

# ENVIRONMENTAL ASSESSMENT

DOI-BLM-ID-I040-2011-0001-EA  
Canyon-Big Timber Land Health Environmental Assessment  
Salmon Field Office  
September 2011

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## **Background:**

In September of 2010, the Bureau of Land Management (BLM) Salmon Field Office (SFO) concluded an interagency land health assessment process within the Canyon-Big Timber Watershed Assessment (CBT) area. A report (USDI-BLM, 2010) for the National System of Public Lands and the National Forest System lands resulted from the collaboration between the BLM SFO and the Salmon-Challis National Forest (SCNF). The report documents the condition and function of public land resources within the CBT area, including an evaluation of the eight Idaho Standards for Rangeland Health (USDI-BLM, 1997) for seventeen BLM-managed grazing allotments, covering approximately 129,000 acres. The eight Idaho Standards for Rangeland Health are: 1) Watersheds, 2) Riparian areas and wetlands, 3) Stream channel/floodplain, 4) Native plant communities, 5) Seedings, 6) Exotic plant communities, other than seedings, 7) Water quality, and 8) Threatened and endangered plants and animals.

The assessment contains recommendations developed by the interdisciplinary (ID) team to address resource issues identified through the assessment process. The recommendations describe objectives related primarily to native vegetation management, but also address other concerns such as noxious weeds, wildland-urban interface (WUI), recreational uses, travel management, wildlife and fisheries habitat, cultural resources, and fire management.<sup>1</sup>

The Fundamentals of Rangeland Health require the BLM to initiate management actions that ensure, “Watersheds are in, or are making significant progress toward, properly functioning condition, including their upland, riparian-wetland, and aquatic components...” (Anon., 2005), if an assessment determines one or more of the Land Health Standards are not being met and that existing grazing management practices or levels of grazing use on public lands managed by the BLM are significant factors in failing to achieve the standards. According to the CBT Assessment thirteen allotments were not meeting one or more land health standards. BLM’s ID team described several causal factors combining to negatively impact the biological, physiological, and ecological processes on public lands managed by the BLM in the watershed. The Authorized Officer determined that existing grazing management is a significant contributing factor to one or more of the Standards not being met on three of the allotments: Chamberlain Creek, Powderhorn and Tex Creek (Appendix A).

Recommendations for public lands managed by the BLM within the CBT area have subsequently been prioritized for National Environmental Policy Act (NEPA) planning and implementation by the SFO. This Environmental Assessment (EA) reflects those priorities by detailing specific proposed actions to meet the identified land management objectives, and includes disclosure of the environmental consequences of implementing those activities.

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<sup>1</sup> The *Canyon-Big Timber Watershed Assessment Report* may be reviewed at the Salmon Field Office, or on the internet at <https://www.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=7903>.

### **Purpose of and Need for Proposed Action:**

The purpose of the Proposed Action is to authorize grazing permits as instructed in the BLM Instruction Memorandum Guidance to Address NEPA Concerns in Livestock Grazing Permit Renewals (USDI-BLM, 2011) and address grazing management and resource condition issues identified in the CBT Watershed Assessment Report, by deciding:

1. To what extent BLM would authorize grazing on public lands managed by the BLM within 16 allotments within the CBT area in accordance with applicable laws and regulations; and
2. Where, and to what extent, the BLM would construct range improvement projects and implement vegetation manipulation projects to enhance habitat conditions and protect WUI areas.

The need for action was established and is based on the recommendations for achieving resource management objectives as presented in the Canyon-Big Timber Watershed Assessment and the Canyon-Big Timber Determination.

### **Issues:**

The SFO worked with partners to develop the CBT Watershed Assessment which presented issues in the CBT area. These issues were further developed through scoping over the following year. The following issues were identified in the assessment; some issues are related directly to an allotment not meeting Idaho Standards for Rangeland Health. All Alternatives presented in this EA do not address all issues.

