Columbia Redband Trout and Columbia Spotted Frog and not meeting Standards 2, 3, and 7 include: Alkali-Wildcat, Baxter Basin, Cow Creek, Ferris FFR, Jackson Creek, Joint, Madriaga, Poison Creek, Soda Creek, Trout Creek, Trout Creek/Lequerica (Table WDLF-3 Section 3.5).

California Bighorn Sheep
In the OFO, the Poison Creek Grazing Association is the only operator to graze and trail domestic sheep through multiple allotments from May to November to graze the Poison Creek, Rockville, and Flint Creek allotments. Eight bighorn sheep CHHRs in Idaho and Oregon are within foray distances of the Poison Creek allotment and trailing routes (Map WDFL-6). In addition, there have been a minimum of 10 bighorn sheep incidental observations recorded by the BLM and IDFG from 1986 to 2002 west, northwest, and southwest of the Poison Creek allotment. A majority of these observations appear to have been made along access routes such as Highway 95 and backcountry roads. The sightings ranged from 3.3 to 6.4 miles from the Poison Creek allotment, occurring from May 1986 to June of 2002. All of the sightings occurred between mid-May and mid-October (Table WDLF-4). No sightings of bighorn sheep have been documented within the Poison Creek allotment specifically.

Table WDLF-4: Documented incidental California bighorn sheep observations in Idaho within 10 miles of the Poison Creek allotment

Date of Observation	Rams	Ewes	Lambs	Total Animals Observed	Type of Sighting	Miles from Poison Creek Allotment
6/2002	1	0	0	1	aerial photo	6.4
5/1999	unknown	unknown	unknown	1	unknown	5.7
1993	1	0	0	1	road kill	6.2
10/15/1986	1	5	0	6	live sighting	6.2
9/5/1986	0	2	0	2	live sighting	5.7
8/4/1986	2	0	0	2	live sighting	3.3
7/1986	unknown	unknown	unknown	2	unknown	5.5
5/20/1986 to 7/30/1986	0	1-8	0	8	live sighting	5.2
5/14/1986	unknown	unknown	unknown	3	live sighting	5.3
5/10/1986	0	3	0	3	unknown	3.8

Domestic sheep grazing occurs in the Poison Creek allotment, which lies within the northwest portion of the greater Owyhee Front Bighorn Sheep PMU, as designated by the IDFG (Map WDLF-5). Domestic sheep grazing in this allotment occurs annually from April 1 (March 1 for early use if Boise District range readiness criteria are met) to May 31. The Poison Creek allotment is located approximately 13 miles from the Reynolds Creek CHHR in Idaho and 10 miles from the Leslie Gulch CHHR in Oregon. In addition,

the Poison Creek allotment operator holds two additional domestic sheep grazing permits in the Rockville and Flint Creek allotments, where sheep are trailed to and from over the course of 8 months. These two allotments are not within the Chipmunk Group allotments but will be discussed further in Section 3.6.9 - Cumulative Effects.

In general, the permittee moves domestic sheep herds from north to south and then east as allotments and routes become available in the spring. The permittee uses a similar route in the fall during the return trip. The trailing route begins at the base ranch in Homedale, Idaho; to the Poison Creek and Rockville allotments for grazing in Idaho; then animals are trailed into Oregon to private ground until the southern and eastern routes in Idaho become available to access the Flint Creek allotment for summer grazing. Overall, the grazing/trailing route covers approximately 300 miles (round-trip) in both Idaho (200 miles) and Oregon (100 miles). Table WDLF-5 provides a trailing chronology and risk of contact calculations for foraying bighorn sheep intersecting a portion of the trailing route and an allotment used for grazing domestic sheep. Map WDLF-6 and 7 provides an illustration of the operator's domestic sheep grazing/trailing route in the Owyhee Field Office and Jordan and Malheur Resource Areas in Oregon.

Table WDLF-5: Probability of a foraying bighorn sheep intersecting the trailing route or a grazing allotment used for domestic sheep herded by the Poison Creek Grazing Association (Refer to Appendix G, Tables G-1 through -6 for additional risk of contact information by pastures and CHHRs)

State	Allotment / Pasture	[1]Risk of Contact (%) Winter	[1]Risk of Contact (%) Summer	Days of Use	Incidental Bighorn Sheep Sightings
OR	Board Corrals; Pasture 1	10.0		• Out: Trails 6 days 3/20 to 4/1 • Back: Trails 6 days 10/25 to 11/17	• No bighorn sheep are known to be recorded along the trailing route in Oregon.
	Board Corrals, Pasture 7	1.7			
	Board Corrals, Pasture 5	[2]21.8			
ID	Graveyard Point	7.0			• Grazes and trails through Owyhee Front Bighorn Sheep PMU. • Bighorn sheep have been recorded within approximately 3 to 6 miles of the Poison Creek allotment (see Table WDLF-4). • Bighorn sheep have been recorded in the Sands Basin (pasture 4) and Rockville allotment (pastures 5 and 7). All sightings from 0 to 0.6 miles of trailing route.
	Strodes Basin, Pasture 1	7.7			
	Strodes Basin, Pasture 5	1.32			
	Poison Creek	[3]Out:23.5 Back:3.27	[2]Out:17.1	• Out: Grazes 60 days 3/27 to 5/31 • Back: Trails 2 days 10/25 to 11/17	
	Sands Basin, Pasture 2	1.1	0.6	• Out: Trails 2 days 4/10 to 4/17 • Back: Trails 2 days 10/25 to 11/17	
	Sands Basin, Pasture 1	0.1	0.8		
	[4]Rockville, Pasture 7	[3]5.0		• Out: Grazes 20 days 4/1 to 5/31 • Back: Grazes 30 days 10/1 to 11/31	
	[4]Rockville, Pasture 5	[3]17.3			
	[4]Corral FFR	[3]0.7			
	[4]Rockville, Pasture 4	[3]2.0			
	[4]Rockville, Pasture 3	[3]1.9			
	[4]Rockville, Pasture 2	[3]2.0			
	[4]Rockville, Pasture 1	[3]2.3			

State	Allotment / Pasture	[1]Risk of Contact (%) Winter	[1]Risk of Contact (%) Summer	Days of Use	Incidental Bighorn Sheep Sightings
OR	Rockville, Pasture 6		0.3	• Out: Trails along roads and grazes private property 12 days 5/3 to 5/15 • Back: Trails only 9/15 to 10/10	• Going out, domestic sheep herds grazed on private property in the Threefingers and Mahogany allotments in early summer. Risk of Contact rated 100 percent because allotments cross into the Leslie Gulch CHHR. • Return: No grazing late season grazing occurs in Oregon. Trailing route in Oregon parallels Oregon/Idaho boundaries.
	Threefingers, Pasture 10		9.3		
	Spring Mountain, Pasture 12		1.2		
	Spring Mountain, Pasture 10		0.7		
	Spring Mountain, Pasture 6		2.5		
	Spring Mountain, Pasture 13		7.6		
	Spring Mountain, Pasture 8		1.0		
	Threefingers, Pasture 10		[3]100		
	Mahogany Mountain, Pasture 3		[3]100		
	Mahogany Mountain, Pasture 12		[3]38.4		
	Spring Mountain, Pasture 8		1.0		
	Spring Mountain, Pasture 7		0.5		
	Spring Mountain, Pasture 24		6.1		
	Spring Mountain, Pasture 13		7.6		
	Spring Mountain, Pasture 9		7.4		
	Spring Mountain, Pasture 14		0.1		
	East Cow Creek, Pasture 1		0.1		
	East Cow Creek, Pasture 2		0.1		
	East Cow Creek, Pasture 3		0.0		
ID	Burgess, Pasture 3		0.1	• Out: Trails Along County Roads for 9 Days, No Trailing Permit Required 5/10 to 6/10 • Back: Trails 5 days 9/30 to 10/10	• Bighorn sheep documented 3.5 miles from the trailing route in Joint allotment (pasture 3). • Bighorn sheep documented within 0.5 miles of trailing route through the Louse Creek allotment (pasture 5). • Bighorn sheep documented within the Upper Deer Creek allotment 2.0 miles of trailing route.
	Madriaga, Pasture 2		0.1		
	Joint, Pasture 3		0.1		
	Joint, Pasture 4		0.0		
	Soda Creek, Pasture 5		0.0		
	Cow Creek Ind., Pasture 2		0.3		
	Baxter Basin, Pasture 3		0.0		
	Baxter Basin, Pasture 1		0.0		
	Baxter Basin, Pasture 2		0.6		
	Cow Creek Ind., Pasture 1		0.0		
	Gusman, Pasture 6		0.8		
	Jordan Creek FFR		0.1		
	Gusman, Pasture 1		1.9		
	Goose Creek FFR, Pasture 1		0.1		
	Louse Creek, Pasture 5		1.5		
	Louse Creek, Pasture 6		0.3		
	Bahem FFR,		0.7		
	Glass Creek, Pasture 1		0.3		
	Morgan, Pasture 1		0.3		
	Morgan, Pasture 2		1.0		
	Walt's Pond, Pasture 2		1.3		

State	Allotment / Pasture	[1]Risk of Contact (%) Winter	[1]Risk of Contact (%) Summer	Days of Use	Incidental Bighorn Sheep Sightings
	Berrett FFR, Pasture 4		1.2		
	Boulder, Pasture 1		0.0		
	Boulder, Pasture 2		0.0		
	Boulder Flat, Pasture 1		0.1		
	Boulder Flat, Pasture 2		0.4		
	Lower Deer Creek, Pasture 1		0.3		
	Lower Deer Creek, Pasture 2		0.6		
	Upper Deer Creek, Pasture 2		0.2		
	Upper Deer Creek, Pasture 3		0.1		
	Blackbird Point, Pasture 2		0.8		
	Flint Creek, Pasture 3		0.8	• Grazes 150 Days 6/1 to 10/31	• Bighorn sheep documented in Flint Creek allotment (pasture 2).
	Flint Creek, Pasture 1		[3]11.4		
	Flint Creek, Pasture 2		[3]29.8		

[1]The risk of contact is calculated for summer (May-October) and winter (November-April) (USDA USFS, 2013b).
[2]Two routes, a southern route and a northern route occur in the Board Corrals allotment, pasture 5. The 21.8 percent represents the maximum risk of contact along the southern route. The northern route, because it does not contain any preference or connectivity habitat and considering the adjacent pastures, the risk of contact would be much lower ranging from approximately 1.0 to 7.0 risk of contact.
[3]These risk of contact values are for allotments that are grazed and therefore represent the probability of a bighorn sheep transecting a domestic sheep grazing allotment.
[4]The Rockville allotment is grazed for 20 days in the winter going out and 30 days in the winter on the return route.

Table WDLF-6: Winter (November-April) period percent probability of an individual bighorn sheep foray from a specific CHHRs intersecting the Poison Creek domestic sheep grazing allotment from 3/27 to 5/31 (going out) and from 10/25 to 11/17 (returning).

Allotment	Idaho CHHR				Oregon CHHR			
	Reynolds Creek	Federal Butte	Castle Creek/Jacks Creek	Owyhee River	Leslie Gulch	Juniper Ridge	Round Mountain	Three Forks
Poison Creek	5.9	0	0	0	23.5	0	0	0

Trailing

The 2012 Trailing EA (USDI BLM, 2012c) provides the background analysis of trailing within the Chipmunk Group allotments (Map RNGE-4). Trail use and specifics can be reviewed in the 2012 Trailing EA and Section 2.1.2 of this document. New to the trailing analysis is approximately 48 miles in three separate routes that are used for cattle and domestic sheep trailing that were not analyzed within the 2012 Trailing EA. These routes will be discussed within this document. Further, because of the risk of grazing/trailing domestic sheep within or near suitable habitat for bighorn sheep, all trailing routes used for domestic sheep will be analyzed.

3.6.2. Environmental Consequences – Effects Common to All Grazing Alternatives

Upland Habitat

The direct and indirect effects of improper livestock grazing will cause changes in plant community composition and result in the overall decrease in the quality and quantity of wildlife habitat within the Chipmunk Group allotments. All wildlife species require a level of adequate forage and cover to meet yearly reproduction needs and avoid predators. Plant community departures from what would be expected based upon ecological site descriptions (i.e., tall, deep-rooted perennial grasses like bluebunch wheatgrass versus short-statured, shallow-rooted grasses like Sandberg's bluegrass and invasive species) are indicators of habitat quality and the health of wildlife community. Further discussions on the effects of livestock grazing on the upland plant community are available in Section 3.3.2.

Alternatives 1-5 all propose varying levels of livestock grazing intensity and duration. Livestock grazing pressure will occur in all of the alternatives (except Alternative 6) within the upland shrub steppe community and will have varying effects. Vegetation will be consumed and soils will be trampled that can directly and indirectly alter or change habitat composition, structure and function. The effects of grazing rotations and associated terms and conditions under each alternative will be analyzed to determine whether the allotment is making significant progress toward meeting Rangeland Health Standard 8 and ORMP objectives.

Riparian Habitat

The direct and indirect effects of improper livestock grazing on the riparian community will alter the vegetation community, disrupt ground and surface water flow, and increase the occurrence of invasive species in the Chipmunk Group allotments. Riparian habitats are disproportionately the most important habitat features in the landscape and provide the greatest benefit to obligate and facultative wildlife covering fish, birds, amphibians, reptiles, big game, and insect species. Livestock are attracted to these habitat types because of the availability of quality forage, water, and shade, which can contribute to the decrease in quality and quantity of stream, wetland, spring, and mesic habitat conditions. Riparian habitats that are not functioning probably do not provide for adequate terrestrial, avian, and aquatic species needs. Further discussion on the direct and direct effects of livestock grazing to riparian communities are available in Section 3.5.2.

Alternatives 1-5 all propose varying levels of livestock grazing intensity and duration. Livestock grazing pressure will occur in all of the alternatives (except Alternative 6) within the riparian community. Riparian vegetation will be consumed and soils will be trampled that can affect the quality and quantity of riparian vigor, structure, and function to support wildlife needs. The effects of grazing rotations and associated terms and conditions, under each alternative will be analyzed to determine whether the allotment is making significant progress toward meeting Standard 8 and ORMP objectives.

Focal Species

Sage-grouse

Alternatives 1 through 5 all propose livestock grazing within upland and riparian habitat communities that are used by sage-grouse within the Chipmunk Group allotments. Livestock trampling and nest encounters have been shown to destroy nests and eggs and cause sage-grouse to flush and abandoned nest. Movement of birds caused by livestock encounters also expose eggs and individuals and alert predators such as ravens and coyotes to their location (USDI USFWS, 2010).

The direct and indirect effects of improper livestock grazing have the ability to alter the overstory/understory composition and structure of sagebrush habitats and contribute to changes in the

plant community function (Section 3.3). Greater sagebrush and herbaceous cover provides vertical and horizontal concealment of nests from predators and has been demonstrated to result in higher nest success (Coates & Delehanty, 2010), (Moynahan, Lindberg, Rotella, & Thomas, 2007), (Delong, Crawford, & Delong, 1995), (Gregg, Crawford, Drut, & Delong, 1994), (Connelly, Wakkinen, Apa, & Reese, 1991). Livestock grazing can contribute to departures in the plant community from reference site conditions of larger perennial grasses (i.e., bluebunch wheatgrass, Idaho fescue) to smaller-stature grazing-tolerant species (Sandberg bluegrass, cheatgrass, and medusahead) (Section 3.3) and therefore influences the viability and sustainability of sage-grouse. The effects of grazing result in reduced plant community composition and structure, concealment cover for nesting and hiding, and forb availability, and increase the risk of predation (USDI USFWS, 2010).

The direct and indirect effects of livestock grazing can alter the composition and function of riparian habitats (Section 3.5). Riparian habitats are sought out by sage-grouse and provide a critical source of forage (primarily forbs and insects) throughout the year and are especially important during the first few weeks of chick development. Livestock are also attracted to these areas because of quality forage and water and tend to concentrate for longer periods of time in these locations. The effects of livestock grazing in riparian habitat types can compact soils, inhibit water infiltration, and reduce cover of herbaceous plants and litter, further causing changes to the shrub, grass, and forb components and lead to an increase in exotic plants.

The direct and indirect effects of Alternatives 1 through 5 to sage-grouse and sage-grouse habitat will depend on the intensity and duration of livestock grazing discussed under each alternative. Vegetation will be consumed and soils will be trampled that can directly and indirectly affect the quality and quantity of upland and riparian vigor, structure, and function to support sage-grouse needs. The effects of grazing rotations and associated terms and conditions under each alternative will be analyzed to determine whether the allotment is making significant progress toward meeting Standard 8 and the ORMP objectives.

Columbia Spotted Frog

Alternatives 1-5 will have levels of riparian (wetland, springs, seeps, and mesic areas) grazing within the Chipmunk Group allotments. The direct and indirect effects of livestock grazing to riparian habitats are discussed above and within Section 3.5.2. The Columbia spotted frog lives in creeks and springs within and adjacent to the Chipmunk Group allotments, and the effects of improper livestock grazing and trampling will reduce the quality and quantity of spotted frog habitat for nesting, foraging and hibernation. Improperly grazed wetlands result in severely hummocked surfaced soils, the breaking up the dense sod, exposing mineral soil, and leading to erosion potential and weed invasion. These disturbances lead to soil compaction, streambank sloughing, damage to vegetation, and premature drying of the soil surface. Livestock can cause direct injury or mortality by trampling spotted frogs and eggs and impact spotted frog movement by defoliating habitat, causing a shift in species composition, dewatering migration corridors and collapsing banks along ponds used for overwintering sites (Tait & Vetter, 2008)

Healthy and viable populations of spotted frogs depend on properly functioning wetland and riparian habitats (Section 3.5). Riparian vegetation will be consumed and soils will be trampled that can directly and indirectly affect the quality and quantity of riparian vigor, structure, and function to support wildlife needs. The effects of grazing rotations and associated terms and conditions, under each alternative will be analyzed to determine whether the allotment is making significant progress toward meeting Standard 8 and ORMP objectives.

Columbia Redband Trout

Under Alternatives 1-5, livestock grazing in or along streams will occur within the Chipmunk Group allotments. The direct and indirect effects of improper livestock use of stream corridors and riparian areas

will substantially reduce the quality and quantity of functioning fish habitat. When riparian areas are utilized for grazing and impacted by trampling, the direct and indirect effects to fish habitat include increased bank erosion and surface fines, increased stream width-to-depth ratios, loss of stream shading, and reduced woody debris recruitment. Surface fines further degrade spawning substrates and reduce reproductive success and can suffocate eggs or trap newly hatched fry in the substrate. Direct effects from cattle trampling redds while eggs or fry are present may also occur. Increased stream width-to-depth ratios and absence of woody debris lead to simplified channels, which reduce hiding cover and increase water temperatures. Loss of overhead cover increases exposure to sunlight, which also reduces hiding cover, increases water temperatures and reduces woody structure to the channel.

Healthy and viable populations of redband trout depend on properly functioning stream and riparian habitats (Section 3.5). Stream systems will be accessed and riparian vegetation will be consumed and banks will be trampled that can directly and indirectly affect the quality and quantity of stream and riparian structure, vigor, and function to support redband trout needs. The effects of grazing rotations and associated terms and conditions, under each alternative will be analyzed to determine whether the allotment is making significant progress toward meeting Standard 8 and ORMP objectives.

California Bighorn Sheep

Cattle Grazing

No bighorn sheep CHHRs are identified within or intersect with any of the Chipmunk Group allotments. However, six of the Chipmunk Group allotments lie within the Owyhee Front Bighorn Sheep PMU identified by IDFG, and 18 allotments have summer source habitat identified by the RCT (USDA USFS, 2013a), (Table WDLF-7).

Table WDLF-7: Chipmunk Group allotments that fall within the Owyhee Front Bighorn Sheep Population Management Unit and/or have bighorn sheep summer source habitat

Allotments (or portions of) that lie within the Owyhee Front Bighorn Sheep Population Management Unit	Allotments that contain bighorn sheep summer source habitat
Alkali-Wildcat	Blackstock Springs
Blackstock Springs	Burgess FFR
Elephant Butte	Chimney Pot FFR
Rats Nest	Chipmunk Field FFR
Sands Basin	Cow Creek Inv.
	Ferris FFR
	Franconi
	Jackson Creek
	Madriaga
	Soda Creek
	Texas Basin FFR
	Trout Creek

The direct and indirect effects of Alternatives 1-5 and the effects of forage competition between cattle and bighorn sheep are not expected to be limiting factors to bighorn sheep behavior and distribution. Grazing behavior by livestock and habitat used by bighorn sheep are considered to be different enough spatially to separate the two species and minimize forage competition. Bighorn sheep tend to seek out landscapes with adequate forage in close proximity to steeper and more rugged slopes (IDFG, 2010a), while cattle prefer gentler slopes. However, some competition for forage may occur as individuals or small bands foray outside CHHRs and cross areas of unsuitable habitat (i.e., broad valleys, limited escape terrain). Because suitable habitat outside CHHRs tends to be more fragmented by shallower topography with

overall reduced habitat value for bighorn sheep, any forage competition is expected to be minimal as bighorn sheep move between areas of suitable habitat, and is not identified as a limiting factor to their distribution and behavior. However, improper grazing, wildfire, and plant community state and transitional shifts will affect habitat quality and quantity and can increase forage competition between the two species.

Domestic Sheep Grazing

Under Alternatives 1-4, domestic sheep grazing is proposed in only the Poison Creek allotment. There are greater similarities of forage preference and habitat use between domestic sheep and bighorn sheep than there are between cattle and bighorn sheep (IDFG, 2010a). The RCT model (USDA USFS, 2013a) identified suitable bighorn sheep habitat within 17 the Chipmunk Group allotments; however, it appears to be of lesser quality compared to habitat nearer to CHHRs, but adequate to provide landscape connectivity and travel corridors to facilitate foray movements.

The RCT model (USDA USFS, 2013b) was run for both winter (November-April) and summer (May-October) periods to assess the probability of a bighorn sheep foray transecting the Poison Creek allotment boundary. The RCT tool results showed that a summer period (May-October) bighorn sheep foray had a 4.1 percent probability of intersecting the Poison Creek allotment from the Reynolds Creek CHHR and 17.1 percent from the Leslie Gulch CHHR. The winter period (November-April) increased slightly to 5.9 percent from the Reynolds Creek CHHR and 23.5 percent from the Leslie Gulch CHHR (Table WDLF-8). Given the concerns of contact between domestic sheep and bighorn sheep and the potential long-term effects to bighorn sheep populations, it is not possible to weight the magnitude of the above probabilities.

Table WDLF-8: Winter and summer period percent probability of an individual bighorn sheep foray from a specific CHHRs intersecting the Poison Creek domestic sheep grazing allotment.

Poison Creek Allotment	Idaho CHHR				Oregon CHHR			
	Reynolds Creek	Federal Butte	Castle Creek/Jacks Creek	Owyhee River	Leslie Gulch	Juniper Ridge	Round Mtn.	Three Forks
Winter	5.9	0	0	0	23.5	0	0	0
Summer	4.1	0	0	0	17.1	0	0	0

[1]The risk of contact is calculated for summer (May-October) and winter (November-April) (USDA USFS, 2013b).

Under Alternatives 1-4, BMPs identified within an existing Separation Agreement between the BLM-Boise District and the permittee will be elevated as terms and conditions within the domestic sheep grazing permit (Section 2.1.2 Bullet No. 13; Appendix H). Domestic sheep grazing terms and conditions are designed to: 1) decrease the risk of contact between bighorn sheep and domestic sheep, and (2) increase communication between BLM, the State, and the permittee regarding bighorn sheep sightings and movements. There also is a similar agreement between the IDFG and the permittee.

Because domestic sheep grazing is permitted on the Poison Creek allotment under Alternatives 1-4 and occurs near or within suitable habitat for bighorn sheep, any of these alternatives maintains the potential for contact between domestic sheep and bighorn sheep. The intent of the terms and conditions identified in the Separation Agreement (Appendix H) is to reduce the risk of contact between domestic sheep and bighorn sheep and potential disease transmission. Because there is no way to determine the attraction between the two species or straying of domestic sheep, separation of the two species must be maintained and the Separation Agreement (Appendix H) provides required herd practices and a communication plan to control domestic sheep herds and notify the agencies of any sightings of bighorn sheep with the intent

to avoid contact between the two species and the transmission of disease. However, as bighorn sheep populations begin to increase and disperse and move closer to IDFG and ODFW management objectives, current CCHRs will expand and new CHHRs can become established. As bighorn sheep herd numbers increase, possible interaction between domestic sheep and bighorn sheep will become greater and the risk of contact will become greater as well, requiring the coordination and communication of the permittee and agencies and continued evaluation of the risk of contact and grazing practices accordingly. For example, considering only the Poison Creek allotment, if the Reynolds Creek herd grew from 25 animals to 40[39] animals, and assuming no change in the sex ratio and CHHR size, the risk of contact hypothetically could possibly increase from 4.1 percent to 6.6 percent (summer period); applying the same method to the Leslie Gulch herd, assuming the herd grew from 298 animals to 670[40] animals, the risk of contact could possibly increase from 17.1 percent to 38.5 percent (summer period). Appendix G Table G-7 provides an example of risk of contact values as bighorn sheep numbers increase toward management objectives based on current CHHRs locations and size.

Trailing

Cattle Trailing

The direct and indirect effects of cattle trailing discussed within the 2012 Trailing EA (USDI BLM, 2012c) are applicable to the remaining four routes and 48 miles being analyzed within this document. The effects of cattle trailing on focal species and mitigation measures recommended within the 2012 Trailing EA are appropriate and do not require any further discussion. It should be noted that two of the larger sage-grouse leks within the Owyhee Field Office (OFO) are located within pastures 1 and 2 in the Boulder Flat allotment and within 1 mile of the Boulder Flat trailing route. These leks and any satellite leks will need to be located and appropriate terms and conditions identified within the 2012 Trailing EA would be applicable.

Domestic Sheep Trailing

There are 29 allotments used by the Poison Creek Grazing Association for domestic sheep trailing. The direct and indirect effects of domestic sheep trailing to bighorn sheep primarily concern the potential for contact and the transmission of disease between the two species. The direct and indirect affects to bighorn sheep associated with vegetation manipulation and other ground disturbing impacts from trailing are minimal given the extremely short period in an allotment/pasture or segment of trail (e.g., 2 to 9 days depending on the segment; possibly the maximum of 1 to 2 days in an allotment/pasture if they are bedding down for the night).

The Poison Creek Grazing Association domestic sheep trailing routes move through or near suitable bighorn sheep habitat (open shrub steppe and mixed juniper/shrub steppe habitat zones) of varying levels of quality, as well as through areas of unsuitable habitat (Map WDLF-6 and -7). To estimate the risk of contact between domestic sheep and bighorn sheep that may occur along the trailing route, a 0.5 mile buffer (0.25 each side of trail) was delineated to provide a boundary for the RCT model (USDA USFS, 2013b) to test (Map WDLF-6 and 7). The RCT model (USDA USFS, 2013b) was ran for both winter (November-April) and summer periods (May-October) when the trailing use occurred during that particular season. In general, segments of the trailing the route that transected areas of suitable and connectivity habitat showed a higher risk of contact compared to segments of the trail that occurred in areas of unsuitable habitat. The most notable risk of contact values occurred during the beginning and end of the grazing/trailing season during the winter period and in allotments nearer the Threefingers and Mahogany Mountain pastures in Oregon during the summer period (Table WDLF-5).

[39] Information about bighorn sheep population growth for the Reynolds Creek herd was obtained in coordination with IDFG.
[40] Information about bighorn sheep population growth for the Leslie Gulch herd was obtained in coordination with ODFW.

Ten incidental observations since 1986-2002 have been recorded within foray distances along the trailing routes. These numbers very likely underestimate the movement of bighorn sheep but confirm that individuals do foray out of CHHRs. More recent information shared by the IDFG confirms bighorn sheep in areas relatively close to the domestic sheep trailing routes (Jake Powell 2012, personal communication).

A fact of trailing domestic sheep is the possibility that individual sheep will be lost or stray from the larger bands. These lost or stray sheep then have the potential to utilize habitats occupied by bighorn sheep. Stray or lost domestic sheep can come into contact with bighorn sheep for prolonged periods of time and increase the potential for transmitting disease. To mitigate some of the risk of contact between the two species, terms and conditions for grazing domestic sheep will be applied to the permit to assure that domestic sheep herds are controlled and individuals accounted for. In addition, as bighorn sheep populations begin to increase and disperse and move closer to IDFG management objectives, domestic sheep trailing and the probability of contact will need to be reassessed and evaluated annually. For example, considering the Rockville allotment (pasture 5) only, if the Reynolds Creek herd grew from 25 animals to 40[41] animals, and assuming no change in the sex ratio and CHHR size, the risk of contact hypothetically could possibly increase from 2.8 percent to 4.6 percent (summer period); applying the same method to the Leslie Gulch herd, assuming the herd grew from 298 to 670[42], the risk of contact could possibly increase from 7.9 percent to 17.9 percent (summer period). Appendix G Table G-8 provides an example of risk of contact values as bighorn sheep numbers increase toward management objectives, based on current CHHRs locations and size.

3.6.3. Alternative 1 Effects

Cattle Grazing

Grazing operations under the current permits have led to the present condition of the upland and riparian wildlife habitats and will serve as the baseline for comparison to the other alternatives. With the exception of three allotments (Chimney Pot FFR, Chipmunk Field FFR, and R Collins FFR), upland and/or riparian vegetation communities in all the remaining 22 of 25 allotments are not meeting Standard 8 in some regard (Table WDLF-3), largely due to the lack of a full complement of dominant perennial bunchgrasses, forbs, and shrubs in the upland and riparian communities, which has reduced the quantity and quality of cover and forage to sustain or enhance populations of sage-grouse, Columbia spotted frog, and Columbia redband trout. With the implementation of Alternative 1, along with the application of the identified terms and conditions, 22 of the 25 allotments are not anticipated to improve upland and/or riparian habitat conditions and will continue to fail to meet Standard 8 for sustaining viable wildlife habitats and populations.

Continued livestock use in 22 of the 25 allotments under this alternative would lead to further trampling and breakdown of stream banks, lead to reduced numbers and vigor of native plant species, increase sediment into streams, and proliferate the establishment of invasive plant species where native species once dominated. Alternative 1 would maintain and increase pressure on upland/riparian vegetation communities due to continued grazing during the spring critical growing season with limited periodic rest. This alternative continues repeated grazing pressure on wildlife habitats and reduces the ability of native plant communities to remain healthy, vigorous, and productive, and provide adequate forage and cover for wildlife species.

[41] Information about bighorn sheep population growth for the Reynolds Creek herd was obtained in coordination with IDFG.
[42] Information about bighorn sheep population growth for the Leslie Gulch herd was obtained in coordination with ODFW.

Domestic Sheep Grazing
Under this alternative, domestic sheep would continue to be grazed in the Poison Creek allotment from April 1 to May 31 (61 days) during the RCT tool winter period (November-April), (USDA USFS, 2013b) to the beginning of the summer period (May-October). Using the winter period calculations, the risk of contact that a bighorn sheep would intersect the Poison Creek allotment from the Reynolds Creek CHHR (in Idaho) rated 5.9 percent and from the Leslie Gulch CHHR (in Oregon) rated 23.5 percent (Table WDLF-5 and -6). These values will increase as bighorn sheep numbers move closer to IDFG herd management objectives.

Domestic Sheep Trailing
Under this alternative, domestic sheep would be trailed as they have been under the existing permit. The overall trailing season would occur from March 27 to November 17. The highest risk of contact between domestic sheep and bighorn sheep would occur during the winter season from March 20 to May 31 (heading out) and 10/1 to 11/17 (returning home) in the northern Idaho and Oregon allotments that traverse or are adjacent to the Owyhee Front Bighorn Sheep Population Unit. The probability of a bighorn sheep intersecting a segment of the trailing route ranged from 0.1 to 21.8 percent (Table WDLF-5). The values show that the greatest risk of contact is by bighorn sheep from the Leslie Gulch CHHR to the west in Oregon (Appendix G, Tables G-5 and 6).

During the summer period, the RCT model (USDA USFS, 2013b) showed the most notable risk of contact values occurred in Oregon as the trailing route crosses the State-line and travels closer to the Threefingers/Mahogany Mountain grazing pastures on private property. The risk of contact ranged from 0.3 to 9.3 percent. Although these segments of the trail are closer to the Leslie Gulch CHHR than the routes discussed above, a lesser amount of suitable or connectivity habitat exists along the trailing route which results in a lower risk of contact. The seasonal timing also occurs in the summer period when the RCT tool (USDA USFS, 2013b) calculates that bighorn sheep are less likely to foray long distances. However, once the grazing pastures are reached, the risk of contact increases significantly to100 percent because the Threefingers and Mahogany Mountain allotment boundaries are within or abut the Leslie Gulch CHHR or contain substantial amounts of suitable and connectivity habitat.

3.6.4. Alternative 2 Effects

Cattle Grazing
Under this alternative, with the exception 8 allotments (Alkali-Wildcat/Rats Nest, Elephant Butte, Franconi/Madriaga, Soda Creek, Trout Creek, and Trout Creek/Lequerica), the proposed grazing schedules are the same as those implemented under the current permit. Because the remaining 14 allotments that were not meeting Standard 8 do not propose any substantial changes to improve habitat conditions, the impacts to wildlife habitat conditions for shrub steppe species are therefore the same as those discussed in Alternative 1. For the allotments that submitted changes to their current permits, the impacts of their new grazing schedules are discussed individually.

Domestic Sheep Grazing
Under this alternative, domestic sheep would be grazed in the Poison Creek allotment the same as proposed under Alternative 1. The risk of contact between domestic sheep and bighorn sheep would be the same as discussed in Alternative 1.

Domestic Sheep Trailing
Under this alternative, domestic sheep would be trailed as they have been under the existing permit. The overall trailing season would occur from March 20 to November 17.The risk of contact between domestic sheep and bighorn sheep would be the same as discussed in Alternative 1.

Alkali-Wildcat and Rats Nest – Conversion to Wild Rat Allotment

Creation of the Wild Rat allotment would not benefit habitat conditions for terrestrial or aquatic species. Currently, both the Alkali-Wildcat and the Rats Nest allotments are not meeting Standard 8 for wildlife. The grazing strategy for the proposed Wild Rat allotment is similar to the current Alkali-Wildcat and Rats Nest allotments. Proposing to continue grazing in the spring during the critical growing season with little to no rest will result in the effects discussed in the above paragraph would not progress the Wild Rat allotment toward meeting Standard 8.

Elephant Butte Allotment

Increasing the acreage of this allotment through the creation of the Wild Rat allotment would not be beneficial to wildlife. Currently, the Elephant Butte allotment is not meeting Standard 8 for wildlife. The critical issues for wildlife in this pasture are the dominance of cheatgrass and the absence of any native plant composition and structure for wildlife in general.

The permittee's grazing proposal is not clear as to how the pastures would be used over the course of a new permit. However, the proposal does imply that early spring and spring grazing may occur and does not state specifically that any rest/deferment will occur. The proposed changes and effects in Alternative 2 remain similar to Alternative 1 and provide no progress toward improving upland habitat composition and structure for wildlife and therefore will not meet Standard 8.

Franconi and Madriaga

Under the permittee's application, the Franconi and the Madariaga allotments would be used together in a 3-year grazing schedule. A five-pasture rotation system (three pastures in Franconi and 2 pastures in Madriaga) would implement a minimum one year of spring deferment in each pasture (2 years of deferment in Franconi pasture 3 and Madriaga pasture 1). In the Madriaga allotment, the permittee is requesting the option to increase stocking from 160 head to 225 with prior BLM approval, but would not exceed the allocated AUMs (see Section 2.2.2 for details).

Currently the Franconi and the Madriaga allotments are not meeting Standard 8 (as well as Standard 4) for wildlife, primarily due to impacts from past fire and reduced abundance of large perennial grasses. Implementing a grazing deferment system out of the critical season will benefit the plant community and improve wildlife cover and forage values. Deferment will reduce repeated spring grazing pressure on the upland plant community and will improve plant community composition and structure. This strategy will move the uplands toward making progress in meeting Standard 8, but probably not within the 10-year term of the permit. But, benefits gained in the Madriaga allotment can be compromised by augmenting stocking levels that will result in increased soil disturbance associated with increased trampling and trailing.

These impacts resulting from increased stocking will also be carried into riparian zones identified in the Madriaga allotment. Currently riparian habitat in the Madriaga allotment is not meeting Standard 8. Increased mechanical damage can be expected resulting in impaired bank stability; reduced plant community composition, structure, and vigor; and degraded water quality. Under this alternative, this strategy is not anticipated to progress toward meeting Standard 8 wildlife (see Section 3.5.2.3).

Soda Creek Allotment

Sage-grouse breeding and late brood-rearing habitat assessment data collected in 2003 showed that upland overstory/understory conditions and wet meadow riparian conditions were in suitable condition (Wildlife Specialist Report). This information suggests that upland and riparian habitat conditions for nesting and early brood-rearing sage-grouse are favorable. These upland habitat conditions are consistent with management objectives identified in Section 2.1 and Desired Conditions discussed in Section 3.5.1,

and therefore are meeting Standard 8 for sage-grouse. However, Section 3.5 identified that riparian conditions are not meeting Standards 2, 3, and 7 but are making significant progress. Although riparian habitat conditions appear to be improving, they are not at this time fully functioning and therefore do not meet Standard 8.

The proposed increase in number of cattle, AUMs, and season of use by the applicant would increase pressure on the upland plant community. The increase in AUMs would apply additional grazing pressure on plant community composition and structure, which could affect the quality and quantity of upland wildlife habitat as well as compound issues and halt any improvement within riparian areas. Increased grazing pressure will not maintain the progress in riparian health and vigor and therefore is expected to not meet Standard 8.

Trout Creek and Trout Creek/Lequerica

Under this alternation, the permittee is proposing a grazing rotation that would combine the three Trout Creek pastures with the two Trout Creek/Lequerica pastures and create a five-pasture 3-year rotation. Combining these two allotments will result in an 18 percent reduction in AUMs (593) compared to the permitted AUMs (726) within the Trout Creek pastures and the authorized AUMs (115) in the Trout Creek/Lequerica pastures would remain the same. However, when the reduction of AUMs (593) proposed in the Trout Creek allotment is compared to the average actual use (342 AUMs) over the life of the current permit, the proposed permitted AUMs is 57 percent greater (see Section 2.2.2 for details). This is an important point because, under the current permit, the Trout Creek allotment is not meeting Standard 8 for upland and riparian wildlife needs. However, upland habitat conditions are marginal and riparian habitat conditions are making significant progress (see Section 3.5.2.3). This indicates that conditions have a good likelihood of improving and progressing toward meeting Standard 8 if grazing practices are managed accordingly.

The concern of maximizing AUMs (albeit reduced 18 percent) is that any progress in habitat condition achieved from grazing fewer AUMs would be lost. However, currently the Trout Creek pastures are used during spring, summer, and fall over a 3-year rotation with no deferment or rest in 2 out of 3 pastures. Under Alternative 2, the proposed schedule would incorporate 1 year in a 3-year rotation of deferment in all pastures. By deferring grazing out of the critical growth period, repeated grazing pressure during the spring will be interrupted, thus allowing plants to recover and improve plant community vigor, composition and structure that will benefit upland wildlife species. This system is an improvement over Alternative 1 and should improve habitat conditions if grazed closer to average actual use levels; however, making progress toward meeting Standard 8 will be slow, and maximizing AUM use will counter any progress.

