



# ENVIRONMENTAL ASSESSMENT

## GRAZING PERMIT RENEWAL FOR WADDOUPS CANYON ALLOTMENT (#11013)

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## **CHAPTER 1 - INTRODUCTION**

### **Background**

There are several authorities which mandate or allow the Bureau of Land Management (BLM) to authorize livestock grazing on public lands as part of multiple-use management of natural resources. Livestock grazing is an accepted and valid use of public lands under the Taylor Grazing Act of 1934, the Federal Land Policy and Management Act (FLPMA) of 1976, and the Public Rangelands Improvement Act (PRIA) of 1978. This Environmental Assessment (EA) is prepared, pursuant to the National Environmental Policy Act (NEPA) of 1969, to address the request for continued livestock grazing on public lands in the Waddoups Canyon Allotment (#11013).

The Waddoups Canyon Allotment includes approximately 14,690 acres of public land and 200 acres of State of Idaho land. There are three authorizations for livestock grazing use within the allotment. The allotment includes two pastures with elevations ranging from approximately 5,900 feet above sea level on the southern boundary near Antelope Creek to 8,700 feet on the northern boundary. Several streams and springs are located within the allotment including; Bailey Corral Canyon Creek, Box Bailey Creek, Flower Garden Creek, Rough Canyon Creek, Schoolhouse Canyon Creek, Waddoups Canyon Creek, Mountain Spring, Richardson Spring and other un-named systems.

### **Purpose and Need for Action**

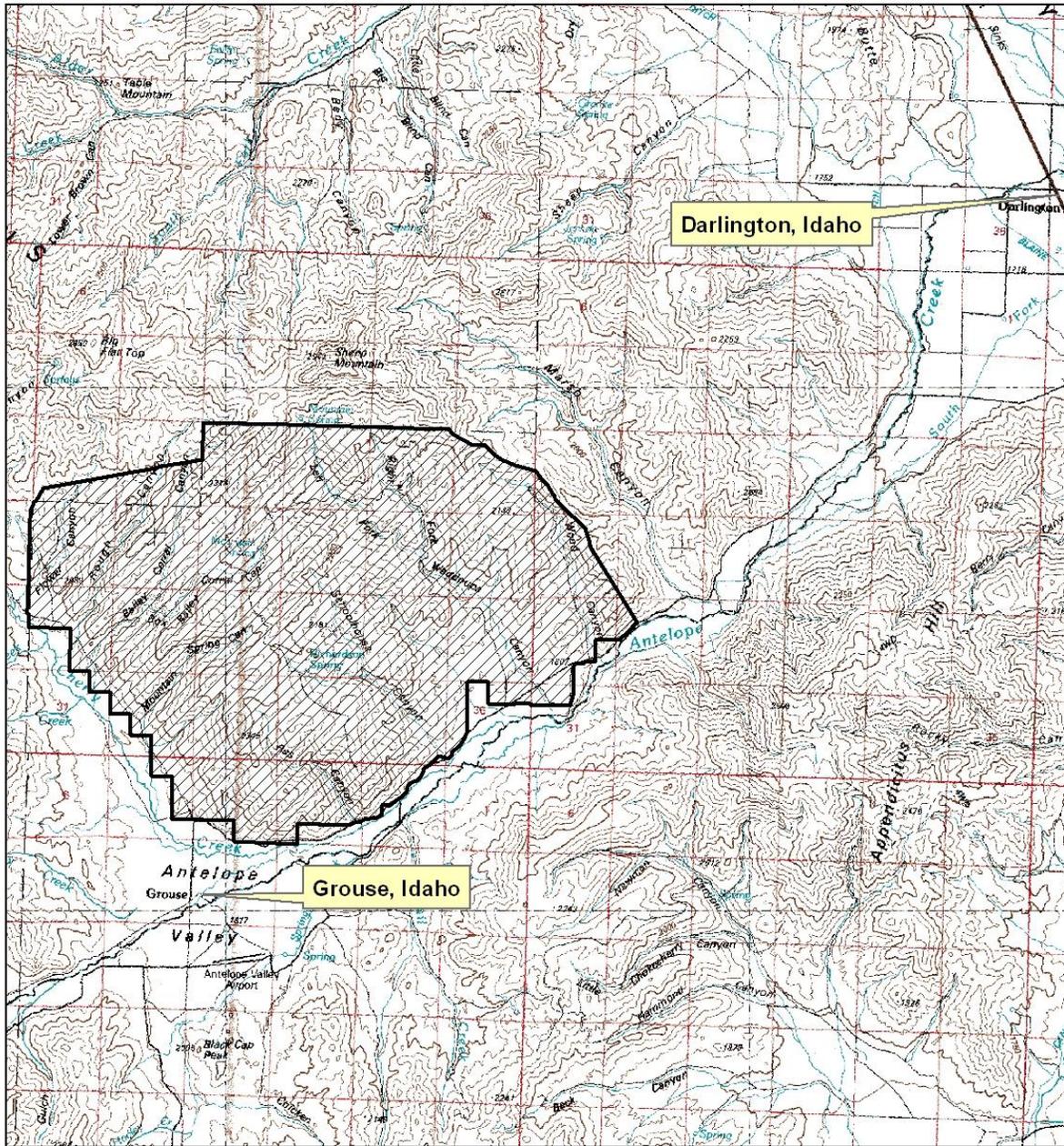
The Big Lost Management Framework Plan 1983 (MFP) identifies the area within and around the Waddoups Canyon Allotment as available for domestic livestock grazing. Where consistent with the goals and objectives of the MFP and the Idaho Standards for Rangeland Health and Guidelines for Grazing Management (ISRH), the BLM authorizes allocation of forage for livestock grazing to qualified operators. The purpose of the proposed action is to authorize livestock grazing consistent with BLM policy and in a manner that maintains or improves project area resource conditions and achieves the objectives and desired conditions described in the Big Lost MFP. The analysis is needed to address the operator's applications for permit renewal in the Waddoups Canyon Allotment.

The Evaluation Report (USDI-BLM 2011b) for the Waddoups Canyon Allotment concluded that the allotment was not meeting Standard 2 (Riparian Areas/Wetlands), Standard 3 (Stream channels), Standard 7 (Water Quality) and Standard 8 (Threatened and Endangered Plants and Animals). However, in each instance progress was being made toward meeting the Standards. Overall, livestock management within the Waddoups Canyon Allotment was in conformance with Idaho Guidelines for Livestock Grazing Management.

### **Location**

The Waddoups Canyon Allotment is located within Custer County approximately 1 mile north of Grouse, Idaho in Antelope Valley. The eastern edge of the allotment is approximately 7 miles southwest of Darlington, Idaho (Figure 1).

# Figure 1 - General Location of Waddoups Canyon Allotment



Allotment Boundary

No warranty is made by the Bureau of Land Management for use of the data for purposes not intended by BLM.

**DRAFT**

### **Conformance with Land Use Plan**

The Proposed Action and alternatives for the Waddoups Canyon Allotment have been reviewed for conformance with the Big Lost MFP, approved on December 15, 1983. The actions are in conformance with the MFP decisions to:

Objective: Maintain and/or improve quantity and quality of the vegetative resources through selective range management. (RM Obj. 1)

Reasons: Classify allotment in the improve category. The principal objective is to improve unsatisfactory resource conditions. (RM-3)

### **Relationship to Statutes, Regulations or Other Plans**

The 1868 Fort Bridger Treaty, between the United States and the Shoshone and Bannock Tribes, reserves the Tribes right to hunt, fish, gather, and exercise other traditional uses and practices on unoccupied federal lands. Under this treaty the federal government has a unique trust relationship with the Shoshone-Bannock Tribes. BLM has a responsibility and obligation to consider and consult on potential effects to natural resources related to the Tribes treaty rights or cultural use.

Grazing administration exclusive of Alaska is governed under the Federal Code of Regulations 43 CFR 4100 – Grazing Administration. The purpose is to provide uniform guidance for administration of grazing on public lands.

On August 12, 1997, ISRH were approved by the Secretary of the Interior. Subsequently, livestock management practices must be in conformance with the approved standards and guidelines.

An Evaluation Report (USDI-BLM 2011b) assessing conformance with the ISRH was issued for the Waddoups Canyon Allotment in December of 2011. The report found that Standards 1 and 4 are being met in the allotment. Standards 2, 3, 7 and 8 are not being met, but are making significant progress toward meeting the Standards. Standards 5 and 6 are not applicable to the allotment.

### **Public Contact and Issue Identification**

In the spring of 2011, the USFO sent a letter to permittees, lessees, interested publics, and other agencies inviting them to participate in the allotment assessments planned in 2011, which included the Waddoups Canyon Allotment. Participation and contributions throughout the process were only received by the grazing permittees and the Idaho Fish and Game (IDFG). In November of 2011, the USFO sent an Allotment Assessment (USDI-BLM 2011a) to the parties above, which summarized the results of the field assessment and other monitoring information available for the allotment. The parties were asked to provide any other allotments specific information they may have which would be considered in the Evaluation Report. No other information was provided. In December of 2011, the Evaluation Report and identified alternatives were sent to the parties. The parties were asked to reply if they had any questions or

concerns regarding the report or identified alternatives. Comments were received from the grazing permittees and the IDFG. No other comments were received.

## CHAPTER 2 - NO ACTION AND OTHER ALTERNATIVES

### **Alternative A (No Action): Issue Unmodified Grazing Permit**

Under Alternative A, the field manager would authorize continued livestock grazing under the same mandatory terms and conditions as the previous permits.

#### Authorized Use Changes

- 1) None

#### Projects

- 2) None

#### Grazing Plan

- 3) Continue deferred rotation grazing system on a two year cycle. The allotment is divided into two pastures, the East Pasture and the West Pasture. Turnout alternates between the East Pasture in even numbered years and the West Pasture in odd numbered years.

#### Mandatory Terms and Conditions

##### Waddoups Canyon Allotment (#11013) Permitted Use

Livestock number/kind	Season	%PL	Type Use
248 Cattle	5/25 to 7/10	100	Active
338 Cattle	5/25 to 7/10	100	Active
204 Cattle	5/25 to 7/10	92	Active
123 Cattle	5/25 to 7/10	100	Active

Active AUMs	Suspended AUMs	Grazing Preference
1,385	499	1,884

#### Other Terms and Conditions

The following Terms and Conditions would be followed, in accordance with 43 CFR 4130.3-2, to assist in achieving management objectives for the allotment:

1. Upland Utilization – Average utilization would be no more than 50% of the annual growth of key upland species. Heavy use areas would be limited to 10% or less of the suitable acreage in each pasture.
2. Upland Trend – Trend studies would be conducted in the uplands using the step point method in key areas on a five year cycle. One photo plot would be established at each key area. Long term trend studies would be conducted using the ecological site inventory method.

3. Riparian and Wetland Trend – Trend would be measured using the Lotic Health Assessment Form on a five year cycle.
4. Key riparian and wetland browse utilization would not be more than 30% of the current annual twig growth that is within reach of the animals.
5. The allotment will be divided into two pastures, the East Pasture and the West Pasture. Turnout will alternate between the East Pasture in even numbered years and the West Pasture in odd numbered years.
6. All livestock will be in one herd, use only one pasture at a time and each pasture only once during the grazing season.
7. The permittees will obtain a full time rider to herd the livestock during the grazing season.
8. Riparian and Wetland Utilization – Utilization studies will be conducted using the stubble height method. Minimum stubble height in key areas along the greenline will be 4 inches at the end of the growing season and 4 inches in other key riparian areas at the end of the growing season.
9. Distribution of livestock and mineral supplements shall be at least ¼ mile away from the nearest water source.
10. In connection with allotment operations under this authorization, if any human remains, cultural, archaeological, historical, paleontological or scientific objects and sites are discovered, the permittee shall stop operations in the immediate area of the discovery, protect such resources and immediately notify the BLM Authorized Officer (AO) of the discovery. The immediate area of the discovery must be protected until the operator is notified to resume by the AO.
11. The allotment(s) listed on this grazing permit is subject to requirements 43 CFR subpart 4180 – Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration. This permit shall be modified, if necessary, to meet the requirements upon completion of a standards and guidelines assessment and determination as scheduled by the authorized officer.

**Alternative B (Proposed Action):** Issue Modified Grazing Permit with an adjustment to the season of use and livestock numbers.

The Evaluation Report (USDI-BLM 2011b) found that Standards 2, 3, 7 and 8 are not being met, but are making significant progress towards meeting Standards in each circumstance and Standards 1 and 4 are being met. A new operator acquired the permits of two former operators through sale or lease. This new operator provided proposals that would provide changes to the existing permits. Under Alternative B, the field manager would authorize continued livestock grazing with changes identified below:

#### Authorized Use Changes

- 1) Change the current season of use to allow livestock turnout on May 1 each year. The season of use would change from 05/25-07/10 to 05/01-07/10 and livestock numbers would be adjusted to account for the longer season of use.

2) Under this alternative the following livestock use would be authorized:

164 Cattle from 05/01 to 07/10 at 100%PL for 383 AUMs  
 305 Cattle from 05/01 to 07/10 at 100%PL for 522 AUMs  
 135 Cattle from 05/01 to 07/10 at 92%PL for 290 AUMs  
 81 Cattle from 05/01 to 07/10 at 100%PL for 190 AUMs

Projects

- 1) Within the White Knob Wilderness Study Area (WSA) authorize the installation of additional troughs or larger troughs at two existing trough sites to increase available water holding capacities. The trough sites are located at UTM: E - 290587 N - 4845807; and E - 291451 N – 4844764 (see Figure 3).

Grazing Plan

- 3) Pasture rotation would be split equally, in terms of number of days, between the East and West Pastures and rotated on a two year rotation schedule throughout the ten year permit term as outlined below:

Pasture	Period of Use	Total AUMs
West	05/01 – 06/04	692
East	06/05 – 07/10	692
East	05/01 – 06/04	692
West	06/05 – 07/10	692

Mandatory Terms and Conditions

Waddoups Canyon Allotment (#11013)

Livestock number/kind	Season	%PL	Type Use
164 Cattle	05/01 to 7/10	100	Active
305Cattle	05/01 to 7/10	100	Active
135 Cattle	05/01 to 7/10	92	Active
81	05/01 to 7/10	100	Active

Active AUMs	Suspended AUMs	Grazing Preference
1,385	499	1,884

**Alternative C (Preferred Alternative):** Issue Modified Grazing Permits with season of use adjustments, projects to extend an existing riparian enclosure, adjustments to Active AUMs and authorization of livestock trailing.

The Evaluation Report (USDI-BLM 2011b) found that Standards 2, 3, 7 and 8 are not being met, but are making significant progress towards meeting Standards in each circumstance and Standards 1 and 4 are being met. Actions to improve livestock grazing management and achieve more rapid progress in riparian improvement have been identified. Under Alternative C, the field manager would authorize continued livestock grazing with changes identified below:

#### Authorized Use Changes

- 1) Change the season of use to allow livestock use in the Waddoups Canyon Allotment between 05/01 – 07/10. Actual number of days used would be limited to 47 days (approximately 23 days/pasture) within the season of use, which is the same number of days currently authorized. This would provide for adaptive management and coordination of use on the adjacent U.S. Forest Service allotment.
- 2) Implement a reduction of 483 Active AUMs within the Waddoups Canyon Allotment (from 1,385 to 902 AUMs).
- 3) Authorize livestock trailing across the Waddoups Canyon Allotment for the duration of the permit. Authorized trailing would require active movement of livestock. Livestock would be trailed along the Cherry Creek road (maintained by Custer County). A description of anticipated authorization specifics is listed in Appendix C, with anticipated trailing routes illustrated in Figure 6. As illustrated in Figure 6, trailing routes would follow existing roads.
- 4) Under this alternative the following livestock use would be authorized:

161 Cattle from \*05/01 to 07/10 at 100%PL for 249 AUMs  
221 Cattle from \*05/01 to 07/10 at 100%PL for 341 AUMs  
133 Cattle from \*05/01 to 07/10 at 92%PL for 189 AUMs  
79 Cattle from \*05/01 to 07/10 at 100%PL for 123 AUMs

\*Actual number of days used would be limited to 47 days within the season of use.

#### Projects

- 1) Extend the existing riparian enclosure on the unnamed spring on the Right Fork of Waddoups Canyon Creek (T: 5N, R: 24 E, Section 14) (see Figure 4). The enclosure would be enlarged by approximately one acre. The enclosure would be a four-strand fence consisting of 3 strands of barbed wire spaced at 42 inches, 30 inches and 24 inches from ground level, and 1 smooth wire located 16 inches from ground level. Green metal fence posts would be used between the braces and would be spaced 16.5 feet apart. A wire stay would be placed on the fence wire midway between steel “T” posts. Fence wire

would be marked to alert wildlife of the hazard. To avoid disturbance to wildlife, construction of the enclosure would not occur between May 15 and June 30.

- 2) To increase the available water holding capacity, authorize the installation of additional troughs or a larger trough at the existing trough site supplied by the unnamed spring on the Right Fork of Waddoups Canyon Creek. The trough site is located just east of the enclosure extension proposed above (UTM: E - 293490 N – 4848483) (see Figure 4).
- 3) Authorize the development of an additional water source in Wood Canyon to supplement the existing/non-functional spring development, (spring location: UTM: E - 295896 N - 4848173) (see Figure 5). The development would consist of collecting water from the spring and diverting it into a pipeline to service existing troughs.
- 4) Authorize approximately 1.25 miles of pipeline in Wood Canyon to connect the southern trough (UTM: E – 296365 N – 4846544) to a more reliable water source resulting from the supplemental spring development. To limit disturbance, the pipeline would be buried within or near the road in Wood Canyon (see Figure 5). In addition, troughs would be floated to allow unused water to remain at the spring source, and the entire system would be shut off when livestock are not in the allotment to limit impacts to the riparian areas.

Grazing Plan

- 5) The basic schedule for pasture rotation would be as outlined in the table below. Any changes to the basic schedule would be made through application prior to livestock turnout. The basic schedule would rotate every two years throughout the 10 year permit term.

Year	Pasture	Livestock Number	Period of Use	AUMs
2013	West	594	05/25 – 06/16	451
	East	594	06/17 – 07/10	451
2014	East	594	05/25 – 06/16	451
	West	594	06/17 – 07/10	451

Mandatory Terms and Conditions Waddoups Canyon Allotment (#11013)

Livestock number/kind	Season of Use	%PL	Type Use	AUMs
161 Cattle	*05/01 to 7/10	100	Active	249
221 Cattle	*05/01 to 7/10	100	Active	341
133 Cattle	*05/01 to 7/10	92	Active	189
79 Cattle	*05/01 to 7/10	100	Active	123
*Actual number of days used would be limited to 47 days within the season of use.				

Active AUMs	Suspended AUMs	Grazing Preference
902	499	1,401

**Alternative D (No Grazing):**

Under Alternative D, the Upper Snake Field Manager would not authorize livestock grazing within the Waddoups Canyon Allotment for a 10 year period from 2013 to 2023. The current operators would retain grazing preference within the allotment and may apply for grazing permit renewal after 2023.

**Other Terms and Conditions**

The following other Terms and Conditions would be included as part of the grazing permit under alternatives B and C in accordance with 43 CFR 4130.3-2.

1. Turnout will alternate between the East Pasture in even numbered years and the West Pasture in odd numbered years.
2. All livestock will be in one herd, use only one pasture at a time and each pasture only once during the grazing season.
3. The permittees will obtain a full time rider to herd the livestock during the grazing season.
4. Riparian and Wetland Utilization – Utilization studies will be conducted using the stubble height method. Minimum stubble height in key areas along the greenline will be 4 inches at the end of the growing season and 4 inches in other key riparian areas at the end of the growing season.
5. Key riparian and wetlands browse utilization will not be more than 30% of the current annual twig growth that is within reach of the animals.
6. Distribution of livestock and mineral supplements shall be at least ¼ mile away from the nearest water source.
7. In connection with allotment operations under this authorization, if any human remains, cultural, archaeological, historical, paleontological or scientific objects and sites are discovered, the permittee shall stop operations in the immediate area of the discovery, protect such resources and immediately notify the BLM Authorized Officer (AO) of the discovery. The immediate area of the discovery must be protected until the operator is notified to resume by the AO.
8. The allotment(s) listed on this grazing permit is subject to requirements 43 CFR subpart 4180 – Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration. This permit shall be modified, if necessary, to meet the requirements upon completion of a standards and guidelines assessment and determination as scheduled by the authorized officer.
9. Range improvements must be maintained to BLM standards by the turnout dates for each allotment on this permit. All livestock water troughs must have a functional wildlife escape ramp and be appropriately floated. Installation and maintenance of wildlife escape ramps are the responsibility of the permittee.
10. If sage grouse fence strikes are documented on existing fences, the fences would be modified to improve visibility in order to minimize sage grouse strikes.

11. Average livestock utilization would be no more than 40% of the annual growth of available native forage species.
12. All permittees would provide and actual use report upon request.

### **Grazing Use Indicators and Criteria**

The following Grazing Use Indicators identify applicable monitoring methods and criteria used to indicate whether the allotment is meeting or making progress toward meeting the ISRH. Grazing Use Indicators and Criteria are not terms and conditions of the authorization, rather they are informative points used to gauge the effectiveness of the terms and conditions of the authorization.

1. *Browse Utilization* – Browse utilization studies would be conducted in key areas. Browse utilization by livestock should be no more than 30 percent of the annual growth of the key browse species (Technical Reference 1734-3, 1999).
2. *Upland Trend* – Trend studies would be conducted in the uplands in key areas. One photo plot would be established at each key area. Long-term trend studies would be conducted using approved BLM methods (Technical Reference 1734-4, 1999).
3. *Streambank Alteration* – Alteration would be measured using an approved BLM method with an objective of no more than 20% of the streambank disturbed by livestock hoof action annually (Idaho Technical Bulletin 2007-01).
4. *Sage Grouse Habitats* – Grazing use levels in pastures with sage grouse habitat would be monitored to evaluate if the grazing system is resulting in maintenance or improvement of vegetative characteristics needed for suitable habitat in accordance with the Challis Local Working Group's Sage-grouse Conservation Plan (Challis LWG, 2007) and the 2006 Conservation Plan for Greater Sage Grouse in Idaho (ISGAC, 2006).
5. *Riparian Condition* – Functioning condition of riparian areas would be assessed using riparian health assessments and Multiple Indicator Monitoring to determine status relative to the overall objective of achieving proper functioning condition (PFC) (U.S. Lotic and Lentic Wetland Health Assessment User's Manual, 2005). Long- and short-term indicators of riparian vegetation, streambank, and stream channel conditions would be monitored to determine parameters that are achieving or making progress towards desired conditions as determined by the Multiple Indicator Method (MIM) (Idaho Technical Bulletin 2007-01).

## CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the general environmental setting and resources within that setting that could be affected by the alternatives. In addition, the section presents an analysis of the direct and indirect impacts likely to result from the implementation of the alternatives.

### General Setting

The Waddoups Canyon Allotment is comprised of approximately 14,690 acres of public land and 200 acres of State of Idaho land. A large portion of the allotment is within the White Knob WSA. There are three authorizations for livestock grazing use within the allotment. A Western Regional Climate Center (WRCC) weather station in Grouse, Idaho has an average annual precipitation of approximately 12 inches. This station is in very close proximity to the Waddoups Canyon Allotment and while some variability may exist it is a good estimate of precipitation for the allotment.

### Resources Considered in the Impact Analysis:

The results of the site-specific assessments indicate that not all of the resources considered are present and/or would be impacted by the alternatives. Direct and indirect impacts on those resources that are present and impacted are discussed in the following narratives within Table 1.

<i>Table 1 - Waddoups Canyon - Resources Considered in the Impact Analysis</i>				
Resource	Not Present	Present, Not Impacted	Present Impacted	Rationale
Access		X		The alternatives would not result in changes in access to the project area.
Air Quality		X		The implementation alternatives would not result in the production of emission or particulate matter above incidental levels.
Areas of Critical Environmental Concern (ACEC's)	X			There are no ACEC's within the Waddoups Canyon Allotment.
Cultural Resource		X		Impacts disclosed under <b>Cultural Resources</b> .
Economic and Social Values			X	Impacts are disclosed under <b>Economic and Social Values</b> .
Environmental Justice	X			There are no minority or low income populations residing near the proposed project area.
Existing and Potential Land Uses		X		The alternatives would not affect the areas existing or potential land uses.
Fisheries	X			There are no fisheries within the project area.
Floodplains			X	Impacts are disclosed under <b>Stream Channels/Floodplains</b> .
Forest Resources		X		The alternatives would not impact the limited forest resources within the upper elevations of the allotment.
Invasive, Non-Native Species			X	Impacts are disclosed under <b>Invasive, Non-Native Species</b> .
Mineral Resources		X		The alternatives would have no impact on mineral resources within the area.
Migratory Birds			X	Impacts are disclosed under <b>Migratory Birds</b> .
Native American Religious Concerns	X			There are no Native American Religious Concerns within the project area.

<b>Table 1 - Waddoups Canyon - Resources Considered in the Impact Analysis</b>				
Resource	Not Present	Present, Not Impacted	Present Impacted	Rationale
Paleontological Resources	X			There are no known paleontological resources located in the project area.
Prime and Unique Farmlands	X			There are no prime or unique farmlands located within the allotment.
Recreational Use			X	Impacts to <b>Recreational Use</b> are addressed in the <b>Wilderness</b> section.
Soil Resources			X	Impacts are disclosed under <b>Soil Resources</b> .
Threatened, Endangered, and Sensitive Plants			X	Impacts are disclosed under <b>Threatened, Endangered, and Sensitive Plants</b> .
Threatened, Endangered, and Sensitive Animals			X	Impacts are disclosed under <b>Threatened, Endangered and Sensitive Animals</b> .
Threatened, Endangered, and Sensitive Fish	X			There are no waters in the project area that support threatened, endangered, or sensitive fish.
Tribal Treaty Rights and Interests		X		The alternatives would have no effect on the tribes' access to use the area to exercise their treaty rights and would have no known effects on resources they use for traditional purposes.
Vegetation			X	Impacts are disclosed under <b>Vegetation</b> .
Visual Resources			X	Impacts are disclosed under <b>Visual Resources</b> .
Wastes, Hazardous and Solid	X			There are no solid or hazardous wastes in the project area and none would be created during the implementation of the alternatives.
Water Quality (Surface and Ground)			X	Impacts are disclosed under <b>Water Quality</b> .
Wetland and Riparian Zones			X	Impacts are disclosed under <b>Wetland and Riparian Zones</b> .
Wild and Scenic Rivers	X			There are no wild and scenic rivers near the project area.
Wild Horse and Burro HMAs	X			There are no wild horse and burro HMAs in the region.
Wilderness			X	Impacts are disclosed under <b>Wilderness</b> .
Wildlife Resources			X	Impacts are disclosed under <b>Wildlife Resources</b> .

## Vegetation

### Affected Environment

Five upland native plant community sites were assessed in the Waddoups Canyon Allotment, which were indicative of dominant vegetative types throughout the allotment. Assessments in the East Pasture were completed in Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*)/bluebunch wheatgrass (*Pseudoroegneria spicata*) and mountain big sagebrush (*Artemisia tridentata ssp. vaseyana*)/bluebunch wheatgrass ecological sites. Assessments in the West Pasture were completed in a mountain big sagebrush/bluebunch wheatgrass ecological site. Generally, indicators were rated no higher than slight to moderate departure, with one exception. The indicator for invasive plants was rated at a moderate departure from site potential in the East Pasture; specifically in the mouth of Waddoups Canyon.

Average annual production of the native plant communities in the allotment are highly variable depending on the amount and timing of precipitation, among other factors. Annual production for the Wyoming big sagebrush/bluebunch wheatgrass ecological site ranges from 450 lbs. /acre in unfavorable years, 700 lbs. /acre in average years, and up to 1,000 lbs. /acre in favorable years. Annual production for the mountain big sagebrush/bluebunch wheatgrass ecological site

ranges from 800 lbs. /acre in unfavorable years, 1,200 lbs. /acre in average years, and up to 1,600 lbs. /acre in favorable years. Production estimates are based on Natural Resource Conservation Service (NRCS) ecological site descriptions.

Three native habitat trend studies were completed at previously established step-point cover monitoring sites and one was completed at an assessment write-up location. The overall trend was static in study plots between pastures and across the allotment. Some measures were either slightly up or down between plots over the years, but differences were not substantial enough to indicate a change in trend. Similarly, the overall trend at Ecological Site Inventory (ESI) locations remained static from 1980 to 1991. No new ESI data were available within the past 10 year permit term.

Utilization patterns within pastures vary between years due to annual precipitation and the timing and duration of authorized livestock use. Average utilization between 2002 and 2011 is highly variable. Average utilization for all years between both pastures was 24% (light). The highest average utilization recorded for all years within the allotment was 38% (light) in 2008 and the lowest average utilization rate was 11% (Slight) in 2005. Cattle are naturally drawn to canyon bottoms and lower sloped areas within the Waddoups Canyon Allotment.

The health of the native plant communities was previously assessed in 2001 and was found to be meeting the standard in the Waddoups Canyon Allotment. The allotment continues to meet the standard to maintain populations of native plants and provide healthy, productive, and diverse native animal habitat.

### Environmental Consequences

Direct impacts to vegetation from livestock grazing result from removal of vegetation and/or damage by foraging animals and indirect impacts occur as plant community composition and structure are altered by grazing. Appropriate grazing or utilization levels can have the effect of stimulating plants, resulting in increased plant production if energy reserves are adequate. If the amount of grazing use or utilization is high for a given year, or especially for a sequence of years, the composition of the vegetative community may become modified as the more desirable, and more utilized species lose vigor and decrease in density throughout the site. The Evaluation for the allotment found that the native upland plant communities were meeting standards for rangeland health.

#### *Alternative A (No Action)*

Under Alternative A there would be no change in the existing livestock grazing management for the Waddoups Canyon Allotment (913 cattle and 1,385 Active AUMs). The current two year grazing cycle, which combines all herds into one and requires intensive herding, would continue. Livestock grazing management changes implemented following the allotment assessment and subsequent grazing permit renewal in 2001 have generally maintained the habitat conditions in the native plant communities. Overall, step-point trend studies indicated a static trend within the allotment and utilization studies documented levels within objectives on the uplands. Improvement in sagebrush vigor and perennial grass composition was noted in lower elevations

at the mouth of Waddoups Canyon. Under Alternative A, the allotment would continue to meet the standard for native plant communities.

*Alternative B (Proposed Action)*

The season of use under Alternative B would be changed from 5/25- 7/10 each year to 5/1-7/10. This adds 24 additional days that vegetation could be utilized by livestock in the allotment. Livestock numbers would be adjusted from a total of 913 cattle to 604, but the same number of Active Use AUMs (1,385 AUMs) would be available. While the permittees may not make use over this entire period (71 days) the potential for such use exists and is assumed in this analysis. Pasture rotation would be split with approximately 35 days in each pasture. In Alternative B the same pasture rotation schedule would be used as in Alternative A.

Extending the season of use by 24 days would be less beneficial for vegetation than the current permitted use in Alternative A. The 5/1 turnout date would allow more livestock use during the spring vegetative growth period. Generally, livestock utilization of vegetation is sustainable in the spring provided use levels are not excessive and adequate rest following use is provided. This system would provide deferment for growing vegetation in one pasture each year and the pasture deferred would be rotated every year. Deferred grazing provides an opportunity for preferred plants and areas to maintain or gain vigor as plants have the opportunity to store carbohydrates and set seed every other year. Deferment is most beneficial to rangeland in mid-seral condition. Deferment may have limited advantage on range in higher ecological condition and may not benefit range in early-seral condition due to the near total depletion of desired species (Vallentine 1990). Although there is some deferment of livestock use, the extended season of use would give desired forage species in each pasture less time to recover following livestock use than Alternative A. Forage species can recover if they are given adequate time and resources (moisture, nutrients and temperature). Consistent over use of vegetation by livestock reduces plant vigor and resiliency to grazing and can eventually decrease composition and abundance.

Water holding capacity of two existing trough locations would be increased in Alternative B. This proposal would have limited impacts on vegetation because troughs already exist in the areas proposed and impacts would be similar to those already known in the area. Utilization of vegetation may increase directly around the water troughs as more livestock are drawn to the area by abundant water, but distribution may improve if reliable water is available on a consistent basis and livestock have less need to congregate around water sources until they have consumed sufficient water.

Livestock numbers would be adjusted to 604, which results in less numbers on the allotment but the same number of Active Use AUMs (1,385 AUMs) would still be available. The effect of utilizing 1,385 AUMs is similar between Alternative A and B. However, the extended use period as mentioned above would give vegetation less time to recover after use.

The change to the season of use as proposed in Alternative B would be less beneficial than current use (Alternative A) even with fewer livestock on the allotment. Alternative B would not

provide for the long term sustainability of forage vegetation in the Waddoups Canyon Allotment and would not likely achieve native habitat standards in the long term.

*Alternative C (Preferred Alternative)*

Alternative C would change the authorized season of use to 05/01-07/10, which is also proposed in Alternative B. However, rather than allowing livestock use during all 71 days during this period, only 47 days would be authorized for livestock use within the broad season of use. The entire season of use occurs during the same period as Alternative B, however; the number of days would be the same as currently permitted (Alternative A). As proposed, Alternative C would potentially allow more use during the spring vegetative growth period compared to Alternative A. The effects of livestock use during the spring were analyzed for Alternative B and would be similar in Alternative C. However, Alternative C limits use to 47 days (approximately 23 days per pasture) within the broad use period, which would provide more time for vegetation to regrow compared to Alternative B.

Alternative C would remove 483 Active Use AUMs from all permits in the Waddoups Canyon Allotment. This AUM reduction results in 319 and 10 fewer cattle on the allotment compared to Alternatives A and B respectively. Permitting fewer cattle on the allotment would reduce grazing pressure on desirable forage species throughout the allotment, which would better provide for the physiological needs of plants at any point during the season of use compared to Alternatives A and B. Residual biomass and cover would increase as a result of this alternative.

Alternative C would also authorize trailing along the Cherry Creek road on the western boundary of the allotment. Trailing would occur in July and October each year. Generally, trailing would only occur for a few hours each year and the effects on vegetation would be limited. Some vegetation may be trampled or bitten by passing livestock, but these impacts would be limited to areas already impacted by the presence of the road and livestock would be actively herded rather than allowed to drift through the allotment during trailing times.

Alternative C proposes to extend an existing riparian enclosure on the unnamed spring affecting approximately 1 acre of vegetation to the south of the existing enclosure. The new enclosure would restrict livestock access to vegetation within the enclosure. Riparian vegetation within the existing enclosure has reached its growth and reproductive potential and is only utilized by wildlife. The new enclosure extension would provide the same for vegetation that has previously been utilized by livestock in the area. Over time abundant residual biomass can decrease plant vigor if it is not removed by grazing or some other manner. Construction of the enclosure could facilitate a loss of vigor in the vegetation that is fenced within it. However, this is not considered to be a problem in the currently excluded vegetation.

Increasing the water holding capacity of the existing trough on the Right Fork of Waddoups Canyon Creek would have limited impact on vegetation. Some vegetation may be removed during construction, but livestock use patterns would not be altered substantially by the proposal. Vegetation would continue to meet standards with the expansion of the water trough.

Alternative C also proposes to develop an additional water source in Wood Canyon to supplement existing, but non-functioning developments. The alternative proposes to install a 1.25 mile pipeline extending from the existing trough site on the northern portion of Wood Canyon to an existing trough on the southern portion of the canyon. The pipeline would be buried within the road in Wood Canyon. The pipeline would occur within previously disturbed areas and would have little direct effect on vegetation aside from construction activities. Impacts to vegetation would occur as livestock alter use patterns in the area as a result of newly available, reliable water. The existing trough on the southern portion of Wood Canyon does not supply sufficient water to support use by livestock and vegetation in the area has received limited use as a result. Livestock use of vegetation would increase in the southern portion of Wood Canyon, but would decrease in the northern portion of the canyon and other portions of the allotment. Improved distribution combined with the AUM reduction proposed in Alternative C would ensure that vegetation standards continue to be met in the allotment.

Pastures would be rotated with livestock turnout occurring in a different pasture each year similar to the current system (Alternative A). Each pasture would be used for approximately 23 days each year. This grazing plan has provided for the achievement of vegetation standards within the Waddoups Canyon Allotment (as proposed in Alternative A) and would continue to meet standards for the duration of the ten year permit term.

The AUM/ livestock reduction, season of use of 23 days of use in each pasture, livestock trailing, riparian enclosure and grazing plan proposed in Alternative C would maintain the standards for vegetation and native habitats in the Waddoups Canyon Allotment. The physiological needs of native vegetation in the allotment would be sustained more effectively in Alternative C compared to Alternatives A and B.

#### *Alternative D (No Grazing)*

Under Alternative D, no livestock grazing would be authorized within the allotment for a period of 10 years, from 2013 to 2023, and no new range improvement projects would be implemented. The potential impacts, including removal of vegetation and/or damage by livestock, would be removed from the allotment for a ten year period. The potential for higher than desired utilization levels in preferred areas, which may lead to changes in composition of the vegetative communities, would be removed. Increased biomass would be left on-site throughout the allotment, increasing the amount of residual cover and litter. Over time abundant residual biomass can decrease plant vigor if it is not removed by grazing or some other manner. However, this would not be anticipated to occur within the 10 year permit term. The majority of the allotment was meeting standards and would continue to meet standards for native plant community health and seeding health under Alternative D. Under Alternative D, areas in lower ecological conditions would improve over time with the removal of livestock. Alternative D would provide for the physiological needs of native plant species and habitats to a larger degree than Alternatives A, B, and C.

## **Invasive, Non-Native Species**

### Affected Environment

Noxious weed monitoring and treatment records for the public lands within the Waddoups Canyon Allotment report occurrences of leafy spurge (*Euphorbia esula*). Approximately 761 acres have been affected by leafy spurge invasion. Some areas consist of dense stands of leafy spurge and others have leafy spurge scattered over a large area. Canada thistle (*Cirsium arvense*) was documented in localized areas in certain riparian areas. The USFO actively inventories, monitors, and treats occurrences of invasive non-native species within the field office area using the Standard Operating Procedures outlined in the Programmatic Environmental Assessment for Integrated Weed Management for the USFO and Pocatello Field Office (USDI-BLM 2009b). Biological controls have been utilized on leafy spurge within the allotment with some success in addition to aggressive chemical controls.

### Environmental Consequences

#### *Alternative A (No Action)*

The potential impacts of invasive, non-native species found in or near the Waddoups Canyon Allotment include degradation of native habitat. Seeds of undesirable species may be dispersed by wind, water, animals, or humans. The native riparian was evaluated and found to be making progress toward meeting ISRH and the native upland habitats were found to be meeting ISRH. Currently, 761 acres of upland habitat have been invaded by leafy spurge. Alternative A would continue current livestock management, which would continue to provide for healthy native habitats overall (see Vegetation). Riparian areas with Canada thistle would continue to be susceptible to the increase of this species. However, riparian areas are making progress toward achieving standards and as riparian health increases the potential for spread of Canada thistle would decrease. By maintaining and/or improving the ecological health of the current native plant communities in allotment, the opportunity for expansion of invasive, non-native species would be reduced. Under Alternative A, all new and existing infestations in both upland and riparian areas would continue to be treated following an integrated weed management approach (USDI-BLM 2009b).

#### *Alternative B (Proposed Action)*

The potential for establishment and expansion of invasive, non-native species would be greater under Alternative B compared to Alternative A. Extending the season of use by 24 days would be less beneficial for vegetation in uplands and riparian areas compared to the current permitted use in Alternative A. Native vegetation in the uplands and riparian areas would be more susceptible to invasion by non-native species. Soils would also receive higher levels of disturbance due to the extended use period and during construction of proposed projects, which would increase the potential area for invasion. Under Alternative B, all new and existing infestations in both upland and riparian areas would continue to be treated following an integrated weed management approach (USDI-BLM 2009b).

### *Alternative C (Preferred Alternative)*

The potential for establishment and expansion of invasive, non-native species under Alternative C would be less than Alternatives A and B. The riparian enclosure extension, trough improvement, and spring development and pipeline proposed under this alternative would create disturbance during construction, which would increase the potential area for invasion. Soils would be disturbed, but limited vegetation would be removed and the site would remain resilient to non-native species invasion. Additionally, approximately 35% of the current permitted use would be removed under this alternative, which would reduce utilization throughout the allotment; benefiting riparian and upland areas and increasing their ability to compete with invasive species. Livestock use would increase in areas where new water is available as a result of the pipeline. This may increase the threat of invasion in these areas. Overall, as livestock distribution improves throughout the allotment, upland and riparian habitats would be healthier and more resistant to invasion. Under Alternative C, all new and existing infestations in both upland and riparian areas would continue to be treated following an integrated weed management approach (USDI-BLM 2009b).

### *Alternative D (No Grazing)*

Livestock are one of several vectors for dispersal of invasive, non-native species, and under Alternative D no livestock grazing would be authorized in the allotments for 10 years. Under Alternative D, the potential establishment or expansion of invasive, non-native species would be less than Alternative A, B, or C due to the removal of this vector and the reduced soil disturbance as no projects would be constructed under Alternative D. Under Alternative D, all new and existing infestations in both upland and riparian areas would continue to be treated following an integrated weed management approach (USDI-BLM 2009b).

## **Soil Resources**

### Affected Environment

There are over 15 different soil mapping units within the Waddoups Canyon Allotment. These units vary widely in depth, drainage, and profile. Units composing large areas of the allotment include Howcan-Hagenbarth-Hutchley (approximately 41% of the allotment), Klug-Zeebar (approximately 17% of the allotment), Ike-Rock Outcrop-Jimbee (approximately 14% of the allotment), Inferno-Grouseville (approximately 8% of the allotment), Jimbee-Rock Outcrop-Ike (approximately 6% of the allotment) and Justesen-Drage (approximately 6% of the allotment). These soil units form along mountain slopes, ridges and fan terraces. Restrictive features are comprised of bedrock over shallow soils and are common at depths of 20 inches and are common in Hutchley, Ike-Rock Outcrop-Jimbee and Jimbee-Rock Outcrop-Ike soil units. Other units are deep and well drained having no restrictive features to a depth of 60 inches. The deep and loamy nature of many soils within the allotment makes them somewhat susceptible to compaction by heavy objects. Available water holding capacity of the soils ranges from 1-12.5 inches. Most soils have a moderate to severe water erosion hazard except for the Justesen-Drage complex, which has a slight-moderate hazard.

Within the Waddoups Canyon Allotment there are approximately 30 miles of road, 26 miles of fence and 6 troughs. Soil compaction and reduced ground cover are more likely to occur along livestock trails, roads, fences and troughs as a result of livestock use. Assuming livestock impact an average area of 12 feet around roads, 4 feet around fences and 0.5 acres around troughs the total impacted area would be 60 acres, which is less than 1% of the entire area of the allotment. Livestock trails have not been quantified within the allotment, but would likely fall within the impact areas made in the assumptions above.

Five field sites were evaluated in the allotment in 2011 (USDI-BLM 2010) which was representative of the watershed integrity condition and site stability across the allotment. Generally, indicators were rated no higher than slight to moderate departure from site potential, with some exceptions. In the northeast portion of the West Pasture and the Northwest portion of the East Pasture, the amount of bare ground was rated as moderately higher than expected, with bare areas of moderate size being sporadically connected. In the northwest portion of the East Pasture, pedestals and terracettes were rated as moderately higher than expected with some pedestalling of bunchgrasses occurring on exposed slopes. Given the moderate-severe erosion hazard of most soils in the allotment there is very limited water erosion occurring overall. While departures exist in localized areas, overall soils are stable throughout the allotment.

### Environmental Consequences

The potential impacts to soils from livestock grazing include soil compaction and a reduction in the amount and distribution of ground cover resulting in accelerating erosion as evidenced by rills, pedestals, and flow patterns. Soil compaction by heavy objects, including trailing by livestock, has the potential to penetrate and compact soil material to depths of 15 to 20 inches, depending upon soil composition, particle size, and moisture content. The majority of the soil units have limited potential for compaction due to gravelly nature of the soils. Generally, the soils in the allotments will have increased moisture levels in the spring compared with the summer or fall. The soil from the surface to a depth of four to six inches is typically released from compaction by frost action. Deeper soil compaction that is not affected by frost action may remain in the soil for years. Soil compaction resulting from intensive livestock use, such as along trails and next to water sites, is estimated to occur on less than one percent of the allotment area. Deep soil compaction restricts root growth reducing plant vigor and community composition and reduces soil productivity.