Issues directly related to not meeting Idaho Standards for Rangeland Health where current livestock management has been identified as a significant contributing factor:

- Poor regeneration survival in aspen stands in the Chamberlain Creek Allotment.
- Riparian habitat along Clear Creek is “Functional-at-Risk (FAR)-downward trend” in the Powderhorn Allotment.
- Riparian habitat along Pass Creek is “FAR-static” in the Chamberlain Creek Allotment.
- Riparian habitat along McGinty Creek is “Non-Functional (NF)” and “FAR-static” in the Chamberlain Creek Allotment.
- Riparian habitat around the Tex Creek ponds is “Non-Functional” in the Tex Creek Allotment.

Issues related to not meeting Idaho Standards for Rangeland Health, but where current livestock management has not been identified as a significant contributing factor:

- The cover of bluebunch wheatgrass and the diversity and cover of forbs within the Jakes Canyon Allotment are lower than desired. Past livestock management was identified as the significant contributing factor.

Issues not directly related to failing to meet Idaho Standards for Rangeland Health:

- Riparian habitat along Texas Creek is “FAR-static” in the Spring Canyon Allotment. Past livestock management was identified as the significant causal factor.
- Riparian habitat at Poison Spring is “FAR-static” in the Center Ridge Allotment.
- High wildfire hazard around private land (WUI) in the Spring Canyon Allotment. Succession in the absence of natural disturbance, primarily wildfire, was identified as the significant contributing factor.
- Conifer encroachment into aspen stands along Big Timber Creek in the Timber Creek Allotment. Succession in the absence of natural disturbance, primarily wildfire, was identified as the significant contributing factor.
- Conifer encroachment into mountain big sagebrush in the Spring Canyon Allotment. Succession in the absence of natural disturbance, primarily wildfire, was identified as the significant contributing factor.
- Cattle crossing public lands managed by the BLM in the CBT area and NEPA having not been completed for this activity.

In addition the following issue has been identified since the Assessment:

- Risk of disease transmission from domestic sheep to bighorn sheep in the Big Timber, Center Ridge and Spring Canyon Allotments.

#### **Proposed Action:**

Alternative 3, the Proposed Action, has been developed to address all of the issues described above. The ID team believes that implementation of Alternative 3, which includes adjustments to existing grazing management, construction of range improvements and vegetation manipulation projects would address the above issues.

#### **Location of Proposed Action:**

The proposed activities are located on public lands managed by the BLM in Lemhi County, Idaho, within Townships 12-17 North and Ranges 24-29 East, Boise Meridian (Figure 1). The allotments are between the Beaverhead Mountains of the Bitterroot Range, and the Lemhi Range. Hydrologically, the area straddles the divide between the upper Lemhi drainage which flows into the Salmon River to the north, and the upper Birch Creek drainage which flows south towards the Snake River. This geographic area will be referred to as the CBT area throughout the document.

#### **Relevant Statutes, Regulations, or Other Plans:**

- *American Indian Religious Freedom Act of 1978.*
- *Antiquities Act of 1906.*
- *Archaeological Resource Protection Act of 1979.*
- *Bureau of Land Management 6840 Manual on Special Species Management 2008.*
- *Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy 2004.*
- *Central Idaho Fire Management Plan 2005.*
- *Challis Sage-Grouse Local Working Group Plan (CSGLWG) 2007.*