A similar system is proposed for the Trout Creek/Lequerica allotment that would implement a 1-in-3-years grazing deferment system. This system is similar to that under the current permit for pasture 1, but increases the spring and critical growing season use in pasture 2, which has been grazed during the late summer and fall over recent years. Although a 1-in-3-year deferment in critical growing season use is proposed, the marginal conditions that exist currently would not improve under increased spring use and therefore would not progress toward meeting Standard 8.

Under Alternative 2, 22 of 25 grazing proposals would not improve upland and riparian habitat conditions for focal species (Table WDLF-3). All of these proposals would either maintain or increase grazing pressure on upland and riparian communities with little to no rest or deferment. The effects discussed in Section 3.6.3 would still occur. Therefore, upland and/or riparian habitat conditions in all of the 22 allotments identified as not meeting Standard 8 (Table WDLF-3) are not expected to improve; they would further fail to provide vegetation structure, forage, and cover to sustain viable focal species habitats and populations.

Summary
The Franconi/Madriaga and Trout Creek grazing proposals show the greatest chance of progressing toward eventually meeting Standard 8. In the Franconi/Madriaga proposal, incorporating deferment will have positive benefits to the plant community and wildlife habitat; however, utilizing options to increase stocking levels in allotments that are not meeting Standard 8 will impede any progress toward meeting Standards. As well as in the Trout Creek proposal, maximizing AUMs above actual use levels will not progress habitat conditions toward meeting Standard 8.

3.6.5. Alternative 3 Effects

Under this alternative, a deferred grazing strategy would be implemented outside the critical growing season intended to stimulate vegetation vigor and reproduction and in time enhance upland shrub steppe and riparian habitat plant composition and structure for wildlife. Mandatory Boise District terms and conditions in addition to other terms and conditions specific to this alternative would be included (Sections 2.2.1 and 2.2.3).

Livestock grazing management as described under Alternative 3 would improve upland and riparian habitat conditions, benefitting identified focal species as well as other associated shrub-steppe and riparian-dependent (e.g., migratory birds, pygmy rabbits, big game, and amphibians). Upland communities in 10 of the 25 allotments (Alkali-Wildcat, Blackstock Springs, Corral FFR, Cow Creek, Ferris FFR, Franconi FFR, Madriaga, Rats Nest, Sands Basin, and Trout Creek), that are managed as native communities (Table WDLF-3), would make significant progress toward meeting Standard 8 and achieve desired habitat management objectives. The decrease in the grazing frequency during the spring growing-season would allow upland native perennial species to complete the annual growth cycle more often in the absence of defoliation by livestock and will improve plant community health and vigor and improve herbaceous composition and structure. Resulting in greater security cover for nesting and brood-rearing sage-grouse from predators and increasing preferred forb diversity and availability. In the short term (1 to 6 years, two rotations) habitat conditions would show measurable and observable improved forage and cover elements. In the long term (7 to 12 years, four rotations), vegetation composition and structure would be expected to continue making significant progress toward meeting Standard 8 and achieve desired RMP management objectives.

In addition, limited riparian habitat grazing intensity and season of use in 11 of the 25 allotments (Alkali-Wildcat, Baxter Basin, Cow Creek, Ferris FFR, Jackson Creek, Joint, Madriaga, Poison Creek, Soda Creek, Trout Creek, Trout Creek/Lequerica) will improve plant vigor, diversity, and regeneration and improve riparian functions to dissipate energy of high flows, trap sediments, harden streambanks, provide shade to streams, deliver woody debris, and improve water quality. Improved herbaceous and woody cover in riparian zones would benefit Columbia redband trout and Columbia spotted frogs by reduced trampling of spring spawning and egg laying sites, decreased erosion and sediment loading, enhanced shade and woody debris delivery, greater channel structure and flow regulation, and improve water quality. In the short term (1 to 6 years, two rotations) habitat conditions would show measurable and observable improved forage and cover elements. In the long term (7 to 12 years, four rotations), vegetation composition and structure would be expected to continue making significant progress toward meeting Standard 8 and achieve desired RMP management objectives.

In two of the 25 allotments (Joint and Poison Creek allotments), which are managed as seeded communities (Table WDLF-3), sagebrush is the common habitat feature either absent or reduced in these communities. It is anticipated that with reduced grazing pressure, conditions for sagebrush regeneration and establishment would be more favorable. As a result, enhanced sagebrush distribution and abundance would improve connectivity between fragmented sagebrush habitats and increase patch size. This

combined with the already dominant non-native grass component would improve overstory/understory composition and structure for sage-grouse and other shrub-steppe dependent species. However, full sagebrush recovery and effective overstory structure and function for wildlife nesting and hiding cover could be years (e.g., 20 years or more) beyond the term of the permit.

In the six of the 25 allotments (Baxter Basin, Burgess FFR, Elephant Butte, Jackson Creek, Lowry FFR and Sands Basin), which contain pastures dominated by annual communities (Table WDLF-3), by implementing Alternative 3, will provide maintenance of remnant native species and habitat patches and a prospect for future recovery by allowing the opportunity of species to grow full cycle during the critical growth period 1 out of 3 years. This strategy would not degrade conditions further, but will continue to fail to provide the plant abundance, composition and structure to create effective cover and forage conditions for nesting and brood-rearing sage-grouse and other sagebrush steppe species. Habitat fragmentation will continue to be an issue, but relief from repeated spring grazing pressure will improve the vigor and health of remnant species and will improve habitat patch connectivity. However, without a comprehensive management strategy and due to the competitive advantage of invasive species over native species, recovery of these communities will be very slow in the short term (1 to 6 years, two rotations) if at all with limited success of improved native shrub and bunchgrass species composition and structure in the long-term (7 to 12 years, four rotations). Wildlife use will be comparable to the health and improvement to the distribution, composition, and structure of the native plant community.

Domestic Sheep Grazing
Under this alternative, domestic sheep grazing would occur from April 1 to May 31 for 2 years and then would be deferred to October 1 to November 31 in the third year. The primary issue with the proposed dates is that bighorn sheep are more mobile during the spring/early summer season and in the fall during the breeding season that occurs approximately mid-October thru November.

The spring grazing dates (April to May 31) would remain the same as Alternative 1. The concerns for contact between domestic sheep and bighorn sheep are the same is those discussed in Alternative 1. This grazing system will not graze domestic sheep in the spring 1 out of 3 years, but would defer grazing of domestic sheep in the fall (October 1 to November 30) in the third year of the rotation. Comparative to Alternative 1, although the risk of contact is the same during the spring grazing dates and fall grazing dates (5.9 percent from Reynolds Creek CHHR and 23.5 percent from the Leslie Gulch CHHR; winter calculations) in Alternative 3, the risk of contact may be slightly less in the spring than in the fall assuming that the fall breeding season would more likely encourage increased bighorn sheep foray behavior. Under this alternative, this domestic sheep grazing system would not reduce the risk of contact between domestic sheep and bighorn sheep and may actually increase the risk of contact by moving grazing into the fall during the bighorn sheep breeding season. It can also be anticipated that the risk of contact values will also likely increase and need to be reevaluated accordingly as bighorn sheep numbers move closer to IDFG herd management objectives.

Domestic Sheep Trailing
Under this alternative, domestic sheep would be trailed as they have been under the existing permit. The overall trailing season would occur from March 20 to November 17. The risk of contact between domestic sheep and bighorn sheep would be the same as discussed in Alternative 1.

In relation to both grazing and trailing under Alternative 3, domestic sheep would be trailed through the Poison Creek allotment 1 out of 3 years between March 27 and May 15, when it is not scheduled to be grazed in the spring as herds are moved to the Rockville allotment. Two out of 3 years, herds would be trailed through the Poison Creek allotment between October 10 and November 17 on the return route, when the allotment is not scheduled to be grazed in the fall.

3.6.6. Alternative 4 Effects

Under this alternative, grazing management would incorporate a combination of rest and/or deferred grazing outside the critical growing season. Grazing management as described in this alternative would improve overall vegetation vigor and reproduction and allow for making significant progress toward meeting Standard 8 and achieve RMP objectives. Grazing management under this alternative (no grazing 2 out 3 years during the critical season and lower stocking rates) would not be dependent on achieving other vegetative terms and conditions (as compared to Alternative 3), to achieve management objects and make significant progress toward meeting Standards.

It is anticipated that the quality and quantity of the upland and riparian communities in 10 of the 25 allotments (Alkali-Wildcat, Blackstock Springs, Corral FFR, Cow Creek, Ferris FFR, Franconi FFR, Madriaga, Rats Nest, Sands Basin, and Trout Creek), which are managed as native communities, would make significant progress toward meeting Standard 8 and achieve desired habitat management objectives (Section 2.1.1). The decrease in the grazing frequency during the spring growing-season combined with the addition of periodic rest and lower stocking levels would allow upland native perennial species to complete the annual growth cycle more often in the absence of defoliation by livestock and improve plant community health and vigor. In addition, limited riparian habitat grazing intensity and season of use would improve plant vigor and regeneration and improve riparian functions to dissipate energy of high flows, trap sediments, harden streambanks, provide shade to streams, deliver woody debris, and improve water quality. In the short term (1 to 6 years, two rotations), enhanced forage and cover elements would occur quickly and show active recovery. In the long term (7 to 12 years), vegetation composition and structure would make significant progress toward meeting Standard 8.

Under Alternative 4, improved upland and riparian habitat conditions would benefit identified focal species as well as other associated shrub steppe species (e.g., migratory birds, pygmy rabbits, big game, and amphibians). Implementing a deferment/rest grazing rotation grazing schedule with reduced stocking levels would improve upland plant community health and vigor and enhanced herbaceous composition and structure and would provide greater security cover for nesting and brood-rearing sage-grouse from predators and increase preferred forb diversity and availability. Improved herbaceous and woody cover in riparian zones would benefit Columbia redband trout and Columbia spotted frogs through reduced trampling of spring spawning and egg laying sites, decreased erosion and sediment loading, enhanced shade and woody debris delivery, greater channel structure and flow regulation, and improve water quality.

In two of the 25 allotments (Joint and Poison Creek allotments), which are managed as seeded communities, sagebrush is the common habitat feature either absent or reduced in these communities. It is anticipated that with reduced grazing pressure and lower stocking levels, sagebrush regeneration and establishment would occur more readily compared to Alternative 3 and the other alternatives. As a result, greater sagebrush distribution and abundance would enhance connectivity between fragmented sagebrush habitats and increase patch size. This combined with the already dominant non-native grass component would improve overstory/understory composition and structure for breeding, brood-rearing and foraging sage-grouse and other shrub-steppe dependent species. However, full sagebrush recovery and effective overstory structure and function for wildlife nesting and hiding cover could be years (e.g., 20 years or more) beyond the term of the permit.

In the five[43] of the 25 allotments (Burgess FFR, Elephant Butte, Jackson Creek, Lowry FFR and Sands Basin), which contain pastures dominated by annual communities (Table WDLF-3), implementing

[43] Baxter Basin is not included under Alternative 4.

Alternative 4 will provide a benefit to remnant native species and habitat patches and provide prospect for future recovery by allowing the opportunity of species to grow full cycle during the critical growth period 2 out of 3 years. This strategy would not degrade conditions further and will allow a better opportunity for native plant species to compete with invasive annuals and to improve abundance, composition, and structure and create effective cover and forage conditions for nesting and brood-rearing sage-grouse and other sagebrush steppe species. Habitat fragmentation will continue to be an issue, but relief from repeated spring grazing pressure will improve the vigor and health of remnant species and will improve habitat patch connectivity by providing greater screening and hiding cover. However, given the competitive advantage of invasive annuals over native species and without the use of a comprehensive management strategy, recovery of effective wildlife habitat conditions will be slow in the short term (1 to 6 years, two rotations). In the long term (7 to 12 years, four rotations), native plants would respond favorably and cover and forage elements will begin to improve. Wildlife use will be comparable to the improved distribution, composition, and structure of the native plant community.

Domestic Sheep Grazing

Under this alternative, domestic sheep grazing in this allotment would occur from April 1 to May 31 in year one, October 10 to October 31 in year two, and rested the third year. The issues and concerns regarding bighorn sheep foray potential during the spring and in the fall breeding season are the same as discussed in Alternative 3. Under this alternative, only 1 year of grazing will occur in the spring. By incorporating rest into the schedule, grazing will be eliminated two years in the spring, not only benefiting the vegetation, but also reducing the risk of contact between domestic sheep and bighorn during the spring grazing season.

The issues and concerns of fall grazing would be the same as discussed in Alternative 3.

Domestic Sheep Trailing

Under this alternative, domestic sheep would be trailed as they have been under the existing permit. The overall trailing season would occur from March 20 to November 17.The risk of contact between domestic sheep and bighorn sheep would be the same as discussed in Alternative 1.

The issue and concerns of trailing in relation to the Alternative 4 grazing schedule are similar to those discussed in Alternative 3. Even in years when grazing is not authorized (e.g., rest years), trailing will continue through the pasture to their next destination.

3.6.7. Alternative 5

<u>Poison Creek Allotment</u>

Under Alternative 5, domestic sheep grazing would be terminated and the AUMs would be converted to cattle use. The primary purpose for considering this alternative is to eliminate the possibility that domestic sheep will come into contact with bighorn sheep and transmit disease to bighorn sheep herds. In addition, the Poison Creek allotment is not meeting Standard 8 for upland vegetation cover composition and structure for sage-grouse. Cattle grazing under Alternative 5 would be the same as that described for Alternative 3 and would include the terms and conditions (Section 2.2.3) for uplands (e.g., maintain an average of greater than 18 cm (7 inches) perennial grass height on upland key species) and riparian habitats (e.g., a minimum of 6-inch stubble height, 30 percent browse (where applicable), and less than 10 percent bank alteration will be maintained in key riparian areas at the end of the grazing season) will be required to be implemented to progress the allotment toward meeting Standard 8.

Conversion of Domestic Sheep Grazing to Cattle Grazing
Under this alternative, converting sheep grazing to cattle grazing is being proposed. The grazing strategy will be the same as discussed for Alternative 3. Converting the type of use will increase the number of cattle and decrease the AUMs by 2 percent.

Grazing preference and behavior are the primary differences between cattle and domestic sheep. Cattle feed mostly on grasses and less on forbs and shrubs, whereas domestic sheep will make high use of forbs but also a large volume of grasses and forbs. Domestic sheep also are more gregarious and are actively herded, whereas cattle distribute farther and are left to graze at will.

The direct and indirect effects of the conversion will increase grazing pressure on grasses in the uplands and concentrate increased number of cattle in the riparian zone. This allotment is managed as a seeded community with disconnected sagebrush habitats. The remaining sagebrush community lacks a favorable occurrence and distribution of large native perennial grasses in the understory. Increased cattle numbers will intensify grazing pressure on limited native grass resources and cause individuals to range further onto possibly steeper slopes and source habitat for bighorn sheep where forage competition may occur. In addition, this conversion will increase the number of cattle that concentrate in the riparian zone. Currently, riparian areas are not meeting Standard 2, 3, and 7 and therefore are not meeting Standard 8 for Columbia redband trout, as well as for other aquatic and terrestrial species.

By terminating domestic sheep grazing, disturbed areas where domestic sheep are concentrated, such as bedding and watering sites, will have a better opportunity for improvement and restoration. An increase in forb occurrence and distribution may also improve that will benefit sage-grouse early in the year.

Domestic Sheep Grazing and Trailing
The primary reason for considering terminating domestic sheep grazing and converting the AUMs to cattle would be to reduce the risk of contact between domestic sheep and bighorn sheep and the potential for disease transmission. Under this alternative, the risk of contact between grazing domestic sheep and bighorn sheep in the Poison Creek allotment will be eliminated. However, assuming the domestic trailing permit is authorized, trailing of domestic sheep through the Poison Creek allotment from Homedale, Idaho, to the Rockville and Flint Creek grazing allotments will still occur. The risk of contact would be reduced because the duration of domestic sheep in the allotment would be shortened from 60 days for grazing to a maximum of 2 days of trailing in the spring and another 2 days in the fall. Therefore, the conversion from domestic sheep grazing to cattle grazing will reduce, but would not eliminate, the risk of contact between the two species.

3.6.8. Alternative 6 Effects

Under this alternative, extended allotment and pasture rest from grazing pressure would extensively improve conditions for all species of wildlife throughout the Chipmunk Group allotments. Vegetative structure and diversity, perennial herbaceous vegetation heights and residual cover, and available forage would increase in all habitat types. Stream and riparian (wetlands, springs, seeps, mesic areas) habitats would improve and expand due to the removal of livestock grazing pressure. Forage availability and cover for all wildlife would substantially improve and populations are expected to flourish and diversify.

In general, none of the negative effects associated with grazing discussed in the other five alternatives would occur and the benefits would be compounded across the allotments. It is anticipated under this alternative that in the short term (1 to 6 years, two rotations), upland and riparian habitat conditions in 20 of the 25 allotments managed as native and seeded communities (Table WDLF-3) will progress steadily, and in the long term (7 to 12 years, four rotations), will show substantial improvement in wildlife habitat cover and forage.

In the six of the 25 allotments (Burgess FFR, Elephant Butte, Jackson Creek, and Sands Basin), which contain pastures dominated by annual communities (Table WDLF-3), implementing Alternative 6 will provide the greatest benefit to remnant native species and habitat patches and provide prospect for future recovery by allowing the opportunity of species to grow and reproduce under a no-grazing scenario. This strategy would not degrade conditions further and will allow a better opportunity for native plant species to compete with invasive annuals and improve the opportunity to improve their abundance, composition and structure and create effective cover and forage conditions for nesting and brood-rearing sage-grouse and other sagebrush steppe species. Habitat fragmentation will continue to be an issue, but relief from repeated grazing pressure will improve the vigor and health of remnant species and will improve habitat patch connectivity by providing greater screening and hiding cover. However, given the competitive advantage of invasive annuals over native species, and without the use of comprehensive management strategy, recovery of effective wildlife habitat conditions will be slow in the short-term (1 to 6 years, two rotations). In the long-term (7 to 12 years, four rotations), native plants would respond favorably and cover and forage elements will begin to improve. Wildlife use will be comparable to the improved distribution, composition, and structure of the native plant community.

Domestic Sheep Gazing and Trailing

Under this alternative, both cattle and domestic sheep grazing would be terminated in the Poison Creek allotment. Terminating domestic sheep grazing would reduce the potential for contact with bighorn sheep and disease transmission, but would not eliminate the risk of contact between the two species. Trailing of domestic sheep is anticipated to continue, as the permittee will still hold grazing permits in the Rockville and Flint Creek allotments. Trailing of domestic sheep is estimated to require a maximum of 2 days in the spring and another 2 days in the fall. During this period, the risk of contact between domestic sheep and bighorn sheep is still a potential.

3.6.9. Cumulative Effects

Cumulative Impact Analysis Area

A Cumulative Impact Analysis Area (CIAA) can vary greatly by species and their distribution across the landscape. Given the focal and current conservation importance of greater sage-grouse and bighorn sheep, it is logical to choose an analysis area that is biologically relevant to both of these species. Both species are part of a larger regional population within north-central Nevada, southeastern Oregon and southwestern Idaho.

The greater sage-grouse and bighorn sheep are the two primary focal species guiding the CIAA for wildlife. Considering their regional distribution and relationship with neighboring populations, the Northern Great Basin population of greater sage-grouse encompasses 5.7 million acres of north-central Nevada, southeastern Oregon, and southwestern Idaho (Map CMLV-2) and fits well with what is thought to be likely sage-grouse lek connectivity in the northern Great Basin (Makela & Major, 2012). Within this delineation, a smaller cumulative effects analysis area of 3.3 million acres will be identified for bighorn sheep, based on current distribution, known CHHRs, State agency identified herd management areas, suitable habitat, and foray potential (Map CMLV-2).

Overall, two specific CIAAs, one for sage-grouse and the other for bighorn sheep, will provide meaningful context and relevance for other large and/or highly mobile species (e.g., big game, raptors, and migratory birds), while greatly exceeding the range of many resident fish, amphibians, reptiles and other wildlife species. This cumulative effects area encompasses all sage-grouse and bighorn sheep habitat within the OFO boundary, as well as additional adjacent habitat in southeastern Oregon, northern Nevada, and a substantial portion of the Bruneau Field Office in Idaho. Analysis timeframes include past

activities that have created the present conditions and future activities planned within the next 3 years, including the expected duration of effects from current and future activities up to the life of this permit (10 years).

Sage-grouse

Sage-grouse PPH/PGH within the Chipmunk Group allotments is extensive and is connected to sage-grouse core habitat areas in Oregon (Map WDFL-3). Sage-grouse leks within the Chipmunk Group allotments are located on the eastern periphery of larger populations in the Jordon Valley and are constrained by the west slope of the Owyhee Mountains. Corridors of limited habitat quality (i.e., deep canyons, mixed shrub-juniper) are located in the Big Boulder Creek drainage that may allow sage-grouse to travel to other habitats to the east.

In much of the analysis area, upland, riparian, and stream habitats have been adversely affected by past grazing practices and rangeland management infrastructure, wildfire, vegetation treatments, and habitat fragmentation due to buildings, roads, and transmission line. As a result, wildlife habitat quality, quantity, and connectivity within the CIAA have been altered and populations of sage-grouse and other shrub steppe associated species have declined.

Disease such as West Nile virus (WNV) has been documented to have negative effects to sage-grouse populations and prompted IDFG to close the hunting season on grouse in western Owyhee County in 2006 due to concerns of WNV impacts (Idaho Sage-grouse Advisory Committee, 2008). West Nile virus is carried by mosquitos that require an adequate water source for individuals to breed and eggs to hatch. Artificial water sources known to support breeding of the *Culex tarsalis* mosquito in sage-grouse habitat include overflowing stock tanks, stock ponds, seeps and overflow areas below earthen dams, and irrigated agricultural fields. Sage-grouse are at risk to WNV because they congregate in mesic areas in late-summer, often near artificial water sources. In addition, sage-grouse are considered a component amplifying host and capable of infecting naïve (non-infected) mosquitos, which may lead to a more rapid spread of the virus and increased mortality within flocks (Walker & Naugle, 2011).

California Bighorn Sheep

Eight bighorn sheep CHHRs in six herd management areas in Idaho and Oregon surround the entire 25 Chipmunk Group allotments (Map WDLF-5). Known movements of tagged individuals, incidental sightings, and foray distance projections produced by the RCT model (USDA USFS, 2013a) confirm that all the CHHRs and herd management areas are connected and have the potential to be visited by exploring and dispersing bighorn sheep. Although large areas of unsuitable habitat exist between CHHRs, bighorn sheep are known to cross large expanses of unsuitable between CHHRs in search for more suitable habitat and other bighorn sheep.

The CIAA includes all of the BLM Owyhee FO, a substantial portion of the BLM Jordan and Malheur Resource Areas (RAs), and a small portion of the BLM Bruneau FO. Both Owyhee and Bruneau FOs are within the Boise District of Idaho, and the Jordan and Malheur RAs are within the Vale District of Oregon. There are three domestic sheep operations known to graze/trail within the CIAA. Two of the operations hold BLM grazing permits and the third is a private commercial operation on private lands.

Within the Owyhee FO, the Poison Creek Grazing Association trails to two additional grazing allotments (i.e., Rockville and Flint Creek) and private lands along their trailing route; within the Vale District, they trail approximately 50 miles in the vicinity of Rockville, Oregon, before returning to Idaho. Also within the Vale District is the Shirts Brothers domestic sheep operation that grazes BLM lands within the northwest portion of the Lower Owyhee Herd Management Area just outside the Leslie Gulch CHHR. The third domestic sheep operation occurs within the Bruneau FO very near the Jack’s Creek PMU and

just outside the Castle Creek/Jack's Creek CHHR. They only graze private property for their operation and the Bruneau FO does not offer any domestic sheep permits on public lands.

Because disease transmission from domestic sheep to bighorn sheep is a focal issue of this EIS, the RCT model (USDA USFS, 2013a) was applied to calculate the probability of a bighorn sheep intersecting an allotment used for grazing . The Rockville and Flint Creek allotments used by the Poison Creek Grazing Association were calculated to be 17.3 percent (winter period) for the Rockville allotment and the Flint Creek allotment to be 29.8 percent (summer period). There is a 100 percent probability for the Shirts Brothers' domestic sheep grazing operation in Oregon because the allotment contains large amounts of suitable and connectivity habitat concentrated along the Owyhee Reservoir, although the model showed majority of the allotment is unsuitable habitat. A 4.0 percent probability was calculated for the private operation near the Jack's Creek CHHR (Table WDLF-9). The low risk of contact value for the private operation was due to the lack of suitable and connectivity habitat although the operation is well within foray distances of bighorn sheep.

Table WDLF-9: Percent probability of a bighorn sheep foray intersecting an allotment or private property within the CIAA used for domestic sheep grazing

Allotment Name	Idaho CHHRs				Oregon CHHRs			
	Reynolds Creek	**Federal Butte**	**Castle Creek/Jacks Creek**	**Owyhee River**	**Leslie Gulch**	**Juniper Ridge**	**Round Mountain**	**Three Forks**
[2]Poison Creek	5.9	0	0	0	23.5	0	0	0
[2]Rockville (ID)	4.9	<1.0	0	0	17.3	0	0	0
[3]Flint Creek	<1.0	3.6	29.6	0	0	<1.0	0	0
[3]Shirts Brothers	0	0	0	0	100	0	0	0
[3]Private	0	0	4.0	0	0	0	0	0

[1]Only maximum probability values by allotment are illustrated. Refer to Appendix G, Tables I-3 thru 6 for breakdown by pasture.
[2]The probability of contact was calculated for the winter period (November – April).
[3]The probability of contact was calculated for the summer period (May – October).

Past, Present, and Reasonable Foreseeable Future Conditions

Livestock Grazing

Livestock grazing (both cattle and sheep) has occurred over much of the area since the late 1880s. Presently, grazing is still a mainstay of individuals, families, and communities within the CIAA. It is anticipated that livestock grazing will continue into the future and that allotment assessments/evaluations/determinations will occur and adjustments made to meet Rangeland Health Standards and Guides as 10-year permits come up for renewal and issues are identified.

Sage-grouse: There are 251 active BLM grazing permits within the sage-grouse CIAA. Livestock grazing has occurred within the analysis area since the late 1800s. Livestock grazing over this period is a contributing factor to shifts in the plant community composition and diversity favoring smaller more grazing tolerant species and invasion annual exotic grasses. The impact of this plant community shift has reduced understory cover critical for nesting, brood-rearing, hiding, and escaping predators. Riparian areas are habitat features that attract livestock. These areas are important for early brood-rearing chicks that depend on the flush of insects where a diversity of forbs persist and are available into the late summer.

Bighorn sheep: Forage competition is anticipated to be minimal because of the difference in habitat preference which spatially separates the cattle and bighorn sheep. However, forage overlap can occur in areas shared by both species (i.e., upper rims of canyons), and the presence of cattle can cause bighorn sheep to avoid these areas. Improper grazing, primarily in CHHRs, can put added stress on herds and cause individuals to seek out forage and space in other locations.

Domestic Sheep Grazing and Trailing

There are two additional domestic sheep operations within the CIAA. One is permitted by the BLM Vale District and the other occurs on private property. The BLM Vale District authorizes the grazing/trailing of the Shirts Brothers domestic operation that passes through the northwest portion of the Lower Owyhee Bighorn Sheep Management Area in Oregon. The RCT model (USDA USFS, 2013a) calculated a probability of a bighorn sheep from the Leslie Gulch CHHR intersecting one of his pastures at 100 percent.

The private land owner operates a commercial domestic sheep operation and is located near the southwestern portion of the Jacks Creek PMU for bighorn sheep. This operator is within the BFO and no domestic sheep grazing is permitted on public lands within BFO boundary. The probability of a bighorn sheep intersecting this private operation is calculated at 4.0 percent (summer period). Although this operation is well within foray distances for bighorn sheep from the Castle Creek/Jacks Creek CHHR, the primary reason for this low risk of contact value is due to the lack of suitable and connectivity habitat near the operations home base.

Sage-grouse: The availability of forbs from spring through fall is an important food item for sage-grouse. Competition for this resource may occur in areas where domestic sheep are being grazed and/or trailed.

Bighorn sheep: There are two BLM-permitted domestic sheep operations within the CIAA, one in Idaho and the other in Oregon. There is also another domestic sheep operation on the periphery of the Jacks Creek PMU. An additional presence of two domestic sheep operations further increases the chances of contact between domestic sheep and bighorn sheep and the potential for disease transmission between CHHRs in the CIAA.

Range Improvement Projects (RIPs)

Range improvements in the form of reservoirs, spring developments, troughs, and fences have accompanied grazing throughout the CIAAs. The benefit of range improvements for wildlife is debatable; while some species may benefit from these developments, others may not. Of concern are the developments that are not to current BLM standards or are in disrepair. These developments often disconnect ground water flow, are over-grazed, or are transitioning to invasive species and reduce habitat quality near the development. Any future developments will be to BLM standards and undergo environmental review. Maintenance of developments occurs on a case-by-case basis and is usually not subject to additional environmental review unless substantially reconstruction or additional impacts may occur.

Fences have been developed to delineate allotments and pastures and to control livestock. New fences maybe constructed on a case-by-case basis as needed, under appropriate NEPA analysis, for improving livestock use and distribution. However, fences can eventually come into disrepair and require regular maintenance to maintain and control of livestock.

Sage-grouse: Sage-grouse derive much of their water from the forage they consume; however they will use free water if available. Riparian areas associated with streams, wetlands, seeps, and springs are important habitat features for sage-grouse because of the availability of forbs as well as insects for early

brood-rearing chicks. Proper design, placement, and maintenance of these improvement projects are critical to their use and to reduce impacts. Riparian fences in disrepair allow livestock to freely congregate and degrade riparian habitat conditions, alter ground/surface water flow and encourages establishment of invasive species. Non-functional troughs that allow unchecked overflow create bogs and mudholes that can facilitate the growth of mosquitoes and the spread of West Nile Virus. Relict troughs can also trap and drown wildlife.

Fences can cause direct mortality to sage-grouse. Hazard fences within high risk areas are located within 1.25 miles of a lek; on flat topography; where spans exceed 12 feet between posts; without wood posts; and where densities exceed 1.6 miles of fence per section (i.e., 640 acres) (USDI BLM, 2012b). Fences also create corridors and perches for predators such as ravens, hawks, owls, and eagles.

Bighorn sheep: Bighorn sheep will utilize livestock water developments. Proper design, placement, and maintenance will assure proper functionality, good water quality, and provide a source of water for bighorn sheep. If these water sources are used during trailing and grazing activities for domestic sheep, the potential for contact and disease transmission between the two species will increase.

Fences contribute to habitat fragmentation and can disrupt movement patterns of bighorn sheep. Fences can also cause mortalities if individuals become entangle and are unable to free themselves.

Wild Horse Herd Management

The creation of the Wild Horse and Burro Management Act 1971 mandated that the BLM manage habitat for wild horses on public lands. Wild horse Herd Management Areas in Idaho and Oregon are delineated and populations of horses are regulated to maintain an appropriate management level (AML). As populations increase and reach management AMLs, gathers are undertaken to decrease herd numbers to levels compatible with other activities (i.e., grazing, wildlife) and reduce pressure on forage resources.

Sage-grouse: Wild horses present another grazer on the landscape and can contribute to rangeland conditions failing to meet sage-grouse habitat needs. Proper herd management will reduce grazing pressure on large bunchgrass composition and structure sought out by sage-grouse.

Bighorn sheep: Wild horses have a greater potential of habitat overlap with bighorn sheep than cattle and may compete for forage and space. There are 12 Wild Horse Herd Management Areas totaling more than 400,000 acres (12 percent) within the CIAA. Bighorn sheep will avoid wild horses and can be displaced when the two species share the same range.

Wildfires and Fire Suppression

Wildfires historically were natural disturbance events that overall were beneficial to the diversity, composition, and distribution of the plant community and in turn provided abundant forage and cover for wildlife. However, in present times, the wildfire interval has become more frequent and, with the invasion of noxious species, has increased the risk of the native plant community shifting to a community dominated by an increasing presence of annual grasses and other exotic species. Wildfires at lower elevations have the greatest impact to the natural community and the shift in community composition. This condition decreases habitat structure and function and provides unsuitable forage and cover conditions for many shrub-steppe associated species.

Suppression activities can remove sagebrush vegetation, create linear openings, and fragment habitat. Pre-suppression activities are required to occur to identify sensitive resource issues to reduce suppression impacts. Post-fire rehabilitation efforts reseed disturbed areas to stabilize soils and improve habitat conditions. Current reseeding projects are now requiring the use of native seed if available.

Sage-grouse: Wildfires have the potential to burn over large areas and can contribute to plant community change. More than 1.6 million acres (approximately 28 percent) of the CIAA have burned since 1960. Wildfires at lower elevations are susceptible to invasions of cheatgrass and medusahead. Once established these exotic communities out compete and replace native communities. This change in the vegetation community does not have the composition and structure to create adequate nesting and hiding cover for sage-grouse and fragments habitat over a large area. Herbaceous composition post fire is generally the same species before the fire less the shrub cover, thus it is important to have a good species composition prior to disturbance.

Bighorn sheep: Wildfires can stress bighorn sheep and cause individuals or small herds to relocate to other areas of suitable habitat. From 1960 to present, 734,000 acres (approximately 21 percent) has burned within the CIAA. Localized wildfires within CIAAs could cause bighorns to relocate to more suitable areas, as was the example of individuals of the Leslie Gulch herd immigrating to the Owyhee front after the Trimbly fire in 2008. Although herd interaction is an important dynamic in bighorn sheep biology, the negative side is that diseased animals can carry bacteria to other herds and transmit fatal pathogens via bighorn sheep to bighorn sheep contact.

Vegetation Treatments

Historically, wildfire disturbance intervals were adequate to control juniper encroachment and diversify shrub-steppe community composition and structure. Prescribed fire to control sagebrush and juniper has used this philosophy to improve grazing conditions for livestock. Mechanical treatments (i.e. chaining, chainsaws) to control juniper and sagebrush have also been used. The results often have mixed results for wildlife in that a period of restoration often needs to occur to realize the benefits or outcomes of the projects. Given the issues surrounding sage-grouse and sagebrush ecosystems, future vegetation treatment objectives will be very specific and localized to minimize broad-scale impacts.

Sage-grouse: Vegetation treatments can fragment habitat, displace individuals, and reduce important overstory and understory cover requirements for sage-grouse. There has been more than 28,000 acres (less than 1 percent) of primarily juniper control within the CIAA. Overly aggressive treatments can create large openings of stunted vegetation favoring predators such as coyotes. In addition, persisting juniper snags are used by as perch locations for hawks, eagles, owls, and ravens. However, project objectives to reduce juniper expansion and improve sagebrush steppe habitat conditions may be achieved over time and benefit sage-grouse when effective vegetation structure and composition are restored.

Bighorn sheep: Vegetation treatments to improve rangeland health will benefit bighorn sheep. Improving habitat conditions will improve the health of individuals and the herd. Bighorn sheep prefer open landscapes with greater sight distances. Controlling and removing juniper will improve habitat conditions and allow bighorn sheep to move more securely across the landscape. However, clearing the landscape of visual obstructions and improving forage conditions will encourage more foraying of individuals and will increase the potential for domestic sheep and bighorn sheep contact.

Roads

The construction of roads on public lands has resulted in the removal of habitat and contributes to fragmentation of the landscape. It is anticipated that any future road development will be project specific in association with range improvement and renewable energy projects rather than new transportation routes. Roads create openings that expose wildlife to predators and can disrupt movement patterns. In addition, mortality of wildlife often results when collisions with vehicles occur.

Sage-grouse: Depending on the construction, location, use, and maintenance of roads, they are open linear features on the landscape with reduced to no vegetation cover and forage. There are 8,083 miles (less than 1 percent) of road network within the CIAA. These linear features create open strips of non-

habitat that allow sage-grouse to be located by predators and also increase the potential for collisions with vehicles. Inversely, roads also function as firebreaks and can work to control the spread of some fires and protect habitat for sage-grouse. Power lines associated with roads create elevated perches and corridors for predators such as eagle, owls, hawks, and ravens.

Bighorn sheep: Roads function as transportation systems that facilitate the movement of vehicles and humans. There are 6,172 miles of road network ranging from two-tracks of natural surface to paved highways. Roads are generally avoided by bighorn sheep, although a level of habituation may occur. Roads fragment habitat and generate increased human disturbance that can disrupt the timing, occurrence, and patterns of bighorn sheep movement between suitable habitat and CHHRs. Depending on the level of road activity, mortality of bighorn sheep can occur from collisions with vehicles or habitat use may be reduced.

Recreation

The CIAAs are open for general motorized use that allows for hunting, fuel wood gathering, collection of miscellaneous products, camping, and motorized touring on established roads. Recreation can limit and disrupt movement patterns of wildlife and cause species to avoid areas where intense and excessive activities are occurring.

Sage-grouse: Sage-grouse occur in natural areas that are also used by outdoor recreationists. Recreation can range from bird-watching to motorcycle racing. Areas closer to urban settings receive the highest use. Sage-grouse avoid humans and human activity. Recreation can disrupt movement patterns and seasonal behavioral activities and may cause individuals to abandoned nests and relocate depending in the intensity of the recreation.

Bighorn sheep: Bighorn sheep use habitat characterized by steep and rugged terrain and generally avoid areas of human activity. Recreation can range from wildlife viewing to OHV exploring. Recreational activities can create barriers to movement and decrease the level of interaction between CHHR. Depending on the intensity of the recreation, bighorn sheep may relocate to other areas of fewer disturbances if the intensity of recreation activities is not tolerable.

Agriculture

Agriculture ranging from pastureland to grain crops occurs within the CIAA for sage-grouse and bighorn sheep. A majority of the agricultural activity occurs along the Snake River and in the Jordan Valley areas, with scattered homesteads along more prominent roads. Agriculture is anticipated to occur into the future.

Sage-grouse: Large portions of sagebrush-steppe habitat have been converted to agricultural uses and contributed to the loss and fragmentation of sage-grouse habitat. There are currently over 620,000 acres (approximately 1.0 percent) of agriculture lands within the CIAA. Sage-grouse are attracted to fields such as alfalfa because of the high availability of quality forage and insects and will visit these fields, often at the expense of their own security. Mortality of individuals may occur because of increased predation and road-related fatalities.

Bighorn sheep: Bighorn sheep will frequent agricultural fields and pastures because of the amount and quality of forage. There are more than 46,000 acres (approximately 1.4 percent) of agricultural land within the CIAA. Production of alfalfa, pasture land, and food crops are the primary use. These visits by bighorn sheep may be at the expense of their own security. Often, to access these areas requires crossing roads and negotiating fences which increase the risk of collisions with vehicles and entanglement with fences. The pastures may also being used for grazing domestic sheep which increases the attraction and the chances for contact and disease transmission.