#### *Alternative A (No Action)*

Under Alternative A, soil surface disturbance and compaction would not increase beyond current levels. Soil compaction resulting from intensive livestock use, such as along trails and next to water sites, is estimated to occur on less than one percent of the allotment area. Under Alternative A, soil conditions on the allotment as a whole would continue to support water infiltration and permeability rates appropriate to site potential. Vegetative cover on the allotment under Alternative A would continue to be sufficient to protect against wind and water erosion.

### *Alternative B (Proposed Action)*

Under Alternative B, the level of existing soil disturbance would be slightly higher than under Alternative A. Extending the time that livestock are on the allotment creates more opportunity for livestock to impact soils through compaction or removing vegetation which provides site stability. The area of soils potentially impacted would increase slightly due to the construction and installation of the additional/larger troughs, but the intensity of impacts after construction would be similar to those already present with the existing troughs. With the season of use, livestock use would occur when soils are wet in the spring and beginning to dry in the early summer. Overall the amount of soils impacted by livestock activity would be less than one percent of the allotment area. Under Alternative B, soil conditions would continue to support water infiltration and vegetative cover would be sufficient to protect against wind and water erosion. However, Alternative A would provide better protection for soils than Alternative B.

### *Alternative C (Preferred Alternative)*

Under Alternative C, the level of existing soil disturbance from projects would increase compared to Alternatives A and B. The amount of time livestock are able to be on the allotment would be the same as Alternative A, but the season available for use would be the same as Alternative B. With this management system livestock use could occur when soils are wet in the spring or beginning to dry in the early summer. The management system under Alternative C would make it so soils are not impacted the same throughout the duration of the 10 year grazing term. The AUM reduction proposed under this alternative would benefit soils as less livestock are able to be on the allotment at any point throughout the grazing season. The projects proposed under Alternative C are a source of increased soil disturbance. The area of soils impacted by livestock would decrease slightly as a result of the extension of the riparian enclosure. The construction of the enclosure would increase disturbance to soils temporarily, but then reduce impacts as livestock are unable to access soils within the enclosure. The spring development and pipeline would increase soil disturbance during construction. The pipeline would be buried in or near an existing road so although soils would be disturbed, the disturbance would occur in an area already highly impacted by vehicles. This area would continue to receive use by vehicles after the pipeline was installed. Impacts to soils would be altered as a result of the projects. Livestock use would increase in areas where new water is available and soil disturbance would increase in these areas, but disturbance would decrease in other areas. Improved distribution combined with the AUM reduction would be beneficial to soils within the allotment. Under Alternative C, soil conditions would continue to support water infiltration and vegetative cover would be sufficient to protect against wind and water erosion.

### *Alternative D (No Grazing)*

Under Alternative D, the impacts to soil resources would be less than under Alternatives A, B, or C. Under Alternative D, no livestock would be authorized in the allotment for a period of 10 years. No projects would be constructed. The limited soil compaction related to livestock use in the portion of the soil profile which is typically released annually through frost action, would not be subject to repeated compaction.

## Wetlands and Riparian Areas

### Affected Environment

The Waddoups Canyon Allotment includes 32.9 acres of riparian/wetland vegetation. Perennial streams (6.4 miles) support approximately 30.5 acres of riparian/wetland vegetation within the allotment and three spring complexes (1.1 miles) support approximately 2.4 acres of riparian/wetland vegetation. The allotment contains eight perennial streams with 12 unique stream reaches. Eleven of the 12 stream reaches have been assessed more than once since 1997. The historical proper functioning condition (PFC) ratings on these streams for riparian vegetation are shown in Table 2:

<b>Table 2: Historical Riparian Vegetation PFC Ratings</b>							
<b>Reach</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2001</b>	<b>2003</b>	<b>2006</b>	<b>2011</b>
Box Bailey Corral Canyon, Reach #1			FAR	NF		FAR	
Reach #2			NF	NF		FAR	
Flower Garden Creek			FAR	NF		PFC	
Rough Canyon			FAR	PFC		NF	PFC
Schoolhouse Canyon			NF	FAR		FAR	
LFK Waddoups Canyon, Reach #2		FAR		FAR		PFC	
Reach #3		FAR		NF		PFC	FAR
RFK Waddoups Canyon, Reach #2	PFC			FAR		PFC	
Reach #3	NF				FAR	NF	FAR
Reach #5	FAR				FAR	NF	FAR
Unnamed Spring, tributary to RFK Waddoups Canyon	NF			FAR		FAR	FAR
Unnamed tributary to Rough Canyon							FAR
Unnamed Spring Complex #580							NF
Unnamed Spring Complex, #674, #675, #678, #681							FAR
Mountain Springs Canyon			FAR	FAR		FAR	NF

In 2011, six of the twelve perennial stream reaches and all three of the spring systems were assessed for riparian vegetative condition.

### Box Bailey Corral Canyon

The two perennial stream reaches of Box Bailey Corral Canyon were both rated nonfunctional (NF) in 2001 and functional-at-risk (FAR) in 2006 with upward trends. Vegetative cover varied from 80% to 90% and no noxious weeds were noted along either stream reach. About 10% - 20% of the stream banks were occupied by Kentucky bluegrass. Preferred shrub regeneration was between 5% and 15% and browse utilization of preferred shrubs was light, with few standing dead or decadent trees or shrubs.

### Flower Garden Creek

Flower Garden Creek was rated NF in 2001 and PFC for riparian vegetation in 2006 with an upward trend. The first reach of this stream had approximately 96% vegetative cover, with no noxious weeds observed. About 25% of the banks were covered by disturbance-increaser vegetation such as Kentucky bluegrass. Willow regeneration was excellent; however utilization on willow was higher than expected.

### Rough Canyon

Rough Canyon Creek was rated NF in 2006 and PFC in 2011 with an upward trend. Vegetative cover was over 95%, with some leafy spurge observed. About 15% of the site was covered by disturbance-increaser species such as Kentucky bluegrass, iris and dandelion.

### Schoolhouse Canyon

Schoolhouse Canyon Creek was rated FAR in 2001 and 2006 with an upward trend. Vegetative cover was about 95% with very few invasive species present. About 5% - 25% of the reach was covered by Kentucky bluegrass and dandelion. Preferred shrub regeneration was 5% - 15% with little to no utilization by livestock.

### Left Fork Waddoups Canyon

In 2001, Reach#2 of the Left Fork of Waddoups Canyon Creek rated FAR and Reach #3 rated NF. In 2006, both reaches rated PFC. Vegetative cover on Reach #2 was over 95%. A small amount (5% - 6%) of Kentucky bluegrass was documented along the stream banks. Abundant willow regeneration was observed on the lower portion of the reach. Utilization of preferred shrubs was little to none, with limited decadent and dead woody material.

In 2011, both reaches were assessed again. Reach #2 had an upward trend remaining PFC, and Reach #3 had a downward trend rating FAR. Reach #3 had approximately 90% vegetative cover provided mostly by willow. There was a lack of rush and sedge in the lower portion of the reach. A small amount of leafy spurge was also found at the bottom of the reach. About 25% - 50% of the reach was covered with Kentucky bluegrass, dandelion, iris and sagebrush. Preferred shrub regeneration was about 10%, with only light browse utilization. No woody vegetation had been removed along the stream, and there was only 5% - 10% decadent and/or dead woody material.

### Right Fork Waddoups Canyon

There are 3 perennial reaches on the Right Fork of Waddoups Canyon Creek; Reach #2, #3 and #5. Reach #2 was assessed in 2001 and rated FAR for riparian vegetation. In 2006 this reach was rated PFC with an upward trend. Vegetative cover was over 95% with abundant rush on the banks. About 10%-15% of the reach was covered by Kentucky bluegrass and dandelion. There

was over 15% woody regeneration along the reach with willow, aspen and water birch. Browse utilization on preferred shrub species was limited. Dead or decadent aspen were fairly common along the reach.

Reach #3 was rated NF in 2006 and FAR in 2011 with an upward trend. Vegetative cover was between 85% and 95%, with mostly shrubby cinquefoil along the stream. Noxious weed species were less than 1% of the cover. Disturbance-increaser species were about 40%, including Kentucky bluegrass, iris and dandelion. Regeneration of preferred shrubs was over 15%, but willow was isolated to two portions of the reach. Light browse utilization of preferred shrubs was noted. Woody vegetation removal as well as dead and decadent woody vegetation was not observed along this reach.

Reach #5 was rated NF in 2006 and FAR in 2011 with an upward trend. Vegetative cover was between 85% - 95% with willow, shrubby cinquefoil, Kentucky bluegrass and serviceberry. Between 1% and 15% noxious weed cover, primarily leafy spurge, was present. Approximately 25% - 50% undesirable herbaceous species such as Kentucky bluegrass, iris and sagebrush were also noted. Preferred shrub regeneration was 5% - 15% and browse utilization was light. No removal of woody vegetation was occurring. Reach #5 is on a 6% - 8% slope with a narrow channel and little area available for riparian herbaceous species to become established.

#### Unnamed tributary to Right Fork Waddoups Canyon

In 2006 this unnamed tributary to the Right Fork of Waddoups Canyon Creek rated FAR. The reach was re-assessed in 2011 and again rated FAR with a static trend. Vegetative cover was between 85% and 95% with mostly willow, rush, iris, Kentucky bluegrass, cinquefoil and some sedge. Some weed cover was present, primarily comprised of Canada thistle. Kentucky bluegrass, iris and other disturbance-increaser species accounted for 25% - 50% vegetative cover along the reach. Willow regeneration was good, and browse utilization was moderate, with wildlife accounting for some of this utilization. There was no vegetation removal other than browsing on this reach.

#### Unnamed tributary to Rough Canyon

This reach was assessed in 2011 for the first time and rated FAR. Vegetative cover was estimated at 87% with some Canada thistle present. About 20%-30% of the cover was disturbance-increaser vegetation such as Kentucky bluegrass, dandelions and iris. Preferred willow regeneration was only 2% - 3%. There was little livestock browsing observed and no vegetation removal other than browsing was observed.

#### Spring Complexes

Three spring complexes were assessed for riparian vegetation within the Waddoups Canyon Allotment. Spring #580 is a series of undeveloped springs oriented along a natural drainage. This reach rated NF in 2011, which was the first year of assessment on the spring. Vegetative cover occupied 80% of the reach and was comprised of Kentucky bluegrass and stinging nettle with a lack of rush and sedge. Canada thistle made up about 1% of the cover while Kentucky bluegrass and stinging nettle consisted of about 15% of the cover. Preferred shrub (willow) regeneration was about 10% and browse utilization was 25% to 30%. Alteration of the vegetation was about 30% and physical alteration to the site was about 35% due to trailing and

hoof shearing, resulting in moderate impact to the physical site. Bare ground at the site was about 20%.

The second spring complex was comprised of a series of four undeveloped springs that are along an unnamed drainage (Springs #674, 675, 678 and 681). This complex rated FAR during the initial assessment in 2011. It was dominated by aspen, willow, sedge, rush and Kentucky bluegrass, with over 95% vegetative cover. Canada thistle had less than 1% cover. Undesirable herbaceous species such as Kentucky bluegrass, iris, dandelion and stinging nettle made up 15%-20% of the cover. Willow regeneration was less than 5%, with mostly mature willow on site. Browse utilization was light and alteration of the vegetation and the physical site was only slight. Bare ground was only about 5%.

The third spring complex is referred to as Reach #1 of Mountain Spring Canyon. This reach rated FAR in 2006 and NF with a downward trend in 2011. About 85% of the complex was covered by vegetation, mostly sedge and rush with a small amount of willow, and about 8%-10% Canada thistle. Undesirable herbaceous species occupied about 15% of the area, including Kentucky bluegrass and dandelion. Willow regeneration was occurring, but new growth was excessively browsed. Alteration of the vegetation and the physical site was about 50% with trampling and compaction yielding a moderate impact. Bare ground was about 5%-10%.

### Environmental Consequences

Livestock grazing can directly or indirectly affect wetland and riparian area conditions. Vegetation attributes may change in response to livestock grazing. These attributes include plant community composition, distribution, and production; plant species diversity; rooting characteristics such as deep rooted vs. shallow rooted; amount of bare ground; and woody plant size, age class, and abundance (USDI-BLM 2006).

#### Alternative A (No Action)

Under this alternative grazing use on the allotment would not change from current management. Livestock management over the last ten years has resulted in an upward trend in riparian vegetation for both reaches (4.7 acres) of Box Bailey Corral Canyon, Flower Garden Creek (0.8 acres), Rough Canyon (0.7 acres), Schoolhouse Canyon (0.6 acres), Reach #2 of the Left Fork of Waddoups Canyon (0.4 acres), and all three reaches of the Right Fork of Waddoups Canyon (8.5 acres). However, current management has also resulted in a downward trend for Reach #3 of the Left Fork of Waddoups Canyon (0.6 acres), a static FAR trend for the Unnamed Spring tributary to Right Fork Waddoups Canyon (0.4 acres), FAR conditions for the Unnamed tributary to Rough Canyon (13.8 acres) and the Unnamed Spring Complex #674, #675, #678 and #681 (1.6 acres); and NF conditions for Mountain Spring Canyon (0.2 acres) and the Unnamed Spring Complex #580 (0.6 miles).

The riparian vegetation trends for each riparian system described above would likely be maintained under this alternative into the future. Streams that rated FAR would likely maintain current conditions, but may experience trend improvements or declines as environmental

conditions fluctuate with current livestock management. In addition, the two NF spring systems would not likely make progress towards PFC under this alternative.

#### Alternative B (Proposed Action)

This alternative would authorize livestock grazing on the allotment similar to Alternative A. The primary difference is the adjustment to the season of use allowing 24 additional days of use in the spring, and the additional troughs to increase water availability. Alternative B would authorize 71 days of livestock use instead of 46 days as Proposed in Alternative A. Under this alternative, an additional 24 days of grazing along with the same AUMs as Alternative A would increase use of riparian vegetation. Allowing 24 days of use earlier than the present system and reducing livestock numbers may not increase the number of AUMs utilized within the allotment, but utilization of riparian areas, trailing, compaction and hoof shearing along the banks would increase. The combined effect of utilizing vegetation while impacting banks would not allow for progress towards PFC. Riparian vegetation would lose vigor and may eventually decrease in abundance being replaced by less desirable species. Improving water holding capacity of existing troughs may work to decrease livestock utilization of riparian areas. If water is more readily available in the uplands it may decrease the amount of use livestock typically make on the springs and seeps, which would decrease the potential for impacts to riparian vegetation. The improvement in water availability would not compensate for the negative effects of the increased season of use. Overall this alternative would not allow for standards to be met. This alternative would not allow progress towards PFC as well as Alternative A.

#### Alternative C (*Preferred Alternative*)

Extending the riparian enclosure fence on the unnamed spring tributary to Right Fork Waddoups Canyon, as proposed under Alternative C, would allow progress towards PFC along this stream reach. Increasing the water holding capacity from this spring by authorizing the installation of additional troughs at the existing trough site would allow progress toward PFC in the associated riparian-wetland system, as the troughs would be floated to allow unused water to remain at the spring source. Providing additional water in this area as proposed with the larger troughs may work to decrease livestock utilization in the surrounding area. This alternative also proposes a reduction of 35% of the active AUMs and continues deferred pasture rotation. Rotation would occur between the east and west pastures every two years with the entire herd in one pasture for 23 days, and in the other pasture 23 days.

The projects proposed for Wood Canyon consist of a spring development and pipeline. The spring development would impact riparian systems in the area by decreasing water in the system. The pipeline would divert water from the spring to existing troughs. Because the spring will not be completely dewatered by the development through installation of a float system on the troughs; riparian-wetland vegetation would be sustained. With less water available as a result of the spring development, riparian vegetation vigor may be reduced. However, this effect would be reduced by the floated troughs and requirement for the development to be shut off when livestock are not in the area. Shutting water collection off in the development off when livestock are not in the allotment would also provide for the sustainability of the riparian area. Providing water in troughs away from stream bottoms would reduce livestock use of steep stream banks

and decrease potential for erosion and impacts to vegetation. Under this alternative riparian vegetation would receive less use compared to Alternatives A and B, and livestock impacts (trailing, compaction and hoof action) would also be decreased due to the AUM reduction. Riparian vegetation would increase in vigor and provide greater stability to banks and riparian systems in the allotment and allow progress towards PFC. Alternative C would allow progress towards PFC more rapidly and to a greater extent than Alternatives A and B.

Alternative D (*No Grazing*)

This alternative would allow the riparian vegetation to attain its highest potential in the 10 year period. Desirable riparian vegetation would increase in areas where livestock grazing has reduced vigor and species composition. Increased vegetation would provide greater bank stability and resistance to disturbance in the future. Under this alternative riparian vegetation would make progress towards PFC and meet PFC in less time than Alternatives A, B and C.

**Stream Channel/Floodplain**

Affected Environment

The Waddoups Canyon Allotment contains 6.4 miles of stream channel and floodplain on eight perennial streams with 12 stream reaches. Eleven of the 12 stream reaches were assessed in 1997, 1998 and/or 1999. In 2011, six of the twelve perennial stream reaches were assessed for stream channel and floodplain characteristics. The historical PFC ratings on these streams for stream channel/floodplain are shown in Table 3:

<b>Table 3: Historical Stream Channel/Floodplain Ratings</b>							
<b>Reach</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2001</b>	<b>2003</b>	<b>2006</b>	<b>2011</b>
Box Bailey Corral Canyon, Reach #1			NF	NF		FAR	
Reach #2			NF	NF		FAR	
Flower Garden Creek			NF	NF		PFC	
Rough Canyon			FAR	PFC		FAR	FAR
Schoolhouse Canyon			NF	NF		PFC	
LFK Waddoups Canyon, Reach #2		NF		FAR		PFC	
Reach #3		NF		NF		FAR	NF
RFK Waddoups Canyon, Reach #2	PFC			PFC		PFC	
Reach #3	NF				FAR	PFC	PFC
Reach #5	FAR				FAR	PFC	FAR
Unnamed Spring, tributary to RFK Waddoups Canyon	NF			FAR		PFC	NF

<b>Reach</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2001</b>	<b>2003</b>	<b>2006</b>	<b>2011</b>
Unnamed tributary to Rough Canyon							NF

Box Bailey Corral Canyon

The two reaches of this perennial stream (0.5 and 0.8 miles, respectively) rated NF in 2001 and FAR in 2006, with upward trends. Stream bank root-mass protection varied from 65%-75%, with the upper reach containing mostly willow, sedges and rushes and the lower reach containing mostly sedge and rush. Meadows and bare ground were impacted by livestock. Stream bank alterations were estimated to be 5% to 15%, with alterations evident in the rest of the site. The channel was also slightly incised.

Flower Garden Creek

This stream reach is approximately 0.8 miles long and rated NF in 2001. In 2006 this reach rated PFC for riparian vegetation with an upward trend. Stream bank root-mass protection was about 80%, and bank structural alterations were between 5% and 15%. The upper portion of the reach had more bare ground and trampling impacts than the lower portion of the reach. This channel was not incised.

Rough Canyon

This stream reach is 0.5 miles long and rated FAR in 2006 and FAR in 2011 with a static trend. Stream bank root-mass protection was about 70%, with only about 3% bare ground. The stream banks and other portions of the site had little structural alterations, and the channel was slightly incised.

Schoolhouse Canyon

This stream reach is approximately 0.5 miles long and rated NF in 2001 and PFC in 2006 with an upward trend. Stream bank root-mass protection was 65% to 85% with little to no bare ground present. The stream bank was not structurally altered, and alterations to adjacent areas were only estimated at 5% to 10%. The channel was slightly incised.

Left Fork Waddoups Canyon

Stream Reach #2 and #3, were rated FAR and NF respectively, in 2001. In 2006, Reach #2 (0.4 miles) was rated PFC and Reach #3 (0.7 miles) rated FAR. In 2011, reach #3 rated NF. Reach #2 had stream bank root-mass protection over 85% with little to no bare ground, little bank structural alterations and little alterations to the rest of the site. The channel was slightly incised.

Reach #3 had 65% to 85% stream bank root-mass protection and abundant bank and bed rock. Human caused bare ground was only 4%-5%. The stream bank had 35%-40% structural alterations, with less than 5% alterations to the rest of the site. The upper portion of this channel was incised; the lower portion was mostly rock-armored. About 35% of the banks were impacted by livestock hoof action.

### Right Fork Waddoups Canyon

There are three perennial stream reaches in this area; Reach #2 (0.4 miles), Reach #3 (0.3 miles) and Reach #5 (0.9 miles). Reach #2 was assessed in 2001 and rated PFC. In 2006, this reach was again rated PFC with an upward trend. Reach #2 had 85% of the stream banks with a deep binding root-mass. The reach had densely wooded areas and portions with abundant rush in the riparian zone. There was little to no bare ground, stream bank structural alteration, or alterations to the rest of the site and the channel was not incised.

Reach #3 rated PFC in 2006 and 2011. About 65% to 85% of the stream banks had deep binding root-mass due mostly to shrubby cinquefoil. Rock was also common, providing armor to the stream channel. Human-caused bare ground was only around 5% and the stream bank was only 5%-10% structurally altered. There were no other alterations to the rest of the site and the channel was not incised, mostly due to the abundance of bank and bed rock.

Reach #5 rated PFC in 2006 and in 2011 it was rated FAR with a downward trend. Stream bank root-mass protection was 65% to 85% due to rock, cinquefoil and other brush. Bare ground was only 1% to 5% of the reach and only about 5% to 10% of the reach was structurally altered. This channel was not incised. This channel was steep (6%-8%) and narrow, with little area for riparian herbaceous species to occupy. Excessive livestock utilization was common on the lower portion of the reach.

### Unnamed tributary to Right Fork Waddoups Canyon

This stream reach (0.2 miles) was assessed in 2006 and rated PFC and in 2011 it rated NF with a downward trend. Stream bank root-mass protection was 60% to 65%, and there was about 2% to 4% bare ground. Livestock trampling and hoof shearing accounted for 30% to 35% stream bank structural alterations, with 20% alteration to the rest of the site. This channel was slightly incised.