- *Clean Air Act of 1970 (amended 1990).*
- *Clean Water Act of 1972.*
- *Code of Federal Regulations (CFR); Title 40; Part 1500 – Council on Environmental Quality 2009.*
- *CFR; Title 43; Part 4100 – Grazing Administration – Exclusive of Alaska 2005.*
- *Endangered Species Act (ESA) of 1973, Section 7, as amended.*
- *Executive Order 11593: Protection and Enhancement of the Cultural Environment 1971.*
- *Executive Order 13007: Indian Sacred Sites 1996.*
- *Executive Order 13175: Consultation and Coordination with Indian Tribal Governments 2000.*
- *Executive Order 13443: Facilitation of Hunting Heritage and Wildlife Conservation*
- *Federal Land Management and Policy Act 1976.*
- *Fort Bridger Treaty of 1868 (15 Stat. 673).*
- *Greater Sage-Grouse Interim Management Policies and Procedures (IM-2012-043)*
- *Guidance to Address NEPA Concerns in Livestock Grazing Permit renewals (IM-ID-2011-045)*
- *Idaho Comprehensive Wildlife Conservation Strategy 2005.*
- *Idaho Forest Practices Act (1974), Title 38, Chapter 13, Idaho Code.*
- *Idaho Sage-Grouse Conservation Strategy 2006.*
- *Interim Strategy for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California 1995 (PACFISH).*
- *Lemhi County Wildland Fire Protection Plan 2006.*
- *Lemhi Resource Management Plan (RMP) 1987, as amended.*
- *Migratory Bird Treaty Act of 1918 (MBTA).*
- *National Fire Plan 2000.*
- *Native American Graves Protection and Repatriation Act of 1990.*
- *Wilderness Interim Management Policy 1997.*

## ALTERNATIVES

Five alternatives are analyzed in this EA. Tables 1 and 2 summarize a comparison of the alternatives, and then each alternative is described in detail after the table. As required by the BLM Instruction Memorandum; Greater Sage-grouse Interim Management Policies and Procedures, Alternative 5 considers deferment on sage-grouse habitat within Preliminary Priority Habitat (USDI-BLM, 2011).

Alternatives are presented in the following order:

**Alternative 1:** This alternative reissues ten-year term grazing permits on 16 allotments as currently permitted without any proposed range improvement or vegetation manipulation projects. No crossing would be authorized. This alternative is considered the No Action Alternative (USDI-BLM, 2011).

**Alternative 2:** This alternative reissues ten-year term grazing permits on 16 allotments at the average level they have been utilized over the last five years (actual use) without any proposed range improvement or vegetation manipulation projects. The SFO is moving to a landscape approach and will be reissuing ten-year term grazing permits that have been in place from two to ten years. The ID team determined that a five-year timeframe was the

most representative across the CBT area. No crossing would be authorized. This alternative is considered the Actual Use Alternative.

**Alternative 3:** This alternative reissues ten-year term grazing permits on 16 allotments with revised Terms and Conditions, and proposes range improvement and vegetation manipulation projects. Specifically, new projects include construction of 1.2 miles of jack and pole fence, 5.65 miles of barbed wire fence, and 6.25 miles of pipeline with 4 watering locations; and 1,708 acres of vegetation treatments. Crossing would be authorized. This alternative is considered the Proposed Action.

**Alternative 4:** This alternative reissues ten-year term grazing permits on 16 allotments with 0 authorized AUMs for Active Preference, and without any proposed range improvement or vegetation manipulation projects. No crossing would be authorized. This alternative is considered the No Grazing Alternative (USDI-BLM, 2011).

**Alternative 5:** This alternative reissues ten-year term grazing permits on 16 allotments with revised Terms and Conditions, and proposes vegetation manipulation projects. Pastures that contain occupied bull trout habitat and are within allotments that are failing to meet Idaho Standards for Rangeland Health and where existing grazing management is a significant causal factor would not be grazed. Pastures with important riparian habitat would not be grazed after July 15 to allow regrowth of vegetation. If those pastures also contain nesting habitat for greater sage-grouse, as mapped by the CSGLWG, they would not be grazed. Pastures that do not have significant riparian habitat would be grazed after July 15<sup>th</sup> to allow a majority of upland grass plants to set seed before being utilized. No new range improvement projects would be constructed and no modifications would be made to existing projects. New vegetation projects would include 1,483 acres of vegetation treatments. No crossing would be authorized. This alternative is considered the Reduced Grazing Alternative (USDI-BLM, 2011).