Mining Activity
Limited mining activity does occur within the CIAA for sage-grouse and bighorn sheep. The size and purpose of the mine dictates the impacts that can be anticipated. Surface mining can alter the topography, permanently remove native habitat and encourage the spread of noxious weeds. Limited smaller scale mining activity is anticipated to occur in the future.

Sage-grouse: Limited mining activity is anticipated to continue in the CIAA. Machinery and increased human activity can cause sage-grouse to alter behavior activities and avoid the area. Surface activities will contribute to habitat loss and fragmentation. Increased structures provide perch locations for predators such as hawks, owls, and ravens.

Bighorn sheep: Limited mining activity is anticipated to occur within the CIAA. Machinery and increased human activity can cause bighorn sheep to alter movement patterns or possibly relocate to other suitable habitat. Surface activities will contribute to habitat loss and fragmentation.

Energy Development and Transmission Lines
Energy development (i.e., wind, geothermal, solar) is a rather new demand. Energy exploration, development and transmission are anticipated to be constructed as the national demand for energy increases. Construction of collection and generation facilities can require large tracts of land and increase human activity. Transmission structures can span multiple states and require maintenance of tower structures and access routes.

Sage-grouse: The construction and operation of energy facilities can permanently remove sage-grouse habitat. Associated with these facilities is increased machinery and human activity. The impacts of these facilities expand beyond their operational footprint, making the adjacent habitat less desirable. Sage-grouse will avoid these areas and possibly relocate. Transmission lines also increase road densities and human activity. However, transmission lines create perch locations for predators such as hawks, eagles, owls, and ravens.

Bighorn sheep: The construction and operations of energy development are associated with an increase in humans, machinery, and noise. Bighorn sheep are sensitive to human developments and will alter their movement patterns or possibly relocate to more suitable habitat. These facilities remove habitat and develop additional roads for operations and maintenance which fragments habitat, creates more human access and promotes the spread of noxious weeds.

Private Property
BLM does not have jurisdiction on private property. Private property has existed within the CIAA since the late 1800s. Ranches and rural residences have been established in some of the more abundant areas for stream, wetlands, springs, and meadows resources. The functioning condition of upland and riparian resources vary from owner to owner. It is anticipated that these ranches and rural residences will continue to operate into the future. Because they are part of the landscape and often own some of the most important resources in the watershed, their property and land practices can contribute to the quality and quantity of upland and riparian habitats and the sustainability of wildlife resources.

Sage-grouse: Ranches and rural residences occur within the range of sage-grouse. Stream, wetland, spring, and meadow habitats sought out by sage-grouse have largely been converted for homes, barns, corrals, and pastures. Often, riparian areas are overused and lack vegetation composition and structure to promote properly function condition. How sage-grouse use these lands is unknown; however, wet meadow habitats are highly sought out by sage-grouse because of the availability of forbs and insects. The extent of sage-grouse use would depend on a combination of influences such as the availability of

forage, the condition of adjacent sagebrush-grass cover, their exposure to predation, and the timing, duration, and amount of livestock as well the intensity of ranching activities and machinery.

Bighorn sheep: Ranches and rural residences occur within or near seasonal source habitat and foray distances for bighorn sheep. The specific level and distribution of bighorn sheep activity that occur on private property in the CIAA are unknown. However, ranches and residences near suitable bighorn sheep habitat have a greater likelihood of being visited. There are at least one commercial domestic sheep operation and an unknown number of farm flocks on private property within the CIAA. Bighorn sheep are attracted to pastures where domestic sheep are being grazed. It can be anticipated that there are times when domestic sheep will escape or stray from pastures and may take up with foraying bighorn sheep substantially increasing the potential for disease transmission.

3.6.9.1. Cumulative Effects – Effects Common to All Alternatives

The effects of livestock grazing discussed in Section 3.6.2 can be anticipated to occur on other grazing allotments within the CIAA on federal, state, and private lands. Grazing during the critical growing season and the development of water sources (i.e., spring development, reservoirs), along with construction and maintenance of fences for livestock purpose, can be expected to occur. As a result, upland, riparian, and stream habitats have been adversely affected and fragmented over much of the CIAA.

Other activities that are expected to occur into the future include wildfire, agriculture, vegetation treatments, development, roads, and energy transmission, as well as recreation and wild horse management. These activities either singularly or combined can cause the fragmentation, alteration, and loss of shrub steppe habitat and encourage the invasion of exotic species and increase fire frequency.

The potential for contact between domestic sheep and bighorn sheep will remain under all the alternatives. Domestic sheep grazing will continue in at least two (Rockville and Flint Creek) of three allotments in the Owyhee Field Office currently permitted for domestic sheep and also on private grounds in Oregon. Trailing to access these allotments is also expected to continue. Because grazing and trailing will continue to occur, the risk of contact between domestic sheep and bighorn sheep is expected to potentially occur as well.

3.6.9.2. Cumulative Effects of Alternatives 1 and 2

Alternatives 1 and 2 are similar, and the effects are discussed in Section 3.6.3 and 3.7.3. Grazing during the critical growing season, the development of water sources (i.e., spring development, reservoirs), and placement of fences for livestock purposes are contributing factors to the current conditions of upland, riparian, and aquatic habitats over much of the CIAA. When the effects of Alternatives 1 and 2 are added to past, present, and reasonably foreseeable future actions within the CIAA, the culmination of effects would continue to maintain or contribute to negative trends in wildlife habitat and populations. These alternatives are not anticipated to progress the allotments toward achieving ORMP management objectives or meeting Standard 8 and do not contribute to improved or enhanced health to the CIAA.

Sage Grouse

The amount of PPH/PGH modeled sage-grouse habitat within the Chipmunk Group allotments is considerable (approximately 113,045 acres), but it makes up a relatively small percentage (approximately 2 percent) of the CIAA. It is difficult to determine the level of unacceptable change in the Owyhee sage-grouse subpopulation and other wildlife populations due to the extent of rangelands that are currently not meeting Idaho Rangeland Health Standards. However, given current upland and riparian health

conditions, it can be anticipated that sage-grouse populations will not respond favorably to another 10 years of static or downward-trending habitat conditions.

Bighorn Sheep
The effects of domestic sheep grazing within the CIAA to bighorn sheep are described in Section 3.6.2. The Poison Creek Grazing Association is only one of three domestic sheep operations known to occur within the CIAA. In addition, the risk of contact and disease transmission is further increased by the occurrence of smaller farm flocks at individual ranches and residences. When the effects of the Poison Creek Grazing Association's domestic sheep operations are combined with other domestic sheep activities, the incremental potential for interspecies contact with bighorn sheep and the transmission of disease is increased substantially. In addition, because of the connected nature of the eight CHHRs and the known movements of individual and bands of bighorn sheep, the potential for bighorn sheep to carry and transmit disease to other CHHRs also exists.

3.6.9.3. Cumulative Effects of Alternative 3, 4, and 6

Under Alternatives 3, 4 and 6, wildlife habitat conditions are expected to improve and progress toward meeting ORMP management objectives, as well as Standard 8 (see Sections 3.6.5, 3.6.6, and 3.6.8). Implementation of Alternatives 3, 4, or 6 would incrementally improve wildlife habitat conditions within the CIAA and substantially increase the quality, quantity, and connectivity of upland and riparian vegetation communities, therefore improving the sustainability of wildlife populations, including sage-grouse, within the CIAA. When added to past, present, and reasonably foreseeable future actions, the benefits of Alternatives 3, 4, and 6 are anticipated to advance the condition of the sagebrush-steppe habitat and not negatively contribute to conditions in the CIAA.

Sage-grouse
Sage-grouse habitat is expected to improve under Alternatives 3, 4, and 6. Improved grazing practices under Alternatives 3 and 4, or no grazing, as proposed under Alternatives 6, will progress vegetation composition and structure toward improving sage-grouse cover and forage. Because of the small percentage of the Chipmunk Group allotments within the CIAA, it is difficult to ascertain the incremental benefits to sage-grouse; however, implementing Alternatives 3, 4, or 6 will only contribute to improving the quality and quantity of sagebrush-steppe habitat and benefitting conditions in the CIAA. By implementing these alternatives, these actions would contribute a net benefit of approximately 123,000 acres (around 2.0 percent) of improved habitat for sage-grouse within the CIAA.

Bighorn Sheep
Under Alternatives 3 and 4, the cumulative effects of domestic sheep grazing and the effects to bighorn sheep within the CIAA are the same as those discussed in Section 3.6.2. Under Alternative 6, grazing of domestic sheep would be terminated; however the Poison Creek Grazing Association holds two other grazing permits, in the Rockville and Flint Creek allotments, which would allow them to trail their domestic sheep herds through the closed Chipmunk Group allotments and still maintain the probability of the two species coming into contact. When added to past, present, and reasonably foreseeable future actions, including the two other domestic sheep operations in Idaho and Oregon, the presence of farm flocks, and the relationship of the eight CHHRs, probability of contact between domestic sheep and bighorn sheep and the transmission of disease would be only slightly reduced but not eliminated. Improved forage quality and quantity should occur near areas of suitable habitat. When added to past, present, and reasonably foreseeable future actions, largely the two other domestic sheep operations in Idaho and Oregon, the presence of farm flocks, and the relationship of the eight CHHRs, any reduction in the probability of contact between domestic sheep and bighorn sheep and the transmission of disease would be lessened due to the closure of domestic sheep grazing in the Poison Creek allotment, but would not be eliminated because trailing of domestic sheep and grazing in other allotments would still occur.

3.6.9.4. Cumulative Effects of Alternative 5

Poison Creek Allotment

Bighorn Sheep
The effects of converting domestic sheep grazing to cattle grazing to reduce or eliminate contact between domestic sheep and bighorn sheep has been discussed in Section 3.6.7. Under this alternative, potential contact between domestic sheep and bighorn sheep would still exist. Although cattle would become the primary grazer, the Poison Creek Grazing Association would still trail their domestic sheep herds to the Rockville and Flint Creek allotments, where they hold grazing permits.

3.7. SPECIAL STATUS PLANT SPECIES

3.7.1. Affected Environment provide

Introduction

The resource objective for special status species, as specified in the Owyhee Resource Management Plan (ORMP), is to manage special status species and habitats to increase or maintain populations at levels where their existence is no longer threatened and there is no need for listing under the Endangered Species Act of 1973, as amended. In addition, BLM Manual 6840 directs the BLM to ensure that any activities authorized, funded or carried out do not contribute to the need to federally list any species as threatened or endangered, all while managing for multiple uses. Standard 8 of the Idaho Standards for Rangeland Health is used to assess whether this objective is being met. GIS data, aerial photography, site visits, plant observation records made by BLM staff (on file at the Owyhee Field Office (OFO) and available upon request), and the IDFG Idaho Fish and Wildlife Information System (IFWIS) were used to evaluate the current conditions of special status plants. In addition, a file search at the OFO was conducted to obtain observation records not yet entered into the IFWIS database. Findings were compiled in the Chipmunk Group Grazing Permit Renewal EIS: Special Status Plant Specialist Report (available on the BLM Group 2 website listed in footnote 14). The report discloses if Standard 8 (Threatened and Endangered Plants and Animals) is being met, provides rationales and causes for meeting or not meeting the Standard, and supplies background on the analysis methods for special status plant species. The following analysis focuses on existing conditions and environmental effects of the proposed grazing activities on special status plants and their habitats in the Chipmunk Group project area (Map GEN-1, Table SSPS-1).

Table SSPS-1 identifies the allotments in which special status plant species are known to occur on BLM-managed lands within the project area. Due to the vast and rugged nature of the land, unknown occurrences of special status plants are likely to be present as well. Four species, each with one occurrence, are mapped at a broad scale with the central location of their occurrence outside the project area and the outer reaches of the buffer (4- to 10-mile diameter) intersecting allotments within the project area. These occurrences are not considered for the purposes of this analysis due to the lack of specific location information and the extended period of time since last visited (circa 1980).

Table SSPS-1 also identifies special status plant species ranks. The species rank provides an estimate of the risk of elimination of an occurrence. Table SSPS-1 provides the status by species at two management scales – the State of Idaho/Oregon and Idaho BLM. Oregon state rankings were included because the cumulative impacts analysis area includes a portion of Oregon.

Table SSPS-1: Special Status Plant Species, Status, and general habitat type by allotment

Species	ID BLM Status[1]	State Rank[2]	Habitat	Allotment
Idaho milkvetch (*Astragalus conjunctus*)	4	ID 2/OR SNR	Soil derived from volcanic (primarily basalt) parent material on rocky hilltops, hillsides and canyon benches within sagebrush scabland or steppe communities up to the lower boundary of pine forest.	Elephant Butte, Poison Creek, Rats Nest, Corral Creek FFR
barren milkvetch (*Astragalus cusickii* var. *sterilis*)	3	ID 1/OR 2	Clay soils derived from volcanic ash on sparsely vegetated bluffs, knolls, and slopes within sagebrush/grassland or bitterbrush communities.	Blackstock Springs
Snake River milkvetch (*Astragalus purshii* var. *ophiogenes*)	4	ID 3/OR SNR	Loosely aggregated, frequently moving, sand and gravelly sand deposits on barren bluffs, talus, dunes, and volcanic ash beds within big sagebrush or salt desert shrub communities (Atwood, 2001).	Blackstock Springs
Cusick's pincushion (*Chaenactis cusickii*)	2	ID 2/OR 3	Clay soils derived from volcanic ash outcrops that are sparsely vegetated with Wyoming big sagebrush or salt desert shrub communities (Atwood, 2001), (Mansfield, 2010).	Elephant Butte, Poison Creek
Malheur cryptantha (*Cryptantha propria*)	4	ID 2/OR 4	Clay and soils derived from volcanic ash on barren, open hillsides of sagebrush-grassland zones (Mansfield, 2010).	Elephant Butte
false naked buckwheat (*Eriogonum novonudum*)	3	ID 1/OR 4	Sandy clay derived from volcanic ash slopes and washes within sparsely vegetated salt desert shrub, sagebrush, or juniper woodlands (Efloras, 2012) (Mansfield, 2010) (NatureServe)	Elephant Butte
soft blazingstar *(Mentzelia mollis*)	2	ID 2/OR 2	Barren soils derived from volcanic ash near Wyoming big sagebrush communities. Most productive near seeps and small springs (Atwood, 2001), (Smithman, 1989).	Blackstock Springs, Elephant Butte, Chipmunk Field FFR
Antelope Valley beardtongue (*Penstemon janishiae*)	3	ID 2/OR SNR	Clay soils derived from volcanic ash or lake bed sediment in sagebrush communities (Atwood, 2001).	Elephant Butte

Species	ID BLM Status[1]	State Rank[2]	Habitat	Allotment
Owyhee phacelia *(Phacelia lutea* var. *calva*)	3	ID 3/OR SNR	Soils derived from volcanic ash in upland areas within sparsely vegetated Wyoming big sagebrush or salt desert shrub communities (Atwood, 2001), (Mansfield, 2010), (Moseley, 1994).	Blackstock Springs
small phacelia (*Phacelia minutissima*)	2	ID 2/OR 1	Moist soils in the understory of aspen and tall forb communities in meadows, especially snow bank areas (Atwood, 2001).	Soda Creek

1. Idaho BLM Types (USDI BLM 2012):
   1. ESA listed, Proposed & Candidate Species- These are species federally identified as threatened, endangered, proposed, or candidate.
   2. Rangewide/Globally Imperiled Species (high endangerment)- These are species that have a high likelihood of being listed in the foreseeable future due to their global rarity and significant endangerment factors.
   3. Range-wide or State-wide Imperiled (moderate endangerment)- These are species that are globally rare or very rare in Idaho, with moderate endangerment factors. Their global or state rarity and the inherent risks associated with rarity make them imperiled species.
   4. Species of Concern- These are species that are generally rare in Idaho with small populations or localized distribution and currently have low threat levels. However, due to the small populations and habitat area, certain future land uses in close proximity could significantly jeopardize these species.

2. State Ranks for ID and OR:
   1. Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences.
   2. Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences.
   3. Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.
   4. Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.
   5. Demonstrably widespread, abundant, and secure.

   SNR identifies that a species is not ranked within that state.

Species Descriptions

Idaho milkvetch (*Astragalus conjunctus*) occurs primarily in Owyhee County in Idaho and Malheur and Harney Counties in Oregon (Atwood, 2001). Within the project area, this species is known from three occurrences (IDFG, 2011) in the following allotments: Elephant Butte, Poison Creek, and Rats Nest. This perennial forb typically grows on soil derived from volcanic (primarily basalt) parent material on rocky hilltops, hillsides, and canyon benches within sagebrush scabland or steppe communities, up to the lower boundary of pine forest (Atwood, 2001). Known occurrences within the project area are threatened by livestock grazing (IDFG, 2011) and wild horses.

Barren milkvetch (*Astragalus cusickii* var. *sterilis*) is endemic to ash outcrops in the Owyhee uplands region (Mansfield, 2010). It occurs within Owyhee County, Idaho, and Malheur County, Oregon, with a range that centers along a 30-mile stretch of the Owyhee River and its side drainages (NatureServe). Within the project area, this forb is known from one occurrence in the Blackstock Springs allotment (IDFG, 2011), (Portland State University, 2012). This perennial species typically grows on clay soils derived from volcanic ash on sparsely vegetated bluffs, knolls, and slopes within sagebrush/grassland or bitterbrush communities (Atwood, 2001) (Mansfield, 2010). Currently, the known occurrence is stable within the project area (IDFG, 2011). However, the occurrence is vulnerable to future permitted mining actions, livestock trampling, OHV use, and a highway ROW (IDFG, 2011).

Snake River milkvetch (*Astragalus purshii* var. *ophiogenes*) is an endemic to the Owyhee uplands region and surrounding areas (Mansfield, 2010). It occurs in the Snake River corridor and surrounding uplands in Gooding, Twin Falls, and Owyhee Counties in Idaho and Malheur County, Oregon (Atwood, 2001). Within the project area, this species is known from one occurrence within the Blackstock Springs allotment (IDFG, 2011). This perennial forb typically grows on loosely aggregated, frequently moving sand and gravelly sand deposits on barren bluffs, talus, dunes, and volcanic ash beds within big sagebrush or salt desert shrub communities (Atwood, 2001). The only known occurrence in the project area is stable, with potential threats of livestock trampling, non-native invasive species, and recreation (IDFG, 2011).

Cusick's pincushion (*Chaenactis cusickii*) is an annual species endemic to the Owyhee uplands region (Mansfield, 2010). It occurs in the Owyhee River drainage in Owyhee County, Idaho, and Malheur County, Oregon (NatureServe). Within the project area, this species is known from two occurrences, one in the Elephant Butte allotment and one in the Poison Creek allotment (IDFG, 2011), (Portland State University, 2012). This annual forb typically grows on clay soils derived from dark brown volcanic ash outcrops of the Poison Creek and Succor Creek Formations that are sparsely vegetated with Wyoming big sagebrush or salt desert shrub communities (Atwood, 2001) (Mansfield, 2010) (Moseley, 1994)). Cusick's pincushion is an annual plant that occurs in the same habitat as soft blazingstar and Owyhee phacelia, and they are all often associated species. This species' habitat is not typically utilized for forage by cattle because of the sparse vegetation although livestock trampling and trailing can be detrimental. Known occurrences within the project area are threatened by livestock trampling/trailing, mining (permitted and recreational), illegal dumping, and OHV use (IDFG, 2011).

Malheur cryptantha (*Cryptantha propria*) is endemic to the Owyhee uplands region and surrounding areas (Mansfield, 2010). It occurs within the Snake River drainage and its major tributaries in northern Owyhee County and western Washington County in Idaho, as well as Malheur County, Oregon (NatureServe). Within the project area, this species is known from one site within the Elephant Butte allotment (IDFG, 2011). This perennial forb typically grows on clay soils derived from volcanic ash on barren, open hillsides of sagebrush-grassland zones (Atwood, 2001) (Mansfield, 2010). Known occurrences within the project area are threatened by road use, OHV use, and non-native species invasion (IDFG, 2011).

False naked buckwheat (*Eriogonum novonudum*) is an endemic to ash outcrops in the Owyhee uplands region (Mansfield, 2010). It occurs along the lower Owyhee River in Malheur County, Oregon, though, there is one known occurrence in Owyhee County, Idaho Elephant Butte allotment (IDFG, 2011), (NatureServe). This perennial forb typically grows on sandy clay derived from dark brown-colored volcanic ash slopes and washes within sparsely vegetated salt desert shrub, sagebrush, or juniper woodlands (Efloras, 2012) (Mansfield, 2010) (NatureServe). The known occurrence in the project area is threatened by OHV use, non-native species invasion, and recreational mining (IDFG, 2011).

Soft blazingstar (*Mentzelia mollis*) is endemic to the Succor Creek drainage, occurring in Owyhee County, Idaho, and Malheur County, Oregon, as well as one disjunct occurrence in western Humboldt County, Nevada (Holmgren, Holmgren, & Cronquist, 2005) (NatureServe). Within the project area, this species is known from three occurrences within the three allotments (IFWIS, ORBIC). This annual forb typically grows on barren soils derived from brown, green, or gray volcanic ash from the Succor Creek Formation near Wyoming big sagebrush communities (Atwood, 2001), (Smithman, 1989). Soft blazingstar is often associated with Cusick's pincushion and Owyhee phacelia (Moseley, 1994). Cattle are known to trample and occasionally graze this species, though it is prickly and likely marginally palatable. Known occurrences within the project area are threatened by livestock trailing, mining (permitted and recreational), OHV use, and illegal dumping (IDFG, 2011).

Antelope Valley beardtongue (*Penstemon janishiae*) has a range from Elmore and Owyhee Counties in Idaho to southeast Oregon, very northeast California, and central to northeast Nevada (NatureServe). Within the analysis area, this species is known from one occurrence within the Reynolds Creek watershed (IDFG, 2011). This perennial forb/subshrub typically grows on clay soils derived from volcanic ash or lake bed sediment in sagebrush communities (Atwood, 2001). Known occurrences within the project area are threatened by OHV use, road use, non-native weed invasion, and recreational mining (IDFG, 2011).

Owyhee phacelia (*Phacelia lutea var. calva*) is an endemic to the Owyhee uplands region (Mansfield, 2010). It has a range from northern Owyhee County, Idaho, to eastern Malheur County, Oregon, and northwest Humboldt County, Nevada (NatureServe). Within the analysis area, this species is known from three occurrences within the Blackstock Springs allotment (IDFG, 2011). This annual forb typically grows on soils derived from volcanic ash of the Succor Creek formation in upland areas within sparsely vegetated Wyoming big sagebrush or salt desert shrub communities (Atwood, 2001), (Mansfield, 2010), (Moseley, 1994)). This species is often associated with Cusick's pincushion and soft blazingstar, as it grows on similar substrate. Known occurrences within the project area are threatened by non-native invasive species and livestock trampling (IDFG, 2011).

Small phacelia (*Phacelia minutissima*) has a range across the Pacific Northwest in Idaho, Oregon, Washington, and Nevada (NatureServe). Within the analysis area, this species is known from one occurrence within the Soda Creek allotment (IDFG, 2011). This annual forb typically grows on moist soils in the understory of aspen and tall forb communities in meadows, especially snow bank areas (Atwood, 2001). Known occurrences within the project area are subject to the potential threat of livestock grazing, mining, and OHV use (IDFG, 2011).

Existing Conditions

No populations of BLM special status plant species are known to occur on BLM-managed lands in the following allotments: Alkali-Wildcat, Baxter Basin, Burgess, Burgess FFR, Chimney Pot FFR, Cow Creek Individual, Ferris FFR, Franconi FFR, Jackson Creek, Joint, Lowry FFR, Madriaga, R Collins FFR, Sands Basin, Stanford FFR, Texas Basin FFR, Trout Creek, and Trout Creek/Lequerica allotments.

Standards for Rangeland Health

The following seven allotments have known occurrences of special status plant species on BLM-managed lands.

Allotments Meeting Standard 8

Chipmunk Field FFR Allotment

Soft blazingstar is known to occur within this allotment, although the condition of the occurrence is unknown. Though cattle have been known to occasionally graze this species, it is likely marginally palatable and occurs on sparsely vegetated fragile soil inclusions; therefore, it is unlikely to be impacted by livestock herbivory. The native plant community is being maintained, and thus, it is expected that the habitat of this species is being maintained. Therefore, even though the condition of the occurrence is unknown, it is unlikely this species is impacted by livestock grazing other than trailing.

Corral Creek FFR Allotment

Idaho milkvetch is known to occur within pastures 1 and 2 of this allotment. The condition of this occurrence is unknown. Idaho milkvetch generally occurs in habitat that would potentially be utilized by livestock, though they are unlikely to be areas of high use. However, both pastures 1 and 2 have been

impacted by historic livestock grazing, resulting in increased Sandberg bluegrass as compared to the expected condition.

Elephant Butte Allotment

Occurrences of Idaho milkvetch, Malheur cryptantha, false naked buckwheat, and Antelope Valley beardtongue are known to occur in pasture 2 and are being maintained. Cusick's pincushion and soft blazingstar are known to occur in pasture 3. Habitat for both species in pasture 3 has been degraded by OHV use and illegal dumping. Cusick's pincushion also occurs in pasture 5, but the condition of this site is unknown. Cusick's pincushion is likely unpalatable and tends to occur in sparsely vegetated soils (Moseley 1994); therefore, even though the condition of the occurrence is unknown, it is unlikely this species is impacted by livestock grazing other than trailing which is generally confined to existing paths which constitute a minor amount of area.

Soda Creek Allotment

Small phacelia is known to occur within pasture 6 of this allotment. This site was recently visited in 2013 (see Special Status Plants Specialist Report II). Although small phacelia tends to occur in moist soils in the understory of aspen and tall forb communities in meadows where livestock are likely to congregate, the recent site visit observed no sign of grazing and insignificant trampling on the habitat microsite. Small phacelia and its habitat at this site is currently being maintained. Given the apparent low livestock use of this area it is unlikely future alterations that alleviate grazing pressure in the surrounding area would alter the sustainability of this site.

Rats Nest Allotment

Idaho milkvetch is the only special status plant known to occur within this allotment and only at one occurrence. Although this occurrence is currently enduring impacts from wild horses, the site is being maintained.

Allotments Not Meeting Standard 8 (livestock are a causal factor)

Poison Creek Allotment

Cusick's pincushion and Idaho milkvetch are known to occur in this allotment. Cusick's pincushion habitat has been degraded by livestock trampling (primarily from sheep) and, to a lesser extent, OHV use. The Idaho milkvetch occurrence is being maintained.

Allotments Not Meeting Standard 8 (livestock are not a causal factor)

Blackstock Springs Allotment

Barren milkvetch, Snake River milkvetch, soft blazingstar, and Owyhee phacelia are known to occur within pasture 1. The barren milkvetch occurrence is being maintained, but the condition of the Snake River milkvetch occurrence is unknown. Snake River milkvetch tends to occur in barren soils; therefore, even though the condition of the occurrence is unknown, it is unlikely this species is impacted by livestock grazing other than trailing. Two occurrences of Owyhee phacelia are being impacted by non-native invasive species invasion within the species' primary habitat. In another location, occurrences of Owyhee phacelia and soft blazingstar are being maintained.

3.7.2. Environmental Consequences – Effects Common to All Grazing Alternatives

The ORMP recognizes the ecological connectivity between resources by tiering from one resource to another. The management action of protecting and enhancing habitat for a diversity of special status

species ((USDI BLM, 1999a) p. 12) is connected to several resources, particularly vegetation, and the need to ensure proper nutrient cycling, hydrologic cycling, and energy flow. When a pasture or allotment is not meeting the Standard for upland rangeland vegetation (Standards 4 or 5), or occurs in pastures subject to Standard 6 (Exotic Plant Communities other than Seedings), special status plants and their habitats are more vulnerable to degradation from direct and indirect impacts of livestock. Rare (special status plants) and common native plant communities can be retained with the maintenance of healthy native communities, which aids in limiting their susceptibility to direct and indirect effects of livestock, such as herbivory, trampling, alterations to fire interval, non-native weed invasion (Rosentreter, 1992), and habitat fragmentation.

Grazing strategies that incorporate proper management of special status plants place livestock disturbances outside of special status plant habitats and limit grazing intensity and season of use during special status plant active growing periods and when soils are moist. These management practices reduce or eliminate threats to special status plants by encouraging plant vigor, reproduction, habitat continuity, and overall maintenance.

The consequences of livestock impacts on special status plants are determined by season of use, stocking rate/AUMs, and frequency of use (i.e., recovery interval between disturbances). Monitoring information on special status plants within the project area are limited, so specific livestock effects under current management are limited. However, when livestock are present, direct and indirect effects on special status plants have the potential to occur, and it is likely that direct effects may impact individuals' and/or vigor and reproduction of the occurrence and their habitats.

Direct effects on special status plants include herbivory and trampling. Special status plants and their habitats are most vulnerable to direct impacts during the spring/critical growing season when plants are flowering and soils tend to be saturated. The majority of species within the project area complete their reproductive cycle by mid-June (the exception to this is false naked buckwheat in September and, at high elevation, small phacelia in July); thus, the positive effects on upland vegetation and special status plants of decreased trampling and herbivory would be most apparent in those years when livestock grazing is deferred from spring to summer or fall. All special status plants within the project area are not known to be especially palatable to livestock; however, when herbivory does occur, it can lead to partial or entire removal of a plant and subsequent mortality. All other species may be somewhat palatable, especially in concentrated use areas. Cusick's pincushion, Owyhee phacelia, and small phacelia are small and low to the ground, making it difficult for most livestock to graze. Sheep have a preference for forbs, making special status plants susceptible to herbivory when sheep herding takes place in or around special status plant occurrences during the growing season.

Trampling can be responsible for partial or entire uprooting of a plant, subsequent mortality, and disturbance to habitat. Nine of the 10 special status plants (excluding small phacelia) occur on sparsely vegetated fragile volcanic ash soils, which are unlikely to be heavily used by livestock unless in close proximity to range improvements that would lure livestock to or through a special status plant habitat. Even minimal trampling in special status plant sites with fragile soils can jeopardize the viability of seed within the soil profile, change the soil constitution through churning, and provide opportunity for non-native weed invasion. When trampling occurs in the spring when soils are moist and plants have not completed their reproductive cycle, effects are likely to be most evident on annual species (Cusick's pincushion, soft blazingstar, Owyhee phacelia, and false naked buckwheat) because their shallow roots allow for easy dislodging in their loose substrate. Older, established species of milkvetch, Malheur cryptantha, and Antelope Valley beardtongue are likely to be somewhat resilient to trampling under light to moderate use given the more robust root system of perennial plants. But heavy use, particularly concentrated cattle/sheep numbers or extended use within occupied habitat, is likely to damage plants and

habitat. Seedlings of all special status plants are highly susceptible to uprooting from trampling and potential mortality.

The response of special status plants to direct effects of livestock grazing also varies based on the elevation where species occur. Lower elevation plant sites in Elephant Butte and Poison Creek allotments receive less precipitation and would be most susceptible to livestock impacts, while impacts at mid- to upper-elevation allotments in upper Rats Nest, Blackstock Springs, and Soda Creek, where precipitation is greater and soil moisture is retained longer, would be more resilient to direct impacts.

Indirect effects on special status plants include changes in vegetation composition, non-native weed increase, altered fire regime, habitat fragmentation, and climate change. Decreased competition in a changing vegetation community from a reduction in perennial grasses and an increase in bare ground may benefit some special status plants by decreasing competition. However, the species within the project area are negatively affected by this change, as the increase in bare ground also provides opportunity for non-native weed invasion, particularly at lower elevations where the ecosystem is less resilient to disturbances, in high use areas near rangeland developments, along roads and salt grounds, and at watering sources. Except for small phacelia, this threat of vegetation composition change providing opportunity for non-native weed invasion is common to all special status plants within the project area to varying degrees. Livestock create bare ground through soil disturbance and can disperse seed as they move from one area to the next. Native and rare plants can be negatively impacted by non-native weed invasion through direct competition for space, moisture, and light (Rosentreter, 1992). Susceptibility to invasion increases when adding drought (West, 1999) to disturbance followed by increased stress to the native and rare plant communities. Within the project area, non-native annual-dominated sites, such as Elephant Butte pastures 2 and 3, are a concern for the loss of genetics, species, and structural diversity, all of which play a role in ensuring the proper functioning of ecological processes and maintenance of special status plants and their habitats.

Another indirect effect from grazing is ongoing contributions to long-term (more than 10 years) changes in the fire regime, shifting to earlier, larger, and more frequent fires as non-native winter annuals dominate the understory (West, 1999) by providing a continuous flash fuel source. For the persistence of most native plants, this abbreviated fire cycle is unsuitable (Wright, 1985) (Rosentreter, 1992) and promotes a change toward decreased species composition, abundance of non-native weeds, and, at lower elevations, potential for monocultures of annual weeds, such as in Elephant Butte pastures 2, 3, and 5. It is likely that non-native weed invasion and altered fire regime would adversely affect these occurrences in the long-term (more than 10 years) through the loss of and fragmentation of habitat. Fragmentation stems from vegetation composition change and can interrupt the transfer of pollinators and, consequently, genetic flow between special status plant occurrences (Tepedino, Sipes, Barnes, & Hickerson, 1997). Management influences on entire ecological groups of plants can compromise the community through loss of a functional group and, hence, a pollinator group (Corbet, 1997), such as in those pastures where non-native annual species are strongest (or even a monoculture). Habitat fragmentation is a concern in the following allotments for special status plants where non-native weed invasion is an issue and upland rangeland health Standards 4 and 5 are not being met (Blackstock Springs pasture 1, Rats Nest, and Corral Creek FFR) or where allotments fall into Standard 6 (Elephant Butte pasture 2, 3, and 5). Corbet (1997) and Tepedino et al. (1997) amplify the importance of maintaining communities with high floristic diversity to provide necessary forage for pollinators throughout a growing season. In pastures where habitat fragmentation has occurred (functional/structural groups have been lost, or non-native weeds are dominant) rare plants are highly susceptible to downward trends.

Global climate change may have a significant negative impact on special status plants due to the small number of sites and the relative lack of resiliency many of these plants show in response to changing habitat conditions. Eight of the 10 species within the project area are endemic plant species with limited

distributions, and they require specialized habitats (Idaho milkvetch, barren milkvetch, Snake River milkvetch, Cusick's pincushion, Malheur cryptantha, False naked buckwheat, soft blazingstar, and Owyhee phacelia); according to (Hawkins, Sharrock, & Havens, 2008) and (Foden, et al., 2008) they will be at greatest risk. The altered future climate may not provide the conditions that are favorable for these species where they currently occur. Other plant species may be better adapted to the altered climate at special status plant sites. These invader species could out-compete the special status plants. The cumulative impacts of climate change on endemic special status plants could lead to increasing rarity for these species.

There are three new trailing routes not analyzed in the 2012 Trailing EA (USDI BLM, 2012c); special status plants are known to occur only along the route through Rats Nest allotment. The impacts of trailing on Idaho milkvetch, the only special status plant known in the allotment, would be minor for all alternatives because a narrowed buffer, relative to routes throughout non-occupied allotments, would be put into place for this pasture (240 feet total width) to minimally disturb the Idaho milkvetch occurrence. Additionally, the majority of the trailing would occur on an already disturbed existing road and the associated borrow ditches, and frequency of the trailing occurrence is low (two times/year) and generally of short duration (maximum of 2 days). All other trailing permits are addressed in the 2012 Trailing EA (USDI BLM, 2012c). Trailing would occur regardless of the scheduled grazing rotation within a pasture (i.e., use would occur when pastures are otherwise rested).

Refer to Section 2.2 Alternatives for a summary of alternative development and which allotments apply to each alternative. Seven of the 25 allotments have known occurrences of special status plants. Five of these allotments will be carried through the entire analysis (except Alternative 5, which pertains only to the Poison Creek allotment). The remaining two are FFRs (Corral Creek FFR and Chipmunk Field FFR) with previous Determinations that did not identify the presence of special status plants; given the new information, these two FFRs are analyzed in Alternatives 1 and 2.

3.7.3. Alternative 1 Effects

Alternative 1 would perpetuate existing conditions (Section 3.7.1 above) and livestock impacts would be similar to those described in the Effects Common to All Grazing Alternatives section above. Special status plants and native plant communities would be static or precipitate downward with this alternative, which may affect long-term population vigor, reproduction, and habitat.

The Group 2 Special Status Plant Specialist Report identifies three of the seven allotments with special status plants that do not meet Standard 8. One of these allotments, Poison Creek, is not meeting due to current livestock grazing, while non-native invasive weeds, OHV use, and illegal dumping are causal factors for failing the other two, Blackstock Springs and Elephant Butte. In the Poison Creek allotment, where livestock grazing is a causal factor, the primary source for not meeting includes spring season use during wet soil conditions and continued grazing during the critical growth period with minimal to no rest or deferment year to year. The resulting adverse effects on the special status plant site are habitat degradation and decreased population viability.

The existing condition was manifested through flexibility in the grazing schedule, which would continue under this alternative. This management regime would allow for grazing in most allotments every year during the critical growing season, with minimal rest or deferment.

Impacts from spring livestock grazing would include trampling and herbivory when the fragile soil of the habitat is most susceptible to damage and seedling plants would be uprooted and killed, reducing seed set for the population. Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species.

This alternative provides little to no maintenance to the diversity of native species and special status plants or improvement to ecological function, due to the limited time for recovery with rotations based on use during the critical growing season in the majority of, if not all, years. All special status plant sites under this alternative are expected to either maintain or decline in population or habitat quality over the life of the permit (see Special Status Plants Specialist Report for methods in determining pastures which are maintaining or declining). As a result, the three allotments not meeting Standard 8 are not anticipated to make progress toward meeting Rangeland Health Standards and ORMP objectives with Alternative 1. In addition there are potential long-term (greater than 10 years) threats to maintained special status plant sites within allotments not meeting Standards 4, 5, or where Standard 6 applies.

Blackstock Springs Allotment

This allotment is not meeting Standard 4; therefore, it is likely that barren milkvetch, soft blazingstar, one occurrence of Owyhee phacelia, and Snake River milkvetch would be negatively impacted over the long term (more than 10 years) through the indirect effects of livestock contributing to habitat loss and fragmentation. Two occurrences of Owyhee phacelia would continue to be negatively impacted by non-native species invasion with potential loss of habitat and, in the long term (more than 10 years), potential loss of an entire occurrence. For all species in pasture 1, it is likely that non-native invasive species and habitat fragmentation would continue to increase under the prescription of every-year spring grazing with flexibility for fall grazing in all years. This would negatively impact special status plants through the loss of habitat and decreased long-term viability. This alternative would not allow the allotment to make significant progress in meeting Standard 8 for plants.

Chipmunk Field FFR Allotment

Even though the condition of the soft blazingstar occurrence is unknown, it is likely that impacts associated with livestock grazing would be marginal given the upland vegetation of this allotment is meeting Standard 4, which is necessary to maintain suitable habitat of this species. However, concern remains for the potential impact of spring livestock grazing (trampling when soils are moist and fragile and herbivory during the growing season) in consecutive years and the subsequent prolonged recovery of special status plants. There is insufficient information to determine if this alternative would make significant progress toward meeting Standard 8; however, it is likely this occurrence will remain in its current state and not decline given the stable conditions of the uplands.