### Unnamed tributary to Rough Canyon

This stream reach (0.6 miles) was assessed in 2011 and rated NF. Stream bank root-mass protection was only about 40% with an estimated 10% bare ground. About 10% of the stream banks were structurally altered, with little alteration occurring in the rest of the site. This channel was slightly incised.

### Environmental Consequences

Livestock can directly and indirectly affect stream conditions through soil compaction, bank shearing, or severing of roots of riparian vegetation, which are needed for plant survival and bank stability (Behnke and Raleigh 1978). Depending on site, soil, and substrate characteristics, channel degradation may take one of two forms. If a restrictive soil layer is in the channel bed, bank erosion causes channel widening and stream depth decreases. Conversely, if the restrictive soil layer is lower, the channel can downcut, and the stream gradient and energy can increase and move excessive sediment downstream (USDI-BLM 2006).

### *Alternative A (No Action)*

Under this alternative the current livestock use over the last ten years has resulted in an upward trend in stream channel/floodplain conditions on both reaches (1.3 miles) of Box Bailey Corral Canyon, Flower Garden Creek (0.8 miles), Schoolhouse Canyon (0.5 miles), Reach #2 of the Left Fork of Waddoups Canyon (0.4 miles), Reach #2 of the Left Fork of Waddoups Canyon (1.6 miles) and Reach #2 of the Right Fork of Waddoups Canyon (0.4 miles). However, it also has resulted in a downward trend for Reach #5 of the Right Fork Waddoups Canyon (0.9 miles), the Unnamed Spring tributary to Right Fork Waddoups Canyon (0.2 miles), a static trend (not in PFC) for Rough Canyon (0.5 miles), and Reach #3 of the Left Fork Waddoups Canyon (0.7 miles), and NF condition for Reach #3 of the Left Fork of Waddoups Canyon (0.7 miles), the Unnamed Spring, tributary to Right Fork Waddoups Canyon (0.2 miles) and the Unnamed tributary to Rough Canyon (0.6 miles).

These channel/floodplain conditions would likely be maintained under this alternative into the future.

### *Alternative B (Proposed Action)*

Under this alternative, the additional 24 days of grazing with the same AUMs as Alternative A would increase use along the channel and stream banks, and not provide progress towards PFC as well as Alternative A. Trailing, compaction and hoof shearing along the banks would increase, which would weaken bank stability and not allow riparian systems to make progress towards PFC. Improving water holding capacity of existing troughs may work to decrease livestock impacts on stream channels. If water is more readily available in the uplands it may decrease the amount of use livestock typically make on the springs and seeps, resulting in less hoof action and risk of erosion and improved bank stability. The improvement in water availability would not compensate for the negative effects of the increased season of use. This alternative would not meet the standards for stable stream channels and/or floodplains.

### *Alternative C (Preferred Alternative)*

Under this alternative, extending the riparian enclosure fence on the unnamed spring tributary to Right Fork Waddoups Canyon would provide progress towards PFC along the stream channel. The nearby proposed trough expansion would not impact this riparian system. This alternative also proposes a reduction of 35% the active AUMs and continues deferred pasture rotation. Rotation would occur between the east and west pastures every two years with the entire herd in one pasture for 23 days, and in the other pasture 23 days. The projects proposed for Wood Canyon consist of a spring development and pipeline. The spring development would impact riparian systems in the area by decreasing water in the system. The pipeline would divert water from the spring to a pipeline and existing troughs. If excess water is removed from the spring source, vegetation vigor would decrease and bank stability would be decreased as well. Because float systems would be installed, the spring will not be completely dewatered by the development and riparian vegetation would be sustained providing stability to the channel and

streambank. Shutting water collection in the development off when livestock are not in the allotment would also provide for the sustainability of the riparian area. Providing water in troughs away from stream bottoms would reduce livestock use of steep stream banks and decrease potential for erosion and impacts to vegetation. Under this alternative riparian areas would have less use compared to Alternatives A and B, and livestock impacts (trailing, compaction and hoof action) would also be decreased due to the AUM reduction. Riparian vegetation would increase in vigor and provide greater stability to stream channels/floodplains within the allotment. This reduced use would lessen the impacts to stream channels/floodplains and allow progress towards PFC. This alternative would allow progress towards PFC more rapidly and to a greater extent than Alternatives A and B.

#### *Alternative D (No Grazing)*

Under this alternative the stream channel/floodplain characteristics of these stream reaches would continue to make progress towards PFC, and in less time than Alternatives A, B or C. The incised channel reaches would continue to alter small portions of these channels and floodplains as they do presently, however the other reach portions would improve in channel and floodplain condition.

### **Water Quality**

#### Affected Environment

The Left Fork (1.1 miles) and Right Fork (1.6 miles) of Waddoups Canyon were assessed for water quality standard indicators in 2011. Neither of the streams is listed on the Idaho 303(d) list of water quality-limited streams.

#### Left Fork Waddoups Canyon

Six of the eight indicators rated “at risk” while two indicators (dissolved oxygen and excess nutrients) were rated in “plus” condition. Stream flow on this date was estimated at 0.5 cubic feet per second (cfs)—the flow reached the confluence of the Right Fork. Water temperature was 18° C at 1445 hrs. The stream was turbid on this date due to recent use by livestock. Sediment as surface fines was present in the channel. Some macro-invertebrates were observed. In regards to best management practices (BMPs), livestock herding was benefiting utilization levels, but some salt blocks were placed too close to the stream.

#### Right Fork Waddoups Canyon

This stream also had an estimated flow of 0.5 cfs and disappeared into the ground before reaching the Left Fork confluence. Only three indicators (water temperature, sediment as surface fines and BMPs) were “at risk”, the rest were in “plus” condition. Beneficial uses were rated “plus.” Water temperature measured 10° C at 1030 hrs, on the upper reach, but measured 18° C at 1600 hrs. on the lower reach. The water had little turbidity. A good variety of

macroinvertebrates were observed on the upper end. BMPs were “at risk” because some salt blocks were observed too close to the stream.

### Environmental Consequences

#### *Alternative A (No Action)*

Under this alternative the majority of the water quality indicators on the Left Fork of Waddoups Canyon and a few of the indicators on the Right Fork Waddoups Canyon would continue to be in “at risk” condition, maintaining this condition into the future. This alternative would not move the majority of indicators into the “plus” condition.

#### *Alternative B (Proposed Action)*

Under this alternative, an additional 24 days of grazing with the same AUMs as Alternative A would likely increase bank trampling, decreasing bank stability and providing more fine sediment to the streams from increased erosion. It is anticipated that livestock utilization of riparian vegetation would increase along with trailing, compaction and hoof shearing along the banks, which would decrease desirable vegetation and its ability to shade the stream, not maintaining cool water temperatures. This increased use on the banks can also widen the banks and shallow the water depth, producing more sediment in the channel and higher water temperatures. Improving water holding capacity of existing troughs may work to decrease livestock utilization of riparian areas and benefit water quality. The improvement in water availability would not compensate for the negative effects of the increased season of use.

#### *Alternative C (Preferred Alternative)*

Under this alternative, extending the riparian enclosure fence on the unnamed spring tributary to Right Fork Waddoups Canyon would move most water quality standard indicators to “plus” condition along this 0.2 miles of stream. This alternative also reduces the AUMs by 35%, and implements the pasture rotation discussed above. The projects proposed for Wood Canyon consist of a spring development and pipeline. The spring development would temporarily increase sediment load in the stream during construction. The pipeline would not impact water quality. Providing water in troughs away from stream bottoms would be beneficial to water quality by decreasing the amount of livestock use directly at the water source. This alternative would reduce bank trampling and hoof shearing impacts, decreasing the amount of fine sediment in the stream. These decreased impacts would increase bank stability, improve riparian plant vigor allowing more shade and cover on the streams, which would help to maintain cool water temperatures. This alternative would move water quality standard indicators to the “plus” condition more than Alternatives A and B.

#### *Alternative D (No Grazing)*

Under this alternative over time all water quality standard indicators would be in “plus” condition. The incised channel reaches would continue to provide a short term sediment source to some of these streams but overall, sediment input along these streams would be minor. Under

this alternative, water quality standard indicators would all reach “plus” condition and in less time than Alternatives A, B and C.

## **Migratory Birds**

### *Affected Environment*

Approximately one-half of bird species that breed in North America are neo-tropical migratory birds. A wide variety of migratory birds inhabit the sagebrush steppe and riparian habitat in the Big Lost River Valley including the sage thrasher, Brewer’s blackbird, green-tailed towhee, vesper sparrow, and yellow warbler. Riparian vegetation attracts a greater number and variety of bird species, primarily those that feed on insects, during migration than during the breeding season (Knopf et. al. 1988). Inventory and monitoring data are limited or absent for many migratory species, including sagebrush-obligates associated with the Waddoups Canyon Allotment. Shrubsteppe birds that require sagebrush as nest sites benefit from intact mature sagebrush stands, which are present in Waddoups Canyon Allotment along with isolated patches of Douglas fir and aspen, wet meadows and riparian habitats.

Approximately 33 acres of riparian and wetland vegetation are found across the allotment in various seeps, springs and creeks. Riparian habitats support the highest bird diversity of any western habitat type and covers less than 1% of the landscape in Idaho (Ritter 1998). Heath and Ballard (2003) found the riparian width and/or percent riparian habitat was positively correlated with breeding bird species diversity within the arid region of the eastern Sierra Nevada. Migratory birds that require riparian habitat and that may use Waddoups Canyon Allotment include the willow flycatcher, yellow warbler, Wilson’s warbler and the blue grosbeak. Other migratory birds may use riparian zones for foraging, nesting, and cover from predators. When in PFC these riparian areas may support healthy and productive vegetation utilized by migratory birds. Riparian habitat that is FAR may still support many migratory birds but habitat suitability may be decreased. The composition and structure of the surrounding vegetation and land uses adjacent to riparian ecosystems can influence distribution and occurrence of most bird species.

As top avian predators, raptors are important components of ecosystems. The Big Lost River Valley provides summer and winter habitat for a variety of migratory raptors, such as: Swainson’s hawk, northern harrier, sharp-shinned hawks, rough-legged hawks and red-tailed hawks. The pattern and amount of habitat cover may determine foraging habits of raptors, with some raptors being successful in areas with increased cover and other species being successful with increased bare ground (Baker and Brooks 1981).

### Environmental Consequences

Migratory birds are most affected by the impacts on vegetation resulting from grazing. Livestock grazing impacts include compaction of soil by hoof action, removal of plant materials, and indirect reduction of water infiltration, all of which can result in decreased vegetation density (Saab et al. 1995). Productive habitats are important for migratory birds to hide from predators, forage, mate and nest; especially during spring. However, songbirds may respond differently to livestock grazing impacts, primarily due to their forage and nesting requirements.

For example, sage sparrow appear to respond positively to grazing; while vesper sparrow, Savannah sparrow and western meadowlark appear to respond negatively; and mourning dove, loggerhead shrike, lark sparrow, sage thrasher and Brewer's blackbird may be unresponsive or show mixed responses to grazing impacts (Bock et al. 1993).

Similar to songbirds, migratory raptors also show a range of responses to grazing with some species (i.e., northern harrier) requiring increased ground cover and other species (i.e., burrowing owl) responding positively to reduced ground cover or bare ground (Saab et al. 1995).

#### *Alternative A (No Action)*

Under Alternative A, grazing would continue at the same timing and intensity levels as currently authorized. Livestock authorized in the allotment would continue to follow a deferred-rotation grazing system, with the two pastures being utilized in alternating seasons each year. Currently, one pasture is grazed in May and June each year, during the important nesting season for migratory birds (May 15- June 30). The deferred pasture is used during the latter portion of this important nesting period. This system would provide deferment of livestock impacts during the spring season for migratory birds in one pasture each year, with the pasture deferred rotating yearly. Rotating pastures would ensure that livestock are not utilizing the same areas at the same time each year, which would benefit wildlife species that may have a yearly fidelity to certain areas. Upland vegetation in the Waddoups Canyon Allotment is currently meeting upland habitat guidelines for migratory birds and would be expected to continue to meet the standards under Alternative A.

Under Alternative A, riparian habitat for migratory birds would likely be maintained as described in **Wetlands/Riparian**. Under Alternative A, riparian areas rated NF may not make progress towards PFC. Those riparian habitats that would be maintained under Alternative A would provide suitable cover and forage for migratory birds that rely on such systems. Riparian systems currently rated NF would not provide suitable habitats under Alternative A and migratory birds may be displaced to more suitable habitats.

#### *Alternative B (Proposed Action)*

The season of use under Alternative B would be changed from 05/25- 07/10 each year to 05/01-07/10. While the livestock operators may not make use over this entire period (71 days) the potential for such use exists and is assumed in this analysis. Pasture rotation would be split with approximately 35 days in each pasture. In Alternative B, the same pasture rotation schedule would be used as in Alternative A. This adds 24 additional days for livestock use in the allotment; ten of which are during the important breeding, nesting and brood-rearing seasons for migratory birds (May 15-June 30). This system would provide deferment of livestock impacts to migratory birds in one pasture each year, with the pasture deferred rotating yearly. Although there is some deferment of livestock use, the extended season of use diminishes the potential for the grazed forbs, grasses and shrubs to recover. This would be most detrimental to the riparian habitats that many migratory birds depend on. Habitats can recover if resources such as moisture, nutrients and temperature are adequate. However, consistent over use of vegetation by

livestock reduces plant vigor, which decreases composition and abundance of native grass, forb and shrub species, utilized by migratory birds.

The change to the season of use as proposed in Alternative B would be less beneficial to migratory bird habitat than current use (Alternative A), as discussed in **Vegetation**, even with fewer livestock on the allotment. Alternative B would increase disturbance by livestock and would not provide for the long-term sustainability of migratory bird habitat in the Waddoups Canyon Allotment. The proposed projects would not change impacts to migratory birds in the allotment, because such impacts already occur with the existing troughs.

Utilization of riparian vegetation would likely increase under Alternative B as a result of the additional 24 days in the use period, which would impact migratory birds that rely on riparian habitats by reducing available forage or cover or displacing birds to other areas. This alternative would not allow progress towards maintaining and improving riparian habitat for migratory birds as effectively as Alternative A.

#### *Alternative C (Preferred Alternative)*

Under Alternative C the authorized season of use would be 05/01- 07/10, which is similar to Alternative B. As proposed, Alternative C would potentially allow more livestock utilization during the spring vegetative growth period and may decrease vegetative species important to migratory birds for cover and forage. The effects of livestock grazing on migratory birds during the spring were analyzed for Alternative A and B and would be similar in Alternative C. However, livestock use would be limited to a total of 47 days (approximately 23 days in each pasture) rather than 71 days as Proposed in Alternative B. This still falls within the important breeding seasons for migratory birds, but reduces the amount of days of direct and indirect impacts from livestock, the amount of forage consumed, and increases the potential for vegetation to recover and provide stable habitats to migratory birds compared to Alternatives A and B.

Migratory bird habitat for some species would have a greater opportunity to improve under Alternative C, with the removal of 483 Active Use AUMs from the Waddoups Canyon Allotment. Under Alternative C, more vegetation would remain, providing more cover and forage for migratory birds to utilize. Over time, this reduction would improve overall upland and riparian habitat conditions for migratory birds as compared to Alternatives A and B.

Alternative C would authorize trailing along the Cherry Creek road on the western boundary of the allotment. Trailing would occur in July and October each year, after the important spring use season for migratory birds. Generally, trailing would only occur for a few hours each year and the effects on migratory bird habitat would be limited by actively containing the trailing to the Cherry Creek road. Some vegetation may be trampled or bitten by passing livestock, but would not measurably reduce migratory bird habitat.

Alternative C proposes to extend an existing riparian enclosure on the unnamed spring, affecting approximately 1 acre of vegetation to the south of the existing enclosure. The new enclosure would include a larger area of riparian habitat and expedite progress towards PFC. Riparian

vegetation would increase and improve habitat for migratory birds. Sanders and Edge (1998) found that practices that increase total riparian associated woody vegetation, such as willows, will likely increase total avian abundance, species richness, and abundance of riparian-associated bird species within landscapes. Short-term impacts to migratory birds from enlarging the enclosure would be limited due to the small size and duration of the disturbance (i.e. approximately one day). Approximately 1,000 feet of additional fence would be installed under Alternative C. Disturbance and displacement during installation phase would be minimal because the fence would be completed before or after breeding and nesting season (May 15-June 30). Increasing the amount of fencing may have long-term effects for migratory birds including increasing perches used for hunting, singing and territorial displays. The proposed trough expansion in this area would have little effect on migratory birds.

The spring development in Wood Canyon would remove water from the site. The spring would not be dewatered and habitats required by migratory birds would be maintained. The pipeline would supply reliable water to other areas of Wood Canyon. Reliable water would be beneficial to some migratory bird species. The projects would improve livestock distribution, which would benefit migratory bird habitats throughout the allotment.

Under Alternative C, pasture rotation would be similar to Alternative A. This rotation system has provided for migratory bird habitat within the Waddoups Canyon Allotment and would continue to meet guidelines for grazing management during the ten-year permit.

Riparian habitat, comprising migratory bird habitat across the Waddoups Canyon Allotment would be maintained and improved under Alternative C, in comparison to Alternatives A and B.

#### *Alternative D (No Grazing)*

Under Alternative D, no livestock grazing would be authorized within the allotment for a period of 10 years, from 2013 to 2023. The potential impacts of livestock grazing on migratory bird habitat, as previously described, would be removed from the allotment for a 10 year period. The potential for excessive utilization levels in riparian areas, which may lead to changes in compositions of the vegetative communities, would be removed. Impacts to migratory bird habitat from removing livestock grazing would vary by species as discussed under Alternative A. In general, understory cover (e.g., grasses and forbs) would increase in size and vigor and provide habitat essential to migratory birds. There would be no displacement or disturbance of migratory birds during critical breeding, nesting and brood-rearing seasons resulting from livestock grazing. Some species like the ferruginous hawk and prairie falcon may be negatively impacted by a reduction in prey visibility due to increased vegetative cover resulting from the absence of livestock grazing (Douglass and Frisina 1993). Other migratory birds such as the sage sparrow and Brewer's sparrow prefer patchy habitat more commonly found with livestock grazing.

Removing grazing from riparian areas would allow the vegetation to achieve or maintain PFC and provide a better microclimate for insects that many migratory birds consume. Riparian conditions on FAR and NF riparian habitat in the Waddoups Canyon Allotment would improve more quickly and provide habitat undisturbed by livestock presence or use during breeding and

nesting seasons of migratory birds. Alternative D provides the best habitat to the most migratory birds, especially riparian-obligate species, as compared to the other proposed alternatives.

The Waddoups Canyon Allotment met the standard for native plant community, which would continue under Alternative D. Overall, impacts to migratory birds would be less under Alternative D than under Alternatives A, B, or C due to reduced disturbance, increased forage and a lack of competition for resources.

**Threatened, Endangered, and Sensitive Animals**

Affected Environment

All data known to the USFO, including data from the U.S. Fish and Wildlife Service, Idaho Fish and Game’s Idaho Natural Heritage Program (INHP) has been used to identify any animal species currently listed under the Endangered Species Act (ESA). There are no Threatened or Endangered animal species in the allotment. There is one candidate species within Waddoups Canyon Allotment; the Greater sage-grouse.

BLM special status species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA (BLM 2008). In addition, the Idaho Comprehensive Wildlife Conservation Strategy (IDFG 2005) lists 229 species of greatest conservation need that BLM has incorporated, in part, into the sensitive list.

Table 4 lists special status species that have been identified as occurring or potentially occurring within the Waddoups Canyon Allotment.

**Table 4 – Potential Special Status Species within Waddoups Canyon Allotment**

Species	Status	Occurrence	Rationale
Brewer’s sparrow ( <i>Spizella breweri</i> )	S	Present	Breeding habitat
ferruginous hawk ( <i>Buteo regalis</i> )	S	Potential	Breeding habitat
Piute ground squirrel ( <i>Spermophilus mollis</i> )	S	Potential	Potential habitat
Greater sage-grouse ( <i>Centrocercus urophasianus</i> )	C	Present	Year-round habitat

Species	Status	Occurrence	Rationale
loggerhead shrike ( <i>Lanius ludovicianus</i> )	S	Potential	Potential habitat
prairie falcon ( <i>Falco mexicanus</i> )	S	Potential	Foraging and potential nesting.
pygmy rabbit ( <i>Brachylagus idahoensis</i> )	S	Present	Potential habitat
sage sparrow ( <i>Amphispiza belli</i> )	S	Present	Breeding habitat
willow flycatcher ( <i>Empidonax trailii</i> )	S	Potential	Potential habitat

Status Codes: C=Federal Candidate Species, S=BLM Sensitive Species

Brewer's sparrows breed in shrub steppe, shortgrass prairie, and semi-desert shrub steppe habitats (Walker 2004). Brewer's sparrows are gleaners, consuming small insects, gleaned from foliage and bark of shrubs and trees, and seed taken from the ground (Rotenberry et al. 1999). Brewer's sparrows prefer large continuous sagebrush communities and have better nest success and season-long productivity in such communities compared to smaller, fragmented shrub steppe habitats (Walker 2004). Waddoups Canyon Allotment provides areas of continuous sagebrush steppe habitat, which provide suitable habitat for Brewer's sparrows.

Ferruginous hawks are open-country species that inhabit grasslands, shrubsteppe, and deserts of North America, including Idaho. This hawk will use sparse riparian forests, canyon areas with cliffs and rock outcrops, isolated trees, and slight ground protrusions for nesting. Jackrabbits or cottontail rabbits are the main prey species (Bechard and Schmutz 1995). Natural features in the Waddoups Canyon Allotment provide nesting and foraging perches for this species.

On March 23, 2010 the US Fish and Wildlife Service determined that listing the Greater sage-grouse was warranted, but precluded by higher listing priorities (USFWS 2010). Habitat for sage-grouse is currently managed under the Greater Sage-Grouse Interim Management Policies and Procedures (USDI-BLM 2011c). Local management actions also follow the Challis Local Working Group's Plan (Challis LWG 2007) and the Idaho Sage-grouse Advisory Committee's Conservation Plan for Greater Sage-Grouse (IDSAC 2006).