Alternatives are described in detail using the following format:

- 1) Descriptions of the "Other Terms and Conditions" common to all grazing permits.
- 2) Proposed management actions by allotment including (where applicable):
  - a. The grazing permit(s) that would be authorized for the next ten years, including Mandatory and additional Other Terms and Conditions;
  - b. Crossing that would be authorized;
  - c. Range improvement projects that would be constructed; and
  - d. Vegetation manipulation projects that would be implemented.

**Table 1: Summary Comparison of Alternatives by Issue**

Issue	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Poor regeneration survival in aspen stands in the Chamberlain Creek Allotment.	Aspen regeneration should remain at current levels.	Aspen regeneration would remain at current levels.	Aspen regeneration would improve.	Aspen regeneration would improve.	Aspen regeneration would improve.
High wildfire hazard around private land in the Spring Canyon Allotment.	Wildfire hazard may be reduced slightly.	Wildfire hazard would be as currently exists.	Wildfire hazard would be reduced considerably.	Wildfire hazard may be increased slightly.	Wildfire hazard would be reduced considerably.
Conifer encroachment into aspen stands in the Timber Creek Allotment.	Conifer encroachment would remain at current levels.	Conifer encroachment would remain at current levels.	Conifer encroachment would be reduced.	Conifer encroachment would remain at current levels.	Conifer encroachment would be reduced.
Condition of riparian habitat in the Powderhorn Allotment.	Riparian habitat would degrade.	Riparian habitat would remain in current condition.	Riparian habitat would improve.	Riparian habitat would improve.	Riparian habitat would improve.
Condition of riparian habitat in the Chamberlain Creek Allotment.	Riparian habitat would degrade.	Riparian habitat would remain in current condition.	Riparian habitat would improve.	Riparian habitat would improve.	Riparian habitat would improve.

Issue	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Condition of riparian habitat in the Tex Creek Allotment.	Riparian habitat would remain in current condition.	Riparian habitat would remain in current condition.	Riparian habitat would improve.	Riparian habitat would improve.	Riparian habitat would improve.
Condition of riparian habitat in the Spring Canyon Allotment.	Riparian habitat would remain in current condition.	Riparian habitat would remain in current condition.	Riparian habitat would improve.	Riparian habitat would improve.	Riparian habitat would improve.
Condition of riparian habitat in the Center Ridge Allotment.	Riparian habitat would degrade.	Riparian habitat would remain in current condition.	Riparian habitat would improve.	Riparian habitat would improve.	Riparian habitat would improve.
Depauperate cover of bluebunch wheatgrass and the diversity and cover of forbs within the Jakes Canyon Allotment.	Cover and diversity of vegetation would increase very slowly over time.	Cover and diversity of vegetation would increase very slowly over time.	Cover and diversity of vegetation would increase over time.	Cover and diversity of vegetation would increase slowly over time.	Cover and diversity of vegetation would increase slowly over time.
Conifer encroachment into mountain big sagebrush in the Spring Canyon Allotment.	Conifer encroachment would remain at current levels.	Conifer encroachment would remain at current levels.	Conifer encroachment would be reduced.	Conifer encroachment would remain at current levels.	Conifer encroachment would be reduced.

Issue	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Appropriate “crossing” authorizations for cattle crossing.	No crossing authorizations would be issued.	No crossing authorizations would be issued.	Crossing authorizations would be issued.	No crossing authorizations would be issued.	No crossing authorizations would be issued.
Risk of disease transmission from domestic sheep to bighorn sheep.	There would be minimal risk of disease transmission to bighorn sheep.	There would be no risk of disease transmission to bighorn sheep.	There would be no risk of disease transmission to bighorn sheep.	There would be no risk of disease transmission to bighorn sheep.	There would be no risk of disease transmission to bighorn sheep.