Corral Creek FFR Allotment

Idaho milkvetch occurs in both pastures 1 and 2 where upland vegetation has been negatively impacted by historic livestock grazing and Standard 4 is not being met (Section 3.3.1). There is insufficient information to determine if this allotment is meeting Standard 8; however, it is likely this occurrence would maintain in the short term, with possible declines in habitat quality over the long term.

Elephant Butte Allotment

Special status plants occur in pastures 2, 3, and 5 of this allotment. All occurrences are expected to maintain or decline under this alternative, with the annual species (Cusick's pincushion, soft blazing star) more likely to decline than the perennial species (Idaho milkvetch, Malheur cryptantha, false naked buckwheat, and Antelope Valley penstemon) due to their short lifecycle, which occurs in early spring when grazing pressure will be concentrated in 2 of 3 years. In the long term (more than 10 years), all species would be subject to the loss of habitat, and, for annual species, potential loss of an entire occurrence. This consequence of spring grazing during 66 percent of the rotation stems from the limited time for recovery. The remaining 34 percent of the rotation would occur in the winter when soils could

potentially be moist and susceptible to disturbance also contributing to habitat loss. This alternative would not allow the allotment to make significant progress to meeting Standard 8 for plants.

Poison Creek Allotment

Because livestock are not drawn to the precipitous habitat of the Idaho milkvetch occurrence within the allotment, it would continue to be maintained through this alternative and all those to follow. Cusick's pincushion habitat within the allotment would continue to be degraded by livestock trampling (primarily from sheep). This occurrence would be subject to direct and indirect effects of habitat degradation and decreased population viability as described in Section 3.7.2. The proposed spring grazing every year would continue the loss of habitat for Cusick's pincushion in the short term. This alternative would not allow the allotment to make significant progress in meeting Standard 8 for plants.

Rats Nest Allotment

The treatment of every-year spring use does not allot time for recovery of upland or special status plants and increases potential for habitat degradation when soils are moist. This pasture is currently not meeting Standard 4, and therefore, the effects would be intensified on special status plants with potential loss of habitat. Under Alternative 1, this occurrence of Idaho milkvetch is expected to maintain or decline over the life of the permit. This alternative would continue to allow the allotment to meet Standard 8, with concern that it could potentially move from meeting to not meeting in the future due to the degraded condition of the surrounding uplands.

Soda Creek Allotment

Although small phacelia tends to occur in moist soils in the understory of aspen and tall forb communities in meadows where livestock are likely to congregate, the recent site visit observed no sign of grazing and insignificant trampling on the habitat microsite (See Special Status Plant Specialist Report - Update). Given the low livestock use of this area, it is unlikely that alterations that alleviate grazing pressure in the surrounding area would alter the sustainability of this site. The current condition of the plant community was reported to be intact with low to moderate levels of alterations from reference condition. This alternative would continue to allow the allotment to meet Standard 8 for plants and associated ORMP Objectives.

3.7.4. Alternative 2 Effects

Alternative 2 is generally the same as Alternative 1, with added flexibility and livestock present during the critical growth period for special status plants in at least 2 out of 3 years, and in some cases, all years (see allotment descriptions below for specifics). Impacts as described in Section 3.7.2 apply, with little to no change to improve resource values from the current condition or to provide opportunity for recovery. Impacts from this alternative are equal to and, in some cases, greater than Alternative 1, due to some allotments being grazed two seasons per year (i.e., spring with fall or winter). As a result, the three allotments not meeting Standard 8 are not anticipated to make progress toward meeting Rangeland Health Standards and ORMP objectives with Alternative 2. In addition there are potential long-term (more than 10 years) threats to maintained special status plant sites within allotments not meeting Standards 4, 5, or where Standard 6 applies.

Blackstock Springs Allotment

Spring and fall grazing would occur under this alternative in all years. The impacts from livestock on special status plants would be equal to those of Alternative 1. This alternative would not allow the allotment to make significant progress in meeting Standard 8 for special status plants.

Corral Creek FFR Allotment

The 3-year rotation proposed in Alternative 3 incorporates seasons of use (spring, spring, deferred) and would allow Idaho milkvetch to maintain in the short term.

Elephant Butte Allotment (five pastures)

Grazing would occur during the critical growing season without rest or deferment in all years, along with winter grazing and extended use during the critical growing season every 1 in 3 years. The effects would be similar to Alternative 1, with all special status plant occurrences remaining in their current state or, with the addition of winter grazing, degrading further as disturbance of the fragile soils during moist conditions could decrease reproduction due to seedbed loss. This alternative would not allow the allotment to make significant progress in meeting Standard 8 for special status plants or ORMP objectives.

Elephant Butte Allotment (six pastures)

Impacts from this alternative on special status plants within the allotment would be identical to those listed above for Elephant Butte allotment (five pastures). This alternative would not allow the allotment to make significant progress in meeting Standard 8 for special status plants or ORMP objectives.

Poison Creek Allotment

This alternative is negligibly different than Alternative 1, with approximately 50 percent of the Cusick's pincushion habitat continuing to be degraded by livestock trampling (primarily from sheep). There is a negligible increase in AUMs (less than 3 percent) from Alternative 1 to Alternative 2 and, thus, herbivory and trampling of plants and habitat would continue as in the current situation. This alternative would not allow the allotment to make significant progress in meeting Standard 8 for plants or ORMP objectives.

Soda Creek Allotment

The grazing scheme proposed for pasture 6 in Alternative 2 would have the same effects as Alternative 1. This alternative would continue to allow the allotment to meet Standard 8 for plants and associated ORMP Objectives.

Wild Rat Allotment

This allotment is the product of joining the Alkali-Wildcat and Rats Nest allotments. In the new allotment, one Idaho milkvetch site occurs in the previously known Rats Nest allotment. Both allotments that comprise Wild Rat allotment are not meeting Standard 4. Continuation of spring grazing every year would maintain or decrease the condition of the Idaho milkvetch occurrences over the life of the permit in the same manner as Alternative 1. This alternative would continue to allow the allotment to meet Standard 8 in the Rats Nest portion of the allotment but with concern for potentially moving from meeting to not meeting in the future due to the degraded condition of the surrounding uplands.

3.7.5. Alternative 3 Effects

Alternative 3 incorporates a grazing rotation that defers grazing for a minimum of 1 year in the 3-year rotation, yet maintains a similar stocking rate to Alternative 1 (except for in Blackstock Springs, where the stocking rate drops 26 percent compared to Alternative 1). Direct and indirect effects from livestock as described in Effects Common to All Grazing Alternatives (Section 3.7.2) are still applicable for Alternative 3, although they would be reduced from those of Alternative 1 because use would not occur every year during the critical growing season. Even though deferment is beneficial to decreasing herbivory, trampling of habitat still has the potential to occur during this time.

Alternative 3 would decrease the potential for herbivory and trampling of special status plants during the critical growing season by 33 percent for all allotments, except Elephant Butte pastures 3 and 5. Deferment would improve the upland vegetation community by allowing time for recovery and movement toward meeting Standards 4, 5, and 6 (where failing) and would inherently improve conditions for special status plants because livestock access to special status plants during the growing season would be reduced. This alternative would potentially improve special status plant occurrences and habitats over the long term (more than 10 years) but not without some indirect risks remaining, such as increasing invasive weeds, abbreviated fire regime, habitat fragmentation, and decrease in plant and insect diversity. Two (Blackstock Springs, Poison Creek) of the three allotments not meeting Standard 8 are anticipated to make progress, while the other (Elephant Butte) would not make progress toward meeting Rangeland Health Standards and ORMP objectives compared to Alternatives 1 and 2. Those allotments currently meeting Standard 8 and not meeting upland vegetation standards would likely continue to meet and maintain Standard 8 for plants.

Blackstock Springs Allotment

Alternative 3 proposes an addition of 1 year deferred grazing coupled with a decrease of 500 AUMs (26 percent from Alternative 1), which would allow pasture 1 to make progress toward meeting Standard 4 and, therefore, potentially result in decreased adverse impacts to special status plants. Implementation of this alternative is anticipated to allow the allotment to make progress toward meeting Standard 8 and ORMP objectives compared to Alternatives 1 and 2.

Elephant Butte Allotment (five pastures)

Pastures 3 and 5 would still be grazed 2 out of 3 years during the critical growing season, as in Alternative 1, but with a longer duration during the critical growing season. This would decrease the intensity by dispersing AUMs over a longer period of time during the critical growing season. This could be damaging to the health of special status plants, as the longer timeframe could create a higher likelihood of trampling and herbivory occurring when the fragile soil of the habitat is most susceptible to damage and seedling plants would be uprooted and killed, reducing seed set for the population.

In pasture 2, this alternative decreases critical growing season use by 66 percent with 2 years deferment in a 3-year rotation, allowing for recovery of upland native vegetation and sustainability to the occurrence of Antelope Valley penstemon.

This alternative would allow pasture 2 to continue to meet Standard 8. Pastures 3 and 5 would be subject to the same effects as Alternative 1, with potential decline to those special status plant sites not meeting Standard 8; those meeting Standard 8 would continue to maintain, with slight potential to decline. This alternative would not allow the allotment to make significant progress in meeting Standard 8 for special status plants or ORMP objectives.

Elephant Butte Allotment (six pastures)

Impacts from this alternative on special status plants within the allotment would be identical to those listed above for the Elephant Butte allotment (five pastures). This alternative would not allow the allotment to make significant progress in meeting Standard 8 for special status plants or ORMP objectives.

Rats Nest Allotment

Alternative 3 would allow for movement toward meeting Standard 4 for upland rangeland health with livestock grazing decreasing by 33 percent during the critical growth period, or occurring in 2 out of 3

years. The one year of deferment would lead to reduced impacts from livestock grazing and the opportunity for recovery, which would enhance population vigor, plant reproduction and habitat quality in the long term (more than 10 years). The Idaho milkvetch site would continue to be maintained, and this allotment would continue to meet Standard 8 and ORMP objectives.

Poison Creek Allotment

Alternative 3 proposes 2 years of critical growing season use and 1 year deferred use, decreasing the potential for herbivory by 33 percent. However, the fragile soils would still be subject to trampling year-round, continuing habitat degradation. Given the severity of livestock impacts to the Cusick's pincushion occurrence, 1 year of deferment would not be sufficient to justify improvement from the current degraded condition (which is noted to have churned soil and dislodged annual vegetation over approximately 50 percent of the habitat). Implementation of this alternative is anticipated to allow the allotment to maintain and potentially make progress toward meeting Standard 8 and ORMP objectives compared to Alternatives 1 and 2.

Soda Creek Allotment

The grazing scheme proposed for pasture 6 in Alternative 3 would have the same effects as Alternative 1. This alternative would continue to allow the allotment to meet Standard 8 for plants and associated ORMP Objectives.

Wild Rat Allotment

This alternative would continue to meet Standard 8 in the Rats Nest portion of the allotment. Even with the addition of 1 year deferred grazing in the 3-year rotation, concern remains for potentially moving from meeting to not meeting the Standard in the long-term future due to the degraded conditions in the surrounding uplands.

3.7.6. Alternative 4 Effects

Alternative 4 would make the most progress of any grazing alternative toward meeting Standard 8 for special status plants by implementing periodic rest and/or deferment and an allotment-wide AUM reduction applied to Poison Creek, Rats Nest, and Blackstock Springs. Rest and/or deferment would provide upland vegetative communities and special status plant occurrences, with the greatest opportunity to improve by promoting plant vigor, reproduction, and habitat continuity. The reduction in AUMs would decrease grazing pressure on plant communities and promote proper functioning of ecological processes, continued productivity and diversity of native plants. This alternative would allow the allotments to make progress toward meeting Standard 8 for plants and is the best resource benefit to special status plants of all grazing alternatives.

Blackstock Springs Allotment

This prescription for a 3-year rotation of spring grazing, deferred grazing, and rest, coupled with a 39 percent reduction in AUMs from Alternative 1, provides the best opportunity for improvement to barren milkvetch, Snake River milkvetch, soft blazingstar, and Owyhee phacelia. Rest and deferment allow for recovery of native and special status plants and their habitat in 2 out of 3 years, or a 66 percent increase for recovery in comparison to Alternative 1. The reduction in AUMs would decrease grazing pressure on plant communities and maintain remnant native plants to enable reproduction and recruitment when favorable climatic or other environmental events occur. Alternative 4 would improve special status plant occurrences in the allotment toward meeting Standard 8 and ORMP objectives.

Elephant Butte Allotment (five pastures)

This alternative has a 3-year rotation of spring grazing, rest, and deferred grazing. The addition of rest and deferment for pastures 2, 3, and 5 provide the best opportunity for improvement from all grazing alternatives. Rest and deferment allow for recovery of native and special status plants and their habitat in 2 out of 3 years, or a 66 percent increase in opportunity for recovery in comparison to Alternative 1. Given that the special status plants area is a conjugate of the upland vegetative community, this improvement would also benefit special status plants. Alternative 4 would improve special status plant occurrences in the allotment toward meeting Standard 8.

Elephant Butte Allotment (six pastures)

Impacts from this alternative on special status plants within the allotment would be identical to those listed above for the Elephant Butte allotment (five pastures). Alternative 4 would improve special status plant occurrences in the allotment toward meeting Standard 8.

Poison Creek Allotment

Livestock trampling to Cusick's pincushion habitat within the allotment would be decreased significantly, as spring grazing would only occur 1 in 3 years, followed by 2 years of rest. Impacts to Cusick's pincushion in the critical growing season would occur during 33 percent of the rotation versus during 100 percent of the rotation as in Alternative 1. In addition, active AUMs would be decreased approximately 31 percent. The reduction in AUMs would decrease grazing pressure on plant communities and promote proper functioning of ecological processes and continued productivity and diversity of native and special status plants. It is expected that this alternative would improve the species occurrence and allow the allotment to make progress toward meeting Standard 8 for plants.

Rats Nest Allotment

Idaho milkvetch will continue to be maintained under this alternative. The indirect effects as noted in Section 3.7.2 Effects Common to All Grazing Alternatives would be minimized as the health of upland vegetation would improve. Disturbance would occur in the spring followed by 2 years of rest, along with a reduction of approximately 100 AUMs or 18 percent from Alternative 1. Growing-season effects would be significantly decreased (by 66 percent) from those incurred in Alternative 1, allowing Idaho milkvetch to maintain plant vigor, reproduce, and recruit additional plants 2 out of 3 years. Habitat would also benefit from the rest and decreased AUMs with a decrease in soil disturbance intensity during the one year of growing season use and total removal for 2 years (66 percent of the rotation). This alternative would allow the allotment to make significant progress toward meeting Standard 8, meeting ORMP objectives, and improved maintenance of the Idaho milkvetch occurrence.

Soda Creek Allotment

The grazing scheme proposed for pasture 6 in Alternative 3 would have the same effects as Alternative 1. This alternative would continue to allow the allotment to meet Standard 8 for plants and associated ORMP Objectives.

Wild Rat Allotment

This alternative would continue to allow the allotment to meet Standard 8 in the Rats Nest portion of the allotment. The 3-year rotation of spring grazing, rest, rest would allow Idaho milkvetch to be maintained and meet ORMP objectives.

3.7.7. Alternative 5 Effects

Poison Creek Allotment

This alternative has the same seasons of use and AUMs as Alternative 3 but incorporates a livestock category shift from sheep to cattle and horses. The conversion of all sheep AUMs to cattle would significantly dampen the impacts to the Cusick's pincushion occurrence beyond Alternative 1. Cattle are not drawn to the Cusick's pincushion habitat due to the sparse vegetation and lack of palatability of the species. The likelihood of direct effects (herbivory or trampling) would be decreased from Alternative 1 because trailing through the habitat would be more confined as cattle tend to move single-file, compared to sheep, which tend to move across an area as a herd, disturbing a greater area of the fragile soils in which this species occurs. When the habitat is occupied by cattle, herbivory would be less likely because cattle prefer more grass-like species rather than forbs. Disturbance by sheep to Cusick's habitat was reportedly the leading issue in the failure to meet Standard 8; therefore, it is anticipated that a shift from sheep to cattle would improve the occurrence and make progress toward meeting Standard 8 and ORMP objectives.

3.7.8. Alternative 6 Effects

Under Alternative 6, no livestock grazing would occur. Therefore, once livestock are completely removed, there would be no direct effects from livestock on individual special status plants and/or their habitats. Discontinuing livestock grazing would decrease the potential for trampling in special status plant habitat and decrease direct herbivory. Decreasing direct herbivory and trampling is expected to have positive effects on plant vigor and reproduction on native and special status plants by removing limitations from grazing and mortality. Indirect grazing effects on special status plants would not occur. Non-native species invasion would potentially decrease as compared to Alternative 1 (Belsky & Gelbard, 2000) and grazing-induced changes to the fire regime and vegetation composition would be halted. New livestock concentration areas would not be created for the duration of 10 years, slowing the spread of non-native invasive species. This would result in increased long term (more than 10 years) health to the special status plant occurrences and their surrounding plant communities. Trailing is not expected to have substantial effects on special status plants because impacts are limited with the narrowed buffer along the entire route of all occupied pastures and because of the short duration and frequency.

3.7.9. Cumulative Effects

Cumulative Impact Analysis Area

The Cumulative Impacts Analysis Area (CIAA) for special status plants encompasses the collective outside boundary of all watersheds in which the Chipmunk Group allotments occur: Hardtrigger Creek-Snake River, Headwaters Jordan Creek, Jordan Creek-Sheep Spring Creek, Jump Creek-Snake River, Reynolds Creek, Trout Creek-Jordan Creek, Upper Cow Creek, and Upper Succor Creek (Map CMLV-1). This area is appropriate because the same types of disturbances and ecological processes function at this landscape scale on special status plant occurrences. Extending the CIAA beyond this boundary would dilute the impacts of the proposed action within the project area. The timeframe considers past actions that have influenced current conditions, activities planned within the next 3 years, and the expected life of this permit (10 years). The life of the permit was chosen because the effects of the proposed action and alternatives would change in 10 years, as it is assumed the permit would be reevaluated at that point.

Past, Ongoing, and Reasonably Foreseeable Activities

Past, present, and reasonably foreseeable future activities within the CIAA relevant to cumulative effects were determined using approximated BLM GIS data and are displayed in Section 3. 2. Several of the

same past activities that have created the current condition of upland vegetation also apply to special status plants in the cumulative effects analysis area. However, special status plants occupy a drastically smaller portion of area than upland vegetation and, as a result, localized activities are less likely to impact special status plants unless they intersect with an area of species occurrence. Because there is limited monitoring information available on the special status plants in the CIAA, it is difficult to determine the degree of effects from past and ongoing activities, but general trends for special status plants are likely to be similar to upland vegetation, as they tend to be conjugates of each other. Table SSPS-2 displays the likely magnitude and type of effects of past and ongoing activities on special status plants in the cumulative effects analysis area.

Table SSPS-2: Past and Ongoing Activities and potential effects on Special Status Plants (SSP) in the CIAA

Activity	**Magnitude of Effect on SSP**	**Type of Effect**
Historic Livestock Grazing	Moderate, widespread	Direct Effect - herbivory and trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect- change in vegetation composition, non-native weed invasion, altered fire regime, habitat fragmentation; potentially decreasing suitable habitat, unknown effects on populations
Herd Management Area	Moderate in localized pasture within HMA	Direct Effect - trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect- change in vegetation composition, non-native weed invasion, altered fire regime, habitat fragmentation; potentially decreasing suitable habitat, unknown effects on populations
Infrastructure (fences, reservoirs, troughs, structures, etc.)	Potentially high in a small percentage of occupied habitat	Localized elimination of individual plants and perhaps small occurrences; permanent degradation of habitat
Roads	Potentially high in a small percentage of occupied habitat	Localized elimination of individual plants and perhaps small occurrences; permanent degradation of habitat
OHV	Moderate to high, localized to a small percentage of occupied habitat	Localized seedbank loss, elimination of individual plants and perhaps small occurrences; severe habitat degradation
Trailing	Likely minor to low in a small percentage of occupied habitat	Localized physical impact and elimination of individual plants and perhaps small occurrences
Noxious Weed Treatment	Likely low if at all in a small percentage of occupied habitat	Overspray potentially reducing vigor and reproduction of individuals and mortality of individuals; unknown effects on populations
Wildfire & Fire Suppression	Minor to moderate, widespread	Low elevation: Long-term (>10 years) shift to reduced species diversity, non-

Activity	Magnitude of Effect on SSP	Type of Effect
		native weed invasion, and altered fire regime. High Elevation: Long-term (>10 years) shift from grass/forb/shrub community to localized late seral shrub dominated areas with reduced species diversity and stress to special status plant occurrences
Prescribed Burning	Likely low if at all in a small percentage of occupied habitat	Short-term (<10 years) minor negative impact to habitat and change in competition; long-term (>10 years) shift from late seral shrub dominated community to grass/forb/shrub community with greater diversity and stability to special status plant occurrences
Mining Claims	Potentially high in a small percentage of occupied habitat	Localized physical impact and elimination of individual plants and perhaps small occurrences; permanent degradation of habitat

Historic Livestock Grazing: This is the dominant land use activity in the area, with almost all of the acreage being managed for grazing. Historically, season-long grazing was common, which, in some areas, has precipitated a shift from a mid- to late seral perennial-dominated system to an early successional, non-native weed-dominated system increasing the amount of fine fuels and subsequently changing the fire regime. Currently, allotments in the CIAA are primarily grazed in the spring and summer months when vegetation (native and special status plants) and habitat are most vulnerable due to the critical growing season and saturated soils. Rested and deferred-use pastures have increased in more recent management with the initiation of range reform in the 1990s and the implementation of the Idaho Standards for Rangeland Health in 1997. Livestock grazing has varying degrees of adverse effect on special status plants (Section 3.7.2) and their habitats. However, grazing permit renewals typically implement grazing systems that minimize impacts to special status plants by adjusting the timing and intensity of livestock use in occupied habitat thereby reducing cumulative effects from these activities.

Wild Horse Herd Management Areas (HMAs): The Rats Nest allotment is located within the Hardtrigger HMA, which is the only HMA to encompass special status plants. In general, horses utilize the same resources as cattle and impact special status plants and their habitats similarly. Herd numbers are expected to be similar to past and present numbers in the reasonably foreseeable future. The carrying capacity of the range is matched with proper herd numbers in which the BLM is required to maintain and will do so in the reasonably foreseeable future. Wild horse impacts to Idaho milkvetch within the Rats Nest allotment have been documented. The severity of the impact is unknown, although utilization levels were reported to be light/moderate at the time of the report.

Infrastructure (fences, reservoirs, troughs, structures): A variety of infrastructure projects have been implemented across the landscape to aid in livestock grazing management. While no infrastructure projects are being considered within the purpose and need of this EIS, it is anticipated that they would continue to be part of the landscape and that some lesser number would be added and/or modified to meet the needs of the livestock grazing industry in the future. Infrastructure throughout the landscape has created congregation areas with potentially localized impacts and elimination of plants possibly small

occurrences. Further impacts from infrastructure are not likely as avoidance measures are adhered to in occupied habitats where new infrastructures and maintenance of existing infrastructures would occur.

Roads: There are 2,485 miles of gravel, native, and paved roads within the CIAA and 126 miles that traverse pastures where occupied special status plants occur in the project area. It is anticipated that future roads would be constructed in association with range improvement and renewable energy projects, but direct impacts to special status plants are not likely to occur as avoidance measures would be included in the design features. However, where disturbance occurs from new roads at lower elevation there is potential for weed patches rather than native early seral species. Potential indirect impacts are non-native weed invasion in the short term (less than 10 years) and an altered fire regime and habitat fragmentation in the long term (more than 10 years).

OHV: The majority of the CIAA is open for general motorized use allowing for travel on established roads. However, unauthorized use does occur and has had negative localized resource effects where special status plant habitats are permanently or semi-permanently altered from repeated heavy use. With the increased popularity of OHV use and expanding population in the Treasure Valley, impacts to the resource are expected to increase. While the resource in the southern part of the CIAA is subject to OHV use, the greatest pressure is in the northernmost allotments around the Owyhee Front, which share proximity to the lower Treasure Valley.

According to the ORMP (USDI BLM, 1999a), OHV use is expected to increase 70 percent from 1999 to 2029 (RMP III-24); areas of low elevation, such as lakebed sediments along the Owyhee Front, are expected to be the highest use areas. This is a common theme for the CIAA within Oregon. In the near future, both Owyhee County, Idaho, and Malheur Resource Area in Oregon are expected to have travel management plans in place which may alleviate OHV resource concerns because routes would be designated, potentially reducing cross country and unauthorized travel. Even with a travel management plan, it is unlikely that unauthorized OHV activities would decrease without law enforcement considering the expected increase in pressure throughout the CIAA and the attraction of the sparsely vegetated rolling outcrops of the special status plant habitats to OHV enthusiasts.

Impacts to the resource from OHV use are likely to be of moderate to high magnitude, depending on the intensity (number of OHVs), frequency, and timing of the disturbance. Effects include localized seedbank loss, elimination of individual plants, decreased vigor, and habitat disturbance all of which could contribute to loss of an entire occurrence.

Trailing: Cattle and sheep trailing routes currently traverse the CIAA and the project area (Section 3.2 - Table CMLV-2; Map RNGE-4). Trailing would typically occur on existing roadways for one day during the spring and a second day during the fall. While trailing permits are renewed on an annual basis, it is assumed the activity would continue to be authorized into the future. Trailing impacts on special status plants would be minor, if at all, given the mandatory term and condition of a narrowed width buffer (240 feet) along trailing routes within pastures containing special status plants (Section 3.7.2 Environmental Consequences and the 2012 Trailing EA (USDI BLM, 2012c)) and the limited frequency and duration. The Owyhee Field Office recently finalized the OFO Livestock Trailing EA; the analysis specific to special status plants is incorporated here by reference (2012 Trailing EA (USDI BLM, 2012c)).

Noxious Weed Treatment: There are 224 documented weed infestations throughout the CIAA and 83 within allotments in the project area occupied by special status plants (46 of which are in the Poison Creek allotment). A majority of the sites are reported to be less than 1 acre, with most receiving chemical treatment and the remainder treated mechanically. Weed treatment would have low to no impacts on special status plants because avoidance measures would be adhered to in areas of occupied habitat.

Fire Suppression & Wildfires: Throughout the entire CIAA, wildfires have burned and reburned approximately 116,213 acres (14 percent) (Map FIRE-1, 2, 3; Section 3.2 - Table CMLV-2). The pastures in the project area that contain special status plants have burned and reburned 20,270 acres (62 percent of the project area). Because mechanized suppression activities generally avoid special status plant occurrences, fire suppression treatments have caused minimal physical disturbances to special status plant occurrences. Avoidance measures are expected to continue into the future.

If wildfire occurs in an upland vegetation community that is stressed, there is a greater likelihood for non-native annual weed invasion resulting in increased competition for resources between native and non-native species during recovery. In the long term (more than 10 years), the shift in species composition toward an increase of fine fuels (annual weeds) in the community can lead to an abbreviated fire cycle and decreased species diversity. This stresses the ecological stability of upland vegetation communities and special status plants increasing the risk in the foreseeable future of habitat fragmentation with the compounding impact of interrupting the transfer of pollinators and gene flow between occurrences of special status plants (Tepedino, Sipes, Barnes, & Hickerson, 1997) throughout the CIAA.

Wildfires will have the greatest indirect effects on special status plants at lower elevations where precipitation is scarce and recovery is slow. Higher elevations tend to be more resilient to wildfire because of the increased precipitation, which aids in faster recovery. Past and present disturbance from wildfires is likely more frequent at lower elevations than historic regimes due to an increase in fine fuel load. At mid- to upper elevations, disturbance from wildfires is less frequent than expected under a natural, historic regime. Change in the natural fire regime combined with season-long livestock grazing disturbance (typical of most past and at least some current/future allotments) has created an altered disturbance regime that has likely stressed special status plant occurrences. Wildfires are expected to continue in the reasonably foreseeable future and cause adverse indirect effects on special status plants through changes in vegetation composition.

Mining Claims: There are 1,181 acres impacted by mining activities within the CIAA. Mining activities occur within Blackstock, Elephant Butte, and Poison Creek occupied pastures, totaling 455 acres in the project area. Of the 10 species with occurrences in the project area, nine (small phacelia is the only exception) are specific to soils derived from volcanic ash and are largely rare because of limited habitat. A serious threat to these species associated with volcanic ash outcrops is from zeolite or bentonite mining. When impacts do occur, the magnitude of the impact is high in the localized area with adverse effects of habitat degradation, potential elimination of individual plants and entire occurrences. Nine of the 10 special status plant species could endure potentially high magnitude of effects from mining to localized occurrences throughout the CIAA; however, reasonably foreseeable future mining is not likely.

Existing Conditions & Baseline

BLM Manual 6840 (USDI BLM, 2008a) and the ORMP objective for special status species and their habitats state that special status species are to be maintained or increased to a level that would avoid listing under the ESA. The 6840 manual also states the objective to implement proactive conservation measures that reduce or eliminate threats to special status plants and a need to list. These objectives are a minimal standard and since all special status plants and their habitats should attain this, the threshold for the cumulative effects analysis was set to these objectives.

Seven (Corral Creek FFR, Chipmunk Field FFR, Elephant Butte, Poison Creek, Rats Nest, Blackstock Springs, and Soda Creek) of the 25 allotments support special status plants, with a total of 26,000 acres for the 10 occupied pastures in the project area, and a total of 19 occurrences for 10 special status plant species. The Poison Creek allotment is not meeting Standard 8 for special status plants, with livestock as the causal factor. Because of the lack of monitoring information on special status plants and the implicit

connection between upland vegetation communities and special status plants, those pastures with occurrences that are not meeting Standards 4 or 5, or are represented in Standard 6 regardless of whether they are meeting (Blackstock Springs, Rats Nest, and Elephant Butte allotments) are of concern for the overall maintenance and health of special status plants and their habitats.

The CIAA consists of approximately 808,651 acres, and contains a total of 185 occurrences for 10 species. Similar to special status plants in the project area, information for occurrences on adjacent lands is limited, with GIS and aerial imagery being the main resource. Special status plant sites within the CIAA have been influenced by various land use activities as noted above. As a result of these activities, in general, special status plant occurrences in the CIAA are probably stable to slightly declining based on best available information.

Cumulative Effects Analysis

Alternatives 1 and 2 Cumulative Effects

Alternatives 1 and 2 would have the most direct and indirect effects of all alternatives to special status plants, as described in Section 3.7.3 and Section 3.7.4. When added to the past, present, and reasonably foreseeable future actions that would affect upland vegetation and associated special status plant occurrences, Alternatives 1 and 2 would continue current conditions and cumulatively have incremental negative effects on special status plants and their habitats.

Past and present livestock grazing has affected upland vegetation and special status plants in the CIAA by disturbing soils and altering vegetation composition with the utilization of key forage species during critical growth periods. Soil disturbance and altered vegetation composition result in opportunity for non-native weed invasion, shortened fire regime interval, and habitat fragmentation, resulting in decreased long-term viability of special status plants and increased susceptibility to habitat degradation. These impacts are most prevalent at lower elevations of the project area where precipitation is limited, and in livestock congregation areas.

Other activities that continue to occur within the CIAA include range improvements, wild horse use, wildfires, weed and vegetation treatments, trailing, roads, OHV, and mining (Table SSPS-2). As documented, OHV use and non-native weed invasion (stemming from alterations in vegetative community and a shortened fire regime) are the main cumulative impacts of concerns for special status plants in the CIAA. The most severe and repetitive impacts from OHV use are concentrated in the Owyhee Front area. Disturbance from OHVs is generally repetitive and in specific locations, with confinement to a small percentage of occupied habitats. Non-native annual weed invasion is widespread throughout lower elevations and in areas of soil disturbance. This contributes to a shortened fire interval and habitat fragmentation. Livestock grazing can perpetuate non-native weed invasion through disturbance of soils and transport of seed.

While the cumulative effects would be small, when added to the grazing scheme of Alternatives 1 and 2, the overall impact to special status plants within the project area would increase. However, this increase is not anticipated to lead to listing under the ESA for any of the species in the short term (less than 10 years), but could be of concern in the long term (more than 10 years).

Alternatives 3 and 4 Cumulative Effects

Alternatives 3 and 4 would have relatively low direct and indirect effects (Section 3.7.5 and Section 3.7.6) to special status plants by reducing the threat of livestock impacts. The alternatives would improve plant communities by dampening critical growing season impacts with periodic deferment or rest allowing time

for plants to recover. This built-in recovery time decreases the impacts of the action and, therefore, reduces the combined cumulative impact to special status plants.

Both alternatives would maintain and benefit upland vegetation and special status plants to varying degrees by decreasing plant composition shifts and soil disturbance which provide opportunity for non-native weed invasion. This would result in decreased long term viability of special status plants and increased susceptibility to habitat degradation. These impacts are most prevalent at lower elevations of the project area where precipitation is limited and in livestock congregation areas.

The main cumulative impacts to special status plants within the CIAA are OHV use and non-native weed invasion (stemming from alterations in vegetative community and a shortened fire regime). The magnitudes of impacts from these activities are stated in Table SSPS-2. OHV impacts would be the same as in Alternatives 1 and 2. However, non-native weed invasion would likely decrease slightly, but perhaps not measurably, as grazing rotations incorporate deferment and rest, plant communities recover, and plant vigor improves.

While the cumulative effects would be small, when added to the grazing scheme of Alternatives 3 and 4, the overall impact to special status plants within the project area would increase. However, this increase is not anticipated to lead to listing under the ESA for any of the species in the short term (less than 10 years), and likely not in the long term (greater than 10 years).

Alternative 5 Cumulative Effects

Alternative 5 for the Poison Creek allotment would have direct and indirect effects to special status plants as described in Section 3.7.7. The livestock conversion from sheep to cattle would offer great benefit to Cusick's pincushion because sheep are currently the greatest livestock contributor to habitat degradation of the species. The addition of one year deferred grazing would also benefit this species.

When considered cumulatively with other activities that will affect special status plants, the expected small improvements from the proposed grazing management are beneficial and would not lead to listing under the ESA for this species.

Alternative 6 Cumulative Effects

Alternative 6 would provide extended rest to special status plants from livestock grazing over the life of the permit. Removing this stress would allow for recovery from year to year and added resilience of the special status plant occurrences when dealing with drought and wildfire. Although the risk of wildfire and plant community shifts are inevitable, alleviating livestock impacts to all allotments would provide the slowest expansion of non-native annuals and depress the broadening of altered fire regimes across the landscape. This alternative, when added cumulatively to effects from other activities described above, would not lead to listing under the ESA for any of the special status plants in the project area. In fact, this alternative would initiate proactive conservation measures that reduce the threat of livestock impacts in an effort to minimize any need for listing of these species under the ESA.

3.8. RECREATION AND VISUAL RESOURCES

3.8.1. Affected Environment

The Chipmunk Group allotments cover a large area within the Owyhee Field Office and lie within three separate Special Recreation Management Areas (SRMAs) and one Extensive Recreation Management Area (ERMA). SRMAs are designated for special or more intensive types of recreation management and where greater investments for recreation management are anticipated due to the intensity of use the area receives, while an ERMA is an area where recreation management is only one of several management

objectives, and where a limited commitment of resources is required to provide extensive and unstructured types of recreation activities (USDI BLM, 1999a).

The Poison Creek and Alkali-Wildcat allotments lie within the Jump Creek SRMA. This SRMA area is approximately 8,500 acres in size and encompasses the desert plateau and canyon lands along the Owyhee Front Country adjoining the Snake River Plain near Homedale. Two streams, Jump Creek on the east and Poison Creek on the west, have cut deep parallel canyons northward through the plateau. Waterfalls exist in each of the lower canyons. The most well-known and frequented by recreationists is the 60-foot high Jump Creek Falls. Jump Creek Canyon, including 90 acres below the falls, has been identified as the Jump Creek Recreation site (a total of 465 acres). The main recreational activities within the Jump Creek SRMA include hiking, horseback riding, camping, hunting, picnicking, and off-highway vehicle (OHV) riding.

The Jump Creek recreation site within this SRMA is a popular area that receives approximately 20,000 visitors per year and is open to the public year-round. The site itself includes three parking areas, restrooms, trash receptacles, information kiosks, access into the canyon falls, fire rings, picnic tables, and access to Jump Creek. The uses within the immediate area consist of camping, hiking, fishing, swimming, picnicking, panning, and rock climbing. The recreation site also serves as a staging area for activities such as off-highway vehicle riding, horseback riding, and hunting.

The Owyhee Front SRMA contains the Rats Nest and Elephant Butte allotments. These allotments are located along the northwestern edge of the management area. This SRMA encompasses approximately 181,500 acres and is made up of the plains and low foothills of the northern front of the Owyhee Mountain Range. The Owyhee Front is recognized for quality motorized OHV opportunities due to its cool spring/fall weather conditions and dry soils, coupled with a diversity of terrain features. The terrain includes hundreds of miles of roads, trails, and interconnecting sand washes traversing gentle to rugged hills and ridgelines. The area is used by OHV enthusiasts year-round and for hunting in the fall. Mountain biking, horseback riding, hiking, sight-seeing, rock hounding, wild horse viewing, and camping all occur throughout the area as well.

The third SRMA within the Chipmunk Group allotments is the Blackstock SRMA. This area, which contains only the Blackstock allotment, consists of approximately 8,675 acres of rolling plateau lands flanking the western slopes of the Owyhee Mountain Range, adjacent to U.S. Highway 95 near the Oregon border. This area has been used since 1977 as a competitive field dog trial area by local dog clubs. The lands are recognized as among the best competitive dog trial areas in the Northwest because of their topography and vegetation. Other uses within the SRMA consist of hunting, OHV riding, hiking, sight-seeing, horseback riding, and camping.

The rest of the allotments are located within the Owyhee ERMA. This ERMA contains approximately 1,006,700 acres extending from the Snake River south along the Oregon border to Nevada. The extreme diversity of landforms and vegetation within the ERMA create a wide range of natural settings in which to enjoy recreational opportunities. Recreation is widely dispersed and consists mostly of hunting, fishing, horseback riding, rock hounding, nature study, camping, OHV riding, mountain biking, sight-seeing, and hiking.

Off-highway motor vehicle (OHV) designations within Chipmunk Group are limited to existing roads and trails. This designation will change within the next 5 years (roughly) to limited to designated, as all of Owyhee County is currently undergoing a travel management process as per the 2009 Omnibus Public Lands Management Act (OPLMA). There is only one small area within the Jump Creek Canyon Area of Critical Environmental Concern, which lies between the Poison Creek and Alkali-Wildcat allotments, where the OHV designations are closed to motorized uses.

The Recreation Opportunity Spectrum (ROS) classification is used to characterize the type of recreational opportunity settings, activities, and experience opportunities that can be expected in different areas of public land. The Chipmunk Group allotments contain multiple settings for recreationists, ranging from Rural, to Semi-Primitive Motorized, Roaded Natural, and Semi-Primitive Non-Motorized classifications.

The Rural classification is an area that is characterized by a substantially modified natural environment. Resource modifications and utilization practices are obvious, the sights and sounds of humans are evident, and the concentration of users is often moderate to high.