Although Idaho populations have shown increases in the past ten years, they have not reached levels attained in the late 1960s or early 1970s and long-term averages continue to indicate a declining range wide population trend (Connelly et al. 2004). Sage-grouse within the Waddoups Canyon Allotment are part of the Snake-Salmon-Beaverhead Idaho population. The trend for this population, as indicated by average number of males per lek, has declined by 57% during the

periods ranging from 1965–1969 to 2000-2007 (Garton et al. 2011). Waddoups Canyon Allotment is currently designated as Preliminary Priority Habitat (PPH) for sage-grouse. In general, PPH designations are based on combined high male lek attendance, high lek density and high lek connectivity. PPH designation may include areas of non-habitat (USDI-BLM 2011c). Activities in these areas may result in impacts to sage-grouse population centers and movement corridors.

Waddoups Canyon Allotment has a variety of habitats as described in the **Vegetation** section. The allotment is used for breeding, brood-rearing, wintering and transitional habitat by sage-grouse. During mild winters, sage-grouse may remain in the allotment. There are three active leks in the southern portion of the Waddoups Canyon Allotment monitored regularly by IDFG.

Sage-grouse prefer big sagebrush for nesting cover, such as Wyoming big sagebrush, due to the height and growth form. It is likely the majority of sage-grouse nesting in the allotment occurs in the lower elevations where the Wyoming big sagebrush is most prevalent. However, nesting may occur in the upper elevations, especially in mountain big sagebrush or mixed shrub habitats that provide adequate nesting cover. The higher elevation habitats are primarily composed of lower stature sage such as black, low and early sagebrush species. Wyoming big sagebrush is used by sage-grouse year-round while black sagebrush provides seasonal habitat during the spring and winter. Although black sagebrush is characteristically shorter in stature than big sagebrush species, a study in Utah found 17% of sage-grouse nests were found under black sagebrush (Connelly et. al. 2011). Uncharacteristic sagebrush and other shrub species, atypical for sage-grouse nesting, may still provide nesting cover if ground and lateral obstructing cover (i.e. grasses, rocks, forbs, shrubs) are sufficient to conceal them from predators. The upper elevation sites transition into lower growing sagebrush species with an understory of bluebunch wheatgrass, Sandberg's bluegrass and a variety of forbs and provide sage-grouse brood-rearing, nesting and wintering habitat. Slopes over 40% are considered naturally unsuitable for sage-grouse breeding. Approximately 14% of Waddoups Canyon Allotment is over 40% slope.

Late brood-rearing habitat in Waddoups Canyon Allotment is available in the uplands as long as forbs persist, which can be dependent on precipitation. Typically, riparian and wetland areas provide the most reliable source of succulent forbs for sage-grouse and their broods in late summer. Areas that retain moisture like springs, seeps, wet meadows and other riparian habitat are typically used by sage-grouse in support of late-brood rearing, especially when late summer precipitation is absent. Currently, as discussed in **Riparian/Wetlands**, riparian areas within Waddoups Canyon Allotment are in an upward trend but not meeting ISRH. As these areas progress to meet ISRH, they will provide more adequate late brood-rearing habitat.

Loggerhead shrikes are passerines that prey upon reptiles, mammals, other birds and a wide array of invertebrates (Woods and Cade 1996). They are widely distributed throughout the southern portion of Idaho and are often locally abundant where they occur (Woods and Cade 1996). Loggerhead shrikes are known to use a variety of habitats including prairies, pastures, sagebrush desert, fence rows, riparian areas, open woodlands, and many others (Dechant, et al. 2002). Habitat must include suitable nesting shrubs or small trees and hunting perches interspersed over a grassy or herbaceous ground cover with some bare areas, where shrikes find most of their prey

(Cade and Woods 1997). There is little information available on loggerhead shrikes within the allotment however, suitable habitat does exist and it is likely shrikes nest and breed there during the summer months.

The Piute ground squirrel has a widespread distribution across western states, being found in Utah, California, Idaho, Oregon, and Washington (O'Hare et al. 2006). Currently, Idaho is the only state that has raised concern for this species identifying it as a protected nongame species. Piute ground squirrels are found in arid high desert habitats such as sagebrush, shadscale or greasewood communities (Rickart 1987). There is potential habitat for Piute ground squirrels in the Waddoups Canyon Allotment.

Prairie falcons inhabit dry environments of western North America where cliffs or bluffs punctuate open plains and shrub-steppe deserts (Steenhof 1998). Availability of cliff nest sites and a prey base of small mammals and birds are important habitat requirements. This species is thought to reach its greatest recorded breeding density in Idaho (Paige and Ritter 1999). Prairie falcons may use the Waddoups Canyon Allotment for breeding, nesting and foraging.

Pygmy rabbits are sagebrush-obligates, requiring sagebrush for food and cover. Pygmy rabbits can be found in a variety of landscape features including alluvial fans and hillsides, swales within rolling topography, floodplains, brushy draws, riparian channels, edges of rock and lava outcroppings, and mima mounds. A survey of pygmy rabbit habitat and distribution within the Big Lost River Valley was conducted in 2003 and active burrow sites were identified (Roberts 2003) in habitats with mima mounds. Waddoups Canyon Allotment does not have the typical mima mound habitat, but may support pygmy rabbits in softer soils or previously established and abandoned burrows. Pygmy rabbit surveys were conducted in the allotment during the field assessment and no burrows were located.

Southeastern Idaho is at the northern range of sage sparrows breeding habitat. Sage sparrows prefer vertical structure, habitat patchiness and are strongly associated with big sagebrush species throughout its range (Martin and Carlson 1998). Sagebrush provides nest sites, food, cover from predators, and perches for territorial and mating displays. Sage sparrows forage on insects associated with shrubs with dense, leafy foliage and likely support more herbivorous insects; and are rarely limited by food (Rotenberry and Weins 1998). Sage sparrows, like Brewer's sparrows have a high fidelity to sites and frequently will return to breed, regardless of environmental variability. However, Paige and Ritter (1999) describe sage sparrow habitats as less than 6,500 feet above sea level. Waddoups Canyon Allotment elevation ranges from approximately 5,900 feet to 8,700 feet above sea level. Sage sparrows may use this area but there are no recorded observations and the higher elevations may preclude some potential habitat.

Willow and alder thicket habitats from Maine to British Columbia and as far south as southern Arizona and California are considered breeding habitats for the willow flycatcher. Forty-six percent of willow flycatcher breeding population nest within the intermountain west (Rich et al. 2004). The willow flycatcher is primarily an aerial forager, but may also occasionally take insects from the ground (Sedgwick 2000). The riparian corridors in the Waddoups Canyon Allotment have areas of willows and alder thickets alongside open meadows providing potential

nesting and foraging habitat for willow flycatchers. Willow flycatchers were found to be more abundant in rarely grazed or completely ungrazed willow areas (Taylor 1986). Currently, as discussed in **Riparian/Wetlands**, riparian areas within Waddoups Canyon Allotment are generally in an upward trend but not meeting ISRH. As these areas progress to meet ISRH, they may provide more adequate foraging and nesting habitat for a variety of species including the willow flycatcher.

In general, upland habitats within the allotment are providing for the needs of sensitive species. For sage-grouse lower elevation sites were considered marginal habitat and elevations above 6,500 feet were best suited for brood rearing habitat. In 2001, most riparian areas were rated NF and were considered marginal for late brood rearing habitat. In 2011, most riparian areas were making progress toward achieving standards. As a result, Standard 8 has not been achieved, but progress toward achieving the standard is being made.

### Environmental Consequences

Direct impacts of livestock grazing to wildlife habitat include nest or burrow trampling and the removal of vegetation that could be used for food or cover. Indirect impacts on habitat used by wildlife can occur if livestock grazing alters the vegetation composition, which can be beneficial or adverse depending upon the specific wildlife species and results of the impact. Connelly et al. (2004) suggested the impacts of livestock spread unevenly across the landscape in space and time, may positively or negatively affect the structure and composition of sage-grouse habitat. In general, livestock management practices that promote the sustainability of desired native perennial grasses and forbs also maintain or minimally affect sage-grouse habitat.

Livestock grazing impacts prairie falcons and ferruginous hawks indirectly by changing the vegetation composition in ways that may affect prey species. Grazing reduces cover (e.g., grass and litter) increasing exposure of small rodents to predation. Resting pastures allows small rodent populations to sustain a more stable prey base during the grazing periods than would be produced under continuous grazing (Douglass and Frisina 1993).

Impacts to pygmy rabbits could be positive or negative. Livestock use may result in increased sagebrush cover or density that would provide additional forage and cover for rabbits, however this may also result in decreased grass and forb cover that are important components of their spring and summer diets (Thines et al. 2004). The potential for loss of habitat diversity and productivity is high in areas that receive repeated heavy utilization. Pastures receiving heavy use during the growing season would result in reduced forbs and grasses reducing habitat quality for pygmy rabbits during the spring and summer.

In general, native vegetation communities in late-seral to PNC condition provide habitat conditions suitable to the largest number of special status species.

### *Alternative A (No Action)*

Impacts to sensitive bird species are based on modifications to habitat and are similar to those discussed under **Migratory Birds**. Under Alternative A, one pasture would be grazed entirely

within the important sage-grouse nesting season (May 15-June 30) and the other pasture would be utilized at the latter end of the nesting season. This system provides deferment of livestock impacts during the spring season for sage-grouse in one pasture each year, with the pasture being deferred rotating yearly. Upland vegetation in the Waddoups Canyon Allotment is currently meeting upland habitat guidelines for sensitive species and would be expected to continue to meet the standards under Alternative A.

Under Alternative A, riparian habitat for sensitive species, specifically sage-grouse and the willow flycatcher, would likely be maintained in the current state as described in **Wetlands/Riparian**. Under Alternative A, riparian areas rated NF may not make progress towards PFC.

Under this alternative, the native upland habitats would continue to provide habitat for sage-grouse. Riparian areas are making progress toward achieving standards and would provide marginal, but improving late brood rearing habitat for sage grouse under this alternative.

#### *Alternative B (Proposed Action)*

The season of use under Alternative B would be changed from 05/25- 07/10 each year to 05/01-07/10. This adds 24 additional days that habitat could be utilized by livestock in the allotment during the breeding, nesting and brood-rearing seasons for sage-grouse and other sensitive species. This system would provide deferment of direct and indirect livestock impacts to special status species' habitat in one pasture each year, with the pasture deferred rotating yearly. Although there is some deferment of livestock use, the lengthened season of use would give desired forb, grass, shrub and riparian/wetland habitats, in each pasture, less time to recover following livestock use than Alternative A. These components are important for special status species' including sage-grouse in order to hide from predators, forage, mating, and nesting; especially during spring. Over time, habitat can recover if resources such as moisture, nutrients and temperature are adequate. However, consistent over-use of vegetation by livestock reduces plant vigor, which would likely decrease composition and abundance of native grasses and forbs utilized by special status species. Diverse vegetation also provides the necessary vertical and horizontal structural cover that many species of wildlife need for concealment from predators.

Utilization of riparian vegetation would likely increase under Alternative B. The additional 24 days in the use period would provide more opportunity for direct and indirect impacts to sensitive species. The proposed projects would not change impacts to sensitive species in the allotment, because such impacts already occur with the existing troughs. This alternative would not allow progress towards maintaining and improving important riparian habitat for sensitive species as well as Alternative A.

The change to the season of use as proposed in Alternative B would be less beneficial to overall wildlife habitat than current use (Alternative A), described in **Vegetation**, even with fewer livestock on the allotment. Alternative B would have the greatest impact on sensitive species' habitat by increasing disturbance by livestock and would not provide for the long-term sustainability of sensitive species' habitat in the Waddoups Canyon Allotment.

### *Alternative C (Preferred Alternative)*

Under Alternative C, the authorized season of use would be 05/01- 07/10 similar to the season of use proposed in Alternative B. As proposed, Alternative C would potentially allow more livestock utilization during the spring vegetative growth period, compared to Alternative A. The effects of livestock grazing to sensitive species during the spring, were analyzed for Alternatives A and B and would be similar in Alternative C. However, livestock use would be limited to a total of 47 days (23 days in each pasture) rather than 71 days as proposed in Alternative B. This still falls within the breeding seasons for most sensitive species, including sage-grouse, which is similar to existing use (Alternative A).

Sensitive species' habitat would benefit under Alternative C, with the removal of 483 Active Use AUMs from the Waddoups Canyon Allotment. Under Alternative C, more vegetation would remain, providing cover and forage for sensitive species to utilize. Over time, this reduction would improve overall upland and riparian habitat conditions for sensitive species as compared to Alternatives A and B.

Alternative C would authorize trailing along the Cherry Creek road on the western boundary of the allotment. Trailing would occur in July and October each year, which are not considered to be vulnerable times for most sensitive species, including sage-grouse. Generally, trailing would only occur for a few hours each year and the effects on sensitive species habitat would be limited by actively containing the trailing to the Cherry Creek road. The trailing of livestock, for a brief period across the allotment, would have short-term impact on sensitive species by creating a disturbance that some species may avoid. Trailing has likely occurred since livestock were first permitted in the area. Some vegetation may be trampled or bitten by passing livestock, but trailing would not measurably reduce sensitive species' habitat.

Trailing livestock in the area as identified under Alternative C would not cause additional impact to the current condition of the native vegetation or sensitive species in the allotment. Under Alternative C, the Waddoups Canyon Allotment would continue to provide native vegetation in healthy condition to support a variety of wildlife species.

Alternative C proposes to extend an existing riparian enclosure on the unnamed spring, affecting approximately 1 acre of vegetation to the south of the existing enclosure. The new enclosure would include a larger area of riparian habitat and expedite progress towards PFC. Riparian vegetation, important to many species including sage-grouse, would increase and improve habitat for sensitive species. Short-term impacts to sensitive species from enlarging the enclosure would be limited due to the small size and duration of the disturbance (e.g. approximately one day). Approximately 1,000 feet of additional fence would be installed under Alternative C. Disturbance and displacement during installation would be minimal because it would be installed before or after sage-grouse breeding season. Increasing the amount of fencing may have long-term effects for sensitive species including increasing perches for raptors seeking prey and Brewer's and sage sparrows seeking perches for singing and territorial displays. The

additional fencing is located at least 2.5 miles from sage-grouse leks, but may still increase the potential for fence strikes by low-flying birds, especially those seeking riparian vegetation. Marking fences to increase visibility reduces grouse mortalities and may completely remove the strike potential (IM 2010-022). The entire enclosure fence would be marked according to the latest guidelines. Sage-grouse that do not fly into habitat within the enclosure could still access the habitat by walking under wires, which are sufficiently tall as proposed under Alternative C. The improved habitat within the enclosure and expanded size of the enclosure would provide more suitable late brood rearing habitat to sage-grouse. The proposed trough expansion in this area would have little effect on sensitive species, because a trough already exists on the site.

The spring development in Wood Canyon would remove water from the site while livestock are in the allotment; however, the troughs would be floated to allow unused water to remain at the spring source. The development and troughs would be shut off after livestock leave the allotment so that the spring would not be dewatered and habitats would be maintained. Habitats around the spring development would be impacted temporarily. Some vegetation may be removed during construction, but these impacts would be limited by the floated troughs and requirement to shut the development off, when livestock are not in the area. In addition, the development would reduce the amount of livestock use in the steep stream bottom in the area, which would improve sensitive species habitat around the spring, including late brood rearing sage-grouse. The pipeline would supply reliable water to livestock in other areas of Wood Canyon and improve distribution, which would benefit special status species habitats throughout the allotment. Construction of the pipeline may impact some vegetation, but these impacts would be limited by placing the pipeline within or near the existing road.

While the health of the native vegetation community is currently being maintained under Alternative A, the decreased grazing pressure due to the reduction in AUMs would maintain, and likely improve vegetative condition. Also, as water availability in Wood Canyon improves, livestock will be able to distribute more effectively, which would reduce the amount of use on riparian areas and promote continued progress toward achieving standards in riparian habitats. Sensitive species' upland habitat, across the Waddoups Canyon Allotment, would be maintained and likely improve under Alternative C, in comparison to Alternatives A and B.

#### *Alternative D (No Grazing)*

Under Alternative D, no livestock grazing would be authorized within the allotments for a period of 10 years, from 2013 to 2023. The potential impacts on sensitive species habitat from livestock grazing would be removed. In general, understory cover and vigor of grasses and forbs would increase and provide habitat to sustain special status species populations. There would be no potential displacement or disturbance to sensitive species by livestock during critical breeding, nesting, and brood-rearing seasons. Some species like the ferruginous hawk and prairie falcon may be negatively impacted by a reduction in prey availability due to increased vegetative cover (Douglass and Frisina 1993). Some sensitive species such as the sage sparrow and Brewer's sparrow prefer patchy habitat that is often associated with livestock grazing. Removing grazing from riparian areas in Waddoups Canyon Allotment would allow vegetation conditions influenced by current grazing to improve over time. This alternative provides improved habitat

conditions for the largest number of special status species when compared to the other alternatives.

The Waddoups Canyon Allotment was meeting standards and would continue to meet standards for native plant community health under Alternative D. Under Alternative D, areas in lower ecological condition in the Waddoups Canyon Allotment would improve over time with the removal of livestock. The standard for threatened and/or endangered plants and animals would make the greatest progress toward achievement under Alternative D as upland and riparian habitats improve.

Overall, impacts to sensitive species would be less under Alternative D than under Alternatives A, B, or C due to reduced disturbance, increased forage and a lack of competition for riparian resources.

## **Wildlife Resources**

### Affected Environment

The Waddoups Canyon Allotment is important to a wide range of native wildlife species that occupy a variety of habitat types. Pronghorn antelope use the allotment during spring and summer, although suitable habitat is limited. Elk and mule deer use the allotment year-round and moose have been observed utilizing the riparian areas during the summer months. According to the IDFG Management Plan for Bighorn Sheep; sheep habitats are restricted to steep and rugged canyon and mountain terrain and adjacent habitats. IDFG includes areas within Waddoups Canyon Allotment into the Pioneers Population Management Unit (PMU) for bighorn sheep. However, there is not a population of bighorn sheep currently managed in the Pioneers PMU.

Waddoups Canyon Allotment has approximately 720 acres of mountain shrub habitat, typically found in the higher elevations. This habitat is important forage for wintering mule deer, elk, and bighorn sheep, but these habitats represent only 5% of the allotment. These habitats received slight to no livestock use within the allotment due to increasing slopes and distance from available water. Some shrubs (bitterbrush and sagebrush) in these areas appear relatively unproductive and decadent, which may be due in part to evident rodent use. According to IDFG, an expanding elk herd may be competing with mule deer in mountain mahogany communities and may be a limiting factor for mule deer populations. Elk and mule deer may also winter on open sagebrush-grassland ridgetops. An established wolf pack in the Pioneer Zone may be influencing elk and deer distribution and populations. The nearest wolf pack is centered 12 miles west of the Waddoups Canyon Allotment.

Most pronghorn populations in Idaho have densities that vary from low to average. In general, Idaho's pronghorn habitats do not support the levels, which are characteristic of high-quality habitats in Wyoming and Montana. Low annual precipitation, reduced habitat quality, and conflicts with private lands are important reasons for the differences. The Camas, Birch Creek, Medicine Lodge, Little Wood, Big Lost, and Little Lost valleys support herds at relatively high densities.

The habitats within Waddoups Canyon Allotment provide habitat for a variety of shrubsteppe bird species, such as the horned lark, white-crowned sparrow, killdeer and western meadowlark. There is also sign of voles, coyotes, ground and tree squirrels. Reptiles in the area may include common garter snake, rattlesnake, and horned lizard. This habitat may also support a diverse group of bat species. Trend data is not available for small mammals, reptiles, bats or birds within this allotment.

Upland plant communities were evaluated and determined to be meeting ISRH. Habitats meeting ISRH generally provide conditions suitable to maintain viable populations of a wide range of native wildlife species. Riparian areas were evaluated and are not meeting ISRH, but are making progress towards Proper Functioning Condition as discussed in **Wetlands/Riparian**.

### Environmental Consequences

Livestock grazing can have direct and indirect impacts on wildlife habitat. Direct impacts include the removal and/or trampling of vegetation that would otherwise be used for food and cover, and livestock-wildlife interactions that may result in wildlife displacement or disease transmission. Indirect impacts result from changes in plant community composition, structure, and productivity which together influence wildlife habitat suitability.

#### *Alternative A (No Action)*

Under Alternative A, there would be no change in the existing livestock grazing management for the Waddoups Canyon Allotment. The current grazing system would continue over the course of the renewed permits. Potential impacts to wildlife are similar to those addressed above under **Threatened, Endangered, and Sensitive Animals**. As described above, native plant communities would be maintained and continue to meet standards in the Waddoups Canyon Allotment, which would provide for a wide range of native wildlife species.

As described above under **Wetland and Riparian**, portions of the wetland and riparian communities are not meeting standards, but overall the wetland and riparian standard is making progress in the Waddoups Canyon Allotment. Those riparian areas not meeting standards are not providing adequate herbaceous cover and forb diversity needed by some wildlife species, relative to site potential. Alternative A would likely continue the current conditions within the allotment and continue progress towards meeting standards in most riparian systems within the allotment, but some riparian systems would not likely make progress toward achieving standards.

#### *Alternative B (Proposed Action)*

Potential impacts to wildlife, under Alternative B are similar to those addressed above under **Threatened, Endangered, and Sensitive Animals**. Alternative B would add an additional 24 days of potential use by livestock, which would increase potential for direct and indirect impacts to wildlife. The proposed projects would not substantially change impacts to wildlife in the allotment, because such impacts already occur with the existing troughs. However, increasing available water may be beneficial to big game animals. Upland habitats are currently meeting standards, but modification of the grazing schedule as outlined in Alternative B would not

maintain standards as effectively as Alternative A, even with fewer livestock numbers. Direct and indirect impacts to vegetation within wildlife habitat were previously analyzed in **Vegetation**. Alternative B would have more impact on wildlife habitat than Alternative A by increasing disturbance by livestock and would not provide for the long-term sustainability of wildlife habitat in the Waddoups Canyon Allotment.

Livestock use of riparian areas and riparian vegetation would likely increase under Alternative B. A wide variety of wildlife species make use of riparian areas as an important component of their life history. With the potential for livestock impacts to increase under Alternative B it is likely that the alternative would not allow progress towards maintaining and improving riparian habitat for wildlife as effectively as Alternative A.