**Table 2: Summary Comparison of Alternatives by Allotment**

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Bull Creek	The Bull Creek Allotment consists of approximately 2,700 acres of public lands managed by the BLM in two pastures with about 1,400 acres of other lands fenced within the allotment. The allotment is meeting all applicable Idaho Standards for Rangeland Health.				
Maximum Livestock Number/Kind	150 Cattle	230 Cattle	350 Cattle	0	230 Cattle
Maximum Grazing Period	4/20-5/11; 9/15-10/6	5/1-9/20	5/1-9/15	NA	7/15-9/15
Maximum Active Preference (AUM <sup>1</sup> )	150	150	150	0	150
Center Ridge	The allotment consists of approximately 16,000 acres of public lands managed by the BLM in five pastures with about 850 acres of other lands fenced within the allotment. The allotment is meeting all applicable Idaho Standards for Rangeland Health except Standard 7. BLM determined that current livestock management is not a significant contributor to failing to meet Standard 7.				

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Livestock Number/Kind	1200 Sheep; 500 Cattle	675 Cattle	500 Cattle	0	500 Cattle
Maximum Grazing Period	5/22-11/1	5/10-10/22	5/24-11/1	NA	7/15-11/1
Maximum Active Preference (AUM <sup>1</sup> )	2336	1151	1947	0	854
Jack and Pole Fence (miles)	0	0	0.3	0	0
Chamberlain Creek	The Chamberlain Creek Allotment consists of approximately 16,000 acres of public lands managed by the BLM in four pastures with about 3,200 acres of other lands fenced within the allotment. The allotment is meeting Standards 1 and 4 of the Idaho Standards for Rangeland Health and is not meeting Standards 2, 3, 7, and 8. BLM determined that current livestock was a significant factor in the allotment's failure to meet Standards 2, 3 and 8, but not Standard 7.				
Maximum Livestock Number/Kind	309 Cattle	337 Cattle	410 Cattle	0	350 Cattle
Maximum Grazing Period	6/1-9/30	5/20-9/25	6/1-9/30	NA	6/1-7/15
Maximum Active Preference (AUM <sup>1</sup> )	1249	1033	1081	0	816
Barbed Wire Fence (miles)	0	0	3.3	0	0
Pipeline (miles; trough locations)	0	0	2.25; 1	0	0
Pipeline Easement (Feet)	0	0	7300	0	0
Dump	The Dump Allotment consists of approximately 250 acres of public lands managed by the BLM in one pasture with about 5 acres of other lands fenced within the allotment. The allotment is meeting all applicable Idaho Standards for Rangeland Health.				

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Livestock Number/Kind	460 Cattle	86 Cattle	90 Cattle	0	90 Cattle
Maximum Grazing Period	6/1-6/2	5/20-6/15 (no grazing 4 out of 10 years)	6/1-7/15	NA	7/15-8/29
Maximum Active Preference (AUM <sup>1</sup> )	30	30	25	0	25
Free Strip	The Free Strip Allotment consists of approximately 3,700 acres of public lands managed by the BLM in four pastures with about 1,400 acres of other lands fenced within the allotment. The allotment is meeting, or making significant progress toward meeting, all applicable Idaho Standards for Rangeland Health.				
Maximum Livestock Number/Kind	158 Cattle	535 Cattle	550 Cattle	0	550 Cattle
Maximum Grazing Period	6/1-10/31 (no grazing 1 out of 4 years)	6/19-7/24 (no grazing 1 out of 4 years)	6/1-10/31 (no grazing 1 out of 4 years)	NA	6/1-10/31 (no grazing 1 out of 4 years)
Maximum Active Preference (AUM <sup>1</sup> )	728 (T&C limits to 481 AUMs)	487 (T&C limits to 481 AUMs)	475	0	475
Hawley Creek	The Hawley Creek Allotment consists of approximately 7,300 acres of public lands managed by the BLM in two pastures with about 100 acres of other lands fenced within the allotment. The allotment is meeting Standard 1, making significant progress toward meeting Standard 4, not meeting Standards 2, 3, 7 and 8, and Standards 5 and 6 are not applicable. BLM determined that current livestock management is not a significant contributor to failing to meet Standards 2, 3, 7 or 8.				
Maximum Livestock Number/Kind	746 Cattle	752 Cattle	616 Cattle	0	0