The Semi-Primitive Motorized and the Semi-Primitive Non-Motorized classifications are areas that are characterized by a primarily unmodified natural environment. There is evidence of other users in the area; however, management actions encourage limited contacts between users. The Semi-primitive motorized classification permits motorized uses within the area, and semi-primitive non-motorized does not.

The Roaded Natural classification is an area that is characterized by a generally natural environment with only moderate evidence of the sights and sounds of humans. Resource modifications and utilization practices are evident, but harmonize with the natural environment (USDI BLM, 1999a).

Overall, recreation is abundant and diverse throughout the Chipmunk Group allotments. The highest use occurs in the northern portion of Chipmunk Group within the Jump Creek recreation site, which was discussed above, as well as the Rats Nest and Elephant Butte allotments, due to their close proximity to development. These areas receive a high amount of hunting, horseback, wildlife viewing, and OHV use. Other areas that are often frequented by recreationists include Blackstock Springs, as mentioned above, Sands Basin (wild horse viewing and OHV), and the Cow Creek area, which is a popular hunting area and also receives a regular amount of OHV activity.

The visual resource management classes within the Chipmunk Group allotments are predominately Class IV. There are, however, some areas that contain VRM Class III (Poison Creek, Alkali-Wildcat, Elephant Butte, Blackstock Springs, Soda Spring, Franconi, Trout Creek, Cow Creek) and even some allotments containing areas of VRM Class II, such as the eastern portions of Soda Creek, Jackson Creek, and Chipmunk Field, as well as the eastern portion of Poison Creek, and the western portion of Alkali-Wildcat.

The VRM Class II objective is to retain the existing character of the landscape. The level of change to the characteristic of the landscape would be low. Management activities may be seen but would not attract the attention of the casual observer. Except within wilderness areas, very limited construction of new rangeland facilities and vegetation treatment projects is permitted.

The VRM Class III objective is to partially retain the existing character of the landscape, and the level of change to the characteristic of the landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features or the characteristic landscape. This classification occurs where the amount of use is relatively high and scenic quality is generally good. Maintenance, construction, and reconstruction of rangeland facilities, roads, and vegetation treatment projects are permitted. In this classification emphasis is placed on construction techniques that will reduce the projects visual impacts to the natural landscape.

The objective for VRM Class IV is to provide for management activities which would require major modifications to the existing character of the landscape. These activities may dominate the view and be

the focus of attention. However, every attempt should be made to minimize impacts with careful location and minimal disturbances (USDI BLM, 1999a).

3.8.2. Environmental Consequences – Effects Common to All Grazing Alternatives

Hunting is the most likely recreational activity to be affected under any of the grazing alternatives in those allotments/pastures where grazing schedules overlap with hunting seasons. These impacts, however, are considered to be negligible.

Under all grazing alternatives, the Owyhee Field Office would continue to work with permittees within the Blackstock Springs allotment on the coordination of event dates for spring and fall dog trials in order to prevent any overlap/interference with livestock operations and vice versa.

Livestock trailing activities would not impact recreational resources or public safety due to the fact that trailing events would be of low frequency and would generally be of short duration. Buffers extending beyond the existing roadways also provide an opportunity for livestock to get off of roadways, which allows traffic to pass through. Additionally, most trailing activities occur on existing routes made up of gravel or native materials, which would ensure slow traffic speeds. The effects of trailing on visual resources would also be negligible due to the fact that livestock trailing occurs on existing roads.

Livestock would continue to access the Jump Creek Recreation Site under all grazing alternatives. The recreation site was never properly fenced, although it had been proposed in past grazing permit renewal documents in order to exclude livestock from the site. However, the impacts to recreationists and recreation facilities are fairly low as a result of this, due to the fact that only a handful of livestock stray into the recreation site each year. Once livestock enter the site, the cattle typically stay downstream of the high use area and hiking trail that enters the canyon, thus the human-livestock interactions are fairly low.

There are no proposed spring developments or water haul sites under any of the grazing alternatives. Additional water sources tend to distribute livestock more evenly throughout the area, decreasing the likelihood of livestock on roads and trails, thus minimizing recreationists' interactions with livestock. Additionally, there are no proposed fence projects for any of the alternatives, which would maintain the existing opportunities for hikers and equestrian users to travel cross country. This also prevents the creation of new disturbance as fences are constructed in relationship to visual resources, and the potential for new trails along fence lines.

3.8.3. Alternative 1 Effects

Effects to recreation throughout all of the Chipmunk Group allotments would be the interaction with livestock during periods of livestock use. During periods of non-livestock use, no impacts would be expected. Areas that are improving with current management would likely continue to improve, thus providing enhanced opportunities for recreation. For example, in areas where vegetation and wildlife habitat is improving, these areas may provide better hunting opportunities for recreationists. Areas of heavy livestock use would also continue to impact recreational opportunities. Overall, the impacts to recreationists as a result of livestock grazing activities are minimal.

Continuation of the present grazing systems would likely maintain visual conditions of the area. Areas that are improving under current management would continue to improve, and conversely, scenic quality that is currently being impacted by livestock use would also continue. These impacts are considered acceptable with the VRM objectives throughout the majority of the Chipmunk Group allotments. However, there are areas within Class II VRM that have been identified as not meeting standards due to livestock grazing; these areas fall within the Alkali-Wildcat and Poison Creek allotments for riparian standards and the Alkali-Wildcat allotment for vegetation standards. This is relevant due to the fact that

within VRM Class II, the goals of these areas are to retain or preserve the existing character of the landscape, and the levels of change to the characteristic of the landscape should be low. The failure to meet Standards indicates a downward trend in a particular area regarding upland and/or riparian vegetation, these types of impacts would have a direct effect on visual resources in these areas where the goal is to preserve the existing character.

3.8.4. Alternative 2 Effects

The impacts to recreation and visual resources associated with this alternative would be the same as those identified in Alternative 1.

3.8.5. Alternative 3 Effects

Impacts to recreation under this alternative would be similar to those identified in Alternative 1. Effects to recreation would be the interaction with livestock during periods of livestock use. During periods of non-livestock use, no impacts would be expected.

Effects to visual resources under the deferred grazing-based alternative could be more beneficial. Although livestock numbers and active AUMs are similar to those in Alternatives 1 and 2, the deferred grazing system was developed to enhance upland vegetation communities and riparian areas by altering the season of use each year. This grazing system would provide some relief to upland vegetation communities during their critical growing periods, while at the same time continuing livestock grazing year to year. Riparian areas could also see some improvement in certain areas, especially in those areas that contain fall grazing. As areas improve throughout the allotments, visual qualities would also begin to improve, thus creating a more positive recreation experience. Improved conditions could also potentially result in increased hunting success as more wildlife utilizes the area.

3.8.6. Alternative 4 Effects

This alternative would have the fewest impacts to recreation and visual resources in comparison to any of the other grazing alternatives. The proposed rest rotations would eliminate interactions between livestock and recreationists during certain years as the allotments are rested from grazing operations. The grazing schedule under Alternative 4 would provide more opportunity for riparian function, as well as for the recovery of upland vegetation following active growing season grazing use and during years of rest. As conditions of the area improve due to the season-based use and a rest rotation, visual qualities would also begin to improve in all areas throughout the allotment, thus creating a more positive recreation experience. The improved conditions could also potentially result in increased hunting success for recreationists as more wildlife utilize the area.

3.8.7. Alternative 5 Effects

The conversion from sheep to cattle would not have any greater or lesser impacts to recreation and visual resources. AUMs would remain the same as what currently exists within the Poison Creek allotment, and the grazing schedule would reflect that of Alternative 3. Therefore, impacts associated with this alternative would be similar to those described in Alternative 3.

3.8.8. Alternative 6 Effects

This alternative would provide the greatest benefit to recreationists and visual resources. There would be no interaction between livestock and recreationists, and as the overall conditions of the area improve, so would visual quality, thus creating a more enjoyable recreation experience. There would be no effects to upland vegetation and riparian areas from livestock, thus improving the overall health and visual quality

throughout the allotments. Improved wildlife habitat conditions would increase wildlife viewing opportunities and potentially result in increased hunting success.

3.8.9. Cumulative Effects: Recreation and Visual Resources

Cumulative Impact Analysis Area

Cumulative effects to recreation and visual resources within the Chipmunk Group allotments would primarily be the result of grazing, utility corridors, and current and future actions that stem from the OPLMA. The area of analysis for cumulative effects is the resource area north of Jordan Creek (delineated roughly by Jordan Creek on the north, Owyhee Mountain range on the east, the Snake River on the south, and the Oregon border on the west). This area is a good representation of the summer/fall recreation activity that occurs within the area. The timeframe considered is activities since enactment of the OPLMA for current conditions and activities planned within the next 3 years, and the expected duration of effects from those activities (generally 10 to 20 years).

Cumulative Effects Common to all Alternatives

Recreation

Impacts from the alternatives listed above, when added to past, present, and future actions within the cumulative analysis area, would have minimal effects to recreation overall. Because there are very few effects that are expected from any of the alternatives listed above, positive or negative, cumulative effects would be minimal for recreation. Opportunities for recreational activities in the cumulative analysis area are abundant and would endure the minimal impacts from any of the alternatives.

Impacts associated with past, present, and future activities would consist of range improvements, such as fences, identified throughout the analysis area that would reduce some opportunities for non-motorized cross country travel. Accessibility in the area for hunters and other recreationists who rely heavily on roads and trails for motorized access could potentially be impacted as a result of future travel planning. Impacts to recreationists from future utility corridors would be minimal, as utility corridors currently exist within the cumulative management area, and proposed lines would be in proximity to existing lines. During periods of livestock use, there would be an increase in potential human/livestock interactions.

In the long term, the combined effects of suitable grazing management and travel management planning within the cumulative analysis area would be beneficial to the overall health and scenic quality of the area, which in turn would result in an improved recreation experience.

Visual Resources

Alternatives 1 and 2 Cumulative Effects

In areas where VRM classifications are categorized Class II, such as those identified in Alternatives 1 and 2, the impacts associated with grazing would not be consistent with the management criteria listed under the Class II VRM classification. As discussed above, areas have been identified as failing to meet Standards under current grazing management. Under these alternatives, upland vegetation communities and riparian areas would not be expected to improve in certain areas. This is acceptable throughout the majority of the Chipmunk Group allotments (Class III and IV); however, within Class II VRM, the goal is to retain the existing character of the landscape, and the levels of change to the characteristic of the landscape should be low.

Power lines currently exist throughout the analysis area, and a new 500 KV power line is proposed for the area as well. The proposed line would travel through Class IV VRM and be in proximity to an existing

500 KV line. Although there are obvious impacts to visual resources associated with 500 KV power lines, these impacts are considered to be minimal, due to the fact the utility corridors would occur within Class IV VRM and these impacts are considered acceptable with the VRM objectives for the area.

The effects of future actions such as travel management planning throughout the cumulative analysis area would be beneficial to the overall health and scenic quality as resources are further protected. However, these benefits, within a few select areas, could be somewhat contradicted in areas of Class II VRM under the grazing schedule for Alternatives 1 and 2.

Alternatives 3-6 Cumulative Effects

Few effects to visual resources are expected from Alternatives 3-6 within the cumulative analysis area. Grazing activities throughout the analysis area would contribute in varying magnitudes toward cumulative effects by influencing plant species composition within the uplands, as well as riparian areas. While these impacts may be greater or lesser within differing allotments, overall these impacts would be considered minimal throughout the cumulative analysis area as a whole.

The impacts associated with utility corridors would be the same as those described for visual resources Alternatives 1 and 2.

Overall, the combined effects of suitable grazing management, or no grazing, and travel management planning within the cumulative analysis area would be beneficial to the overall health and scenic quality of the area.

3.9. AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACECs)

3.9.1. Affected Environment

The applicable ORMP objective for management within Areas of Critical Environmental Concern (ACECs) identifies that BLM will retain existing and designate new ACECs where relevance and importance criteria are met and where special management is needed to protect the values identified.

The Chipmunk Group allotments include the 440 acre Sommercamp Butte Research Natural Area (RNA)/ ACEC, the 150-acre Squaw Creek RNA/ACEC, and are adjacent to the 612-acre Jump Creek Canyon ACEC, as designated in 1999 by the Owyhee Resource Management Plan (ORMP) (USDI BLM, 1999a). For many years all areas of the Squaw Creek RNA/ACEC has been nearly completely isolated from livestock grazing due to a lack of water and topography. This has promoted excellent low-elevation Wyoming sagebrush/bluebunch wheatgrass communities (USDI BLM, 1999a) (Map ACEC-1). Grazing is prohibited in the Jump Creek Canyon and restricted along the Jump Creek Canyon rim.

ACECs that are adjacent to the Chipmunk Group allotments but are included in the affected environment are Mcbride Creek ACEC, Coal Mine Basin ACEC and Sommercamp Butte ACEC and Cinabar Mountain ACEC.

Sommercamp Butte (440 acres; plant communities)

This area is noteworthy for its extensive, good ecological condition mountain mahogany-bluebunch wheatgrass community type. The rimrock butte top supports a mountain mahogany-gland ocean-spray (*Holodiscus dumosus*) community type. Mountain mahogany communities are currently poorly represented in special management areas within the Owyhee Uplands ecological region. The Sommercamp Butte area ranges in elevation from 6,000 to 6,360 feet. Because of its elevation, Sommercamp Butte also has relatively high scenic values. It is bordered to the north and east by State of Idaho land (see Map ACEC-1 in the appendices). Special status animal species known or expected to

occur in the area include sage grouse, numerous Neotropical migratory birds, bats, and a diversity of other wildlife including elk, mule deer, pronghorn, and a variety of raptors and other nongame species.

Recent observations in July 2013 (see Project Record, Sommercamp Butte ACEC 2013) identified the condition of the vegetation within the RNA/ACEC as fairly close to reference conditions. Current management of the ACEC appears mostly compatible with the values and resources for which the ACEC was designated. Current cattle management appears to be mostly maintaining the native plant community; the lack of summer water within the ACEC results in relatively light use. A diversity of shrubs, grasses and forbs were encountered during the field visit. Very few junipers were seen within the ACEC. Grasses appeared to have only a low departure from reference abundance. Annual invasive grasses were few (cheatgrass, North Africa grass) and only very small areas of these two annuals were seen. However, the non-native perennial bulbous bluegrass was frequent throughout the ACEC, although generally less dominant than the native grasses. Although it likely has replaced some of the desirable native grasses in the plant community, its overall effect in the ACEC is relatively minor, as indicated by the amount of native grasses present. A variety of native perennial and annual forbs was identified and present throughout. A handful of non-native forbs were observed, but each was localized in a very small area and collectively these weeds have virtually no effect on the native plant community in the ACEC. No noxious weeds were seen and none are recorded in the area.

Squaw Creek (150 acres; Plant communities)
Two of the three physically separated portions of Squaw Creek are represented by excellent-condition, low-elevation Wyoming sagebrush-bluebunch wheatgrass communities. The northern parcel of these two is within the Wild Horse Herd Management Area. These two areas have been partially protected from livestock grazing by lack of water, topography, and the presence of an old road cut on all but one side. The third area burned around 1989 and is now a bluebunch wheatgrass community, with the Wyoming sagebrush beginning to return. It is also in excellent condition due to nearly complete isolation from grazing for many years. All areas contain an extensive microbiotic soil crust, resulting in little exposed soil. Squaw Creek is particularly valuable as a rangeland reference area, since so few low-elevation bunchgrass communities in excellent condition remain. Special status animal species known or likely to occur in this area include sage-grouse, California bighorn sheep, and several species of bats and Neotropical migrants, as well as other wildlife including mule deer, chukar, gray partridge, and a diversity of raptors and other nongame birds, mammals, reptiles and amphibians. This area qualifies as a Research Natural Area (see Map ACEC-1 in the appendices).

In accordance with the 1999 ORMP (USDI BLM, 1999a), The Squaw Creek Research Natural Area (RNA) is designated as being:

- Excluded from Rights-of-Way actions for surface and subsurface development;
- Prohibited to developing springs and pipelines, wildlife water sources and reservoirs, pasture and exclosure fencing and juniper/vegetation treatment projects; and,
- Other multiple use activities including restrictions associated with developing wildlife water sources and reservoirs, livestock salting and grazing, pasture and exclosure fencing, and fire suppression and rehabilitation actions (USDI BLM, 1999a).

Jump Creek Canyon (612 acres; Plant communities, Watershed, Riparian resources, Scenic values)
Jump Creek Canyon contains excellent examples of several different undisturbed riparian communities along its perennial stream, a diversity of special status animal and other wildlife species, pockets of excellent condition Wyoming sagebrush-bluebunch wheatgrass, and high scenic values. Riparian communities include syringa-red-osier dogwood (*Philadelphus lewissii-Cornus stononifera*), water birch (*Betula occidentalis*), syringa and water birch gallery forest. Special status animal species include redband trout, which occur throughout the length of the creek, several species of bats and Neotropical

migrants that are known or expected to occur within riparian and canyon habitats bordering the creek and adjacent sage brush steppe uplands, and the Mojave black-collared lizard, which is known to occur in outcrops near the lower end of the canyon. Mule deer, mountain lion, various raptors and other nongame birds, mammals, reptiles, amphibians and fish also occur within this unique area. The presence of numerous waterfalls, springs, pools, and steep canyon walls have created a unique and highly scenic environment. A small portion of the area is currently designated as a recreation site, and the remainder is within the Jump Creek Special Recreational Management Area (SRMA). Jump Creek is designated as a Stream Segment of Concern (SSOC) and has been identified as eligible as a component of the Wild and Scenic Rivers system (see Map ACEC-1 in the appendices).

In accordance with the 1999 ORMP (USDI BLM, 1999a), The Jump Creek Canyon ACEC is designated as being:

- Excluded from Rights-of-Way actions for surface and subsurface development;
- Prohibited to developing springs and pipelines, wildlife water sources and reservoirs, pasture and exclosure fencing and juniper/vegetation treatment projects; and,
- Other multiple use activities including restrictions associated with developing wildlife water sources and reservoirs, livestock salting and grazing, pasture and exclosure fencing, and fire suppression and rehabilitation actions (USDI BLM, 1999a).

3.9.2. Alternatives 1-5 Effects

Alternative 2 actions, as limited in this EA to no project construction, as well as Alternatives 1, 3, 4, and 5, do not include proposals to construct projects or engage in surface disturbing activities. As a result, none of the activities excluded or prohibited within the Sommercamp Butte RNA/ACEC, Squaw Creek RNA/ACEC, and Jump Creek Canyon ACECs would be affected. Activities restricted within the three ACECs, including salting, would continue to be restricted equally under each of the five alternatives, as directed by the ORMP guidance. In addition, Sommercamp Butte and Squaw Creek livestock grazing would continue at a minimal level due to a lack of water and topography. Relevant and important values for which the three ACECs were designated would continue to be protected. Alternatives 1-5 would allow significant progress toward meeting upland vegetation health and vigor; including meeting ORMP objectives.

3.9.3. Alternative 6 Effects

The no-grazing alternative would not include activities excluded or prohibited within the Sommercamp Butte RNA/ACEC, Squaw Creek RNA/ACEC, and Jump Creek Canyon ACECs. Similarly, the alternative would eliminate the need for compliance inspections related to restrictions to livestock grazing and salting within the portions the ACECs that occur in the Chipmunk Group allotments. Elimination of the need for compliance inspections related to restrictions to livestock grazing and salting would extend through the 10-year term of livestock exclusion from the Chipmunk Group Chipmunk allotments. Relevant and important values for which the two ACECs were designated would continue to be protected. Alternative 6 would allow significant progress toward meeting upland vegetation health and vigor; including meeting ORMP objectives.

3.9.4. Cumulative Effects

The cumulative effects analysis area for ACECs is defined by the bounds of the Bureau of Land Management Owyhee Field Office. The land use plan for the Owyhee Field Office, the ORMP, designated 12 ACECs totaling 167,372 acres. Restrictions to activities authorized were included in the management direction provided by the plan.

For all alternatives activities excluded, prohibited, or restricted in the 12 ACECs, as identified in the ORMP, would retain relevant and important values unchanged and protected in the cumulative effects

analysis area. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted ACECs within the CIAA, conditions and health of the ACECs within the Chipmunk Group allotments would meet or move toward meeting ORMP objectives and the Idaho Standards for Rangeland Health.

3.10. SOCIAL AND ECONOMIC VALUES

3.10.1. Affected Environment

Desired Condition, Resource Objectives, & Assessment/Monitoring Methods

The resource objective specified in the Owyhee Resource Management Plan (ORMP) for both livestock grazing management is to provide for a sustained level of livestock use compatible with meeting other resource objectives. Resolve issues associated with livestock grazing identified in the ORMP EIS (USDI BLM, 1999b).

Monitoring includes collection of ecological site inventory, rangeland health assessment, utilization, trend, actual use, climate and other data by various methods. Monitoring also includes use supervision and compliance checks (Appendix F).

The Chipmunk Group allotments

The Chipmunk Group allotments include 80,720 acres of public land, 8,589 acres of state land, and 35,953 acres of private land (Table ALLOT-1) (Maps GEN-1, RNGE-1, RNGE-2, RNGE-3). The allotments in this EIS are located adjacent to one another within the northern portion of Owyhee County, Idaho, within one of three subgroups: Cow Creek, Jump Creek, and Succor Creek.

There are 25 grazing allotments within the Chipmunk Group allotments (Table ALLOT-1). There are currently 12,251 active AUMs of livestock forage allocated on the 25 allotments (see Table ALT-1.1 in Section 2.2.1 above for detailed AUMs by allotment). Current grazing management is described in detail in the Alternative 1 section above and in Appendix B.

Permitted stocking rates on public lands managed by the BLM within the Chipmunk Group allotments average approximately 10.2 acres per AUM. Cattle (cow/calf pairs and yearlings) are the primary type of livestock authorized on the allotments. Allotments are specifically permitted for cattle, sheep, and/or horses.

Table ALLOT-1: Total acres, active use and class of livestock within Chipmunk Group allotments in 2012 (taken from 1999 ORMP and 2012 GIS data)

Allotment Name/#	Class of Livestock[1]	Active Permitted Use (AUMs)	Public Acres	State Acres	Private Acres	Total Acres
Alkali-Wildcat	C	624	6,211	0	0	6,211
Baxter Basin	C	299	1,422	0	0	1,423
Blackstock Springs	C	2,057	12,794	1,278	3,265	17,337
Burgess	C	240	1,182	0	128	1,310
Burgess FFR	C	11	250	0	474	723
Chimney Pot FFR	C	4	24	0	1,256	1,280
Chipmunk Field FFR	C	72	559	32	12,379	12,970
Corral Creek FFR	C	9	70	0	202	272
Cow Creek	C	1,214	7,839	2	114	7,956
Elephant Butte	C	390	6,939	24	2,211	9,174

Allotment Name/#	Class of Livestock[1]	Active Permitted Use (AUMs)	Public Acres	State Acres	Private Acres	Total Acres
Ferris FFR	C	150	1,050	0	2,092	3,142
Franconi	C	120	629	0	1,430	2,059
Jackson Creek	C	1,139	5,825	3,740	1,205	10,770
Joint	C	1,089	3,127	954	137	4,217
Lowry FFR	C	6	37	0	229	266
Madriaga	C	865	3,955	0	151	4,106
Poison Creek	C,H,S	761	5,244	0	37	5,280
R Collins FFR	C	24	102	0	333	435
Rats Nest	C	717	4,891	640	0	5,531
Sands Basin	C	999	10,861	1,279	1,382	13,522
Soda Creek	C,H	501	2,981	640	5,177	8,798
Stanford FFR	C	114	544	0	1,348	1,892
Texas Basin FFR	C	5	91	0	1,906	1,997
Trout Creek	C	726	3,360	0	86	3,447
Trout Creek/Lequerica	C	115	733	0	410	1,143
TOTAL		**12,251**	**80,720**	**8,589**	**35,953**	**125,262**

[1]Class of livestock is: H-horses, C-cattle, and S-sheep

Within the Chipmunk Group allotments, there are fences that border lands administered by the BLM, but that are not owned by BLM. Most of these fences are built by neighboring land owners to keep livestock off or on their land. In addition to fences, there are approximately 18 BLM cattleguards and 82 water locations developed primarily for domestic livestock use. There are approximately 186 acres excluded from livestock grazing within the allotments in the analysis area. Most cattleguards are under the maintenance responsibility of the BLM, while other rangeland projects (troughs, pipelines and fences) are typically maintained by the permittees.

Livestock Trailing

Trailing, or moving animals across federal, state, or private land, is a component of regular grazing management practices in the Chipmunk Group allotments. The timing of specific trailing events varies annually based on factors such as forage production, drought, resource conditions, weather, wildfire, court decisions, and individual livestock operations across the analysis area.

Livestock are primarily actively trailed on the existing roads, where no or limited forage is consumed and the trailing occurs for short durations. For the majority of situations, trailing activities have not been documented, nor are they expected to substantially affect resources. Thus, they are not affecting the ability of these allotments to meet or make significant progress toward meeting Standards. However, trailing activities have been considered and are incorporated into this Rangeland Health Assessment and Evaluation Report. For specific livestock routes, see Map RNGE-4 Trailing.

Economic profiles

This socioeconomic analysis will focus primarily on Owyhee County, Idaho, where all of the Chipmunk Group allotments are located, but as some of the livestock operators who own the cattle maintain base ranches in Jordan Valley, Oregon (Malheur County), this county will also be included in the analysis. Owyhee County is the second-largest county in the state and covers 7,639 square miles. The population in Owyhee County in 2010 was 11,389, an increase of 7 percent from the year 2000, compared to an 18 percent increase throughout the state of Idaho over that same time period. The population density is only

1.5 people per square mile, and most of the county residents enjoy a largely rural lifestyle. Residents of the Treasure Valley come to the public lands to recreate on weekends and during hunting and fishing seasons. In 2010, the median age in the county was 35.3 years, almost three years older than the median age in 2000 and close to the median age of 36.3 for the entire state. Almost one-third of county residents are under the age of 18 and more than 20 percent of residents are age 45 to 64. The population in the baby boomer generation increased almost 26 percent from 2000 to 2010. Southwest Idaho is projected to grow by more than 95,000 people by the year 2020, and 77,000 of these people will live in Ada or Canyon Counties (Gardner & Zelus, 2009).

Economic profiles

Unemployment in Owyhee County in 2010 was 11 percent, compared to 8.8 percent in Idaho and 9.6 percent nationwide in the same year. Incomes are lower in Owyhee County than in Idaho, possibly due to employment primarily in lower-paying sectors like agriculture and social services. In 2010, the per capita income for Owyhee County was $17,373, with a median household income of $33,441; per capita income for the state was $22,518 and median household income was $46,423 (U.S. Census Bureau, 2012). More than 20 percent of people in Owyhee County live below the poverty level, which is a higher rate than Idaho's poverty rate. Table SOCE-1 shows the unemployment rate, per capita income, median household income, and poverty rate of Owyhee and Malheur counties.

Table SOCE-1: Economic statistics for populations in Owyhee and Malheur counties

Location	Unemployment rate	Per capita income	Median household income (2010 dollars)	All people below poverty rate
Owyhee County, ID	11%	$17,373	$33,441	22.2%
Malheur County, OR	10.3%	$16,335	$39,144	22.7%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Agriculture (including livestock ranching), natural resource management, education and social services are the primary sectors for employment in Owyhee and Malheur counties, although manufacturing and retail trades also employ many residents in the counties (Table SOCE-2). Malheur County in southeastern Oregon covers 9,887 square miles and is 94 percent rangeland, two-thirds of which are managed by the BLM (Malheur County, Ore., 2012). Population density was 3.2 persons per square mile in 2010. Although education, health care and social services together employ almost one-fourth of the county's residents (U.S. Census Bureau, 2011), irrigated fields in the northeast corner of the county allow for intensive and diversified farming, and residents of the Treasure Valley in Oregon and Idaho support businesses connected to hunting, fishing, golfing, camping, hiking, and water-related activities.

Table SOCE-2: County employment by industry (2006-2010 average)

Industry	Owyhee County, Idaho	Malheur County, Oregon	United States
Civilian employed population 16 years and over	4,448	11,487	141,833,331
Agriculture, forestry, fishing and hunting, and mining	19.4%	12.4%	1.9%
Construction	12.6%	7.1%	7.1%
Manufacturing	9.0%	10.0%	11.0%
Wholesale trade	1.6%	4.4%	3.1%

Industry	Owyhee County, Idaho	Malheur County, Oregon	United States
Retail trade	8.3%	10.7%	11.5%
Transportation and warehousing, and utilities	6.3%	3.4%	5.1%
Information	1.0%	1.3%	2.4%
Finance and insurance, and real estate and rental and leasing	4.2%	4.1%	7.0%
Professional, scientific, and management, and administrative and waste management services	2.9%	4.2%	10.4%
Educational services, and health care and social assistance	19.7%	23.1%	22.1%
Arts, entertainment, and recreation, and accommodation and food services	5.7%	7.6%	8.9%
Other services, except public administration	3.3%	3.8%	4.9%
Public administration	5.9%	7.9%	4.8%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Economic Contribution of Livestock Grazing

The federal government manages 78 percent of the total land in Owyhee County; the BLM manages 75.9 percent of all federal land in the county. Ninety-three percent of the total federal land in the county is managed for commodity production (timber harvest, crop and livestock production, and mining) and 7 percent is managed primarily for natural, cultural, and recreational activities (EPS-HDT, 2012).

Table SOCE-3 shows the industry classification (based on the North American Industry Classification System (NAICS)) for farms located in Owyhee and Malheur counties, as well as the nation as a whole in 2007. Individual farms may engage in various types of agriculture (both crops and livestock), but these classifications provide insight into the likely primary agriculture activity for the farms surveyed in the 2007 USDA Census of Agriculture. As shown in the table, the proportion of farms classified as beef cattle ranching and farming operations substantially exceeds the national average.

Table SOCE-3a and b

Table SOCE-3a: Number of Farms by Type, 2007

Farm Type	Owyhee County, ID	Malheur County, OR	County Region	U.S.
All Farms	620	1,250	1,870	2,204,792
Oilseed & Grain Farming	40	74	114	338,237
Vegetable & Melon Farming	10	57	67	40,589
Fruit & Nut Tree Farming	4	8	12	98,281
Greenhouse, Nursery, etc.	4	8	12	54,889
Other Crop Farming	185	388	573	519,893
Beef Cattle Ranch. & Farm.	247	492	739	656,475
Cattle Feedlots	8	34	42	31,065
Dairy Cattle & Milk Prod.	23	35	58	57,318
Hog & Pig Farming	4	10	14	30,546
Poultry & Egg Production	6	4	10	64,570
Sheep & Goat Farming	30	40	70	67,254
Animal Aquaculture & Other Animal Prod.	59	100	159	245,675

Table SOCE-3b: Percent of each farm in each county, by type, 2007

Percent of Total	Owyhee County, ID	Malheur County, OR	County Region	U.S.
Oilseed & Grain Farming	6.5%	5.9%	6.1%	15.3%
Vegetable & Melon Farming	1.6%	4.6%	3.6%	1.8%
Fruit & Nut Tree Farming	0.6%	0.6%	0.6%	4.5%
Greenhouse, Nursery, etc.	0.6%	0.6%	0.6%	2.5%
Other Crop Farming	29.8%	31.0%	30.6%	23.6%
Beef Cattle Ranch. & Farm.	39.8%	39.4%	39.5%	29.8%
Cattle Feedlots	1.3%	2.7%	2.2%	1.4%
Dairy Cattle & Milk Prod.	3.7%	2.8%	3.1%	2.6%
Hog & Pig Farming	0.6%	0.8%	0.7%	1.4%
Poultry & Egg Production	1.0%	0.3%	0.5%	2.9%
Sheep & Goat Farming	4.8%	3.2%	3.7%	3.1%
Aquaculture & Other Prod.	9.5%	8.0%	8.5%	11.1%

Source: (EPS-HDT, 2012)

Table SOCE-4 shows county-level economic information for 2011 based on data from the Bureau of Economic Analysis. While total earnings in Owyhee County are substantially less than those of Malheur County, farm earnings in Owyhee County are more than triple those of Malheur County. More than half of the earnings generated in Owyhee County come from farming, compared to just under 6 percent in Malheur County.

In terms of employment, the farming section accounts for more than one-quarter of the jobs in Owyhee County, more than 10 percent of the jobs in Malheur County.

In all three counties, more than half of the cash receipts generated by farms come from livestock and products.

Table SOCE-4: Farm Earnings, Employment, and Cash Receipts (2011)

	Owyhee Co. (ID)	Malheur Co. (OR)
Total earnings by place of work (million dollars)[1]	$198.5	$578.8
Farm earnings (million dollars)	$107.3	$33.3
Farm earnings (%)	54.0%	5.7%
Total employment[2]	4,262	17,235
Farm employment	1,123	2,098
Farm employment (%)	26.3%	12.2%
Farm cash receipts and other income (million dollars)[3]	$345.3	$374.5
Livestock and products (%)	58.6%	59.2%
Crops (%)	37.6%	36.1%
Other (%)	3.8%	4.7%

Source:
1 Bureau of Economic Analysis, Regional Economic Information System (BEA-REIS). 2012. Table CA05: Personal income by major source and earnings by NAICS industry.

2 Bureau of Economic Analysis, Regional Economic Information System (BEA-REIS). 2012. Table CA25N: Total full-time and part-time employment by NAICS industry.
3 Bureau of Economic Analysis, Regional Economic Information System (BEA-REIS). 2012. Table CA45 Farm income and expenses.

Data from the Bureau of Labor Statistics (BLS) indicate that the average annual income of individuals employed in occupations related to animal production earned approximately $36,047 and $28,987 in Owyhee and Malheur counties, respectively, in 2011.

In accordance with the Owyhee Resource Management Plan (USDI BLM, 1999a), livestock grazing is available within the 25 Chipmunk Group allotments. Additionally, the ORMP identified the active authorized use for livestock within the ORMP planning area upon implementation of the plan. The plan further identified that authorized active use would be adjusted through the life of the plan based on monitoring and assessment to determine future stocking levels. Stocking levels necessary to meet objectives[44] were projected to be reduced from 135,116 upon implementation of the ORMP in 1999 to 112,647 AUMs in 2004 and 105,899 AUMs in 2019. These projected levels of authorized active use compare to an average actual use of 96,676 AUMs during the years 1988 through 1997.

In 2010, livestock cash receipts in the state of Idaho totaled $1.2 billion, an increase of 26 percent over the previous year (USDA NASS, 2011). According to the 2007 USDA Census of Agriculture, the most recent year the census was taken, (USDA NASS, 2009) 134,732 cattle and calves were sold in Owyhee County that year, which brought almost $67 million to the county that year, an average of $497 per head. In the state of Idaho, 1.8 million cattle and calves were sold that same year, totaling more than $1.3 billion, an average of $756 per head. However, most of the grazing operations with livestock on the Owyhee River area allotments are family-owned ranches based in Jordan Valley, Oregon. Thus, although the livestock graze in Idaho, income from the sales of those livestock goes to the counties in which the livestock operations are based. In 2007, sales of 203,743 cattle and calves in Malheur County totaled $179 million (USDA NASS, 2009). Livestock operation owners may still do business in Idaho, especially while the animals are actively grazing on the allotments, by purchasing supplies, equipment, and gasoline for vehicles, as well as visiting local establishments for food and entertainment. Research completed in 1999 estimated that livestock grazing contributed $66.94/AUM to the Owyhee County economy (Darden, Harris, Rimbey, & Harp , 1999): $46.85/AUM as a direct impact to ranches and $16.22/AUM as indirect/induced effects to other sectors in the local economy. Indirect and induced economic effects to the regional economy include supply purchases (such as hay, equipment, etc.) and from the labor income expenditures by ranch employees and by employees of suppliers. These numbers provide a means of comparing effects to the local economy from changes in livestock grazing management, but actual economic impacts may vary by ranch and county.

The BLM collects annual grazing fees from the operators based on the number of AUMs they are permitted. An AUM represents the amount of dry forage required to sustain one cow and her calf, one steer, one horse, five sheep, or five goats for one month. The ORMP provides 135,116 active permitted AUMs for all of the allotments in the Owyhee Resource Area. Section 2.2.1 shows the active use, suspension, and permitted use AUMs for each of the Chipmunk Group allotments under the current permit. As defined by the Taylor Grazing Act of 1934, active use is the current authorized use, which includes livestock grazing. Suspension is the temporary withholding of active use, and permitted use is the forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease. At the current rate of $1.35 per AUM, these allotments can generate

[44] The ORMP objective for livestock grazing management is to provide for a sustained level of livestock use compatible with meeting other resource management objectives. In addition, the objective is to resolve issues associated with livestock grazing identified in the allotment management summary (Appendix LVST-1 of the ORMP).

$22,152 per year from active-use AUMs (based on the number of AUMs authorized in Alternative 1). The BLM distributes 50 percent of the grazing revenues to range betterment projects, 37.5 percent remains in the U.S. Treasury, and 12.5 percent is returned to the state (43 USC Chapter 8A, 1934). In addition, the BLM contributes payments in lieu of taxes (PILT), which totaled more than $9.5 million in Owyhee County from 2003 to 2012, for an average of about $956,000 per year[45].

Non-market values of ranching

Most environmental goods and services (e.g., clean air and water, fish and wildlife habitat, recreational and aesthetic values) are not traded in markets, so it is difficult to place a monetary value on the protection or degradation of natural resources that provide these goods and services. In many cases, a method called hedonic pricing can attempt to estimate a value of the goods and services an ecosystem provides by examining the amount of money that people would be willing to pay when the characteristics of the service change. For example, the value of the ecosystem services that support recreational activities (e.g., clean air and water that supports habitat for fish and wildlife, which in turn provides hunting, fishing, and wildlife watching opportunities) can be estimated by examining average expenditures for travel, equipment, and supplies for these recreational activities in an area (see Tables SOCE-9 and 10 below). People may spend less time and money on recreational activities in areas where the natural resources have become degraded. The Group 2 Chipmunk allotments provide opportunities for recreation such as ORV use, fishing, hunting, boating, camping, and wildlife-watching (see Recreation, Visual Resource, ACEC, Wilderness and Wild and Scenic Rivers, and Lands with Wilderness Characteristics sections in this EA); however, degraded conditions caused by fires and livestock grazing-related activities can reduce wildlife habitat, muddy streams and rivers, and diminish scenic values, all of which can lead to less recreation and thus less money spent in the counties adjacent to these allotments.

Other intangible values associated with ecosystems services include social values of natural resource use – the sense of community cohesiveness and belonging that comes from participating in recreational activities, as well as farming and ranching. Degraded conditions, as mentioned above and in the resource impact analysis sections of this EA, lessen the quality of the land and forage available for growing crops or feeding livestock, which can also have economic impacts on the producers of these goods in the counties adjacent to the Group 2 allotments. Ecosystems services also have value beyond providing for the uses discussed in this EA. As noted in (Besser, et al., 2012), providing for healthy, functioning ecosystems can contribute to a greater resilience to extreme events like fires and storms, as well as the long-term impacts of climate change.