#### *Alternative C (Preferred Alternative)*

Potential impacts to wildlife, under Alternative C, are similar to those addressed above under Alternative B and **Threatened, Endangered, and Sensitive Animals**. Although livestock use may occur earlier in the spring similar to Alternative B, the number of days would be limited to 47 days as proposed in Alternative A. In addition, the AUM reduction under Alternative C would reduce the number of livestock on the allotment and the amount of forage removed by livestock. Livestock may disturb or displace wildlife earlier in the spring under this alternative, but the extent of disturbance or displacement would be less than Alternatives A and B. Furthermore, the pasture rotation would ensure that wildlife across the allotment are not interacting with livestock at the same time each year.

Grazing earlier in the spring may increase grazing pressure on some native forbs and grasses, resulting in a decrease in food availability and cover for small mammals and reptiles. However, the amount of forage removed by livestock would be less under Alternative C due to the AUM reduction. Impacts to vegetation important for wildlife habitat were analyzed for Alternative C under **Vegetation**.

The expansion of the riparian enclosure proposed in Alternative B may temporarily displace wildlife that use the area during construction. The proposed trough expansion in this area would have little effect on wildlife aside from providing water even after livestock are removed from the water.

The spring development in Wood Canyon would remove water from the site. The spring would not be dewatered and habitats would be maintained. The pipeline would supply reliable water to other areas of Wood Canyon. Reliable water would be beneficial to wildlife. The projects would improve livestock distribution, which would benefit wildlife habitats throughout the allotment.

Upland habitats were determined to be meeting standards and riparian areas were making progress toward meeting the standards in the Waddoups Canyon Allotment. Alternative C would make greater progress towards achieving riparian standards than Alternatives A and B and would continue to provide for the health of upland habitats.

#### *Alternative D (No Grazing)*

Potential impacts to wildlife, under Alternative D, are similar to those addressed above under **Threatened, Endangered, and Sensitive Animals**. Under Alternative D, no livestock grazing would be authorized within the Waddoups Canyon Allotment for a period of 10 years, from 2013 to 2023. The potential impacts on the vegetation that wildlife species require for forage or cover would be removed from the allotment. The potential for higher than desired utilization levels in preferred areas, which may lead to changes in compositions of the vegetative communities, would be removed. In general, understory cover, composed of grasses and forbs, would increase in size and vigor and provide habitat necessary for sustaining wildlife populations. These changes would result in increased diversity, cover, and height of grasses and forbs, which would improve habitat quality for many species of wildlife. There would be no potential displacement or disturbance to wildlife species during important breeding, nesting, calving, fawning and brood-rearing seasons. Some species that prey upon small mammals, like raptors, may benefit from a decrease in cover because it makes prey more visible. Therefore, a removal of grazing may have a negative effect in these situations.

Removing grazing from riparian areas in Waddoups Canyon Allotment would allow the vegetation to attain its highest potential condition. Riparian conditions on the approximately 16 acres of riparian habitat in the Waddoups Canyon Allotment in FAR condition would improve more quickly. Riparian areas are important to the majority of wildlife species, including migratory birds and sage-grouse. Alternative D provides the best habitat for the most species, especially riparian-obligate species, as compared to the other proposed alternatives.

Overall, impacts to wildlife species' habitat would be less under Alternative D than under Alternatives A, B, or C due to reduced disturbance, increased forage and a lack of competition for resources.

**Threatened, Endangered, and Sensitive Plants**

Affected Environment

All data known to the USFO, including data from the U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, Idaho Native Plant Society, and the Idaho Natural Heritage Program have been used to identify any plant species currently listed under the Endangered Species Act (ESA). There are no threatened or endangered plant species in the Waddoups Canyon Allotment. There is one species located within the Waddoups Canyon Allotment, which is designated as sensitive by the BLM.

Table 5 lists special status species that have been identified as occurring or potentially occurring within the Waddoups Canyon Allotment. The probability of species occurring and rationale for occurrence are listed.

**Table 5 – Special Status Plant Species**

Species	Status	Occurrence
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Species	Status	Occurrence
Lost River silene ( <i>Silene scaposa</i> var. <i>lobata</i> )	Type 4	Documented on public land within Waddoups Canyon Allotment

Lost River silene is generally rare in Idaho with small populations or localized distribution and currently have low threat levels. There are 24 known locations of Lost River silene in Idaho. It is also found in Oregon and Nevada. Lost River silene is typically found on north, northeast or southeast slopes within sagebrush/bunchgrass areas. Plants have also been documented in juniper/Douglas-Fir woodlands. It flowers from approximately 07/01 – 08/01. Potential threats to the species include weed invasion and grazing.

### Environmental Consequences

#### *Alternative A (No Action)*

This population of Lost River silene is located approximately 0.10 mile away from Flower Garden Creek in the West Pasture of the Waddoups Canyon Allotment, which provides water to livestock and wildlife. This area receives grazing use by livestock and wildlife. Direct impacts include trampling and dislodging by foraging livestock and wildlife. There is potential for more populations of this sensitive silene in the Waddoups Canyon Allotment.

Current livestock management as proposed in Alternative A would continue to support populations of silene within the Waddoups Canyon Allotment. The current season of use would only allow livestock use for approximately 10 days (7/1 – 7/10) when the silene is beginning to flower. Silene plants would potentially be grazed by livestock during the reproductive period every-other-year under the current deferred rotation system. Alternative A would continue to meet the standards for upland habitats and native vegetation and would continue to provide for the physiological needs of the Lost River silene.

#### *Alternative B (Proposed Action)*

Alternative B would allow an additional 24 days of livestock use compared to the proposed season of use in Alternative A. Livestock numbers would be reduced and Active AUMs would be the same as Alternative A. While no additional AUMs would be utilized under Alternative B, the longer season of use would provide livestock more opportunity to utilize individual silene plants. No additional livestock use would occur during the reproductive period under Alternative B. As discussed in the **Vegetation** section, uplands would be less likely to maintain standards under Alternative B and the Lost River silene would be under greater livestock grazing pressure compared to Alternative A. The proposed projects would not change impacts to sensitive plants in the allotment, because such impacts already occur with the existing troughs.

#### *Alternative C (Preferred Alternative)*

Alternative C proposes to expand the season of use similar to Alternative B, but limit the number of days of use within that period to 47 days as Alternative A proposes. Active AUMs would also be reduced under this alternative. The larger season of use would not increase livestock use of silene, because of the restriction on the amount of time livestock use could occur. Silene plants would receive less grazing pressure under Alternative C due to the reduction in Active AUMs compared to Alternatives A and B.

Alternative C also proposes to increase the size of an existing riparian enclosure and capacity of troughs as well as a spring development and pipeline in Wood Canyon. Livestock trailing is also proposed. The construction of projects and trailing are not in close proximity to the know silene population and would not affect the plants.

Alternative C would maintain and improve upland and riparian habitats and provide for the needs of the Lost River silene to a greater extent than Alternatives A and B.

#### *Alternative D (No Grazing)*

Under Alternative D, no livestock grazing would be authorized in the allotment for a period of ten years. During this period, the potential for livestock to impact the Lost River silene would be removed.

## **Cultural Resources**

### Affected Environment

To evaluate the Waddoups Canyon allotment for cultural resource values, a Class I records search was conducted using a Geographical Information System (GIS) inventory and site databases to determine previously surveyed acres and sites recorded within the allotment boundary.

Three previous inventories have been conducted within the Waddoups Canyon allotment boundary. Two of these inventories were conducted at a Class III level and covered approximately 30 acres and were completed according State Historic Preservation Office (SHPO) and BLM standards as outlined in the State Protocol. In 1980, a Class II inventory was conducted in the Big Lost area and identified and recorded sites within the Waddoups Canyon allotment.

There are ten (10) known historic properties located within the allotment boundary. Of these, nine (9) are prehistoric sites, and one (1) is historic in nature. The prehistoric resources consist of lithic and tool scatters, and the historic resource is a historic mining site. Nine (9) sites are recommended potentially eligible for inclusion to the National Register of Historic Places (NRHP). The prehistoric lithic scatters have a potential for intact, buried deposits are potentially eligible for the NRHP under criterion D.

### Environmental Consequences

#### *Alternative A (No Action)*

Livestock grazing has the potential to directly impact historic properties primarily through trampling which can modify the horizontal and vertical distribution of artifacts and impact resource integrity. Livestock impacts to cultural resources within the Waddoups Canyon allotment is generally limited, with activity mainly focused at congregation areas. In areas where livestock is more dispersed, such as the uplands or alluvial fans in the allotment, it can be predicted that impacts will be mainly surficial, causing no stratigraphic mixing, but perhaps resulting in horizontal displacement of artifacts.

Six trough locations have been identified within the allotment. At one trough location, a potentially eligible historic property has been identified. This location will be visited and if there are adverse effects to the site, mitigation measures will be pursued in consultation with Idaho SHPO and affected tribes. This could include decommissioning the trough or moving it to another location that has been surveyed with no known historic properties. However, at the other five livestock congregation areas identified, there are known historic properties that are recommended potentially eligible for inclusion to the NRHP.

With mitigation procedures in place, no known historic properties listed or eligible for listing on the National Register of Historic Places (NRHP) will be affected from the permit renewal in the Waddoups Canyon allotment.

#### *Alternative B (Proposed Action)*

Impacts to cultural resources would be similar to those presented under Alternative A. However, an adjustment to season of use to allow use up to two weeks earlier may impact historic properties caused during wet seasons in which more vertical displacement of soil could occur due to livestock trampling.

The two locations proposed for additional troughs or larger troughs would increase livestock congregation, one of which as a potentially eligible property. Impacts and mitigation for the projects would be similar to those identified in Alternative A.

#### *Alternative C (Preferred Alternative)*

Impacts to cultural resources would be similar to those presented under Alternative A; however, the proposed extension of the riparian enclosure, reduction in AUMs, and the authorization of livestock trailing could have direct impacts to cultural resources.

The enlargement of the riparian enclosure of the unnamed spring on the Right Fork of Waddoups Canyon Creek of approximately 1 acre could directly impact cultural resources through ground disturbance. However, a Class III inventory of the original spring development and enclosure covered approximately 10 acres in the surrounding area and did not identify any historic properties. Additional troughs or a larger trough at the existing location fed by this unnamed spring have also been inventoried at a Class III level; no historic properties were identified. Therefore, the proposed extension of the enclosure or the area identified for trough modifications would not impact any known historic properties eligible for listing on the NRHP.

The development of an additional water source at Wood Canyon spring and the construction of a 1.25 mile pipeline toward the southern trough in Wood Canyon could directly impact cultural resources through ground disturbance and enlargement of a congregation area. However, the pipeline would be buried within the existing road; therefore, no additional impact would occur to any known or unknown cultural resources.

Two trailing events along one route have been identified for authorization within the Waddoups Canyon allotment. Route 1 is along an existing county road and would be trailed in the summer in mid-to-late July and in the fall in early-to-mid October. Each trailing event would be less than one day; therefore, there have been no identified holding areas, where potential livestock congregation could occur. The summer and fall trailing events would occur when the ground typically exhibits dry soils, resulting in less vertical soil displacement due to trampling, and therefore less potential of indirect impact to cultural resources. No known historic properties have been identified along Route 1.

Significant reductions in AUMs could provide protection to known and unknown historic properties, because there would be less livestock gathering at congregation areas, which in turn could result in less soil disturbance.

Prior to any ground-disturbing activities, the proposed range improvements would be subject to Section 106 review and impacts to historic properties would be avoided or mitigated through consultation with the Idaho SHPO and affected tribes. With mitigation procedures in place, no known historic properties listed or eligible for listing on the National Register of Historic Places (NRHP) would be affected from the permit renewal of and authorization of trailing within the Waddoups Canyon allotment.

#### *Alternative D (No Grazing)*

This alternative would eliminate all livestock threats of impacts to historic properties for a period of 10 years.

### **Economic and Social Values**

#### Affected Environment

Two measures of economic impacts used in studies exploring impacts to livestock operations due to changes in federal grazing permits and leases, are herd reduction and forage substitution (Rowe and Bartlett, 2001). Herd reduction may be a better indicator of operation efficiency rather than direct economic impact at the level of the individual operator (Rowe and Bartlett, 2001). The impact on any single ranch operation of a reduction in public land AUMs may be enormous, depending on the flexibility of its nonfederal forage base and other factors (Harp et al, 2000). The impacts of herd reductions resulting from federal land management policy changes that reduce federal land AUMs have been estimated at the community and county level (Harp et al, 2000), however, these estimates are based on evenly distributed federal land AUM reductions at a scale beyond the allotment level. Based on recent USDA cattle market reports (USDA,

2011) the average recent market steer price was \$770 or \$77 per AUM assuming a 10 AUM input. The average recent market price for bred cows was \$1,150 or \$96 per AUM assuming 12 AUMs input. Therefore the change in gross revenue for the operators may range from \$77 to \$96 per AUM. Forage replacement has also been used as a proxy indicator of economic impact. Forage replacement values may range in cost from replacement from private pasture to replacement from hay versus the annual cost of forage on public land which was \$1.35/AUM in 2011. Average private pasture cost in Idaho in 2011 is \$12/AUM and average local hay prices were \$64/AUM. Therefore the forage substitution cost annually would range from \$10.65 to \$62.65 per AUM.

### Environmental Consequences

#### *Alternative A (No Action)*

Alternative A would result in no changes in the mandatory terms and conditions for livestock grazing in the allotments. There would be no impact from Alternative A, which is the baseline for addressing economic and social values relative to the operators.

#### *Alternative B (Proposed Action)*

Under Alternative B, there would be no change in the authorized use levels. Adjustments to livestock numbers and turnout would occur, but these adjustments would not affect AUM numbers. There would be additional expenses to the operators associated with the construction and maintenance of projects proposed in Alternative B.

#### *Alternative C (Preferred Alternative)*

Under Alternative C, there would be a 483 AUM reduction. The forage substitution cost to the permittees under Alternative C would range from approximately \$5,144 to \$30,260 annually. If the herds are reduced as a result of decreased forage availability, the decreased gross revenue through herd reductions would range from approximately \$37,191 to \$46,368 annually. Some increased cost to permittees would be expected for maintenance of proposed projects, but this would not be expected to be substantial and the permittees are already assigned maintenance responsibilities of existing range improvements.

#### *Alternative D (No Grazing)*

Under Alternative D, no grazing would be authorized in the Waddoups Canyon Allotment for a period of ten years. The forage substitution cost to replace 1,385 AUMs would range from approximately \$14,750 to \$86,770 annually. If the herds are reduced as a result of decreased forage availability, the decreased gross revenue for the operators through herd reductions would range from approximately \$106,645 to \$132,960 annually. Under Alternative D, there would be no additional cost for project maintenance.

### **Visual Resources**

## Affected Environment

The public lands managed by the USFO have been divided into four Visual Resource Management (VRM) classes to help manage and reduce impacts to the scenic (visual) resource. The Waddoups Canyon Allotment is within both a VRM Class I and VRM Class III. Proposed projects are located in both VRM classes. The objective of VRM Class I is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and should not attract attention. The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate and 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 of the characteristic landscape.

The form elements within the project area are defined primarily as moderate, with wide visual characteristics. For example, the hillsides are moderately sloped and regular. A visitor can see for many miles in most directions. There are human alterations consisting of roads and an existing riparian fence. These structures add curvilinear, continuous characteristics. Vegetation is predominately sagebrush and grasses, creating a harmonious combination of colors. The line elements on the hillsides are smooth, long, and simple.

### *Alternative A (No Action)*

There are no proposed range improvement projects under Alternative A. Therefore, there would not be impacts to visual resources.

### *Alternative B (Proposed Action)*

Alternative B proposes to increase the water holding capacity of two existing water troughs by installing additional troughs or constructing new troughs. The two troughs would be constructed in a VRM Class I. The proposed projects are located on primitive roads adjacent to springs/streams, allowing for view of the entire project area.

The proposed projects would create additional linear line features in a landscape that is smooth, rolling, and regular. Constructing the troughs would have little impact on the form of the landscape due to the location of the project; the troughs would be constructed in areas with existing visual disturbances.

Although the proposed projects would not dominate the view of the casual observer, the proposed projects do not meet VRM Class I objectives to preserve the existing character of the landscape. This class provides for natural ecological changes, but the level of change to the characteristic landscape should be very low and should not attract attention. New troughs would attract some attention even though they would not dominate the view, but adding new troughs would not meet VRM Class 1 objectives.

### *Alternative C (Preferred Alternative)*

Alternative C proposes to extend the existing riparian enclosure around an unnamed spring on the Right Fork of Waddoups Canyon Creek. Approximately 834 feet of wire fence would be constructed in a VRM Class III, enlarging the existing riparian enclosure by approximately 1 acre. The proposed project is located on a primitive road adjacent to the unnamed spring, allowing for view of the entire project area.

The proposed fence construction would create additional linear line features in a landscape that is smooth, rolling, and regular. Constructing the fence would have little impact on the form of the landscape due to the location of the project; the fence would be constructed using the natural drainage features in the riparian area. By utilizing the natural contours and the thick riparian vegetation, the fence would be less noticeable by the casual observer. The spring development and pipeline would not be noticeable to the casual observer as the pipeline would be buried within an existing road and the spring development would eventually be concealed by riparian vegetation. In the long term, the spring development and pipeline would not be noticeable to the casual observer as the pipeline would be buried within an existing road and the spring development would eventually be concealed by riparian vegetation.

Based on the visual contrast rating worksheet, the proposed projects would create an overall weak contrast between the form, line, color, and texture elements of the existing landscape in the VRM Class III. This rating meets the objectives of a VRM Class III.

#### *Alternative D (No Grazing)*

Alternative D proposes no grazing in the Waddoups Allotment; therefore, there would not be impacts to visual resources.

### **Wilderness**

#### Affected Environment

The White Knob Mountains WSA (WSA, ID-31-17) is comprised of 9,950 acres, all of which are included within the Waddoups Canyon Allotment. WSAs are managed by the BLM to protect the values that made them eligible for designation as wilderness by Congress. These values include naturalness, solitude, primitive and unconfined recreational experiences, and the presence of special features; such as ecological, geological, educational, historical, scientific and scenic values.

The BLM Idaho Wilderness Study Report (1991) identified that the White Knob Mountains WSA contains human-caused impacts but essentially retains its natural character. The natural character is affected when visitors notice improvements such as, vehicle roads, trails, and watering sites for livestock. There were approximately six miles of motorized roads, five developed watering sites, and numerous unimproved vehicle ways identified in the inventory.

There are outstanding opportunities for solitude but the quality of solitude decreases when visitors encounter motorized vehicles near cherry-stem roads. Wildlife habitat is a special

feature of the WSA, supporting moose, deer, elk, sage-grouse and a variety of other species. Opportunities for primitive and unconfined recreation exist in the WSA but significant physical features that attract wilderness visitors are lacking. Hunting, hiking, backpacking, wildlife observation, photography, rock climbing, and sightseeing are the primary activities that occur on the WSA.

Livestock grazing may continue in the same manner and degree in which it was being conducted on October 21, 1976, if it does not cause unnecessary or undue degradation of the lands and their resources. The WSA portion of the allotment is in good condition and provides outstanding opportunities for recreational visitors.

#### Environmental Consequences

Proposed projects in WSAs are evaluated according to policies described in the Bureau's Interim Management Policy for Lands Under Wilderness Review, with supplemental Idaho guidance specific to range developments (IMP 1995). A proposed project must not impair the area's suitability for preservation as wilderness:

“The preservation of wilderness values within a WSA is paramount and should be the primary consideration when evaluating any proposed action or use that may conflict with or be adverse to those wilderness values” (IMP 1995).

A proposed project must enhance wilderness values, and the effects of the action on all wilderness values identified in the wilderness inventory must be considered. In addition, a project must be substantially unnoticeable, which is defined as “something so insignificant as to be only a very minor feature of the overall area or not distinctly recognizable by the average visitor as being manmade” (IMP 1995). The project must not require motorized access if the area becomes designated wilderness. BLM must ensure that approval of a proposed action would not create a situation where the cumulative effect of existing and proposed uses would impair wilderness suitability.

#### *Alternative A (No Action)*

Under Alternative A, grazing would continue with no changes to the number of livestock or season of use for grazing within the WSA. As identified in the Idaho Wilderness Study Report (1991), Volume 3 (pg. 450-461), livestock grazing existed during wilderness inventory and did not impact designation as a WSA.

Opportunities for primitive and unconfined recreation activities were identified in the wilderness inventory and are available within the WSA. Interaction between recreation visitors and livestock could impact primitive and unconfined recreation since livestock could affect the goals of a particular activity.

#### *Alternative B (Proposed Action)*

Alternative B proposes an adjustment in the season of use; turnout of livestock would occur 24 days earlier (5/01) compared to the turnout under Alternative A (5/25). Additionally, troughs would also be installed or enlarged at existing trough locations.

Solitude is the primary wilderness characteristic that would be impacted by the proposed season of use change. By allowing the permittee an earlier turnout date, visitors would have more occasions to come in contact with the sights and sounds of people. For example, visitors would be exposed to vehicles associated with the grazing operation for longer periods of time. There is no data available to determine how much use is made by recreationists in the area and what the potential for interaction with the livestock operation would be. Naturalness would not be impacted by season of use. Impacts to naturalness were already identified in the inventory, resulting from exposure to roads and range improvement projects. Opportunities for primitive and unconfined recreation activities were identified in the wilderness inventory and are occurring within the WSA. Interaction between recreation visitors and livestock would impact primitive and unconfined recreation since livestock could affect the goals of a particular activity.

Naturalness is the primary wilderness characteristic that would be impacted by proposed trough expansions. Impacts to naturalness were already identified in the inventory, resulting from exposure to roads and range improvement projects. Installing or constructing new troughs would increase disturbance to naturalness above and beyond the original inventory of range improvements. Although the projects would be installed in an existing area of impact they would not meet the criteria of being substantially unnoticeable.

Alternative B has more impacts to the wilderness characteristics of White Knob WSA compared to Alternative A due to the proposed trough expansions. A proposed project must not impair the area's suitability for preservation as wilderness. Projects proposed under Alternative B would not enhance wilderness values and would not be substantially unnoticeable.

#### *Alternative C (Preferred Alternative)*

Alternative C proposes an adjustment in the season of use and a reduction in the number of livestock. Rangeland Health standards are not being fully achieved within the WSA, although progress is being made. This alternative would enhance wilderness values by improving the naturalness of native habitats within the WSA.