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Grazing Period	5/15-6/30; 9/10; 9/15-10/31	5/19-9/8 (no grazing 6 out of 10 years and no grazing 1 out of 10 years)	5/15-10/31	NA	NA
Maximum Active Preference (AUM <sup>1</sup> )	628 (T&C limits to 468 AUMs)	274	468	0	0
Jakes Canyon	The Jakes Canyon Allotment consists of approximately 550 acres of public lands managed by the BLM in two pastures with about 30 acres of other lands fenced within the allotment. The allotment is meeting Standards 1, 2, 3 and 8, not meeting Standards 4 and 7, and Standards 5 and 6 are not applicable. BLM determined that current livestock management is not a significant contributor to failing to meet Standards 4 and 7.				
Maximum Livestock Number/Kind	40 Cattle	21 Cattle	40 Cattle	0	40 Cattle
Maximum Grazing Period	5/15-7/15	5/20-7/14 (no grazing 1 out of 10 years)	5/20-7/15 (no grazing for 2 years)	NA	5/20-9/6
Maximum Active Preference (AUM <sup>1</sup> )	31	29	31	0	29
Vegetation Project (acres)	0	0	225	0	0
Leadore	The Leadore Allotment consists of approximately 420 acres of public lands managed by the BLM in three pastures with about 380 acres of other lands fenced with the allotment. The allotment is meeting Standards 1 and 7, making significant progress toward meeting Standards 2, 3, 4 and 8, and Standards 5 and 6 are not applicable.				
Maximum Livestock Number/Kind	41 Cattle	48 Cattle	60 Cattle	0	48 Cattle

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Grazing Period	6/16-8/5	6/6-7/1 (no grazing 1 out of 10 years)	6/16-8/5	NA	6/16-8/5
Maximum Active Preference (AUM <sup>1</sup> )	30	8	28	0	8
Barbed Wire Fence (miles)	0	0	0.35	0	0
Leadore Hill	The Leadore Hill Allotment consists of approximately 1,500 acres of public lands managed by the BLM in two pastures with about 75 acres of other lands fenced within the allotment. The allotment is meeting all applicable Idaho Standards for Rangeland Health.				
Maximum Livestock Number/Kind	39 Cattle	58 Cattle	85 Cattle	0	80 Cattle
Maximum Grazing Period	5/16-7/31	5/13-7/31 (no grazing 1 out of 10 years)	5/15-6/30	NA	5/16-6/30
Maximum Active Preference (AUM <sup>1</sup> )	93	83	114	0	78
Leadville	The Leadville Allotment consists of approximately 6,500 acres of public lands managed by the BLM in three pastures with about 900 acres of other lands fenced within the allotment. The allotment is meeting Standards 1 and 5, not meeting Standards 2, 3, 4, 7 and 8, and Standard 6 is not applicable. BLM determined that current livestock management is a significant contributor to failing to meet Standard 4 but not Standards 2, 3, 7 or 8. To make significant progress toward meeting Standard 4, the Lower Pasture was aerated and seeded in the fall of 2010 and will be rested for two years.				
Maximum Livestock Number/Kind	500 Cattle	535 Cattle	500 Cattle	0	500 Cattle
Maximum Grazing Period	5/10-5/31; 10/1- 10/10	5/6-6/30	5/1-9/30	NA	5/1-9/30