Rangeland Ecosystem Goods and Services

Healthy rangeland ecosystems can provide multiple goods and services that can increase the economic, social, and cultural well-being of individuals and communities. To the degree that rangeland resources are degraded, an opportunity exists—through restoration of ecosystem health—to obtain these goods and services at a higher and more productive level.

According to participants in the Sustainable Rangelands Roundtable, rangeland ecosystem goods and services are divided into three main categories: Biological, hydrological/atmospheric, and miscellaneous.[46] The Roundtable identified a list of goods and services available from healthy rangelands, some of which are shown. Additional goods and services not identified by the Roundtable have been added to their list (see table SOCE-5) to show other potential gains within the Owyhee region. This list

[45] Based on BLM data retrieved at http://www.doi.gov/pilt/county-payments.cfm?term=county&state_code=ID&fiscal_yr=2012
[46] Source: http://sustainablerangelands.org/pdf/Ecosystem_Goods_Services.pdf

should not be considered as exhaustive. There may be even more potential goods and services that could be provided in greater amounts by an increase in rangeland health in the area.

Table SOCE-5: Rangeland ecosystems services

Biological	Hydrological/Atmospheric	Miscellaneous
Domestic Livestock Production	Clean Drinking Water	Scenic Views
Other Food for Human Consumption	Water for Downstream Economic Uses	Cultural or Spiritual Resources
Forage for Livestock	Floods for Channel and Riparian Area Rejuvenation	Historical/Archeological Sites
Fiber	Flood Mitigation	Recreation and Tourism Sites
Biofuels	Water Bodies for Recreation/Tourism	
Wildlife Habitat Benefits (Fishing, Hunting, Viewing, Existence Value, etc.)	Minimization of Soil Erosion and Downwind/Downstream Soil Deposition	
Potential Biochemicals	Contribution to Clean, Fresh Air	
Genetic Material	Carbon Sequestration	

Some of the potential benefits of increased rangeland health would be realized by individuals who live far away from the Owyhee region. Because streams flowing through the area eventually contribute to the Snake and Columbia River systems, any extra sediment that leaves the area could result in lower hydrologic capacity, lower resistance to flooding, and decreased capacity for boat traffic on the Snake and Columbia rivers. In addition, stream-bottom sediment deposition decreases success rates for spawning fish species, possibly contributing to extended protection and expensive habitat-loss mitigation for salmon and other fish species. While these benefits might not be directly enjoyed by members of the Owyhee community, their value to society as a whole needs to be accounted for. An example of a "downwind" good or service is enhanced carbon sequestration potential, the benefits of which accrue to the entire global community and all earth ecosystems. Although these benefits are not focused on the Owyhee region, their value to the world as a whole must be weighed in the process of evaluating the relative benefits and costs of changes in range allotment permits and management decisions.

In 2011, researchers at the University of Nevada, Reno (UNR) prepared a preliminary draft of a flow-model for economic analysis for land management decision-making in the Intermountain West[47]. In conjunction with this project, the researchers assembled an annotated bibliography of existing studies on the value of ecosystem services provided by rangeland and other land types in the western United States.

[47] *Economic Flow-Model for Western Rangelands: Annotated Bibliography and Additional Resources*, June 2011, University of Nevada, Reno, is available from the Owyhee Field Office project record upon request.

Table SOCE-6 shows a list of the ecosystem goods services included in that bibliography. For each ecosystem good or service in the list, the table discloses:

- Whether an impact is expected to occur under any of the alternatives under consideration within this planning process;
- Whether any anticipated impacts are expected to be measureable;
- Whether the research included in the bibliography has been able to assign a monetary value to impacts to the ecosystem good or service in question; and
- Additional resources or data sources used in evaluating the good or service for this EIS.

The UNR document also outlines the conditions under which it would be reasonable to use the studies it cites to estimate the monetary value of the goods and services listed.

Table SOCE-6: Rangeland ecosystem goods and services and whether there are potential impacts from grazing and potential values of the services

	Ecosystem Goods and Services listed in the University of Nevada, Reno's Annotated Bibliography	**Is this resource expected to be affected under one or more of the alternatives being considered?**	**Is it expected to be affected in a manner and/or to a degree that can be measured?**	**Has research found a way to assign a monetary value to impacts to this resource?**	**Additional source(s) of documentation on this resource and its value and/or additional information**
A.1	Ranch Incomes	Yes	Yes	Yes	BLM Value of Change in AUMs Calculator
A.2	Amenity Value of Ranching Lifestyle	Yes	No	Yes	
A.3	Recreation	No	No	Yes	
A.4	Wildfires	Maybe	?	Yes	
A.5	Erosion and Hydrology	Maybe	No	Yes	FS WEPP and WEPS water and wind erosions models
A.6	Carbon Sequestration	Yes	No	Yes	The Chicago Climate Exchange carbon markets is not currently functional. If and when it becomes functional again, the market value of carbon will serve as a type of measure of the economic value of carbon sequestration. It is important to note that the true value of carbon sequestration is found in reduced future impacts from climate change. Those expected impacts can be estimated but are highly uncertain.

	Ecosystem Goods and Services listed in the University of Nevada, Reno's Annotated Bibliography	Is this resource expected to be affected under one or more of the alternatives being considered?	Is it expected to be affected in a manner and/or to a degree that can be measured?	Has research found a way to assign a monetary value to impacts to this resource?	Additional source(s) of documentation on this resource and its value and/or additional information
A.7	Wild Horses (under Miscellaneous)	Maybe	No	Yes	The study cited shows that additional wild horses beyond the target level cause economic losses due to reduced forage for livestock and wildlife.

Economists regularly quantify the value of ecosystem goods and services in dollar terms. Techniques used to estimate the dollar value of these benefits include:

- Revealed Preference Methods
  - Hedonic Pricing
  - The Travel Cost Method
- Expressed Preference Methods
  - Contingent Valuation
  - Welfare Measures
- Replacement Cost Method
- Dose-Response Methods
- Opportunity Cost Calculation

Revealed preference methods of valuation estimate proxy market prices based on the activities and choices made by actual people:

- In the hedonic pricing method of assessing value, the analyst identifies the contribution that environmental or ecosystem services make to the price of other goods and or services. For example, a piece of land or home with a scenic view will generally command a higher market price than does a similar piece of land or home without the same view. So if a thriving ecosystem provides a more beautiful view, the difference in price between that property and one without the view would be attributed to the ecosystem itself.
- To use the travel cost method of analyzing the value of ecosystem goods or services, the analyst surveys the amount of money people either are willing to spend or actually spend on visits to a particular place. Expenditures on fuel, vehicle wear and tear, airfares, motels or hotels, restaurant food, entry fees, and so on can be interpreted as the value placed by the traveler on the experience of visiting that location. Complicating factors include income effects, differences in the values placed by visitors on the time they spend traveling to the location, proximity of the location to the visitor’s starting point, declining willingness to spend money on subsequent visits, and so on.

Expressed preference methods use hypothetical economic data based on interviews or surveys to estimate the market value of ecosystem goods and services:

- Contingent valuation methods rely on surveys in which people are either asked how much they would be willing to pay to obtain an ecosystem good or service, or they are asked to state how much they would have to be compensated in dollars in exchange for giving up an ecosystem good or service. For example, a group of land owners might be asked how much they would each be willing to pay in order to establish a specific wildlife population on a nearby piece of public land. The total amount for all surveyed land owners could be used as a statistical basis for an approximation of the market value of establishing the proposed wildlife population. Or the same landowners could be asked how much they would have to be paid in compensation in order to get them to give up an existing wildlife population on nearby land. Contingent valuation methods are sometimes less than ideal due to strategic "voting" by survey participants. They are also subject to some unsurprising distortions. People are usually more conservative when they state how much they would be willing to pay to obtain something in contrast with how much they would have to be paid by someone else in order for them to give up something they already possess or that they might possess in the future.
- Welfare measures of value refer to methods in which the total consumer well-being (welfare) associated with an ecosystem good or service is measured by comparing the estimated dollar amounts that all prospective consumers are willing to pay for an ecosystem good or service are compared with the actual cost to society of providing that good or service. To the degree to which the actual cost falls below the amount individuals are willing to pay, an economist would say that consumer surplus or, in other words, surplus economic enjoyment, is (or will be) generated by the good or service being evaluated.

In the replacement cost method, economists add up the amount it would cost to provide a specific ecosystem good or service by means of a human-built method. For example, vegetation on a healthy landscape provides water filtration benefits. To calculate the monetary value of those filtration benefits using this method, an economist would use engineers' estimates of the cost of building one or more water treatment plants to treat the same volume of water to the level as provided by the ecosystem. This method can also be used to estimate the value of ecosystem services that are expect to be obtained through restoration of a degraded landscape.

The dose-response method is used to estimate the value of a healthy ecosystem by identifying the cost of treatment for ecological damages where treatment or mitigation is required locally, downstream, or downwind. For example, if a degraded ecosystem allows elevated levels of nutrients to pollute a water body that is a source of drinking water at some point downstream, then the cost of treating human and/or livestock illnesses caused by the polluted water can be used to estimate some of the value of repairing the ecosystem so that nutrient runoff is reduced or eliminated. Similarly, the cost of water treatment downstream to remove the nutrient load (thus preventing contamination-related illnesses) can also be used to approximate the value of upstream ecosystem restoration. This method is sometimes closely correlated with the replacement cost method.

In the opportunity cost method of valuation, the following simple rule is applied: The value of something is equal to the value of whatever must be given up in order to obtain it. Based on the rules of mathematical equality, this must mean, conversely, that the value of what was given up is equal to the value of what was obtained in the exchange. This method is sometimes used to make a statement regarding the value of an ecosystem when a damaging activity either is proposed or has already occurred. For example, if a new gold mine is opened on a piece of land, then the total value of the ecosystem goods and services that were given up in order for the mine to be opened and operated is said to be equal to the total economic value generated by the mine.

These and other methods all provide means of quantifying, in dollars, the value of goods and services not directly traded in existing markets. Many of the goods and services provided by healthy rangeland

ecosystems are already traded in existing market systems and could be valued by means of identifying the quantities and qualities in which they exist. The estimation of the market value of all of the goods and services provided by the rangeland in this set of allotments falls outside the scope of the present analysis.

Recreation

Residents in nearby counties in Idaho and Oregon engage in fishing, hunting, boating, off-highway vehicle use, camping, wildlife watching, and winter sports throughout the Owyhee Resource Area. Studies conducted in 1995 identified visitor day values and net willingness-to-pay values for recreation here. Table SOCE-7 depicts the value recreationists place on these activities, rather than the actual expenditures. As mentioned above, there are few or no suppliers for recreational equipment in Owyhee County, so most expenditures for this equipment would occur outside the county and likely would not have much of an impact on the local economy, although recreationists would spend money on gasoline and groceries within Owyhee County. However, recreation presents some costs to the county. According to a 2003 report on the social and community aspects of public land grazing policy alternatives (Wulfhorst, Rimbey, & Darden, 2003), the limited staff of the county Sheriff's department is often overwhelmed with requests from recreational users who are lost, having mechanical problems, or injured. Search-and-rescue efforts often draw in community members who have more familiarity with the landscape than the out-of-town users with little knowledge of the area. Each call to help someone hurt, lost, or stranded in the backcountry costs money. In FY2003, search-and-rescue supplies totaled $1,000 of the $13,600 budget for the patrol component of the Sheriff's budget, and additional staff members are hired seasonally to respond to incidents (Wulfhorst, Rimbey, & Darden, 2003). The state of Idaho reimburses counties up to $4,000 per incident to cover some of the costs for volunteer-related expenses and the Sheriff bills the BLM for backcountry patrols. State funds come from the state gas tax and vehicle registrations. However, some county residents are uncomfortable with the idea of state resources being used to rescue recreationists who come from outside the county; attempts to recover costs ($500 each) from those rescued have been successful only about half the time.

Table SOCE-7: Net willingness-to-pay recreation value for the Owyhee Resource Area

Activity	1995 Value
Deer hunting	$40.02
Elk hunting	52.42
Antelope hunting	80.47
Other big game	53.65
Waterfowl hunting	42.48
Upland and small game	42.47
Warm-water fishing	39.28
Cold-water fishing	38.08
Developed site recreation	7.45
Disbursed use recreation	4.47
Non-game viewing, photography	28.31

Source: (USDI BLM, 1999b)

Table SOCE-8: Owyhee Resource Area Estimated Recreation Use and Value (1995)

Activity*	Visitor Days	1995 Value
Hunting	70,722	$3,816,617
Fishing	11,109	429,682
Off-highway vehicles	24,600	696,412
Other motorized use	22,616	640,266
Non-motorized use	10,669	47,689

Activity*	Visitor Days	1995 Value
Camping	39,107	291,344
Other land-based	36,740	717,113
Whitewater boating	1,368	38,714
Other water-based	1,057	29,917
Snowmobiling	2,301	10,285
Other winter sports	423	1,891
Total	**220,712**	**$6,719,930**

*Based on 8 hours per visitor day
Source: (USDI BLM, 1999b)

Social Value of Ranching

As noted in the Owyhee County Natural Resources Plan (Owyhee County Commissioners, 2009) livestock grazing often plays an important social role in this area, in addition to contributing economically. It has been an important component of the local economy in Owyhee County since the late 1860s, when the establishment of the southern Idaho railroad coincided with the migration of sheep through the Owyhee Mountains to Elko, Nevada. Horses and cattle were also introduced in the Owyhee Mountains at that time, and residents of rural Oregon, Idaho, and Nevada have since identified with the tradition, land use, and history of ranching in these areas. Maintaining the land in agriculture and ranching preserves the rural character and small-community feel, keeps the cost of living lower, and provides ample opportunities for recreation. Harp and Rimbey (2004) found that in communities in Owyhee County where ranching was an essential component, community members felt a much greater connection to each other, to the ranchers, and to local business owners. Among the Owyhee County communities surveyed for the study, Jordan Valley and Marsing communities scored higher in terms of community cohesion, owed at least in part to the large role that ranching plays in each of these communities. Closing a ranch in Jordan Valley or Marsing could have substantial negative social effects.

Environmental Justice

The Executive Order 12898 of February 11, 1994, established the requirement to address environmental justice concerns within the context of federal agency operations. This means that agencies must:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
- Ensure the full and fair participation by all potentially affected communities in the decision-making process; and
- Prevent the denial of, reduction in or significant delay in the receipt of benefits of the project by minority and low-income populations.

Evaluation of these impacts requires the identification of minority and low-income populations (including Native American tribes) within the affected area and evaluation of the potential for the alternatives to have disproportionately high and adverse impacts on such populations. Low-income populations are determined based on annual statistical poverty thresholds developed by the Bureau of Census. A low-income community may include either a group of individuals living in geographic proximity to one another or dispersed individuals (such as migrant workers or Native Americans) where the group experiences a common effect or environmental exposure. Minorities are individuals who are members of the following population groups: American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic. (Council on Environmental Quality, 1997)

Table SOCE-1 above shows the median household incomes and poverty rates for all three counties addressed in this document. Owyhee and Malheur counties are largely agriculturally based economies, so incomes are lower and poverty rates are higher.

Table SOCE-9 shows the breakdown in race and ethnicity for both counties. Neither of the counties has a minority population that exceeds 50 percent. However, the proportion of minorities in Owyhee County and Malheur County are higher than the proportions for Idaho (16 percent) and Oregon (21.4 percent), respectively. Crop producers and livestock operations in the United States commonly and legally employ citizens of Mexico and various Latin American countries, and most of these individuals would be classified as minority. Some proportion of the minority populations in Owyhee County and Malheur County could be employed by crop producers and livestock operators, so changes in livestock grazing in these counties could affect some members of the minority communities there.

Table SOCE-9: Race/ethnicity distribution

	Owyhee County	**Malheur County**
Total	11,389.0	31,326.0
Population by race		
White alone	69.2%	64.4%
Black or African American alone	0.1%	0.1%
American Indian and Alaska Native alone	3.1%	0.5%
Asian alone	0.0%	0.9%
Native Hawaiian and other Pacific Islander alone	0.0%	0.1%
Some other race alone	0.0%	0.1%
Two or more races	3.2%	2.7%
Population by ethnicity		
Hispanic or Latino	24.4%	30.3%
Minority	30.82%	35.60%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

3.10.2. Effects Common to All Alternatives

Table SOCE-10 below shows the total change in AUMs in all of the Chipmunk Group allotments for each alternative and the value of those changes to the community, based on estimates by Darden et al (See Section 3.10.1 above); the breakdown for each allotment can be found in table SOCE-12. Table SOCE-11[48] shows the average impact on expected 10-year net revenue for representative ranch operations, based on a detailed analysis that incorporates a sample partial enterprise budget showing the potential impact of each alternative on that part of the enterprise affected, based on information provided by a local ranch operator that was reviewed by a BLM rangeland manager (see Explanation of Model in Appendix I). The results of this analysis are intended to represent the impacts of the alternatives on representative small, medium, and large ranch operations and are not specific to any individual ranch.[49] For the purposes of this analysis, a small ranch is one with fewer than 200 cattle plus 10 horses; a medium ranch is one with 200 to 500 cattle plus 10 horses, and a large ranch is one with 501 to 2,499 cattle plus 10 horses.

[48] The actual totals in Table SOCE-11 may differ, since the totals for all of the alternatives assume that the same alternative would be chosen for all allotments; however, the Owyhee Field Manager may choose a different alternative for each allotment, which may result in different total impacts from the ones shown here.

[49] A complete analysis using this model has been conducted for each of the Chipmunk Group allotments to inform the development of the sample small, medium, and large ranches. This analysis is available from the Idaho BLM State Office project record upon request.

These values assume that the animals use all of the active use AUMs authorized. In Table SOCE-12, the results show the differences in 10-year net revenue when comparing the changes in AUMs in Alternatives 2 through 6 with the baseline AUMs in Alternative 1, and have been averaged and rounded. The figures in Tables SOCE-11 and SOCE-12 should not be construed as an estimate of the actual economic impact on actual individual ranches within the study area. Ranchers have a wide range of options available to them in terms of how they respond to changes in the permitted number of AUMs on their range allotment(s). Depending on the length of their allowed grazing season and the specific change in permitted AUMs, a rancher might choose to increase or decrease herd size, change grazing months, retain or sell animals at their headquarters, lease new ground or cancel one or more leases on private rangeland, switch to irrigated pasture, adjust feed lot contracts, completely change operation types, and so on. Given the number of uncertain variables and the range of possibilities, it is not feasible to anticipate how individual ranches will react to changes in their specific grazing permits. Also unknown are any and all associated business decisions made in response to prevailing markets, federal and state agricultural policies, and personal values.

BLM acknowledges that as a result of any changes in permitted AUMs, there are likely to be multiplier effects within the economy that serves the associated ranching community. Because it is not possible to quantify the specific monetary impacts on individual ranches, it is also not possible to accurately estimate the resulting multiplier effects. It is possible, however, to state qualitatively, for example, that a reduction in AUMs would result in a corresponding reduction in regional economic activity if ranches choose to reduce herd numbers and then in turn reduce their spending within the regional economy. The converse is also true (see this related discussion above). In addition, canceling grazing on any BLM-administered pasture for 1 or more years (e.g., resting a pasture) could impact grazing revenue brought in by the state of Idaho because any unfenced state-administered grazing land located within a rested BLM-administered pasture could not be grazed by a state grazing lessee. The state lessee could request that he or she not be charged a state grazing fee during that time, and the loss of income to the state could impact funding for other state programs.

Table SOCE-10: Total change in AUMs and value of AUMs to the community for all of the Chipmunk Group allotments

Alternative	% Change in AUMs	Change in Total AUMs	Total Active AUMs	Annual Dollar Value of Change[1]	Value of AUMs to community[2]
1 (No Action)	0%	0	12,090	$0	$809,304.60
2	6%	772	12,862	$9,781	$860,982.28
3	-17%	-2,098	9,992	-$26,582	$668,864.48
4	-35%	-4,219	7,871	-$53,455	$526,884.74
5	-2%	-19	761	-$241	$50,941.34
6 (No Grazing)	-100%	-12,090	0	-$153,180	$0

[1] Ten-year Average Market Value of Forage per AUM in Idaho, 2002 - 2011 (non-irrigated private ground): $12.67
[2] Based on estimates by Darden et al (See Section 3.10.1 above)

A number of alternatives call for reductions in AUMs on some or all of the allotments. In some cases, as described below, some operators could incur additional costs from alternative forage options due to changes in livestock numbers or management practices. These costs could include:

- Different AUM fees: Private land AUM fees in 2011 were $14.50/AUM in Idaho and $14.80/AUM in Oregon, plus transportation costs. AUM fees on state-owned land in 2012 are $5.25/AUM in Idaho and $8.48/AUM in Oregon. The 10-year (2002-2011) average market

value of an AUM in Idaho is $12.67/AUM, which is an estimate based on survey indications of monthly lease rates for private, non-irrigated grazing land.

- Feeding hay on the ranch instead of grazing on pastures: The operators would need 780 lbs. (0.4 tons) dry forage/month for each cow and her calf if the herd were moved back to the ranch instead of to other grazing land. The 10-year (2003-2012) average price for alfalfa hay was $138/ton in Idaho and $148/ton in Oregon. This means that the operator would spend up to $58/month ($693/year) on dry forage for each cow and her calf.

There may be other costs associated with changes in livestock numbers or management practices that could affect the operators' bottom lines and the community as a whole. For example, Torell and others (2002) found that a 50 percent reduction in BLM AUMs in the Jordan Valley area resulted in a reduction in net annual ranch returns of $2.41 per AUM removed; reductions of 75 percent and 100 percent resulted in net ranch return reductions of $2.94 per AUM removed and $3.44 per AUM removed (respectively). The authors also found that removing spring grazing on BLM land in the Jordan Valley area would reduce an operator's net cash income by $24.17 per AUM removed. If the operator grazed on private pasture or fed the animals at the ranch during the spring, the negative impact would be lower ($5.34/AUM removed) (Torell, et al., 2002). However, it is possible that one or more of the operators might find that such a large percentage of the herd would need to be moved or sold that operating the ranch would no longer be economically feasible. Any cuts in AUMs would lead to increased expenses for grazing and/or feed that could be detrimental to the viability of the ranch. This could lead to losses in jobs, income to the community, and tax revenue for the county and state. Additionally, ranching is so intimately connected to the overall culture in the areas in and around Owyhee County that the closing of a ranch would lead to a substantial loss of community cohesion. The closing of a ranch in Jordan Valley or Marsing could be viewed by community members as an adverse effect on the social conditions of the local community.

Table SOCE-11: Average impact on expected 10-year net revenue for representative ranch operations

	Alt. 1 (Baseline) Expected 10-year Net Revenue	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**
Small (< 100 Head)	$165,122	No Effect	No Effect	-$178,709	No Effect	-$136,320
Medium (100 - 499)	$1,208,286	+$350,881	-$153,347	-$556,995	-$36,697	-$981,290
Large (500 - 2500 Head)	$3,783,839	-$200,235	-$601,123	-$1,680,865	No Effect	-$3,133,337

Table SOCE-12: Impact on expected 10-year net revenue for each alternative by allotment

	Alternative 1 (Baseline)		Alternative 2			Alternative 3		
Allotment	**Number of Cattle**	**Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**
Chimney Pot FFR	4	$25,297	0%	N/A	N/A	0%	N/A	N/A
Texas Basin FFR (472)	5	$31,621	0%	N/A	N/A	0%	N/A	N/A
Lowry FFR (477)	6	$37,945	0%	N/A	N/A	0%	N/A	N/A
Corral Creek FFR (602)	9	$56,918	0%	N/A	N/A	0%	N/A	N/A
Burgess FFR (638)	11	$69,566	0%	N/A	N/A	0%	N/A	N/A
R Collins FFR (612)	24	$151,781	0%	N/A	N/A	0%	N/A	N/A
Trout Cr/Lequerica (560)	52	$307,073	0%	N/A	N/A	0%	N/A	N/A
Burgess (572)	66	$357,228	0%	N/A	N/A	0%	N/A	N/A
Chipmunk Field FFR (523)	71	$448,672	0%	N/A	N/A	0%	N/A	N/A
Stanford FFR (608)	112	$707,619	0%	N/A	N/A	0%	N/A	N/A
Franconi (558)	118	$745,564	0%	N/A	N/A	0%	N/A	N/A
Baxter Basin (530)	121	$703,676	0%	N/A	N/A	-3%	-$17,316	-2.5%
Trout Creek (529)	123	$569,359	-18%	-$328,054	N/A	-53%	-$233,620	-41.0%
Ferris FFR (545)	147	$928,620	0%	N/A	N/A	0%	N/A	N/A
Madriaga (557)	160	$768,083	0%	N/A	N/A	-25%	-$150,210	-19.6%
Elephant Butte (513)	195	$1,165,788	+7%	+$67,337	+5.8%	+7%	+$67,337	+5.8%

	Alternative 1 (Baseline)		Alternative 2			Alternative 3		
Allotment	**Number of Cattle**	**Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**
Cow Creek (562)	201	$920,869	0%	N/A	N/A	-17%	-$120,831	-13.1%
Soda Creek (652)	276	$1,667,674	+46%	+$634,424	38.0%	0%	N/A	N/A
Alkali-Wildcat (514)	311	See Wild Rat	See Wild Rat			See Wild Rat		
Rats Nest (522)	323	See Wild Rat	See Wild Rat			See Wild Rat		
Jackson Creek (506)	338	$1,860,594	0%	N/A	N/A	-17%	-$256,240	-13.8%
Poison Creek (603) (Sheep expressed in equivalent number of cattle for baseline comparison)	373	$2,224,756	0%	N/A	N/A	-2%	-$36,697	-1.6%
Blackstock Springs (515)	442	$2,236,829	0%	N/A	N/A	-27%	-$479,202	-21.4%
Joint (531)	568	$3,411,984	0%	N/A	N/A	-45%	-$1,268,224	-37.2%
Wild Rat (Combined Alkali-Wildcat and Rats Nest Allotments)	634	$3,462,577	-7%	-$200,235	-5.8%	-7%	-$200,235	-5.8%
Sands Basin (521)	723	$4,476,956	0%	N/A	N/A	-9%	-$334,911	-7.5%

	Alternative 1 (Baseline)		Alternative 2			Alternative 3		
Allotment	**Number of Cattle**	**Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**
Cumulative Direct Impact over Ten Years:	Estimated Baseline Net Revenue:	$27,337,049		+$501,526			-$3,030,149	

	Alternative 4			Alternative 5			Alternative 6		
Allotment	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**
Chimney Pot FFR	0%	N/A	N/A	0%	N/A	N/A	-100%	-$21,116	-83.5%
Texas Basin FFR (472)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$26,395	-83.5%
Lowry FFR (477)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$31,674	-83.5%
Corral Creek FFR (602)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$47,510	-83.5%
Burgess FFR (638)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$58,068	-83.5%
R Collins FFR (612)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$126,694	-83.5%
Trout Cr/Lequerica (560)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$252,719	-82.3%
Burgess (572)	-62%	-$178,709	-50.0%	0%	N/A	N/A	-100%	-$288,241	-80.7%
Chipmunk Field FFR (523)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$374,459	-83.5%

	Alternative 4			Alternative 5			Alternative 6		
Allotment	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**
Stanford FFR (608)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$590,549	-83.5%
Franconi FFR (558)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$622,223	-83.5%
Baxter Basin (530)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$577,199	-82.0%
Trout Creek (529)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$440,792	-77.4%
Ferris FFR (545)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$774,966	-83.5%
Madriaga (557)	-48%	-$288,404	-37.5%	0%	N/A	N/A	-100%	-$600,841	-78.2%
Elephant Butte (513)	-29%	-$278,969	-23.9%	0%	N/A	N/A	-100%	-$961,962	-82.5%
Cow Creek (562)	-34%	-$241,662	-26.2%	0%	N/A	N/A	-100%	-$710,771	-77.2%
Soda Creek (652)	0%	N/A	N/A	0%	N/A	N/A	-100%	-$1,379,182	-82.7%
Alkali-Wildcat (514)	See Wild Rat			See Wild Rat			See Wild Rat		
Rats Nest (522)	See Wild Rat			See Wild Rat			See Wild Rat		
Jackson Creek (506)	-41%	-$617,991	-33.2%	0%	N/A	N/A	-100%	-$1,507,295	-81.0%
Poison Creek (603) (Sheep expressed in equivalent number of cattle for baseline comparison)	-56%	-$1,027,529	-46.2%	-2%	-$36,697	-1.6%	-100%	-$1,834,873	-82.5%

	Alternative 4			Alternative 5			Alternative 6		
Allotment	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**	**Percent Change in Total AUMs over 10 Years**	**Ten-year $ Impact**	**Percent Change in Estimated Ten-year Net Revenue**
Blackstock Springs (515)	-50%	-$887,412	-39.7%	0%	N/A	N/A	-100%	-$1,774,823	-79.3%
Joint (531)	-45%	-$1,268,224	-37.2%	0%	N/A	N/A	-100%	-$2,818,275	-82.6%
Wild Rat (Combined Alkali-Wildcat and Rats Nest Allotments)	-63%	-$1,802,119	-52.0%	0%	N/A	N/A	-100%	-$2,860,506	-82.6%
Sands Basin (521)	-53%	-$1,972,252	-44.1%	0%	N/A	N/A	-100%	-$3,721,231	-83.1%
Cumulative Direct Impact over Ten Years:		-$8,563,271			-$36,697			-$22,402,364	

3.10.3. Alternative 1 – Effects Common to All Allotments

The AUMs and grazing schedule authorized in the no-action alternative for all of the allotments are the same as in the current permit. There would be no change in livestock management, operations would continue with business as usual, and there would be no additional socioeconomic impact to the ranches. The ranches would continue contributing to employment and the purchase and sale of goods and services in the counties where they are located.

3.10.4. Alternative 2 Effects

Appendix C-1 and Section 3.3.2.2 in the Upland Vegetation/Noxious Weeds section describe the management changes on the allotments for Alternative 2. Table SOCE-12 in Section 3.10.2 shows the differences in 10-year net revenue on each of the allotments for Alternative 2, compared to the estimated 10-year net revenue for Alternative 1.

3.10.5. Alternative 3 Effects

Appendix C-1 and Section 3.3.2.3 in the Upland Vegetation/Noxious Weeds section describe the management changes on the allotments for Alternative 3. Table SOCE-12 in Section 3.10.2 shows the differences in 10-year net revenue on each of the allotments for Alternative 3, compared to the estimated 10-year net revenue for Alternative 1. Alternative 3 incorporates deferred grazing on 21 of the 25 allotments, which means that ranch operators who have grazed livestock at certain times in the past but cannot graze at those times under Alternative 3 would have to either feed the animals on the ranch or find forage on other federal, state, or private lands instead. Where permittees have been provided flexibility in the past to graze year-round on an allotment but are required in Alternative 3 to adhere to specific grazing schedules and seasons of use, the permittees would also have to find other feed or forage during times they can no longer graze the allotment. Thus, they could incur additional feed, labor, and/or transportation costs. As outlined in table VEG-11 in Section 3.3.2.3, the Blackstock Springs, Cow Creek, Jackson Creek, Joint, Madriaga, and Trout Creek allotments would have an AUM reduction greater than 10 percent over the life of the 10-year permit; the AUM reductions on Blackstock Springs, Madriaga, and Trout Creek are greater than 25 percent over the life of the permit. This could result in substantial economic impacts to the ranch operators and to the local economy. However, as long as those costs are not prohibitive, they would continue contributing to the local economy by providing jobs and purchasing equipment and supplies. The management changes in Alternative 3 are intended to provide for improvement in vegetation conditions across the landscape, which could, in turn, provide for long-term improvement in forage for livestock.

3.10.6. Alternative 4 Effects

Appendix C-1 and Section 3.3.2.4 in the Upland Vegetation/Noxious Weeds section describe the management changes on the allotments for Alternative 4. Table SOCE-12 in Section 3.10.2 shows the differences in 10-year net revenue on each of the allotments for Alternative 4, compared to the estimated 10-year net revenue for Alternative 1. Alternative 4 incorporates more rest on some or all pastures over the life of the 10-year permit on 14 of the 25 allotments, with AUM reductions of 29 to 63 percent on 10 of the 14 allotments. This means that the ranch operators would need to either feed the animals on the ranch or move them to other private, state, or federal grazing lands. This could have a substantial impact on the ranch operators and the local economy, as noted in Section 3.10.2. The management changes in Alternative 4 are intended to provide for improvement in vegetation conditions across the landscape, which could, in turn, provide for long-term improvement in forage for livestock.

3.10.7. Alternative 5 Effects – Poison Creek Allotment

The Poison Creek allotment is the only allotment affected by Alternative 5. Appendix C-1 and Section 3.3.2.5 in the Upland Vegetation/Noxious Weeds section describe the management changes on the allotments for Alternative 5. Table SOCE-12 in Section 3.10.2 shows the differences in 10-year net revenue on the allotment for Alternative 5, compared to the estimated 10-year net revenue for Alternative 1. The operator could incur additional costs for AUMs, transportation, feed, or labor if the animals are grazed on more expensive or less convenient land, or if they are fed hay on the ranch instead. These costs would be in addition to those incurred by selling the sheep and purchasing cattle, as well as converting the equipment and facilities on the ranch to accommodate more cattle. Labor costs would be reduced by converting to cattle, however, because sheep typically require more herding and active management than cattle do.

3.10.8. Alternative 6 Effects

This alternative would cancel all authorized use AUMs on the allotment for a period of 10 years, after which applications for grazing permits would be accepted. Table SOCE-12 in Section 3.10.2 shows the differences in 10-year net revenue on the allotment for Alternative 6, compared to the estimated 10-year net revenue for Alternative 1. This would likely have a substantial socioeconomic impact on the ranch operators, the people they employ, the businesses where the operators purchase supplies, and the communities that are supported by livestock operation activities (see Section 3.10.2 for a discussion of some specific impacts). The ranchers would have to relocate their livestock to other private or state land, possibly outside of Owyhee County, sell their livestock, and/or close the ranch completely. The ranchers already likely purchase supplies from stores closer to the new grazing locations, so income from taxes and sales in these communities would drop, and the income from the livestock sales would go to the counties where the base ranches are located. The people previously employed by the ranches would have to look for new jobs if any of the ranches closed; the agricultural sector in both counties is large enough that they may not have much trouble finding similar work elsewhere, but they may have to relocate or commute long distances, which could be costly. Finding work in other sectors may be difficult because unemployment is so high. The greatest loss to the local communities as a result of ranch closures would be the loss of social cohesion. As noted above, researchers have found that ranchers have more social networks throughout the community, and closing a ranch can lead to a disruption in these networks.

However, not all socioeconomic impacts could be negative. Land on the allotments could be more available for recreational opportunities, which could bring more money to the stores, restaurants, and hotels that provide goods and services for people from the Treasure Valley who come to hunt, fish, camp, boat, and watch wildlife throughout the Owyhee Mountains. This could also provide more employment opportunities in other sectors throughout the county. However, as noted in the ORMP EIS (USDI BLM, 1999b), the number of businesses that provide recreational goods and services in Owyhee County is minimal. Most residents, as well as those visiting from other counties, purchase their goods outside of Owyhee County. Thus, although some recreation fees could be collected, the influx of recreation to the county would not add much to the revenue from sales or taxes there and could actually negatively affect the financial resources of the county through additional requests for help in the backcountry. In addition, the management changes in Alternative 6 are intended to provide for improvement in vegetation conditions across the landscape, which could, in turn, provide for long-term improvement in forage for livestock.

3.10.9. Cumulative Effects

The scope of this analysis covers Owyhee County, ID, and Malheur County, OR, because although the Owyhee Field Office has jurisdiction only over the allotments within the Owyhee Resource Area, the

ranchers applying for livestock grazing permit renewals maintain base ranches near Jordan Valley, Oregon.

Past, Present, and Reasonably Foreseeable Future Actions

As stated in the background section of this EIS (1.3) the BLM Owyhee Field Office prioritized and grouped allotments to fully process and renew grazing permits in accordance with the Order Approving Stipulated Settlement Agreement (United States District Court for the District of Idaho Case 1:97-CV-00519-BLW) dated June 26, 2008. The agreement defined a schedule for completing the environmental analyses and final decisions for grazing permits in a number of allotments.

Past actions taken regarding grazing permit renewals will affect the socioeconomic conditions in both counties because they influence decisions the operators make regarding their ranches. There are 124,982 active use AUMs permitted in Owyhee County (135,116 active use AUMs in the ORMP (USDI BLM, 1999a) minus the 9,558-AUM reduction in the Owyhee River Group Final EA (DOI-BLM-ID-B030-2012-0012-EA) and the 576-AUM reduction in the Pole Creek Allotment Final EA (DOI-BLM-ID-B030-2009-0004-EA), and 407,473 active use AUMs permitted in the Malheur and Jordan Resource Areas in Oregon (USDI BLM, 2002). Table SOCE-13 shows the value to the community of AUMs for each of the alternatives in this EIS combined with the changes in the Owyhee River Group and Pole Creek allotments.

Currently, for Alternatives 1-4, as long as the ranches remain in business, they will continue contributing to employment and the purchase and sale of goods and services in the local areas, and community cohesion will be maintained. For Alternative 5, the Poison Creek allotment permittee might need to make substantial changes on the ranch to accommodate sheep instead of cattle, which could contribute additional money to the local economy. For Alternative 6, not renewing the permits would mean that the BLM would no longer be contributing to the ranching community by providing grazing land, and if the ranches chose to close, the operators would no longer be contributing to employment or the purchase and sales of goods and services in the community. The U.S. government would continue contributing to the county through payments in lieu of taxes (PILT), which totaled more than $9.5 million in Owyhee County from 2003 to 2012, for an average of about $956,000 per year. Ranching plays a large role in both counties, so although the loss of any or all of the Chipmunk Group ranches alone could have a substantial impact on the local communities, the loss, which is small in proportion to the total livestock operations' contributions to the two-county area, likely would not have a cumulative effect on a larger scale. However, AUM changes incorporated in the alternatives presents here, combined with AUM reductions in the Owyhee River Group allotment permits and the Pole Creek allotment permits, could have either positive or negative impacts to local suppliers, since the operators associated with all of these allotments might choose to alter ranch operations in ways that would require either increases or reductions in supply purchases.

Allotments in the analysis area are in various stages of the 10-year permit cycle, and as expiration dates approach, each allotment is evaluated for rangeland health and progress toward meeting the Fundamentals of Rangeland Standards prior to the authorization of a new permit. Following these evaluations, the BLM will prepare NEPA documents, either in the form of Environmental Assessments or Environmental Impact Statements. As noted in Section 1.3 of the EIS, livestock grazing permits for all of the Owyhee 68 allotments must be renewed by December 31, 2013; draft Environmental Assessments are currently being prepared for the Toy Mountain, South Mountain, and Morgan priority allotment groups (Groups 3, 4, and 5). These documents will analyze the social and economic impacts of implementing multiple alternatives, just as this Group 2 EIS does, and will be followed by Proposed and Final Decisions regarding renewal of each of the grazing permits. While it is not possible to analyze those impacts in this EIS because future possible changes in the management of the Toy Mountain, South Mountain, and Morgan allotment groups

have not been developed or analyzed, estimates of impacts based on a range of AUMs are presented below.