Solitude would be impacted by the proposed season of use change. By allowing the permittee an earlier turnout date, visitors would come in contact with the sights and sounds of people more frequently. Opportunities for primitive and unconfined recreation activities were identified in the wilderness inventory and are available within the WSA. Interaction between recreation visitors and livestock would impact primitive and unconfined recreation since livestock could interfere with the goals of a particular activity. There is no data available to determine how much use is made by recreationists in the area and what the potential for interaction with the livestock operation would be.

Alternative C would help enhance the naturalness of the WSA by improving riparian conditions and would have fewer impacts to wilderness characteristics compared to Alternative B.

The proposed projects are located outside of the WSA, and therefore, have no impact on the wilderness characteristics of the White Knob Mountains WSA.

*Alternative D (No Grazing)*

There would be no impacts to wilderness characteristics under Alternative D due to lack of grazing and the proposed projects associated with grazing. Alternative D has fewer impacts to wilderness characteristics compared to the other alternatives analyzed in this environmental assessment.

**CHAPTER 4 - CUMULATIVE IMPACTS**

This section of the document discloses the incremental impacts that Alternatives A, B, C and D are likely to have when considered in the context of impacts associated with past, present, and reasonably foreseeable future actions that have occurred, or are likely to occur in the area. The Big Lost Cumulative Impact Assessment Area (CIAA) for the purposes of this analysis includes the lower Big Lost River Valley and areas in close proximity to the valley within the boundary of the USFO (Figure 2). The Big Lost CIAA is bordered by the Big Desert CIAA to the south, the Twin Buttes CIAA to the southeast and the Little Lost CIAA to the East. The Big Lost CIAA contains approximately 435,323 total acres and includes portions of Butte and Custer counties. Surface ownership within the CIAA is summarized in Table 6:

<b>Table 6 - CIAA Surface Ownership</b>		
	<b>Acres</b>	<b>Percent of CIAA</b>
<b>Idaho State Land</b>	5,594	1%
<b>Department of Energy-INL</b>	29,984	7%
<b>National Park Service</b>	225	<1%
<b>Private Land</b>	141,815	33%
<b>U.S. Forest Service</b>	87,040	20%
<b>BLM</b>	170,665	39%
<b>Total</b>	<b>435,323</b>	<b>100%</b>

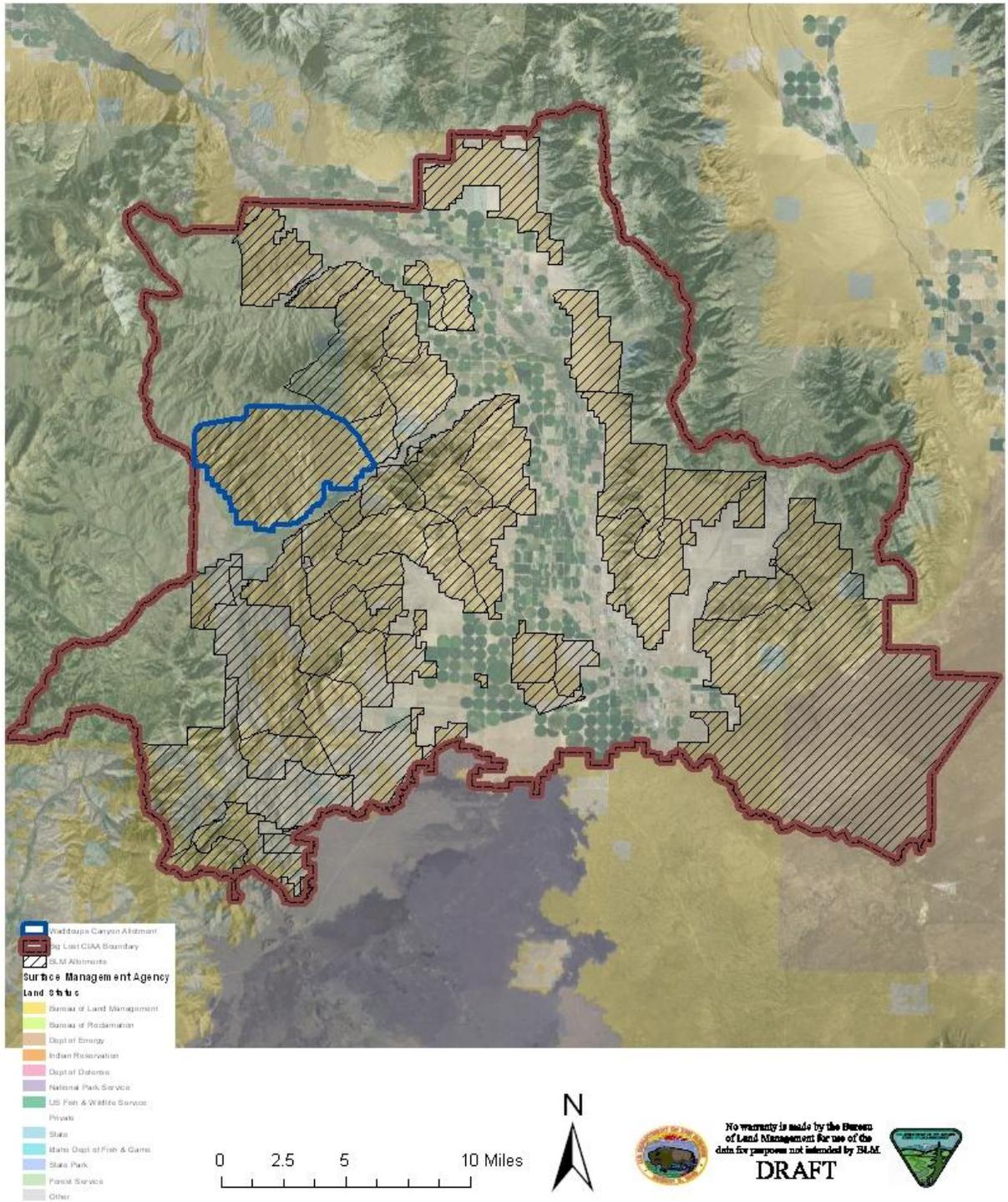
The dominant land and vegetation features throughout the CIAA are summarized in Table 7:

<b>Table 7 - Dominant Land and Vegetation Features</b>		
	<b>Acres</b>	<b>Percent of CIAA</b>
Perennial Grasslands	31,711	7%
Annual Grassland	6,286	1%
Shrubland	281,794	65%
Riparian and Wetland	5,502	1%
Forested	44,994	10%

Agriculture	52,349	12%
Urban	8,502	2%
Rock, Cliffs and Canyons	3,960	1%
Other	226	<1%
<b>Total</b>	<b>435,323</b>	<b>100%</b>

Shrublands dominate the CIAA with 281,794 acres (65% of CIAA) of shrubs primarily comprised of various species of sagebrush. Agriculture, forests and perennial grasslands also comprise a large area. Over time these vegetative communities have been affected by drought, human caused disturbance, invasive species, wildfire and a variety of other factors. The White Knob and Appendicitis Hills WSAs are located within the CIAA. These WSA's cover approximately 35,688 acres of BLM public lands or 8% of the CIAA.

**Figure 2 – Big Lost Cumulative Impact Analysis Area (CIAA)**



## Past and Present Actions

Past and present actions identified for the lower Big Lost River Valley which have impacted the human environment to varying degrees include agricultural development, urban development, infrastructure (i.e. communication sites, roads, fences and water troughs), wildfire and livestock grazing. Table 8 details acreage associated with the disturbances identified within the CIAA:

<b>Table 8 - Past and Present Actions in the CIAA.</b>	
<b>Type of Activity</b>	<b>Impact</b>
<b><i>Agricultural Development</i></b>	
<i>Number of Acres</i>	52,349 Acres developed for Agriculture.
<i>Percent of CIAA</i>	12%
<b><i>Urban Development</i></b>	
<i>Number of Acres</i>	8,502 Acres developed by Urbanization
<i>Percent of CIAA</i>	2%
<b><i>Infrastructure (Roads, fences and water troughs)</i></b>	
<i>Number of Acres</i>	990 Miles of road affecting *1,440 acres 440 Miles of fence affecting *58 acres 80 Water troughs affecting *40 acres 6 Communication sites affecting 3 acres
<i>Percent of CIAA</i>	<1%
<b><i>Wildfire</i></b>	
<i>Number of Acres</i>	17 Fires over 30 years affecting 31,268 acres
<i>Percent of CIAA</i>	7%
<b><i>Livestock Grazing</i></b>	
<i>Number of BLM Allotments</i>	38 Allotments; 13 Allotments not meeting standards; 12 of the 13 allotments not meeting due to livestock grazing; 6 Allotments not meeting but making progress; 19 allotments meeting standards
<i>Number of Acres</i>	198,388 Acres** in 38 Allotments; Total BLM acres of the 13 Allotments not meeting standards: 65,064; Acres not meeting standards, within the 12 Allotments where livestock grazing has been identified: 5,160.
<i>Percent of CIAA</i>	BLM acres within allotments: 46%; 13 Allotments not meeting: 18%; Area within the 12 Allotments not meeting standards due to livestock grazing: 1%
<p>*Area affected by roads assumes an average impact area of 12 feet surrounding all roads.            *Area affected by fencing assumes an average impact area of 4 feet surrounding all fences.            *Area affected by water troughs assumes an average impact area of ½ acre surrounding all troughs.            *Area affected by communication sites assumes an average impact area of ½ acre surround all sites.</p>	
<p>**Figure includes BLM acres and acres where BLM administers livestock grazing on Department of Energy lands under a Memorandum of Understanding and National Parks Service lands under a Delegation of Authority.</p>	

Agricultural development has a long history in the CIAA. Though Lewis and Clark first entered, what would later become the state of Idaho, in 1805, settlers were not attracted to the region until the 1880s. There are no significant population centers within the CIAA. Settlement is generally dispersed with a larger numbers of residents in the southern portion of the CIAA associated with developed agriculture and the town of Arco, Idaho. The 2010 census placed the population estimate of Butte County at 2,891 and Custer County at 4,368. The majority of the total population between Butte and Custer counties resides outside of the CIAA. It is estimated that 2% of the CIAA has urban development. Private property makes up approximately 33% of the land base in the CIAA. Not all private ground is suitable for farming and those areas not used for crop production are often used for grazing livestock or other purposes. Approximately 12% of the CIAA has been developed for agricultural purposes.

Infrastructure development within the valley has increased over time, mostly in the form of conversion to agricultural lands. However, the majority of the land base in the CIAA remains undeveloped. Residential development is higher in proximity to the developed agricultural base along the Big Lost River and in the southern end of the CIAA. There are approximately 990 miles of existing roads within the CIAA, ranging from two lane paved routes to residential roads and undeveloped access routes. Using an average impact area of 12 feet along all roads the total area affected by roads is approximately 1,440 acres, which is less than 1% of the total area within Big Lost CIAA. Proliferation of approved, constructed and maintained roads within the CIAA is expected to be minimal in the foreseeable future. Proliferation of unauthorized roads is expected to continue, particularly as a result of OHV recreation. The extent to which unauthorized road proliferation will occur in the future is difficult to anticipate and quantify.

Livestock grazing has a long history in the region, dating back to the settlement of the area in the late 1800's. In the early settlement years, cattle and sheep were raised to support the surrounding miners and settlers. Within the CIAA, ranching has declined over time since its peak in the early to mid-20<sup>th</sup> century as more lands were devoted to agriculture. Livestock production has been relatively stable within the CIAA over the last 20 years and livestock production is a major economic segment of the CIAA. There are currently all or portions of 42 BLM grazing allotments, as well as all or portions of the 20 USFS allotments authorized for livestock grazing within the CIAA. Nearly all of the public lands within the CIAA are authorized for livestock grazing.

Recreation use within the CIAA has increased over time. Recreation use is primarily a dispersed activity within the CIAA. Dispersed campsites are found throughout the area and most are located adjacent to flowing water. Popular areas include Antelope Creek and suitable portions of the Big Lost River. Big game hunting, camping, fishing, and motorized vehicle use are the primary recreational pursuits within the CIAA. Many of the 990 miles of roads within the CIAA are used for motorized recreation. The White Knob and Appendicitis Hills WSA's are located within the CIAA. These WSAs cover approximately 35,688 acres of BLM public lands or 8% of the CIAA.

### *Reasonably Foreseeable Future Actions*

Reasonably foreseeable future actions include continuation of the past and present actions as described above. The level and character of agricultural development is anticipated to remain consistent into the foreseeable future as most suitable private property within the CIAA has been developed. There are no identified renewable energy projects or residential developments within the CIAA and the level of existing infrastructure is expected to remain at or near current levels. Populations in Butte County, Idaho have fluctuated over the past 40 years with a high census count of 3,342 in 1980 to the current estimate of 2,891. Populations in Custer County have increased over the past 40 years to the current estimate of 4,368. Populations in both counties are not expected to change significantly in the future and urbanization or infrastructure is also not expected to increase substantially. The level and character of livestock grazing within the CIAA is expected to remain at or near current levels barring any significant policy change regarding grazing on federal lands which compose the majority of the CIAA. Recreational use is expected to continue to increase over time and the potential exists for development or expansion of recreation facilities on public lands within the CIAA. Many of the 990 miles of roads within the CIAA are used for motorized recreation. Proliferation of unauthorized roads resulting from unauthorized motorized recreation is expected to continue as recreation activities increase in the area. The extent to which unauthorized road proliferation will occur in the future is difficult to anticipate and quantify.

### *Impacts Associated with Past and Present Actions*

Past and present actions have resulted in varying degrees of impact to the resources considered in the analysis. Impacts are higher for agricultural developments which have resulted in direct habitat loss and fragmentation of approximately 12% of the CIAA. Agricultural development has altered or removed the native vegetation communities, changed soil characteristics and introduced elements like accelerated erosion, irrigation and concentrated fertilization that have altered and would continue to alter the characteristics of the natural landscape.

Observable impacts associated with urban development have resulted in direct habitat loss and fragmentation of approximately 2% of the CIAA. These actions have introduced non-natural elements that have altered hydrology, energy cycles, soil characteristics and native vegetative communities within the CIAA.

Impacts associated with infrastructure development have resulted in direct habitat loss and fragmentation of less than <1% of the CIAA. Infrastructure often affects natural habitats differently than agriculture or urban development. In the case of roads and fences the impacts are often drawn out over a linear area rather than large concentrated blocks as agriculture and urban development are. Although infrastructure may influence natural areas in different ways the impacts act similarly by removing the native vegetation communities and introducing non-natural elements into the natural landscape.

Over the past 30 years, 17 wildfires have burned 31,268 acres on BLM lands, which amounts to approximately 7% of CIAA. In the southeast corner of the CIAA, fires have burned within the

same area multiple times. Wildfire can remove and/or permanently alter native vegetation communities. Often, invasive species and noxious weeds are able to establish within fire disturbance areas. Perennial grasses and forbs are generally able to recover well after wildfire if their composition and health were adequate prior to the fire and fire intensity is not too severe. If shrubs are removed by wildfire, recovery to pre-fire conditions can take much longer.

Approximately 26,210 acres (6% of CIAA) of native habitat have been treated and/or seeded within the CIAA. Some vegetation treatments have been completed in an effort to rehabilitate and stabilize areas after wildfire. Recent treatments were completed to improve watershed functionality. Other treatments were completed in the late 1900's with the intent of increasing forage for livestock. Many of the treatment areas have burned or were treated on multiple occasions. The majority of seedings completed in the CIAA have seeded crested wheatgrass, which decreases the vegetation species diversity and habitat value to wildlife.

Of the 38 BLM grazing allotments in the CIAA 13 have been documented to be not meeting the Standards and Guidelines for Healthy Rangelands. One allotment was not meeting standards, but concerns identified were not attributed to livestock grazing. BLM administered lands within the 12 allotments where standards are not meeting due to livestock grazing cover an area of approximately 65,064 acres (18% of CIAA). The 65,064 acres include areas meeting and not meeting standards within the 12 allotments. A more accurate estimate of acres managed by BLM not actually meeting standards due to livestock grazing in the 12 allotments is 5,160 acres, which is approximately 1% of the CIAA. The Waddoups Canyon Allotment was not meeting Standards 2 (Wetland and Riparian Areas); 3 (Stream Channel and Floodplain); 7 (Water Quality) and 8 (Threatened and Endangered Plants and Animals), but significant progress towards meeting the standards was being made in each instance. All other applicable standards were met.

Unmanaged livestock (horses, cows, and sheep) grazing in the first half of the 20th century resulted in altered ecological conditions in the riparian areas and the uplands in the Big Lost River Valley. Use was historically higher adjacent to available water with limited use in the areas away from springs, creeks, and rivers. As livestock grazing became more carefully managed in the valley on the remaining native vegetation, the ecological health of the rangelands and riparian areas improved.

Fencing is commonly used as a livestock management tool and there are approximately 480 miles of fence occurring throughout the CIAA. Using an average impact area of 4 feet along all fences, the total area affected by fencing is approximately 58 acres, which is less than 1% of the total area within the Big Lost CIAA. Another livestock management tool often used in the CIAA is the use of water troughs to improve livestock distribution. There are a minimum of 80 livestock water troughs documented in the CIAA. Using an average impact area of 0.5 acres surrounding water troughs the total disturbance area is 40 acres, which is less than 1% of the total area within the Big Lost CIAA.

Activities that occur on public and private lands, such as agricultural practices; infrastructure development; recreational use such as camping, hunting, and ATV use; and livestock grazing management affect wildlife use patterns, the quantity and quality of habitats, and population viability. Many species of wildlife including birds, bears, and big game require large intact

habitats for their continued survival. Urbanization and recreational properties on adjacent private lands reduces their value to wildlife habitat through fragmentation of existing habitats. Cumulative impacts of livestock grazing on wildlife habitat include compaction of soils, reduction of available forage and hiding cover, and disturbance of riparian vegetation. Maintaining intact habitats and having the flexibility to modify grazing schedules to meet the specific needs of vegetation and wildlife will help maintain rangelands in good ecological condition.

The U.S. Fish and Wildlife Service (USFWS) identified primary and other threats to Greater sage-grouse in its 12-Month Findings for Petitions to List the Greater Sage- Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (USFWS 2010). The primary cause of sage-grouse population decline identified by the USFWS was fragmentation of sagebrush habitats due to: habitat conversion for agriculture or urbanization, infrastructure within sagebrush habitats (powerlines, communication towers, fences, roads, railroads, etc.), wildfire and energy development (specifically roads and energy related infrastructure). Other important threats included: inadequate regulatory mechanisms, invasive plants (annual grasses and noxious weeds), climate change, collisions (with fence, powerlines, etc.), conifer invasion, contaminants, disease (West Nile virus), poorly managed livestock grazing, hunting, mining, predation, prescribed fire/vegetation treatments, recreation (OHV use) and water developments (USFWS 2010). It is often the cumulative impact of various disturbances that have the greatest effect on sagebrush ecosystems, rather than any single disturbance (Knick et al. 2011).

Key sage-grouse habitats are large scale, intact sagebrush steppe areas that provide sage-grouse habitat (Sather-Blair et al. 2000). Within the Big Lost CIAA there are approximately 267,458 acres of Key sage-grouse habitat, which is approximately 61% of the CIAA. There are also 20,963 acres (5% of CIAA) of Restoration Type 1 habitat in the CIAA. These areas have limited sagebrush composition, but acceptable understory comprised of native and/or seeded perennial grass rangelands. Restoration Type 1 habitats are considered important areas of focus for sagebrush establishment and retention (Sather-Blair et al. 2000). Within the CIAA there are also areas with acceptable sagebrush cover, but inadequate desirable herbaceous cover in the understory or the understory is comprised of invasive annual grasses or exotic plants. Habitats that meet these criteria are considered Restoration Type 2 (Sather-Blair et al. 2000). Within the CIAA there are only 27 acres of Restoration Type 2 habitat (<1% of CIAA). Restoration of Type 2 areas would require expensive management treatments. Approximately 13,246 acres of PPH and 10,862 acres of PGH have been treated and/or seeded. Some vegetation treatments have been completed in an effort to rehabilitate and stabilize areas after wildfire. Other treatments were completed in the late 1900's to increase forage for livestock. Many of these areas have burned or were treated on multiple occasions. The majority of seedings completed in the CIAA have seeded crested wheatgrass, which decreases the habitat value to sage-grouse.

Sage-grouse Preliminary Priority Habitats (PPH) are those areas of highest conservation value due to high male lek attendance, high lek density and high lek connectivity (Makela and Major 2011). There are approximately 260,330 acres of PPH within the Big Lost CIAA. Preliminary General Habitats (PGH) are habitats occupied by sage-grouse not contained within PPH. PGH areas are characterized by lower lek densities that may serve as important connectivity corridors between PPH (Makela and Major 2011). There are approximately 57,410 acres of PGH within

the CIAA. Table 9 summarizes known impacts within PPH and PGH areas in the Big Lost CIAA:

<b>Table 9 – Known Impacts in the Big Lost CIAA</b>						
<b>Impact</b>	<b>PPH Acres Affected</b>	<b>% of PPH</b>	<b>% of CIAA</b>	<b>PGH Acres Affected</b>	<b>% of PGH</b>	<b>% of CIAA</b>
<b>Agricultural Development</b>	1,322	<1%	<1%	17,403	30%	4%
<b>Urban Development</b>	889	<1%	<1%	1,979	3%	<1%
<b>*Infrastructure</b>	962	<1%	<1%	210	<1%	<1%
<b>Wildfire</b>	25,843	10%	6%	4,847	8%	1%
<b>**Livestock Grazing</b>	5,160	2%	1%	0	0%	0%
<b>Vegetation Treatments</b>	7,082	3%	2%	2,786	5%	<1%
*Note: Infrastructure is a combination of communication sites, roads, fences and water trough sites.						
** Action describes areas identified as not meeting ISRH and livestock grazing management was determined to be the primary factor. In situations where the specific location of acres, not meeting due to current livestock the applicable standards, were not delineated in a GIS data base and available for analysis relative to delineated PPH and PGH areas, the assumption was made if the allotment included PPH habitat, all of the acres not specifically located were within PPH areas. Likewise, if the allotment only included PGH habitat, all of the acres not meeting the applicable standard were considered to be within PGH areas. While this assumption may inflate that acreage impacted by livestock grazing in PPH or PGH habitat, respectively, it insures that potential PPH and PGH acreages impacted by livestock grazing are not excluded.						