It would be speculative at this time for this EA to include the cumulative impacts from those future actions not yet defined, and for which decisions have not been issued. Future NEPA analysis in all Owyhee planning area grazing permit renewal efforts will include the cumulative effects of past, present, and foreseeable actions at that point in time. That analysis will include the cumulative effects to the social and economic environment that result from implementing the selected alternative in this EA. For any allotments in Groups 3 through 5 that meet all Standards and Guidelines, reductions in AUMs may not occur; however, because reductions in AUMs have been proposed on allotments in the Owyhee River and Chipmunk Groups that have not met Standards or Guidelines, it is reasonable to assume that future reductions may occur on any allotments in Groups 3 through 5 that are not meeting Standards or Guidelines as well. Those potential reductions, combined with any impacts that may result from changes in management of the Owyhee Group allotments and proposed changes in the Chipmunk Group allotments, could have substantial impacts on local economic activity. Social and economic effects experienced locally from reductions on each permit would be compounded on a county-wide or regional basis.

As noted above, renewing permits for all of the allotments in Groups 2 through 5 at currently permitted levels would maintain active permitted use at 36,549 AUMs. Renewing the permits at 75 percent of current levels would total 27,412 AUMs; 50 percent renewal would total 18,275 AUMs; 25 percent renewal would total 9,137 AUMs. If the no-grazing alternative were chosen for all of these allotments, 0 active use AUMs would be authorized and grazing would not occur on any of the Groups 2 through 5 allotments for 10 years.

In addition to the Owyhee 68 permits, there have been decisions recently issued by the BLM Owyhee Field Office that, when implemented, will contribute cumulative effects to the social and economic environment in the analysis area (See Section 2.2 for a description of the grazing permit renewal summary). The Pole Creek Allotment Final EA (EA # ID130-2009-EA-3783) analyzed, and the proposed decision selected, a 576-AUM reduction. In the context of cumulative effects analysis, these reductions are considered foreseeable actions rather than speculative because the NEPA analysis is completed and the proposed decisions have been issued.

A number of permit renewals have been completed and implemented since implementation of the ORMP in 1999 that may have residual effects to the social and economic environment today. Eighteen of the 134 allotments in the Owyhee Field Office considered in this cumulative effects analysis have had AUM reductions and include Castlehead-Lambert, Cliffs, Elephant Butte, Garat, Hardtrigger, Rockville, Rabbit Creek/Peters Gulch, Swisher Springs, Strodes Basin, Trout Springs, Bull Basin, Nickel Creek, Gusman, Silver City (which was combined with Diamond Creek after ORMP publication), Louse Creek, Burghardt FFR, ‘45’, and Tent Creek. The effects of issuing these permits resulted in AUM reductions totaling 20,766 within the planning area (ORMP table LVST-1, RAS data (available from the Idaho BLM State Office project record upon request).

The cumulative effects to the social and economic environment analyzed in this EA are within the context of the following three analysis assumptions:

- When it was completed in 1999, the Owyhee Resource Management Plan (ORMP) identified 135,116 active use AUMs in the planning area (Proposed RMP at 23). The Final EIS projected that meeting the rangeland health objectives through the implementation of Alternative E (the selected RMP) would cause substantial adjustments to be made in livestock grazing throughout the planning area (EIS at IV-269). The EIS concludes in the effects to livestock management

section (IV-271) that active use AUMs would decrease 22 percent, or about 30,000 AUMs over the estimated 20-year life of the plan. The level of AUM reductions analyzed in the grazing alternatives in this EA, added to all AUM reductions implemented or proposed in other permit renewal actions within the planning area, would result in 115,320 active use AUMs permitted, and would be within the AUM reduction levels analyzed in the Final ORMP/EIS (105,899 AUMs by 2019)[50].

- In pursuit of meeting the resource objectives in the ORMP as well as the Standards for Rangeland health, the above AUM numbers are approximate estimates and future authorized levels of livestock use may change. If future AUM reductions within the Owyhee Field Office are greater than those analyzed in the ORMP/EIS, they will be subject to further NEPA analysis.

- The CEQ regulations state that the *"Human environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (See the definition of "effects" (Sec. 1508.8).) This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment* (40 CFR 1508.14).The effects analysis in this EA discusses the social, economic, natural, and physical environment in this context.

Table SOCE-13: Total value of Owyhee 68 Groups 1-5 permitted AUMs to the community[1]

Alternative	Value of AUMs to community[2]	Total value to community with full authorization of Groups 3-5 AUMs	Total value to community with 75% authorization of Groups 3-5 AUMs	Total value to community with 50% authorization of Groups 3-5 AUMs	Total value to community with 25% authorization of Groups 3-5 AUMs	Total Value to community with no grazing in Groups 3-5
1 (No Action)	$1,721,295	$3,358,581	$2,949,259	$2,539,938	$2,130,617	$1,721,295
2	$1,772,973	$3,410,258	$3,000,937	$2,591,616	$2,182,294	$1,772,973
3	$1,580,855	$3,218,141	$2,808,819	$2,399,498	$1,990,176	$1,580,855
4	$1,438,875	$3,076,161	$2,666,839	$2,257,518	$1,848,197	$1,438,875
5 (Poison Creek only)	$962,932	$2,600,217	$2,190,896	$1,781,575	$1,372,253	$962,932
6 (No Grazing)	$911,991	$2,549,276	$2,139,955	$1,730,633	$1,321,312	$911,991

[1]Based on estimates by Darden et al (See Section 3.10.1 above)
[2] The first column is the value of AUMs to the community from the Owyhee River Group, Chipmunk Group, and Pole Creek allotments; all other columns include the total value from column 1 plus the total value of the AUMs in Groups 3 through 5 at different authorization levels.

[50] This document tiers to the ORMP Final Decision and incorporates the Final ORMP EIS by reference.

3.11. CULTURAL AND PALEONTOLOGICAL RESOURCES

3.11.1. Cultural Resources

3.11.1.1. Affected Environment

The Chipmunk Group begins in the geologic region known as the Owyhee Uplands, which stretches from north-central Nevada, through the southwestern corner of Idaho, to the southeastern corner of Oregon and ends at the Snake River Plain. The region is characterized by sagebrush-covered plateaus and narrow, deep canyon bottomlands. Perennial waterways are few, but the landscape has a multitude of ephemeral drainages, springs and pluvial collection points. Aboriginal occupation of the greater area dates back several thousands of years. The archaeological record for the Dirty Shame Rockshelter located in southeastern Oregon has revealed continual human use from 9,500 years ago to 400 years ago (Hanes, 1988). Sites in the Camas Creek area of southwestern Idaho date from about 6,000 years ago to 150 years ago (Plew, 2008). The region still holds important cultural significance to the people of the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation.

Euroamerican visits to the Owyhee County area started as early as the beginning of the 19th century. A fur trading expedition led by Donald Mackenzie of the Northwest Company traveled to the Snake River country in 1818 and some trappers were reputed to have visited the region in 1812 (Idaho State Historical Society, 1964). Starting in the 1840s, the Oregon Trail and its alternates allowed thousands of immigrants to travel to southwestern Idaho and points farther west. Settlement of the area began in the mid- to-late 19th century and the proliferation of gold mining in the 1860s, primarily along Jordan Creek, created a demand for livestock to feed the growing population of prospectors and to supply other markets (Yensen, 1982). Although local mining activities have subsided greatly, the demand for beef remains strong. More recently, recreational pastimes such as hunting and backcountry motorized travel have become very popular and bring people to areas previously ignored.

3.11.1.2. Environmental Consequences – Effects Common to All Grazing Alternatives

A Class I records search in conjunction with Geographical Information Systems (GIS) datasets was conducted to identify all cultural and paleontological sites and all cultural resources surveys within the allotment group. Project inventory reports were checked for adherence to current standards and for survey acreage. Each site record was reviewed to verify site location, description and discussion of any type of impacts. GIS range improvement datasets were also compared to cultural resources inventory coverage and high resolution aerial imagery was studied to identify areas of possible livestock congregation that had not been previously surveyed. Cultural resources inventories of recognized and potential congregation areas (troughs, reservoirs, springs, salt blocks, etc.) were conducted by BLM archaeologists and technicians to ascertain the presence or absence of cultural properties. A minimum survey radius of 50 meters around these areas was determined to be sufficient coverage (Coddington, 2008). All previously recorded sites determined to be within a 100 meter radius of these locations were monitored to assess any effects. No new range improvements are proposed for any of the allotments; therefore, no project-specific inventories were conducted. This review process is in accordance with the grazing permit/lease renewal guidelines agreement between the BLM and the SHPO, dated January 29, 1999, and with standard professional procedures for livestock grazing permit/lease renewals. If impacts to National Register of Historical Places (NRHP)-eligible properties are identified, the stipulations of the grazing permit can be modified or other mitigation measures can be authorized to address the presence and protection of these resources.

Within the Chipmunk Allotments group, a total of 1,856 acres have been inventoried for cultural resources. Of the 73 potential livestock congregation areas, 68 (93 percent) were surveyed, as shown in Table CULT-1, which resulted in 657 acres of new inventory conducted for this analysis. The five areas

that were not inventoried could not be reached due to access limitations or other reasons that prevented BLM personnel from visiting them. BLM administered land within 11 of the allotments was determined to have no areas of congregation and/or lacked the presence of recorded sites, therefore, no additional surveys were conducted within their boundaries. Eleven previously recorded sites were monitored and 11 new sites were documented. Five of the monitored sites and five of the newly recorded sites are reported to be affected by livestock grazing.

Table CULT-1: Results of cultural resources analysis

Allotment	Previous Survey Acres	New Survey Acres	Total Survey Acres	Percent of BLM Surveyed	Previously Recorded Sites	Sites Monitored	New Sites	Cong./ Surv.[1]
Alkali-Wildcat	3	37	40	0.6	5	2	0	4/4
Elephant Butte	204	29	233	3.4	20	0	0	1/1
Poison Creek	142	118	260	5.0	2	1	1	5/5
Rats Nest	88	8	96	2.0	7	2	0	4/4
Sands Basin	72	61	133	1.2	19	0	4	6/6
Blackstock Springs	189	87	276	2.0	12	0	4	6/6
Corral Creek FFR	0	0	0	0.0	0	0	0	0/0
Chipmunk Field FFR	0	0	0	0.0	1	0	0	0/0
Jackson Creek	104	43	147	2.5	2	0	0	9/7
Texas Basin FFR	0	0	0	0.0	0	0	0	0/0
Baxter Basin	0	0	0	0.0	1	0	0	0/0
Burgess	1	65	66	4.9	2	0	0	4/4
Burgess FFR	0	0	0	0.0	0	0	0	0/0
Chimney Pot FFR	0	0	0	0.0	0	0	0	0/0
Cow Creek	25	53	78	1.0	0	0	1	5/5
Ferris FFR	0	0	0	0.0	0	0	0	1/0
Franconi	25	0	25	0.0	0	0	0	0/0
Joint	70	50	120	3.8	2	1	2	6/5
Lowry FFR	0	0	0	0.0	0	0	0	0/0
Madriaga	25	72	97	2.5	2	1	0	13/13
R Collins	0	0	0	0.0	0	0	0	0/0
Soda Creek	156	25	181	6.1	0	4	0	7/7
Standford FFR	0	9	9	1.6	0	0	0	2/1
Trout Creek	76	0	76	2.3	0	0	0	0/0
Trout Creek/ Lequerica	19	0	19	2.6	1	0	0	0/0
Totals	**1,199**	**657**	**1,856**		**76**	**11**	**12**	**73/68**

[1] Number of potential congregation areas/number of those areas surveyed.

Direct impacts that may occur as a result of livestock grazing and can adversely affect cultural resources include breakage and modification to artifacts and features, vertical and horizontal displacement, and toppling and modification of standing objects (Coddington, 2008) (Broadhead, 1999) (U.S. Army, 1990). Indirect effects include biomass reduction that can increase the potential for erosion of the site matrix, looting due to greater visibility from vegetation removal, and soil compaction. The presence and magnitude of these impacts are used to analyze the effects of livestock, if any, to cultural properties. Damage or loss of artifacts and features can affect important attributes that qualify a site as eligible for the NRHP. The effects caused by livestock to sites can be exacerbated by soil composition, soil moisture and animal concentration. Areas of congregation such as wallows, salting locations, troughs, springs, reservoirs and other watering spots have the greatest potential to realize these impacts. Sites at or in close proximity to these areas would be monitored and, if necessary, protective measures would be instigated. Measures can include, but are not limited to, exclosure fencing, removal or relocation of range

improvements, decommissioning of facilities to eliminate animal congregating, removal of natural attractants, suspension of grazing, changes in the seasons of grazing, or other actions deemed suitable to protect the resource by the land manager and in consultation with the State Historic Preservation Office (SHPO). Typically, the greater the dispersion of livestock and other grazing animals across the landscape, the less likely a site will experience any significant negative consequences.

Cultural sites 10OE919, 10OE1214, 10OE1390, 10OE2283 and10OE9187 were found to have been affected by grazing during monitoring visits. The reported effects include trails less than 10 centimeters deep, biomass loss and surficial trampling of less than 2 centimeters. An exclosure fence surrounding one site is in disrepair and allows livestock access to a spring where trampling is occurring. Two water troughs are on another site and there are ground disturbances from 2 to 9 centimeters deep. Effects to newly documented sites 12-O-20SB4, 12-O-20BS5, 12-O-20B7, 12-O-20CC0, and 12-O-20JT2 (temporary numbers) are trails from 1 centimeter to 10 centimeters deep, hoof impressions up to 6 centimeters deep, and surficial trampling less than 2 centimeters. There is a salt block located at one site that has caused a loss of biomass and trampling up to 2 centimeters deep. In general, the top 10 centimeters of archaeological sites lack spatial integrity due to thousands of years of natural, biogenic and anthropogenic forces. None of the effects described above significantly alter the surficial constituents or intact buried deposits, if extant, or the characteristics of these sites that would qualify them for inclusion in or eligibility for the NRHP. The Owyhee Field Office will be moving the salt blocks off the one site and will be repairing the fence around the spring at the other location.

3.11.1.3. Alternative 1

The No Action/Current Conditions alternative would renew the grazing permit under the present terms and conditions of the expiring permit. This alternative would apply to all 25 allotments. Stocking levels and seasons of use would remain the same and no range improvements or other projects are proposed. Seasons of use vary per allotment, but include most months of the year. Grazing-related impacts to sites are more likely to occur during the spring when soil moisture is higher and can facilitate compaction, transport and other disturbances to artifacts and features. It is necessary to repair the exclosure fence around site 10OE1390 and to relocate the salt blocks at site 12-O-20JT2 at least 100 meters away from the site's boundaries. Both of these sites are of undetermined eligibility and are at risk of experiencing possible adverse effects if current impacts continue. These mitigation measures would protect the sites until a formal determination of eligibility can be made. With the protective actions completed, it has been determined that no historic properties would be affected by this alternative.

3.11.1.4. Alternative 2

Alternative 2, for purposes of this analysis, is virtually identical to Alternative 1 in terms of livestock numbers and seasons of use. The main difference is a proposal to transfer 1,050 acres from the Alkali-Wildcat allotment to the Elephant Butte allotment, then combine the Rats Nest and Alkali-Wildcat allotments into a single, two-pasture allotment called Wild Rat. Stocking levels for this larger single allotment would essentially remain the same and the season of use would not change. Effects to cultural resources and recommendations for site protection and monitoring are the same as in Alternative 1. No historic properties would be affected by this alternative.

3.11.1.5. Alternative 3

The deferred grazing alternative would employ a deferred rotation grazing schedule. Rest seasons would be part of this system. The change could have a positive outcome, in a general sense, on cultural resources by lessening potential effects to artifacts and features. The transfer of acreage and reconfiguration of allotments as described in Alternative 2 also apply to this alternative. Effects to cultural resources and recommendations for site protection are the same as in Alternative 1. It has been determined that no historic properties would be affected by this alternative.

3.11.1.6. Alternative 4

This alternative would establish a grazing system for a subgroup of allotments that varies the season of use and allows for longer periodic rest cycles. Stocking levels would be at lower levels than proposed in the previous alternatives. Overall, this alternative would tend to decrease use of the allotments and possibly reduce any adverse impacts to sites. The transfer of acreage and reconfiguration of allotments as described in Alternative 2 also apply to this alternative. The effects to cultural resources and the recommendations for site protection are the same as in Alternative 1. It has been determined that no historic properties would be affected by this alternative.

3.11.1.7. Alternative 5

This alternative pertains solely to the Poison Creek allotment and proposes the conversion from sheep grazing to cattle grazing. The allotment contains two previously recorded cultural sites, neither of which is near identified livestock congregation areas and neither are reported to have been affected by grazing. Surveys of five congregation areas conducted for this permit renewal nearly doubled the inventoried acreage for the allotment, but did not discover any new sites. A project unrelated to this permit renewal, however, did record one new site, 13-O-16-JC1, a sparse lithic scatter of undetermined eligibility. It is not affected by grazing. If the single-pasture allotment is converted, any new congregation areas created by the conversion would need to be identified and surveyed. It has been determined that no historic properties would be affected by this alternative.

3.11.1.8. Alternative 6

The no-grazing alternative would remove the possibility of livestock effects to known and undiscovered cultural sites. Sites would still be subject to weather, wildlife, fire, and other natural processes, but these types of impacts have been occurring since the sites were first formed and are generally minor in their overall effects. Artifact collecting and other human-caused disturbances would continue, but if ground cover increased from the lack of foraging and trampling, cultural material could be better hidden and protected. No historic properties would be affected by this alternative.

3.11.1.9. Cumulative Effects

The scope of analysis for the Chipmunk Group is considered to be the individual allotment boundaries. The range of known cultural site characteristics is similar to those in the surrounding areas, the group is not part of an historic district under which sites could have a contributing element potential or would need additional protection, and there are no recorded or known Traditional Cultural Properties within the allotments.

The effects of livestock trailing have been analyzed under the 2012 Trailing EA (USDI BLM, 2012c) and it concludes that there would be no significant impacts as a result of the continued use of established routes within the allotments. Four trailing routes (see map Range-4), referred to as Boulder Flat, Rats Nest, Rockville and Strodes Basin, were not addressed in the EA. The Boulder Flat trailing route travels both cross country and on an established road through the Cow Creek Individual allotment. It exits the allotment and continues along the Pleasant Valley road terminating just south of Flint Creek. Approximately 7 miles of this route is off-road. The Rats Nest route follows a well-established road and the recorded sites along the corridor were monitored during the 2012 field season. An NRHP-eligible site (10OE860) located along the route has been severely impacted over a period of several decades. Livestock, wild horses and humans have used the location since the 1940s and a nearby spring was first developed for livestock in 1942 by the Civilian Conservation Corps. Artifact looting of the site has also been reported. Because of these adverse impacts, it is possible that this site no longer has potential for National Register eligibility. A formal determination is necessary and if the site is judged to be eligible, protective measures would be needed. The other sites along this corridor (10OE868, 10OE869 and 10OE870) will not be affected. The Strodes Basin trailing route follows established roads for its entire traverse. There have been no cultural resources surveys completed along this corridor and no sites have

been recorded. The Rockville trailing corridor follows interconnecting roads for the entire route and one bedding location, fenced corrals adjacent to U.S. Highway 95, has been identified. Cultural resources surveys have been completed for approximately 25 percent of the northern portion of this trail. There are three cultural sites within one quarter mile of the trailing route and none in proximity to the corrals.

Alternatives 1 and 2 would fundamentally continue the current grazing systems of the expiring permits. Under these regimens, generally minor effects to sites due to livestock grazing could be expected to continue, but would not be expected to affect a site's eligibility. Alternatives 3 and 4 tend to decrease the possibility of grazing impacts by changes in the season of use, reduction in the numbers of livestock and/or pasture rest cycles. Potential and actual effects as previously discussed would apply to these two alternatives. Past and ongoing effects, as identified with the 11 sites monitored in this analysis, include biomass reduction, compression, trail-creation and use, and deflation. These effects are not compromising the characteristics that qualify the sites for inclusion in or eligibility for the NRHP. No cumulative effects are expected under these alternatives.

Alternative 5 (pertains to the Poison Creek allotment only) will increase the number of cattle permitted on the allotment and that action may be considered a cumulative effect by itself. Currently there are three sites recorded within the Poison Creek allotment, but none are experiencing grazing-related impacts. If this alternative is chosen, any newly created congregation points would need to be identified and inventoried for cultural resources. With the absence of range improvement proposals associated with this action, and since any other future projects unrelated to this permit renewal would be subject to a separate NHPA compliance review, there are no cumulative effects expected under this alternative.

Alternative 6 would remove livestock grazing from all of the allotments; therefore, no cumulative effects to cultural resources would be expected. Any future undertakings in or near these allotments that are unrelated to these renewal applications would be subject to separate NHPA compliance reviews.

Native American Religious Concerns

The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation actively maintain their cultural traditions and assert aboriginal rights and/or interests in this area. As Native American traditions and practices are tied to the elements of the natural environment, any impacts to the earth are of concern to the Tribes. The Tribes have been consulted on the renewal of these grazing permits pursuant to AIRFA and NHPA and have not raised any cultural resource concerns. There are no recorded or known traditional cultural properties within the allotment group.

3.11.2. Paleontological Resources

3.11.2.1. Affected Environment

Paleontological resources (fossils) have long been recognized for their scientific, educational, and recreational value. A fossil is any evidence of past life, and includes body fossils such as shells and bones, as well as trace fossils such as footprints, burrows, trails, or other evidence of an organism's presence. Fossils are preserved in rocks and are usually discovered when they are eroding out of the rock at the surface, or during ground-disturbing activity such as road grading or trenching. Most individual organisms that lived in the past did not die in such a way as to have their remains fossilized, and fewer still will be collected and studied before they erode away. Therefore, fossils are considered rare and nonrenewable.

All fossils contain information about past life, but not all fossils are significant. Significant fossils are those that are unique, unusual, or rare, are diagnostic, stratigraphically important, and add to the existing body of knowledge. In order to determine a fossil's significance, an assessment must be made by

someone who is experienced in the field of paleontology, and who possesses a sufficient mastery of the existing body of knowledge to understand how a given fossil contributes to our overall understanding.

The Bureau of Land Management (BLM) has managed fossils as a valued resource for many years. Legal authority to manage fossils comes from a variety of laws, executive orders, and policies. The laws include the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA). More recently, the Paleontological Resources Preservation subtitle of the Omnibus Public Land Management Act of 2009, also known by its popular name, the Paleontological Resources Preservation Act (PRPA), directs land managers within the Department of the Interior Agencies and the U.S. Department of Agriculture, but not including either Indian or Military (Department of Defense) lands, to manage and protect fossils using scientific principles and expertise. PRPA does not make a distinction between the types of organism preserved; therefore, all fossil resources, plants, invertebrates, and vertebrates that are determined to be scientifically significant are to be actively managed.

With the passage of PRPA, the paleontology program of the BLM is slowly able to take on more active management of paleontological resources. The resources are managed in collaboration with BLM partners such as universities and museums across the country, as it is those parties that provide much of the work done on collecting, studying, storing, and providing meaning to our fossil resources. Additionally, BLM and our partners strive to educate the public about the value of this natural heritage.

In general, the desired outcomes for the paleontological resource are to: 1) protect the resource from unnecessary damage, theft, or vandalism; 2) ensure that the resource is responsibly collected by qualified individuals working to benefit the public through their actions; 3) utilize the resource in educational programs for the general public; and 4) teach the public about BLM's role in the management of this important resource.

The impact to fossils from the management of other resources on BLM land can be negligible to deleterious, depending up on nature of those actions. However, by maintaining best practices for the identification of resources and the mitigation of damage, the paleontological resources should continue to remain an invaluable part of the national trust.

3.11.2.2. Environmental Consequences – Effects Common to All Grazing Alternatives

The Chipmunk Group lies within the Owyhee Plateau physiographic region. The Sucker Creek paleontological formation of the Late Miocene age is the only one present within the group, but it does not underlie all of the allotments. Nine of the allotments have no fossil-bearing sediments and 16 contain partial areas of the stratum. There is one documented paleontological site within the allotment group, a find of camel bones that had been recorded in 1927. The location of the discovery is inexact and it is suspected to be on land owned by the State of Idaho. The overall paucity of fossil discoveries could be attributed to the lack of suitable fossil-bearing strata and/or related research. The effects to paleontological resources are similar to those discussed for cultural resources. Breakage, displacement and the consequences related to biomass reduction are the primary areas of concern.

3.11.2.3. Alternatives 1-5

Because of the ephemeral nature of fossil-bearing strata and the lack of paleontological sites on land managed by BLM within this allotment group, no effects are expected under these alternatives.

3.11.2.4. Alternative 6

There would be no effects from livestock grazing under this alternative.

3.11.2.5. Cumulative Effects

The allotment group's boundaries comprise the scope of the analysis for paleontological resources. Unlike cultural resources, there are no specific requirements to complete paleontological inventories for undertakings on BLM managed land. Fossil discoveries may occur during a NHPA Section 106 survey, as a result of academic research or from a private party's disclosure. Due to a virtual absence of fossil locations and a low potential for discovery, no cumulative effects are predicted for paleontological sites in this allotment group.

3.12. WILD HORSE HERD MANAGEMENT AREAS (HMA)

3.12.1. Affected Environment

Desired Condition, Resource Objectives, and Assessment/Monitoring Methods

The resource objective specified in the Owyhee Resource Management Plan (ORMP) for Wild Horse Management is to maintain wild and free-roaming horses in the Owyhee Wild Horse Herd Management Areas (HMAs) at appropriate management levels (AML) within a thriving natural ecological balance.

The Appropriate Management Levels (AMLs) for each HMA were established in 1999 in the Owyhee Resource Management Plan (RMP) following an in-depth analysis of habitat suitability and resource monitoring and population inventory data, with public involvement. Page II-13 of the Owyhee Resource Management Plan EIS states that the AML will be based on the analysis in trend of range condition, utilization, actual use, and other factors which provide for the protection of the public range lands from deterioration. The upper limit of the AML is the maximum number of wild horses that can graze in a thriving natural ecological balance and multiple use relationship on the public lands in the area. Establishing an AML as a population range allows for the periodic removal of excess animals (to the low range) and subsequent population growth (to the high range) between removals. See Table WHMA-2 for appropriate management levels and forage allocations by HMA as identified in the ORMP.

Table WHMA-2: Allotment-specific wild horse herd management HMA (1999 ORMP)

HMA	AML Population Range	Forage Allocation (AUMs)
Hardtrigger	66-130	1,176
Black Mountain[1]	30-60	540
Sands Basin	33-64	588
TOTAL	129-254	2,304

[1]Not in the analysis area

The boundaries of the HMAs are delineated by fencing, which is generally effective in limiting wild horse distribution to the HMAs; however, some wild horses have been observed outside of HMA boundaries. These animals have caused conflicts with adjacent landowners including trespass on private land, breeding with domestic horses, and property damage.

Monitoring of the vegetation includes collection of rangeland health assessments, livestock actual use, utilization, trend, climate and ecological site inventory data by various methods as described in section 3.3 Upland Vegetation and Appendix F. Wild horse monitoring also includes collection of data concerning population characteristics.

Wild Horse Herd Management Areas (HMAs)

The Hardtrigger Herd Management Area (HMA) encompasses 66,063 acres and the Sands Basin

HMA includes 11,637 total acres of public and other land. The HMAs are located in Owyhee County and located south of the Snake River between Murphy and the Sands Basin allotment to the west (Map ACEC-1).

The Hardtrigger Wild Horse Management Area includes within its boundaries the Rats Nest allotment and a portion of the Elephant Butte allotment (Map ACEC-1); horse numbers and AUMs are described in Table WHMA-2. The HMA has been regularly surveyed 16 of the past 22 years since 1990; horse numbers exceeded the AML during 8 of those years (Table WHMA-5). The Hardtrigger and Black Mountain HMA populations are currently at or above the high AML. (See vegetation specialist report for census data by year). The BLM is expected to implement a population treatment and removal gather within the next 2 years, according to a September 2012 decision (DOI-BLM-ID-B030-2012-0010, signed 9/26/2012). This action will reduce the populations to the low AML in each HMA.

The Sands Basin Wild Horse Management Area is located within the Sands Basin allotment (Map ACEC-1); horse numbers and AUMs are described in table WHMA-2. The Sands Basin HMA has been regularly surveyed 16 of the past 22 years since 1990; horse numbers exceeded the AML during 9 of those years, for census data by year see Rangeland Vegetation Including Noxious Weeds and Invasive Plants Report (Table WHMA-5).

Table WHMA-3: Herd Management Areas that affect Chipmunk Group allotments

HMA	Livestock Grazing Allotment	Affected Acres	Percent of total Allotment
Hardtrigger	Elephant Butte	452	5
	Rats Nest	5,531	100
Sands Basin	Sands Basin	11,636	86

Table WHMA-4: Allotment-specific wild horse herd management

HMA	Acres	AML	Population Range	2012 Census Data	Forage Allocation (AUMs)
Hardtrigger	66,063	98	66-142	142	1,176
Black Mountain	50,611	45	30-60	55	540
Sands Basin	11,636	49	33-64	65	588
TOTAL		192	129-254	250	2,304

Source: (USDI BLM, 1999a)

The most recent census flight of the Hardtrigger HMA was completed in the summer 2012 and the most recent census flight for the Sands Basin HMA was 2009. The following table summarizes flight data during 1990-2012 for the Hardtrigger and Sands Basin HMAs.

Table WHMA-5: Census Data for Herd Management Areas Hardtrigger and Sands Basin

Year	Hardtrigger AML 98 Range (66-130)	Sands Basin AML 49 Range (33-64)
2012	142[1]	65[2]
2011	ND	ND
2010	*113	ND
2009 (July)	91	*33
2008 (June)	ND	100
2007 (Mar.)	*287	ND
2006 (Sept.)	ND	64

Year	Hardtrigger AML 98 Range (66-130)	Sands Basin AML 49 Range (33-64)
2004	ND	ND
2003	*89	*52
2002	118	54
2001	75	37
2000	*85	*62
1999	56	48
1998	42	47
1997	*125[3]	*70[3]
1996	ND	ND
1995	62	52
1994	*135	41
1993	110[3]	36
1992	58	24
1991	*112	*34
1990	ND	ND

[1]2012 wild horse numbers estimated using a 14% annual herd growth rate.
[2]2012 wild horse numbers estimated using a 20% annual herd growth rate.
[3]Survey numbers based on adult horses only (observations during aerial flights of horses generally greater than 11 months in age and not with a wet mare).
* Horses were gathered from this HMA during the calendar year.
ND = No Survey Data for these years.

Rats Nest and Elephant Butte Allotments

Those portions of the Hardtrigger HMA represent 5 percent of the Elephant Butte allotment and 100 percent of the Rats Nest allotment (Table WHMA-3). There are 1,176 AUMs of vegetation is allocated for wild horses within the Hardtrigger HMA (Table WHMA-4). The Rats Nest and Elephant Butte allotments serve as year-long wild horse habitat. Generally, wild horses will stay at higher elevations unless forage is unavailable and/or snow drives horses to lower snow-free elevations. Currently, 25 to 35 wild horses use the Rats Nest allotment, equating to 360 AUMs. Although the Hardtrigger HMA includes small portions of the Elephant Butte allotment as shown in Map ACEC-1, these horses do not have access to the Elephant Butte allotment due to fence boundary changes. Therefore, the Elephant Butte allotment will not be discussed further for HMAs for the remainder of this analysis.

The Rats Nest allotment is currently not meeting Standards 1, 2, 3, 4, and 8 due to current livestock and wild horses.

One trend site was established in the Rats Nest allotment to record wild horse use and shows a long-term downward trend and short-term static trend of bluebunch wheatgrass frequency and a static trend on Sandberg bluegrass. Utilization levels from 1975 to 1996 for upland key species in the Rats Nest allotment have generally been light to heavy (21 to 80 percent utilization). More recent data taken from 1997 to 2011 has shown slight to light use (6 to 40 percent utilization). Utilization is from both wild horses and cattle in this allotment. Specifically, in 1997, data show that wild horse use was 70 percent on bluebunch wheatgrass. Census data for 1997 showed 125 head of wild horses, which exceeds the animal management level of 98 head (Table WHMA-5). Approximately 24 adults and four foals remained in the Rats Nest allotment during the summer/fall of 2012. The steep topography discourages the horses from moving out of the area, and during the winter of 2012/2013, the horses did not move up in elevation. On Feb. 11, 2013, the OFO completed an inspection of the Rats Nest area. Approximately 35 to 40 wild horses were using the area and utilization levels were already moderate/heavy prior to any livestock turnout for the 2013 grazing season. Current utilization data show heavy use around Coyote Spring.

Sands Basin Allotment

Those portions of the Sands Basin HMA represent 86 percent of the Sands Basin allotment (Table WHMA-3). There are 588 AUMs of forage allocated for wild horses within the Sands Basin HMA (Table WHMA-4). The Sands Basin allotment serves as year-long wild horse habitat. Generally, wild horses will stay at higher elevations unless forage is unavailable and/or snow drives horses to lower snow-free elevations.

Of the four pastures within the HMA, pasture2 is dominated by a 1970s crested wheatgrass seeding, and pasture 4 is dominated by native plant communities. Much of pasture 3 was drill seeded following the 2002 Trimbly wildfire, but both the seeded and unseeded areas are substantially dominated by annual grasses (i.e., medusahead wildrye and cheatgrass). Therefore, pasture 2 was evaluated under Standard 5 (Seedings), pasture 3 was evaluated under Standard 6 (Exotic Plant Communities), and pasture 4 was evaluated under Standard 4 (Native Plant Communities). Currently pastures 2, 3, and 4 are available to season-long wild horse grazing. The Sands Basin allotment is currently not meeting Standards 1, 2, 3, 4, 7, and 8 due to current livestock, wild horses, exotic species, and soils in pastures 3 and 4.

Trend data were collected at two photo plots in pasture 2; one photo plot and one nested plot frequency site are established in pasture 3; and two photo plots and one nested plot frequency site in pasture 4. Specific trend analysis can be found in (Vegetation Specialist Report available on the BLM Group 2 website noted in footnote 14).

Pasture 2 wild horse trend data

Pasture 2 photo plots show the general view of these communities are moderately dominated by Wyoming big sagebrush and small bunchgrasses with lesser amounts of large bunchgrasses with no apparent trend.

Pasture 3 wild horse trend data

Pasture 3 nested plot frequency site data show increased frequency of crested wheatgrass, field brome, medusahead wildrye, fescue, and cheatgrass, with a significant downward trend in bluebunch wheatgrass. Photo plots showing increased annuals and decreased shrub density from the effects of the 2002 Trimbly fire on site in pasture 3.

Pasture 4 wild horse trend data

Pasture 4 nested plot frequency site data show a significant downward trend in Bluebunch wheatgrass and squirreltail from 1991 to 2010 with medusahead wildrye being established. Also photo plots showing increased annuals and decreased large bunchgrasses.

Utilization levels from 1975 to 1996 for upland key species in the Sands Basin allotment have generally been light to heavy (21 to 80 percent utilization). More recent data collected between 1997 and 2011 have shown slight to light use (6 to 40 percent utilization), with the exception of 59 percent use on Idaho fescue in 2004 at one site in pasture 4 from both wild horses and cattle. Census data from the Sands Basin HMA for 2003 showed 52 head and 64 head in 2006, which is at the high end of the appropriate animal management level of 33 to 64 head (Table WHMA-5). In the Sands Basin allotment, wild horses use pastures 2, 3 and 4 (Map ACEC-1).

3.12.2. Effects Common to All Allotments

Direct and Indirect Effects - Introductory Information

Livestock compete with wild horses and wildlife for forage and water resources within the associated HMAs and allotments (Olsen & Hansen, 1977). Water for livestock and wild horses is mainly available from springs and reservoirs during late winter to early summer. Throughout the summer, spring flow and reservoir storage diminish. By the late part of the grazing season, most water resources become dry, thus causing some excessive use in and around perennial riparian areas, including Jump Creek in Sands Basin. In the direct and indirect HMA analysis area, are 14,313 acres would be affected, including pastures 2, 3, and 4 of the Sands Basin and Rats Nest allotments.

Effects on wild horses from implementing trailing would authorize 54 additional AUMs to the Rats Nest allotment for trailing. This trailing activity could potentially include increased trampling effects on vegetation for approximately 4 miles during short-term trailing events. The permitted AUMs would have short-term direct effects of removal and trampling of vegetation and localized competition for foraging on wild horse habitat. The routes and miles directly affected by trailing make up less than 1 percent of the analysis area, and not all of these acres would actually be trailed upon (See Livestock Trailing Section 2.1.2; Map RNGE-4).

3.12.3. Alternatives 1 and 2 Effects

Rats Nest, Wild Rat and Sands Basin Allotments

The degree of livestock and wild horse competition for available vegetation is occurring on these allotments because the AML population range is at the maximum range; the 2012 census found 142 head, with an expectation of a 14 percent foal crop for 2013. A shift in livestock distribution from current use and water locations is expected to remain the same as the current condition. However, in the long term, as rangeland condition and vegetative trend continue to not improve, wild horses may be impacted and displaced. Without an improvement in rangeland condition, wild horses may be forced to adapt and move out of traditional use areas and use new areas where cattle and wild horses have not typically utilized. Currently uplands within these allotments are not being maintained and not improving (see Section 3.3.1). These conditions would continue to remain the same (not improve) under these alternatives. This is primarily due to the degree of current utilization levels, continuous spring grazing during the critical growth periods for perennial vegetation. These allotments are primarily used by cattle during the spring season and by wild horses season-long. Livestock grazing under these alternatives would not be expected to directly impact wild horse herd health in the short term; however, as vegetative conditions continue to decline in the long term, manageability of wild horses would become more difficult, as horses would be expected to be found outside HMA boundaries more frequently as they search for healthier and more sustainable forage resources throughout the year. Wild horse HMAs would have adequate opportunity to thrive in a natural ecological balance and meet ORMP management objectives.

3.12.4. Alternatives 3 and 4 Effects

Wild Rat and Sands Basin Allotments

Alternatives 3 and 4 would be expected to benefit wild horse herd health and maintain wild and free-roaming horses in the HMA at appropriate management levels within a thriving natural ecological balance. An overall deferment and rest would be expected to allow for lower amount of competition for available forage throughout the grazing season, in addition to improving wild horse habitat.

Increased years of deferment or rest allow opportunity for recovery and maintenance of plant health and vigor to improve upland vegetative communities (Bailey & Brown, 2011). A fall system of grazing would be beneficial for the improvement of the riparian areas when stream bank temperatures are cool enough to

discourage animals from congregating in the riparian areas (Bellows, 2003). Similarly, Holland et al. (2005) found that recent grazing exclusion resulted in an increase in canopy cover, height growth, and stem density during the 11 years of a study in Colorado, indicating that these variables respond positively to removal of livestock grazing. For detailed effects on upland and riparian vegetation resources, see Sections 3.3 and 3.5 above.

Deferment and rest from livestock grazing as prescribed in Alternatives 3 and 4 will allow the HMAs to benefit by moving the upland and riparian habitat conditions that are currently not meeting toward meeting or meeting Idaho Rangeland Health Standards and ORMP objectives. Wild horse HMAs would have an opportunity to thrive in a natural ecological balance and meet ORMP management objectives.

3.12.5. Alternative 6 Effects

Rats Nest, Wild Rat and Sands Basin Allotments

Alternative 6 would be expected to benefit wild horse herd health and maintain wild and free-roaming horses in the HMA at appropriate management levels within a thriving natural ecological balance. Removal of livestock grazing would remove any competition from livestock grazing and would benefit wild horses and improve wild horse habitat better than any other alternative.

Implementation of the no-grazing alternative would provide a more rapid rate of recovery toward ecological site potential than other alternatives considered. The elimination of grazing for a period of 10 years would restore the riparian ecosystem because the rest from livestock grazing would allow for the recovery of the stream bank and a functional riparian plant community to benefit by moving the upland and riparian habitat conditions, currently not meeting toward meeting or meeting Idaho Rangeland Health Standards and ORMP objectives. Wild horse HMAs would have an opportunity to thrive in a natural ecological balance and meet ORMP management objectives.

3.12.6. Cumulative Effects

Wild Horse Herd Management Areas (HMAs) CIAA area

A cumulative effect is defined as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). The cumulative impacts focus on the aggregate effects of the past, present, and reasonably foreseeable future actions.

The wild horse resource CIAA was set to the Black Mountain, Hardtrigger and Sands Basin HMAs (Map ACEC-1) that incorporate and extend beyond the Chipmunk Group allotments boundary. The wild horse CIAA includes direct effects to pastures 2, 3 and 4 of the Sands Basin allotment and the Rats Nest allotment. Wild horse CIAA allotments that are affected outside the directly affected allotments and are included in the Hardtrigger and Black Mountain HMA complex are Bass FFR, Chipmunk Field FFR, East Reynolds Creek, Hardtrigger, Juniper Spring, Elephant Butte, Alkali-Wildcat, Rabbit Creek/Peters Gulch, Reynolds Creek, Shares Basin and Strodes Basin.

Wild Horse HMAs overlap the Elephant Butte, Rats Nest, and Sands Basin livestock grazing allotments, as illustrated in Table HMA-2 below and Map ACEC-1. Within the CIAA, the Black Mountain HMA also presents cumulative impacts over 50,611 acres directly adjacent to the 66,063-acre Hardtrigger HMA. There are 134,949 acres in the HMA CIAA. The Hardtrigger and Black Mountain HMAs are managed as a complex, generally meaning that there is frequent/natural wild horse movement between individual HMAs and it is difficult to manage the HMAs and horse populations independent of one another. The effects of livestock grazing on wild horse habitat resources are similar to those disclosed as

the direct and indirect effects; however, populations are managed as a complex and have the potential to affect the total HMA CIAA area.

Past, Ongoing, and Reasonably Foreseeable Activities

Past, present, and reasonably foreseeable future activities within the CIAA relevant to cumulative effects were determined using approximated BLM GIS data and are displayed in Section 3.2. Several of the same past activities that have created the current condition on wild horses would continue in the cumulative impacts analysis area. Vegetation and soils effects are interrelated with wild horse habitat conditions. For more specific effects from livestock grazing, see Sections 3.3 and 3.4 of this EIS. Table VEG-11 displays the likely magnitude and type of effects of past and ongoing activities on upland vegetation including noxious weeds in the cumulative impacts analysis area.

Reasonably foreseeable activities include grazing permit renewals on the Reynolds Creek allotment and Boardman to Hemingway power line. Effects of future grazing decisions would directly affect competition of foraging between wild horses and cattle and AML wild horse numbers in the Black Mountain HMA. Power lines through Rats Nest allotment would directly affect 0.3 miles and have localized elimination of vegetation and permanent degradation of habitat.

Table WHMA-6: Past and Ongoing Activities and potential effects on wild horses in the CIAA

Activity	**Magnitude of Effect on Wild horses**	**Type of Effect to wild horse habitat**
Livestock Grazing	Moderate, widespread	Direct Effect - herbivory and trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect- change in vegetation composition, non-native weed invasion, altered fire regime. Competition for foraging with wild horses.
Infrastructure (fences, reservoirs, troughs, structures, etc.)	Potentially high in a small percentage of HMA CIAA acres	Localized elimination of individual plants and perhaps small occurrences; permanent degradation of wild horse habitat
Roads	Potentially high in a small percentage of HMA CIAA acres	Localized elimination of vegetation; permanent degradation of wild horse habitat
OHV	Moderate to high, localized to a small percentage of HMA CIAA acres	Localized seedbank loss, elimination of individual plants; degradation of wild horse habitat, disruption of wild horse behavior and possible avoidance of heavy OHV areas.
Trailing	Likely minor to low in a small percentage of HMA CIAA acres	Localized physical impact and elimination of individual plants; short term impacts to wild horse habitat.
Noxious Weed Treatment	Likely low if at all in a small percentage of HMA CIAA acres	Overspray potentially reducing vigor and reproduction of individual plants and mortality of individual plants; short term impacts to wild horse habitat.
Wildfire & Fire Suppression	Low to moderate, widespread in HMA CIAA acres	Low elevation: Long-term (>10 years) shift to reduced species diversity, non-native weed invasion, and altered fire regime. High Elevation: Long-term (>10 years) shift from grass/forb/shrub community to localized late seral shrub dominated areas with reduced species diversity; short term high impacts long term low impacts to wild horse habitat.
Prescribed Burning	Likely moderate in a small	Short-term (<10 years) minor negative impact to

Activity	Magnitude of Effect on Wild horses	Type of Effect to wild horse habitat
	percentage of HMA CIAA acres	wild horse habitat and change in competition; long-term (>10 years) shift from late seral shrub dominated community to grass/forb/shrub community ; short term high impacts long term low impacts to wild horse habitat.
Mining Claims	Potentially high in a small percentage of HMA CIAA acres	Localized physical impact and elimination of individual plants and perhaps small occurrences; permanent degradation of vegetation; permanent degradation of wild horse habitat

Alternatives 1 and 2 Cumulative Effects

Rats Nest, Wild Rat and Sands Basin Allotments

Grazing management would not be expected to make significant progress toward meeting rangeland health standards in the long term. The degree of livestock and wild horse competition for available vegetation is occurring repeatedly during the spring and summer on these allotments; because the AML population range is at the maximum range. As competition for available forage increases, competition could force current wild horse bands in this area to migrate from traditional use areas located within the allotment to areas outside of the allotment, or even areas outside of the HMA. Although minor impacts as above would occur, when these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted wild horse habitat within the CIAA, there would be adequate opportunity to improve unsatisfactory vegetation or maintain satisfactory vegetation health and condition on all areas, as described in the wild horse ORMP management objectives. Wild horses would continue to have adequate opportunity to thrive in a natural ecologically balanced HMA, therefore meeting ORMP objectives.

Alternatives 3 and 4 Cumulative Effects

Wild Rat and Sands Basin Allotments

Cumulatively, grazing management actions under these alternatives would have the least short and long term negative impacts on wild horse herd health and herd management of any grazing alternatives. Impacts are the same as described in the direct effects. An overall reduction in active AUMs would decrease competition between cattle and wild horses in the short term and lessen the degree of competition in the long term as wild horse numbers begin to reach the upper levels of AML. When these consequences are combined with the past, present and reasonably foreseeable future actions that have impacted HMA resources within the CIAA, and displayed in the Table WHMA-6, wild horses would have the opportunity to thrive in a natural ecological balanced HMA; therefore meeting ORMP objectives.

Alternative 6 Cumulative Effects

Wild Rat and Sands Basin Allotments

Effects from livestock competition of foraging and wild horse habitat would be eliminated. When these consequences are combined with the past, present and reasonably foreseeable future actions that have impacted HMA resources within the CIAA, wild horses would have the opportunity to thrive in a natural ecological balanced HMA, therefore meeting ORMP objectives.

3.13. MITIGATION

Mitigation measures are those measures, means, or practices that could reduce or avoid the adverse impacts to the human environment that result from implementing a proposed action or an alternative. Mitigation measures can help to accomplish this in several ways (40 CFR 1508.20):

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing 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.
- Compensating for the impact by replacing or providing substitute resources or environments.

Often, when proposing an action, the BLM, as well as permit applicants, will include mitigation measures as integral components of a proposed action's design. If mitigation measures are incorporated into the proposed action or alternatives, they are called design features, not mitigation measures (NEPA Handbook H-1790-1 at 61).

The CEQ issued mitigation guidance to Federal agencies in a January 14, 2011, memorandum (Council on Environmental Quality, 2011). The memorandum states that mitigation measures included in the project design are integral components of the proposed action, are implemented with the proposed action, and therefore should be clearly described as part of the proposed action that the agency will perform or require to be performed. Consequently, the agency can address mitigation early in the decision-making process and potentially conduct a less extensive level of NEPA review (memorandum at 6).

Mitigation in this EIS is presented in the manner described above. Applied to each alternative are built-in mitigation measures in the form of design features to reduce or avoid adverse impacts. Beginning at Section 3.6.2 and continuing through the analysis, the EIS explains that depending on the alternative, livestock grazing rotations, and seasons of use, there are associated terms and conditions presented to mitigate grazing pressure on the upland and riparian vegetation communities, and the habitat components used by four wildlife focal species, greater sage-grouse, Columbia spotted frogs, Columbia redband trout, and California bighorn sheep.

The EIS analyzes the risk of disease transmission between domestic and bighorn sheep but also describes in Section 2.3.1 what precautions are built in to the proposed action and alternatives to lower that risk. Incorporated by reference is the analysis from an Owyhee Field Office trailing EA issued in 2012. This EIS adopts from the EA best management practices from a Separation Agreement established between the Boise District Office and the permittees, but elevates these practices to terms and conditions. Domestic sheep grazing and trailing terms and conditions are designed to: 1) decrease the risk of contact between bighorn sheep and domestic sheep, and 2) increase communication between BLM, the State, and the permittee regarding bighorn sheep sightings and movements. There is a similar agreement between the Idaho Department of Fish and Game and the permittee.

Effects to cultural resources are addressed in Section 3.11. Cultural resource inventories were conducted at areas of livestock concentration. This review process is in accordance with the grazing permit/lease renewal guidelines agreement between the BLM and the SHPO, dated January 29, 1999, and with standard professional procedures for livestock grazing permit/lease renewals. If impacts to National Register of Historical Places (NRHP)-eligible properties are identified, the stipulations of the grazing permit can be modified or other mitigation measures can be authorized to address the presence and protection of these resources. Repair and maintenance of livestock exclosures, observation of the Boise

District's range readiness criteria to minimize activity around concentration areas when wet soils are susceptible to livestock trampling, terms and conditions of grazing permits as well as the Boise District's terms and conditions are design features of all grazing alternatives that will be in place to reduce or minimize the effects to cultural resources at these concentration areas.

Terms and conditions common to all grazing alternatives and livestock trailing events that are design features to reduce or eliminate effects to resources are listed in Sections 2.1.1 and 2.1.2 of this EIS. The Final Jump Creek, Succor Creek, & Cow Creek Watersheds Grazing Permit Renewal EIS will further describe mitigation measures in the form of design features for the Preferred Alternative, and will describe in the Record of Decision the monitoring required to ensure the implementation and success of these mitigation measures (40 CFR 1505.2 (c)).

4. CONSULTATION AND COORDINATION

Throughout the development of the EIS, the BLM consulted and coordinated with other federal, state, and local governments/agencies and Native American Tribes to acquire relevant information for use in completing this EIS. This coordination also served to keep these stakeholders apprised of the progress made toward completion of the EIS and any issues that may have been identified throughout the NEPA process.

BLM invited 37 different federal, state, and local agencies to participate as cooperating agencies for the Group 2 EIS. Cooperating agency status provides opportunities separate from the public review process to cooperating agencies to ensure improved coordination to inform the EIS and ROD. Of the 37 agencies invited, only three agencies chose to participate as cooperating agencies: Idaho Department of Lands, Idaho Department Fish and Game, and Natural Resource Conservation Service. However, on March 1, 2013, BLM received a letter from the NRCS indicated that the NRCS was terminating its status as a cooperating agency for the Chipmunk Group EIS. Beginning in May 2012, upon signature of the Chipmunk Group EIS Cooperating Agencies Memorandum of Understanding (MOU No. BLM-MOU-ID-2012-0006-1610), BLM began holding monthly/bimonthly conference calls with the cooperating agencies. BLM holds monthly conference calls with designated representatives from NRCS, IDL, and IDFG to discuss the EIS and related issues. In addition, although the Owyhee County Commissioners chose not to participate as formal cooperating agencies, BLM meets with the commissioners on a monthly basis when the Chipmunk Group grazing permit have been a regular topic item.

The BLM consulted with the Shoshone-Paiute Tribes through the Wings & Roots - Native American Campfire, to share information and consult about Tribal sacred and other important cultural resources, as well as to gain an understanding of how BLM management decisions might affect the Tribes. However due to contracting issues associated with the facilitator, Wings and Roots meetings have not been held since November 2012 and at this time it is unknown when these consultation meetings will resume.

BLM has held numerous meetings with Idaho Department of Fish and Game (IDFG) to discuss bighorn sheep and sage grouse issues in addition to the monthly cooperating agency conference calls. BLM met with IDFG on February 7, 2013, to discuss IDFG's concerns regarding sage grouse management and specifically the Idaho Governor's Sage-Grouse Task Force Recommendations (The State of Idaho, 2012). In addition, BLM met with IDFG and Oregon Division of Fish and Wildlife (ODFW) representatives at the IDFG Nampa Office on February 27, 2013 to discuss bighorn sheep information and modeling efforts.

The BLM met with the IDFG, ODFW, and the BLM-Vale District, in regards to bighorn sheep in June 2012 and again on March 15, 2013. These meetings were held at the BLM Vale District Office in Vale, OR. The coordination meetings were held to gather and share resource management information across state lines, and BLM-Idaho bighorn sheep modeling efforts and other information included in the EIS.

Other less-formal briefings have been made to Idaho congressional representatives (including the Governor's Office) and Idaho's Resource Advisory Council (RAC) during regularly scheduled Boise District and Idaho State Office monthly and quarterly meetings since issuance of the Chipmunk Group EIS Notice of Intent (NOI) in January 2012. These meetings have been informal in nature and generally simply included progress reports and schedule changes associated with completing the EIS. No formal Chipmunk Group briefings have been requested nor presented to these entities as of completion of the EIS. To date, these entities have been primarily focused on the Owyhee River Group grazing permit renewals progress and events.

The same is true for Western Watersheds Project (WWP), no Chipmunk Group-specific meetings have been requested nor occurred to date. Two meetings with WWP have occurred since the Chipmunk Group EIS NOI was published in January 2012. Meetings with WWP took place on March 28, 2012, and December 3, 2012, and similar to the meetings to date with Idaho congressional representatives and the RAC, these meetings were focused on the Owyhee River Group grazing permit renewals.

The BLM coordinated with the permittees to develop their applications for livestock grazing for the Chipmunk Group allotments EIS. During June and July of 2012, the BLM met with the permittees to go over those applications and offered additional time to amend any proposals that were already submitted. In December 2012, the BLM offered meetings to permittees to go over preliminary determinations and to clarify the alternatives developed. Three of the 14 permittees accepted meetings; the others declined. Several follow-up phone calls were made to clarify questions on applications for Elordi Cattle Company and the Chipmunk Grazing Association throughout the process. The Table CCC-1 shows the meetings and dates with the Chipmunk Group permittees. Additional dates were made as well see discussion below the table.

Table CCC-1: Permittee Coordination Dates

Permittee No. & Allotments	Meeting Current Management and Permit Application Clarification	Meeting Preliminary Determinations and Alternatives Development	Follow-up Meetings Clarification of Permit Applications
Alan J. Johnstone (0129)	June 27, 2012		
Chad & Dannelle Hensley (4228)	June 26, 2012		Several phone calls and clarification on permit applications with consultant.
Chipmunk Grazing Assn. (1395)	June 29, 2012	December 6, 2012	Several phone calls and clarification on permit applications with consultant.
Doug Burgess (1436)	June 26, 2012		
Elordi Cattle Co. LLC (1468)	June 27, 2012	December 19, 2012	Several phone calls and clarification on permit applications with consultant.
Elordi Sheep Camp (4084)	Permit was split after these meetings therefore no meeting was scheduled.		
John Isernhagen (2860)	June 29, 2012		
Lequerica & Sons INC. (2984)	June 27, 2012		
LS Cattle Company (1425)	June 29, 2012		
LU Ranching Co. (1429)	July 17, 2012		

Permittee No. & Allotments	Meeting Current Management and Permit Application Clarification	Meeting Preliminary Determinations and Alternatives Development	Follow-up Meetings Clarification of Permit Applications
Poison Creek Grazing Association LLC (3987)	July 13, 2012		
Sean & Andrea Burch (4245)	June 25, 2012		Several phone calls and clarification on permit applications with consultant.
Ted Blackstock (1389)	June 25, 2012	December 19, 2012	Several phone calls and clarification on permit applications with consultant.
Tim McBride (0436)	June 27, 2012		

As per 4130.3-3, "Following consultation, cooperation, and coordination with the affected lessees or permittees, the State having lands or responsible for managing resources within the area, and the interested public, the authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices are not meeting the land use plan, allotment management plan or other activity plan, or management objectives, or is not in conformance with the provisions of subpart 4180 of this part. To the extent practical, the authorized officer shall provide to affected permittees or lessees, States having lands or responsibility for managing resources within the affected area, and the interested public an opportunity to review, comment and give input during the preparation of reports that evaluate monitoring and other data that are used as a basis for making decisions to increase or decrease grazing use, or to change the terms and conditions of a permit or lease." The BLM has completed extensive consultation, cooperation, and coordination with affected permittees and interested publics. As outlined above, several meetings were held and multiple opportunities to review documents occurred.

In addition to a Scoping Open House in February 2012 and a second Open House on June 13, 2013, BLM met with 14 individual affected permittees at the Owyhee Field Office during the month of June 2012 (see Table CCC-1 in the FEIS). Additionally, after the DEIS was published, BLM conducted the following meetings:

- Western Watershed Projects on June 11, 2013;
- Poison Creek LLC on June 12, 2013;
- Doug Burgess on June 12, 2013;
- The Blackstock Springs allotment permittees – Ted Blackstock, Alan Johnstone, Elias Jaca, Tony Richards, and Chad Gibson on June 13, 2013;
- Chad and Dannelle Hensley, and Sean Burch (separately), on June 17, 2013;
- Applicable Group 2 Cooperating Agencies of record – Idaho Department of Lands and Idaho Department of Fish and Game on June 26, 2013; and
- Tim Lowry, and Chipmunk Grazing Association (separately), on June 27, 2013.

5. LIST OF PREPARERS

Name	Position	Experience
Jake Vialpando	Project Manager	BLM, 20 years
Carmela Romerio	Rangeland Management Specialist	USFS, 21 years BLM, 2 years
Regina Rone	Soil Scientist	USFS, 10 years BLM, 2 years
Melissa Schroeder	Soil Scientist	BLM, 4 years
Bonnie Claridge	Fisheries Biologist	BLM, 15 years
Gillian Wigglesworth	Botanist	BLM, 6 years
Jim Priest	Wildlife Biologist	Colville Tribes, 8 years BLM, 12 years
Ryan Homan	Outdoor Recreation Planner	BLM, 10 years
Brian McCabe	Archaeologist	BLM, 15 years
Jessica Gottlieb	Writer/Editor	USDA, 3 years BLM, 2 years
Jayson Murgoitio	GIS Specialist	DOD, 8 years Environmental Conservation Services, 3 years BLM, 2 years
Eric Mayes	NEPA Specialist	BLM, 11 years
Seth Flannigan	NEPA Specialist	BLM, 3 years

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7. APPENDICES (See Appendices document)
8. MAPS (See Maps document)

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GLOSSARY

Accelerated erosion: Soil loss at a rate in excess of natural or geologic erosion as a result of human-caused disturbance

Actual use data: Numbers of livestock, kind, and/or class of those livestock and period of time those livestock actually grazed a specific allotment or pasture

Age class: A classification of woody plant species according to relative age, e.g., seedling, young, mature, or decadent

Allotment: An area of land where one or more individuals graze their livestock. An allotment generally consists of federal rangelands, but may include intermingled parcels of private, state or federal lands. BLM and the Forest Service stipulate the number of livestock and season of use for each allotment.

Allotment Management Plan (AMP): A documented program which applies to livestock grazing on public lands, prepared by consulting, cooperating, and coordinating with the permittee(s), lessee(s), or other interested publics

Animal unit: A unit of measure for rangeland livestock equivalent to one mature cow or five sheep or five goats, all over 6 months of age. An animal unit is based on average daily forage consumption of 26 pounds of dry matter per day.

Animal Unit Month (AUM): The amount of forage needed to sustain one cow, five sheep, or five goats for a month. A full AUMs fee is charged for each month of grazing by adult animals if the grazing animal (1) is weaned, (2) is 6 months old or older when entering public land, or (3) will become 12 months old during the period of use. For fee purposes, an AUM is the amount of forage used by five weaned or adult sheep or goats or one cow, bull, steer, heifer, horse, or mule. The term AUM is commonly used in three ways: (1) stocking rate as in X acres per AUM, (b) forage allocation as in X AUMs in allotment A, and (3) utilization as in X AUMs consumed from Unit B.

Annual plant: A plant that completes its life cycle and dies in 1 year or less.

Appropriate Management Level (AML): The optimum number of wild horses that provides a thriving natural ecological balance on the public range.

Area of Critical Environmental Concern (ACEC): Areas where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Authorized Officer: Any person authorized by the Secretary of the Interior to administer BLMs rangeland management program (typically the Field Office Manager)

Base property: Land or water sources on a ranch that are owned by, or under long-term control, of the operator

Base property leases: On BLM-administered lands, the long-term lease of base property

Beneficial use: Any of the various uses which may be made of the water of an area including, but not limited to, agricultural water supply, domestic water supply, industrial water supply, cold-water biota, warm water biota, salmonid spawning, primary contact recreation, secondary contact recreation, wildlife habitats, and aesthetics

Best Management Practice (BMP): A component practice or combination of component practices determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals. (Idaho Agricultural Pollution Abatement Plan, August 1993)

Component Practices: Approved practices, used alone or in combination with other practices, are used to develop BMPs. (Idaho Agricultural Pollution Abatement Plan, August 1993)

Bighorn Sheep Herd Management Area: An area designated by the Oregon Department of Fish and Wildlife for bighorn sheep population and harvest management

Bighorn Sheep Population Management Unit (PMU): An area designated by the Idaho Game and Fish for bighorn sheep population and harvest management

Breeding habitat: Leks and the sagebrush habitat surrounding leks that are collectively used for pre-laying, breeding, nesting, and early brood-rearing, from approximately March through June

Brood (sage-grouse): A hen or group of hens with at least one chick

Carrying capacity: The maximum stocking rate possible without damaging vegetation or related resources. Carrying capacity may vary from year to year on the same area due to fluctuating forage production.

Class of livestock: Description of age or sex group for a particular kind of livestock, such as cow, bull, calf, yearling, ewe, ram or lamb.

Climax plant community: The final vegetation community and highest ecological development of a plant community that emerges after a series of successive vegetation stages; the climax community in theory perpetuates itself indefinitely unless disturbed by outside forces.

Collaboration: To work jointly with others

Connectivity: The state of being functionally connected by movement of organisms, material, or energy; the opposite of habitat fragmentation.

Consultation, Coordination, and Cooperation: A process prescribed by the Public Rangelands Improvement Act of involving the permittee(s), lessee(s), federally recognized Indian tribes, and interested publics in the development of allotment management plans and other management programs on public lands. The process also includes trust responsibilities to Federally recognized Indian tribes.

Core Herd Home Range (CHHR): The area within which most herd individuals spend most (95 percent) of their time

Cover (general): The proportion of the soil surface covered by a vertical projection of the cover class of interest (e.g. canopy cover, basal cover, litter cover), regardless of what is above or below the object

Cover (sage-grouse): An indication of the relative amount of shelter or protection provided by all vegetation at a given point, normally used to assess nesting habitat

Cow-calf operation: A livestock operation in which a base breeding herd of mother cows and bulls is maintained. The cows produce a calf crop each year, and the operation keeps some heifer calves from each calf crop for breeding herd replacements. The rest of the calf crop is sold between the ages of 6 and 12 months along with old or nonproductive cows and bulls.

Deferment: Nongrazing, either by delay or discontinuance of grazing, from the beginning of plant growth until the seed is set or the equivalent stage of vegetative reproduction.

Diversity: (1) The absolute number of species in a community, species richness; and (2) a measure of the number of species and their relative abundance in a community; low diversity refers to few species or unequal abundances, high diversity to many species or equal abundances.

Early brood-rearing habitat: Upland sagebrush sites relatively close to nest sites, typically characterized by high species richness with an abundance of forbs and insects, where sage-grouse hens raise young chicks (less than 21 days old)

Ecological site: A kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and its response to management. Ecological site is synonymous with range site and ecological type.

Ecological Site Description (ESD): Description of the soils, uses, and potential of a kind of land with specific physical characteristics to produce distinctive kinds and amounts of vegetation

Ecological Site Inventory: The basic inventory of present and potential vegetation on BLM rangelands.

Ecological Site Potential: The plant community that can be supported in an area given its edaphic and climatic potential

Ecological status: The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree to which the kind, proportions, and amounts of plants in a community resemble that of the potential natural community.

Ecoregion: A large area of similar climate where similar ecosystems occur on similar sites (those having the same landform, slope, parent material, and drainage characteristics

Ecosystem: The totality of components of all kinds that make up a particular environment; the complex of a biotic community and its abiotic, physical environment

Encroachment: Advancement beyond the usual or proper limits; often used to describe the advancement of pinyon pine or juniper woodlands into sagebrush communities

Energy flow: The capture of sunlight energy by plants and the conversion through photosynthesis to biomass.

Exotic: Not native; an organism or species that has been introduced into an area, and is thus outside of its native range

Exotic plant communities, other than seedings: Assemblages of plants that are not indigenous to the area, such as cheatgrass, yellow star thistle, and medusa head rye.

Extensive Recreation Management Area (ERMA): Area where recreation is unstructured and dispersed, with minimal regulatory constraints and where minimal recreation-related investments are required. An ERMA includes all public land exclusive of SRMAs.

Fall Habitat (Sage-grouse): The matrix of sagebrush habitat areas that sage-grouse slowly move through from September through November, transitioning from summer habitat to winter habitat, and shifting their diet from including large amounts of forbs to feeding exclusively on sagebrush

Fenced Federal Range (FFR): A small amount of public land fenced with a large amount of private land

Forage: All browse and herbaceous growth available and acceptable to grazing animals or that may be harvested for feeding purposes. Forage includes pasture, rangelands, and crop aftermath. Feed includes forage, hay and grains.

Foray: A movement of a bighorn sheep outside of the core herd home range. Rams, in particular, make occasional long distance foray movements.

Forb: An herbaceous plant that is not a grass, sedge, or rush.

Fragmentation: The process of dividing habitats into smaller and smaller units until their utility as habitat is lost.

Functional – At Risk (FAR): A riparian-wetland area which is in functional condition but has at least one attribute or process that makes it susceptible to degradation

Geographic Information Systems (GIS): A collection of computer hardware, software, and geographic data for capturing, managing, analyzing, and displaying all forms of geographically referenced information

Grazing fee: A charge, usually on a monthly basis, for grazing a specific kind of livestock

Grazing management practices: Techniques used to manage livestock and include season, duration (amount of the time grazing occurs), intensity of use, numbers of livestock, kind of livestock, and distribution (e.g., salting, herding, and water development)

Grazing permit/license/lease: Official written permission to graze a specific number, kind, and class of livestock for a specified time period on a defined rangeland

Grazing program: A combination of grazing management and/or facilities used to ensure an expectation of meeting or making significant progress toward meeting the Standards for Rangeland Health.

Grazing season: On federal lands, an established period for which grazing permits are issued

Grazing system: A systematic sequence of grazing use and nonuse of an allotment to meet multiple use goals by improving the quality and amount of vegetation

Ground cover: The percentage of material, other than bare ground, covering the land surface. It may include live and standing dead vegetation, microbiotic crust, litter, cobble, gravel, stones, and bedrock. Ground cover plus bare ground totals 100 percent.

Habitat: The place and environment where an animal or plant lives, including all biotic, climatic, and edaphic factors

Habitat Indicator: A component or attribute of habitat that can be observed and or measured in order to characterize suitability for shelter, food, water, and space

Herbaceous (vegetation): Plants that die back to the ground each year, normally with soft, non-woody stems

Herd: One or more wild horse bands using the same general area

Herd Management Area (HMA): The geographic area identified in a management framework or resource management plan for the long-term management of a wild horse herd

Human activities: Any activity that is initiated or controlled by people, such as recreation, timber harvest, livestock grazing, road and other construction, and mining.

Hydrologic cycle: The circulation of water in the atmosphere, on the surface of the earth, in the soil, and in the underlying rocks.

Indian Treaty: A contract in writing between the United States Government and Indian tribes formally signed by duly authorized representatives and ratified by the United States Senate.

Indicator: Components or attributes of a rangeland ecosystem that can be observed and/or measured that provides evidence of the function, productivity, health and/or condition of the ecosystem.

Infiltration: The process by which water on the ground surface enters the soil, as influenced by soil texture, aspect, slope, and vegetation cover.

Invasive (plant): A plant species that is not part of, or is a minor component of, a pre-disturbance plant community, and that has the potential to become a dominant or co-dominant species on the site if its future establishment and growth is not actively controlled by management interventions

Key species: (1) Species that, because of their importance, must be considered in a management program; or (2) forage species whose use shows the degree of use of associated species.

Landform: A naturally formed element of the landscape that controls or influences hydrologic, physical, and ecological processes

Landscape: Landform of a region in aggregate

Land use plan: A resource management plan or management framework plan developed under the provisions of 43 CFR 1600. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management Act of 1976 and establish management direction for resource uses of public lands. (43 CFR 4100)

Late brood-rearing habitat: Variety of habitats used by sage grouse from July through September. Habitats used include, but not limited to, meadows, farmland, riparian areas, dry lakebeds, sagebrush areas

Lek: A site where birds, specifically grouse, regularly congregate for display and courtship purposes

Life form: Characteristic form or appearance of a plant species at maturity, e.g., tree, shrub, forb, grass, etc.

Litter: Dead plant or animal material on the soil surface

Livestock management facilities: Physical facilities, such as fences, water developments, and corrals that are used to handle and control livestock.

Marginal habitat (sage-grouse): Area supports the species but survival rates and reproductive success are generally lower by comparison, and area may or may not have the potential to become suitable in the future

Microbiotic crust: Community of non-vascular primary producers that occur as a "crust" on the surface of soils and made up of a mixture of algae, lichens, mosses, and cyanobacteria (blue-green algae).

Monitoring: The orderly collection, analysis, and interpretation of resource data and information to evaluate progress toward meeting Standards for Rangeland Health and/or management objectives

Multiple use: A combination of balanced and diverse resource uses that considers long-term needs for renewable and nonrenewable resources, including recreation, rangeland, timber, minerals, watershed, and wildlife, along with scenic, scientific, and cultural values.

Naïve: a non-infected individual or population

Native species: Plants or animals indigenous to the area

Nesting Habitat: Area with protective grass and high lateral shrub cover where hens nest, typically under sagebrush shrubs

Non-Functioning (NF): A riparian-wetland area which clearly does not provide adequate vegetation, landform, or large woody debris to dissipate energies associated with high flow, and thus does not reduce erosion, improve water quality, etc. (Prichard et al. 2003)

Non-habitat: Area within the historical distribution of sage-grouse that is unoccupied, does not currently provide habitat, and does not have the potential to provide habitat in the foreseeable future (100 years)

Non-native species: Plants or animals not indigenous to the area.

Noxious weeds: Exotic plants that are listed by the State of Idaho and subject to Idaho weed control laws.

Nutrient cycle: The cyclical process by which plants and animals use chemical compounds and elements in the soil, water, and atmosphere to produce plants and animals and the decomposition of plants and animals to return chemical compounds and elements to the soil, water, and air for future use.

Off-highway Vehicle (OHV): All motorized vehicles which are capable of being operated off of improved and regularly maintained roads having hardened or gravel surfaces; same as off-highway motorized vehicle (OHMV)

Overstory: The upper canopy or canopies of plants, usually referring to trees, shrubs, and vines

Perennial plant: A plant that has a life span of 3 or more years

Perennial stream: A stream where water is present during all seasons of the year

Preliminary General Habitat (PGH): Represents areas of occupied sage-grouse habitats not contained within PAs. GAs may serve as important connectivity corridors between PAs, potential stepping stones (habitat islands) for grouse movements within corridors, or occupied habitats characterized by low lek density.

Preliminary Priority Habitat (PPH): Habitat of highest conservation value relative to maintaining sustainable sage-grouse populations range-wide. Represent high priority sage grouse areas characterized by a combined high male lek attendance, high lek density and high lek connectivity.

Productivity: The ability of a site to produce vegetation.

Proper functioning condition (PFC): Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and ground-water recharge; develop root masses that stabilize stream banks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity.

Rangeland: A kind of land on which the native vegetation is predominately grasses, grass- like plants, forbs, or shrubs. Rangelands include natural grasslands, savannas, shrublands, most deserts, alpine communities, riparian areas, and wet meadows.

Rangeland condition: The present status of a unit in terms of specific values or potential.

Rangeland health: The degree to which the integrity of the soil and ecological processes of rangeland ecosystems is maintained.

Residual vegetation: Amount, cover, and species composition of the vegetation on a site after it has been grazed for a period of time.

Resource Management Plan (RMP): A land use plan as described by FLPMA

Rest: Non-grazing for a specified period of time, generally a full growing season up to a full year.

Riparian area: A form of wetland transition between permanently saturated wetlands and uplands. The areas exhibit vegetation or physical characteristics that reflect permanent surface or subsurface water influence. Typical riparian areas include such areas as lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers, streams, glacial potholes, and shores of lakes and reservoirs with stable water levels. Riparian areas do not include ephemeral (permanently above the water table and flows only during or immediately after a rainstorm or snowmelt) streams that do not exhibit the presence of vegetation dependent upon free water in the soil.

Risk: The potential or probability of an adverse event

Risk of Contact Model: A model for predicting the probability, expressed a percentage, of a bighorn sheep intersecting an allotment that is used for and domestic sheep grazing or trailing. The model uses the source habitat, core herd home range, and foray analyses results to generate the output.

Sagebrush steppe: Arid and semi-arid sagebrush-dominated lands in the western United States and Canada that encompass the approximate boundaries of the historical range of greater sage-grouse.

Scenic river: Rivers or sections of rivers that are free of impoundments, with shorelines or watersheds largely primitive and shorelines largely undeveloped, but accessible in places by roads

Sensitive plants and animals: Plants and animals listed by the Bureau of Land Management State Directors.

Separation Agreement: A communication and response plan agreed upon by the BLM and the permittee that contains best management practices to control herds of domestic sheep and reduce the risk of contact between domestic sheep and bighorn and disease transmission. Subsequently to the development of the EIS and the questionable effectiveness of the current agreement, the BMPs are now Boise District terms and conditions for grazing domestic sheep within the Owyhee Field Office.

Seral: Pertaining to the successional stages of biotic communities

Seral (successional) community: One of a series of biotic communities that follow one another in time on any given ecological site.

Shrub: A plant that has persistent woody stems and a relatively low growth habit (less than 5 meters tall), and that generally produces several basal shoots instead of a single bole.

Shrub steppe: Habitats characterized in western North America by woody, mid-height shrubs and perennial bunchgrasses; typically arid, with annual precipitation averaging less than 36 cm over much of the region.

Significant progress: Measurable and/or observable (i.e., photography, use of approved qualitative procedures) changes in the indicators that demonstrate improved rangeland health.

Source habitat: Characterized by macrovegetation and topography that contributes to positive population growth for a species in a specified area and time. Distinguished from habitats associated with species occurrence as such habitats may or may not contribute to long-term population persistence.

Spatial scale: The relative size of an area under consideration. For example, a small scale is a site, a mid-scale is a watershed, and a large scale is a basin.

Special Recreation Management Area (SMRA): Area where recreation is one of the principle management objectives; where intensive recreation management is needed and which requires more than minimal recreation-related investments. Recreation activities in these areas are generally more concentrated, structured, and regulated than in ERMAs.

Special Status Species: Plant and animal species that are federally listed as threatened or endangered, proposed threatened or endangered, candidate species, State listed as threatened or endangered, or listed by a Bureau of Land Management State Director as sensitive.

Species composition (plant): The proportions of various plant species in relation to the total on a given area; it may be expressed in terms of relative cover, density, or weight.

Stocking rate: The number of specific kinds and classes of animals grazing or using a unit of land for specified time; not the same as carrying capacity

Suitable habitat: Area provides environmental conditions necessary for successful survival and reproduction to sustain stable populations.

Summer habitat: The summer or late brood-rearing period from July through August, when hens and chicks use a variety of moist and mesic habitats where succulent forbs and insects are found in close proximity to sagebrush.

Sustained Yield: The continuation of a healthy desired plant community.

Trend: The direction of change in ecological status or resource value rating observed over time. Trend is described as toward or away from the potential natural community, or as not apparent.

Understory: Plants growing beneath the canopy of other plants; usually refers to grasses, forbs, and low shrubs under a tree or shrub canopy.

Unsuitable habitat: Area does not currently provide one or more of the life requisites, and therefore does not provide habitat, but may provide habitat sometime in the foreseeable future (less than 100 years), through succession or restoration.

Upland (habitat): An area that is not inundated with water and typically supports vegetation types adapted to life in non-saturated soil conditions

Use: Human activities (e.g., mining, forestry, livestock grazing, vegetation manipulation, road construction and maintenance, other construction and maintenance activities, wild horses, recreation, habitat manipulation, and management facility construction and maintenance).

Utilization: The proportion or degree of the current year's forage production that is consumed or destroyed by animals (including insects). Utilization may refer to either a single plant species, a group of species, or to the vegetation as a whole.

Watershed: An area that collects and discharges runoff to a given point. It is often used synonymously with drainage basin or catchment.

Wetland: Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and which under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Typical wetlands include marshes, shallow swamps, sloughs, lake shores, bogs, wet meadows, and riparian areas.

Wet meadow: A meadow where the surface remains wet or moist throughout the summer, usually characterized by sedges and rushes

Wild horses: Unbranded and unclaimed horses that use public lands as all or part of their habitat, or that have been removed from these lands by the Authorized Officer but have not lost their status under Section 3 of the Wild and Free-Roaming Horse and Burro Act of 1971.

Wild River: River or section of a river that is free of impoundments and is generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.

Winter habitat (sage-grouse): Sagebrush habitats that provide access to sagebrush above the snow for all food and cover requisite

Woodland: Vegetation dominated by open stands of trees with crowns not usually touching (generally forming 25 to 60 percent cover); canopy tree cover may be less than 25 percent in cases where it exceeds shrub, dwarf-shrub, herb, and nonvascular cover, respectively.

Viable: A population that has the numbers and distribution of reproductive individuals to provide a high likelihood that a species will continue to exist and be well-distributed throughout its natural range.