Wildfire and development (agricultural and urban) provide the greatest cumulative impact to sage-grouse within the CIAA. Aside from the direct impacts of habitat alteration, these disturbances may alter sage-grouse behavior causing them to avoid impacted habitats or displace populations to more suitable areas.

Although livestock grazing was not identified as a primary threat, it is one of the more widespread uses occurring in sage grouse habitat (Connelly et al. 2004). There is limited evidence to suggest direct impacts to sage-grouse by livestock, but livestock grazing does directly affect sage-grouse habitats by removing vegetation (foraging) or changing species composition under poor management practices (Connelly and Braun 1997). Assuming that all acres not meeting standards are in PPH, approximately 2% of PPH within the CIAA have been identified as not meeting the Standards and Guidelines for Healthy Rangelands where livestock grazing was identified as a contributing factor.

Livestock grazing has occurred within the CIAA since the late 1800s. Impacts to sagebrush ecosystems were likely the greatest during this time as unregulated grazing occurred into the early 1900s (Knick et al. 2003). The Taylor Grazing Act (1934) was the foundational law for livestock management on public lands, and although it was intended to regulate livestock use, it also benefited sage-grouse habitat within the CIAA by curbing unregulated grazing. Since then other laws, improved science, improved management cooperation (interagency and with private landowners) and improving adaptive management have provided more safeguards for sage-grouse habitats.

Sage-grouse within the CIAA are part of a larger population known as the Snake-Salmon-Beaverhead population. A population viability analysis for the Snake-Salmon-Beaverhead population was completed by Garton et al. (2011). The viability analysis factored in known current and historic anthropogenic factors including domestic livestock grazing from 1965-2007. This analysis included sage-grouse meta-populations within the CIAA. Garton et al. (2011) found that the Snake-Salmon-Beaverhead population had a 0%-27% chance of falling below population viability levels ( $\geq 500$  male sage-grouse) in the next 100 years.

No new primary threats such as conversion of sage-grouse habitat for agriculture or urbanization, or infrastructure (roads, powerlines, energy development, etc.) are proposed on public lands in the CIAA. In addition, no such plans or proposals are identified for nearby lands under other ownership (private, NPS, DOE or State of Idaho lands) in the CIAA. Invasive species and wildfire continue to be threats that cannot be anticipated in frequency or intensity. Impacts associated with wildfire are likely to continue to be the greatest threat to sage-grouse populations in the CIAA. Managing for healthy habitats in the CIAA provides the most protection against invasive species and resiliency to disturbances such as wildfire. PPH are comprised of areas that have the highest conservation value for maintaining sustainable sage-grouse habitats. Additional disturbances (e.g. new infrastructure development) are less likely to be implemented in PPH areas without adequate mitigation in the future (BLM 2011).

The renewal of the grazing permit for the Waddoups Canyon Allotment will continue livestock grazing for 10 years. The allotment is expected to make progress toward meeting the Standards and Guidelines for Healthy Rangelands (including the needs of sage-grouse) into the foreseeable future and provide for improved habitats within the CIAA. Other grazing permits within the CIAA would continue to be evaluated, modified as needed and renewed according to law and BLM policy in the future. Other threats such as invasive plants, climate change, collisions, contaminants, disease, hunting, mining, predation, vegetation treatments, recreation (OHV use) and water developments are likely to continue in the CIAA, but the extent to which they affect sage-grouse are difficult to quantify. No new projects such as fencing, vegetation treatments, mining or water developments are proposed in this EA. Other such proposals may occur within the CIAA in the future, but would be subject to law and BLM policy to ensure that the cumulative effect to sage-grouse does not inhibit the viability of populations in the CIAA or for the Snake-Salmon-Beaverhead population.

### *Incremental Impacts Associated with Alternatives*

#### *Alternative A*

Alternative A would contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Livestock use would remain at current levels and no infrastructure development associated with livestock use would be constructed. The number of road miles within the area would not increase as a result of implementing Alternative A. The number of riparian acres in PFC or in an upward trend would remain about the same, as would the number of upland acres being maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species. The

amount of suitable habitat for wildlife species, including special status species that occur in the CIAA would remain about the same.

#### *Alternative B*

Alternative B would contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Active livestock use will remain at current levels under Alternative B and no new livestock related infrastructure would be constructed. The number of road miles within the area would not increase as a result of implementing Alternative B. As a whole the number of riparian acres in PFC or in an upward trend within the CIAA would remain static, but would likely decrease as a result of this proposal in the Waddoups Canyon Allotment. The number of upland acres being maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species would remain consistent with the current situation. The amount of suitable habitat for wildlife species, including special status species that occur in the CIAA would remain about the same.

#### *Alternative C*

Alternative C would contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Active livestock use would be reduced by approximately 35%. On existing riparian enclosure would be enlarged to protect more riparian resources. The number of road miles within the area would not increase as a result of implementing Alternative C. As a whole the number of riparian acres in PFC or in an upward trend within the CIAA would increase as a result of this proposal. The number of upland acres being maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species would remain consistent with the current situation. The amount of suitable habitat for wildlife species, including special status species that occur in the CIAA would remain about the same or improve slightly.

#### *Alternative D*

Alternative D would contribute very little to the collective impact associated with past, present and reasonably foreseeable future actions. Livestock use would not occur for a ten year period within the allotments. The number of road miles within the area would not increase as a result of implementing Alternative C. No additional infrastructure or range improvement projects would be constructed. Removal of livestock under Alternative C would result in the maintenance and/or improvement in habitat conditions throughout the allotment. The amount of suitable habitat for wildlife species, including special status species that occur in the CIAA would remain about the same.

## CHAPTER 5 – SUMMARY AND CONCLUSIONS

The assessment indicates that Alternative A, which includes no changes in the current mandatory terms and conditions, would continue to meet or make progress toward meeting Standards 1, 2, 3, 4, 7, and 8 of the Idaho Rangeland Health Standards in the allotment. Overall, the allotment would continue to provide habitats suitable to maintain viable populations of native wildlife species, including special status species. However, even though progress was being made toward achieving standards where they were not met, some areas (mostly riparian) would not be expected to improve under Alternative A. Under Alternative A, there would be no impact on economic or social values.

The assessment indicates that Alternative B would provide less progress toward meeting standards and may even reverse trends where progress is currently being made. Authorized use would be the same as Alternative A under this alternative. The season of use would be lengthened to 71 days under this alternative, which this assessment indicates would not provide progress toward maintenance or achievement of standards. Riparian areas and nearby uplands would likely have downward trends and wildlife habitat would be affected to a greater extent under this alternative compared to Alternatives A, B and C. Under Alternative B, there would be no impact on economic or social values.

The assessment indicates that Alternative C would continue to meet or make progress toward meeting standards and progress would be made more rapidly than Alternatives A and B. Under Alternative C, the small riparian enclosure enlargement would be authorized. The riparian enclosure would aid in riparian standards achievement by prohibiting livestock use of the sensitive riparian area. Alternative C proposes an approximately 35% reduction (483 AUMs) in the Waddoups Canyon Allotment. The forage substitution cost to the permittees under Alternative C would range from approximately \$5,144 to \$30,260 annually. If the herds are reduced as a result of decreased forage availability, the decreased gross revenue through herd reductions would range from approximately \$37,191 to \$46,368 annually. Under Alternative C, maintenance costs associated with the enlarged riparian enclosure would increase, but are expected to be minimal.

The assessment indicates that Alternative D, which includes no livestock grazing in the allotment for a 10 year period, would continue to meet or make progress toward meeting standards and would provide the most rapid progress toward achieving the standards. The Waddoups Canyon Allotment would continue to provide habitats suitable to maintain viable populations of special status species and improvement in habitat condition in both upland and riparian areas associated with livestock grazing impacts would be expected. Under Alternative D, there would be economic and social impacts on the operators. The forage substitution cost to replace 1,385 AUMs would range from approximately \$14,750 to \$86,770 annually. If the herds are reduced as a result of decreased forage availability, the decreased gross revenue for the operators through herd reductions would range from approximately \$106,645 to \$132,960 annually. Under Alternative D, there would be no additional cost for project maintenance.

## **CHAPTER 6 - CONSULTATION AND COORDINATION**

### **Persons and Agencies Consulted**

Antelope Valley Ranch – Permittee  
PU Ranch – Permittee  
Tom Waddoups – Permittee  
Bob and Leann Harrop - Permittee  
Idaho Department of Fish and Game  
Idaho Department of Lands  
Idaho State Dept. of Agriculture  
Chairman, Land Use Policy Committee, Shoshone-Bannock Tribes  
Chairman, Tribal Business Council, Shoshone-Bannock Tribes  
U.S. Fish and Wildlife Service  
Lost River Ranger District  
Western Watersheds Project

### **List of Preparers**

Jordan Hennefer: Economic and Social Values/Invasive, Non-Native Species/Vegetation  
Dan Kotansky: Wetland and Riparian Area, Stream Channels/Floodplains, Water Quality  
Dawn Loomis: Wildlife Resources/Threatened, Endangered, and Other Special Status Species  
Marissa Guenther: Cultural Resources

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**APPENDIX A – DETERMINATION DOCUMENT for WADDOUPS CANYON ALLOTMENT**

**SECTION 1 –DETERMINATION REQUIRED**

X All Standards are met or making significant progress towards meeting and there is conformance with the guidelines. **No Determination is required, review is complete.**

— One or more Standards is not being met or there is non-conformance with the guidelines. **An Authorized Officer’s Determination is required; continue with Section 2.**

**SECTION 2 –DETERMINATION**

*The Determination documents the authorized officer’s finding that existing grazing management practices or levels of grazing use on public lands either are or are not significant factors in failing to achieve the standards and conform to the guidelines within a specified geographic area. (H-4180-1 page I-3)*

APPENDIX B – Project Maps

Figure 3 – Proposed Trough Enlargements (Alternative B)

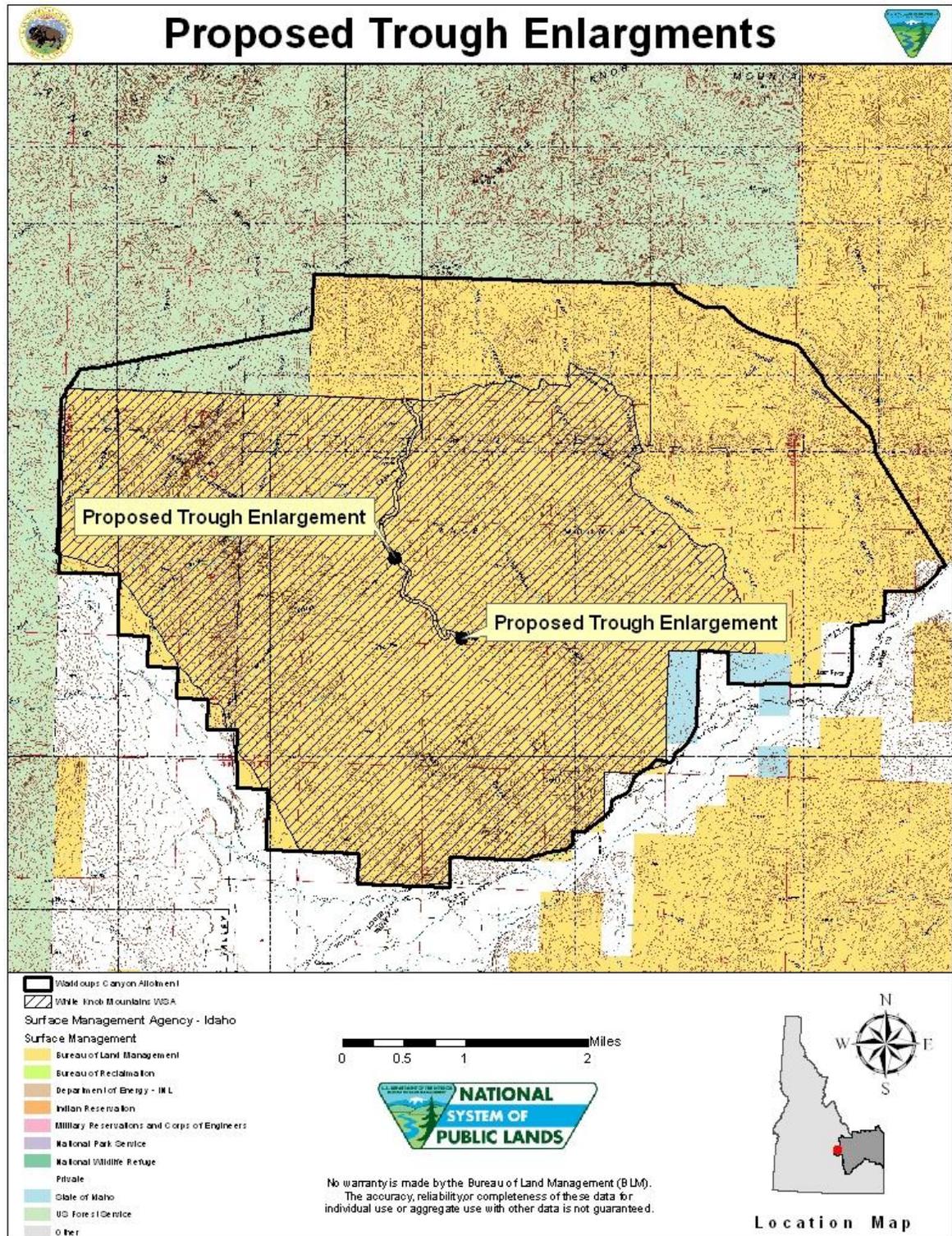


Figure 4 – Proposed Riparian Exclosure Extension and Trough Expansion (Alternative C)

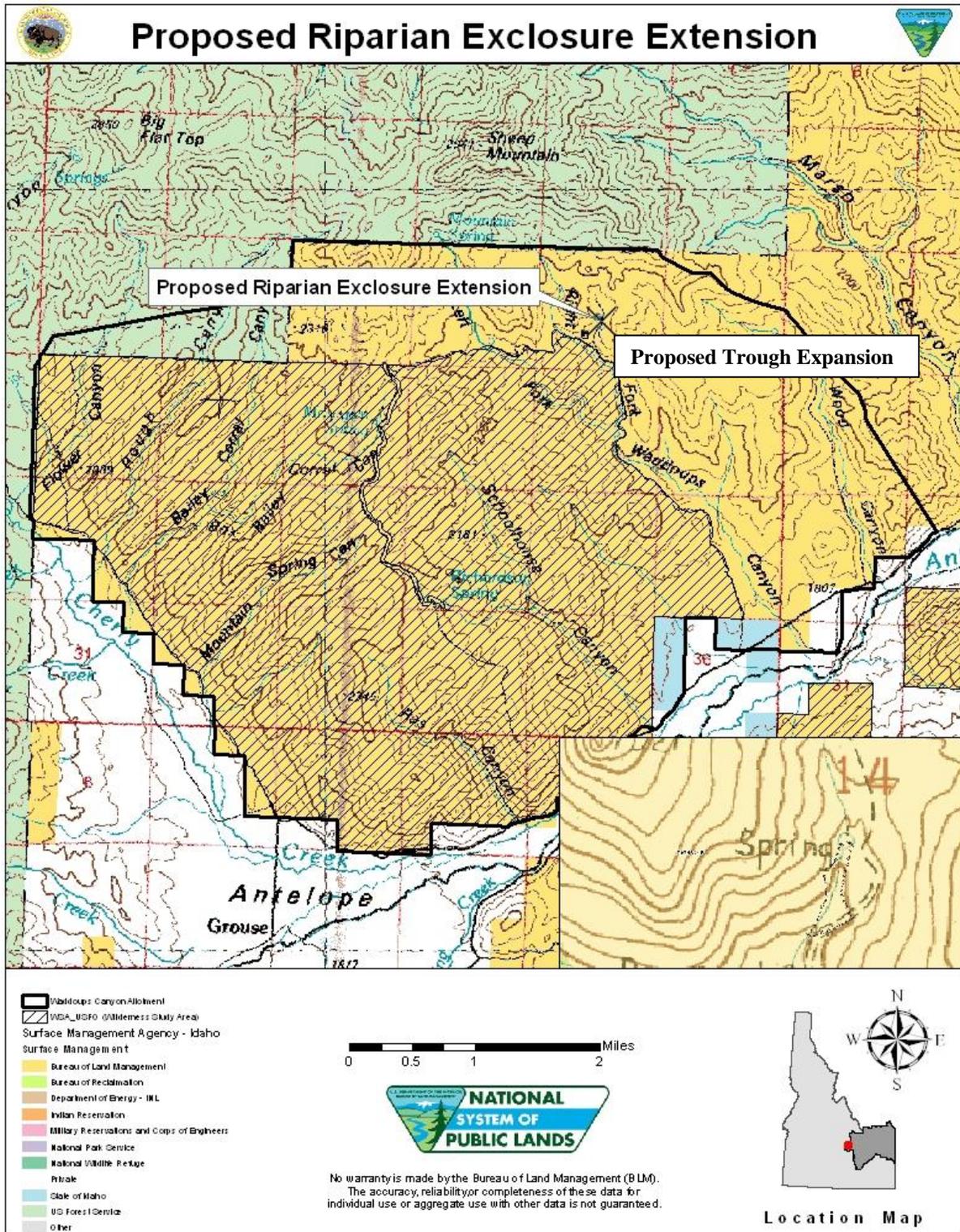
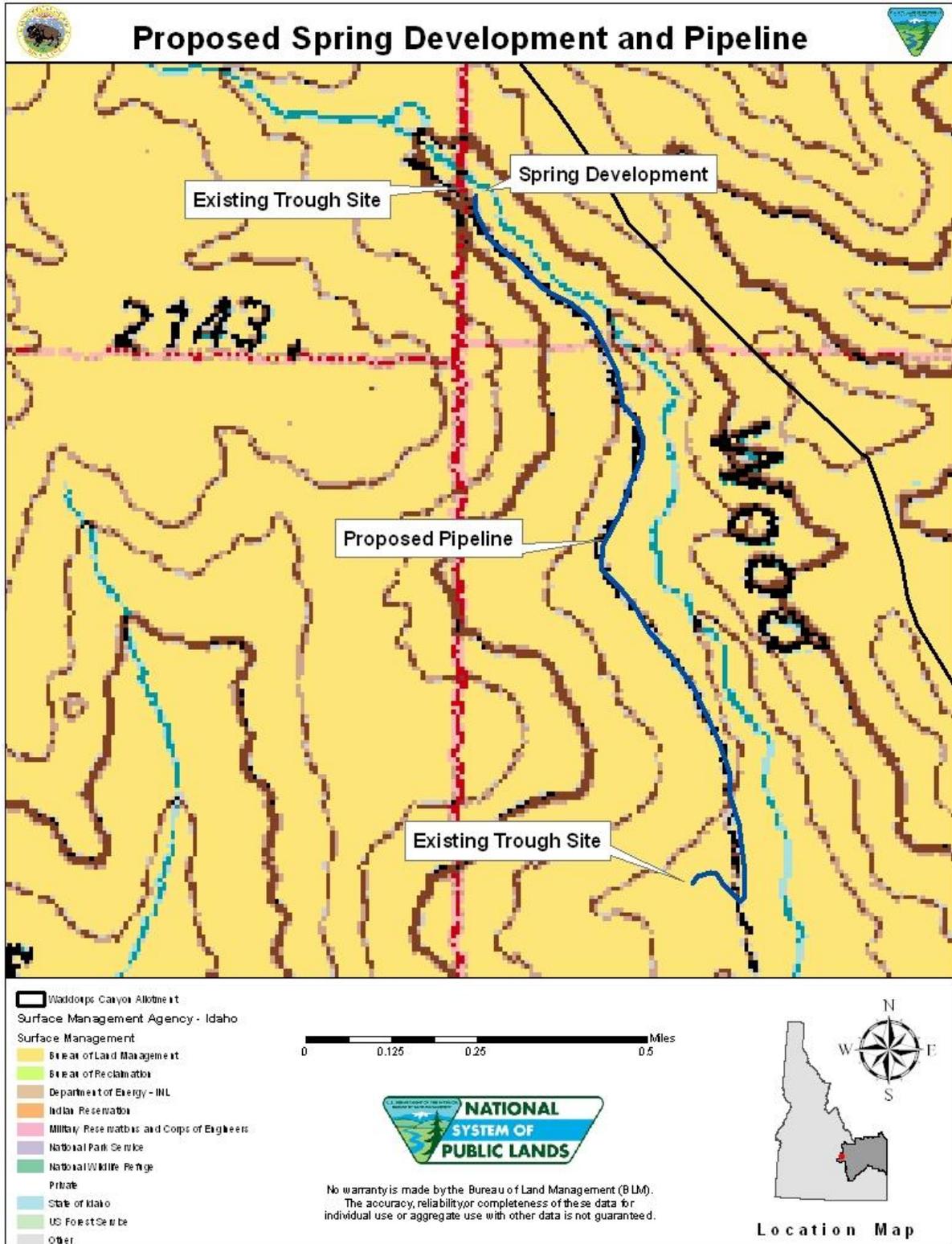


Figure 5 – Wood Canyon Proposed Spring Development and Pipeline (Alternative C)



## APPENDIX C – Anticipated Livestock Trailing Authorization Details

### Route 1 Summer

*Location:* Trailing through the Waddoups Canyon Allotment to access Forest Service lands.

*Number of days:* <1 (a maximum of 5 hours would be needed)

*Timing:* Between 07/10 and 07/20.

*Number of Livestock:* Up to 200 cattle.

*Point of entry:* Existing county road on southwest portion of the West Pasture.

*Point of exit:* Existing county road in northwest portion of the West Pasture as it enters Forest Service lands.

*Route:* See Figure 3.

*Holdover areas:* None.

### Route 1 Fall

*Location:* Trailing through the Waddoups Canyon Allotment to access private lands.

*Number of days:* <1 (a maximum of 5 hours would be needed).

*Timing:* Between 10/01 and 10/20.

*Number of Livestock:* Up to 800 cattle.

*Point of entry:* Existing county road in northwest portion of the West Pasture as it enters BLM lands from Forest Service lands.

*Point of exit:* Existing county road in southwest portion of the West Pasture as it enters private lands.

*Route:* See Figure 3.

*Holdover areas:* None.

**Figure 4 – General Location of Livestock Trailing (Alternative C)**