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Active Preference (AUM <sup>1</sup> )	528	415	528	0	207
Barbed Wire Fence Constructed (miles)	0	0	0.7	0	0
Barbed Wire Fence Removed (miles)	0	0	0.5	0	0
Nez Perce	The Nez Perce Allotment consists of approximately 4,000 acres of public lands managed by the BLM in six pastures with about 3,500 acres of other lands fenced within the allotment. The allotment is meeting Standards 1 and 4, not meeting Standards 2, 3, 7 and 8, and Standards 5 and 6 are not applicable. BLM determined that current livestock management is not a significant contributor to failing to meet Standards 2, 3, 7 or 8.				
Maximum Livestock Number/Kind	875 Cattle	630 Cattle	864 Cattle	0	864 Cattle
Maximum Grazing Period	5/20-10/1	5/24-9/10	5/20-10/1	NA	5/20-10/1
Maximum Active Preference (AUM <sup>1</sup> )	977	509	466	0	466
Powderhorn	The Powderhorn Allotment consists of approximately 33,000 acres of public lands managed by the BLM in eight pastures with about 3,500 acres of other lands fenced within the allotment. The allotment is meeting Standards 1, 4 and 5, not meeting Standards 2, 3, 7 and 8, and Standard 6 is not applicable. BLM determined that current livestock management is a significant contributor to failing to meet Standards 2, 3 and 8 but not Standard 7.				
Maximum Livestock Number/Kind	1019 Cattle	711 Cattle	982 Cattle	0	982 Cattle
Maximum Grazing Period	4/15-12/12	4/21-12/16	4/15-12/12	NA	7/15-12/12
Maximum Active Preference (AUM <sup>1</sup> )	5014	2619	3517	0	1246

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Jack and Pole Fence (miles)	0	0	0.4	0	0
Barbed Wire Fence Constructed (miles)	0	0	0.4	0	0
Barbed Wire Fence Removed (miles)	0	0	0.3	0	0
Pipeline (miles; trough locations)	0	0	4; 3	0	0
Pipeline Easement (Feet)	0	0	7500	0	0
Purcell Creek	The Purcell Creek Allotment consists of approximately 640 acres of public lands managed by the BLM in one pasture with about three acres of other lands fenced within the allotment. The allotment is meeting all applicable Idaho Standards for Rangeland Health.				
Maximum Livestock Number/Kind	21 Cattle	235 Cattle	200 Cattle	0	200 Cattle
Maximum Grazing Period	5/1-6/30	6/1-6/16 ( no grazing 4 out of 10 years)	5/1-6/30	NA	7/15-9/15
Maximum Active Preference (AUM <sup>1</sup> )	28	19	28	0	19
Spring Canyon	The Spring Canyon Allotment consists of approximately 23,000 acres of public lands managed by the BLM in five pastures with about 3,900 acres of other lands fenced with the allotment. The allotment is meeting, or making significant progress towards, all applicable Idaho Standards for Rangeland Health except Standard 7. BLM determined that current livestock management is not a significant contributor to failing to meet Standard 7.				
Maximum Livestock Number/Kind	1119 Cattle; 1200 Sheep	560 Cattle	720 Cattle	0	720 Cattle

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Grazing Period	5/15-10/24	5/16-10/18	5/15-10/31	NA	5/15-10/31
Maximum Active Preference (AUM <sup>1</sup> )	3329	1400	2542	0	1400
Jack and Pole Fence (miles)	0	0	0.3	0	0
Vegetation Project (acres)	0	0	762	0	762
Tex Creek	The Tex Creek Allotment consists of approximately 2,700 acres of public lands managed by the BLM in one pasture with about 30 acres of other lands fenced within the allotment. The allotment is meeting Standards 1, 4 and 5, making significant progress toward meeting Standards 3 and 8, not meeting Standards 2 and 7, and Standard 6 is not applicable. BLM determined that current livestock management is a significant contributor to failing to meet Standard 2 but not Standard 7.				
Maximum Livestock Number/Kind	132 Cattle; 3 Horses	134 Cattle; 38 Horses	175 Cattle	0	0
Maximum Grazing Period	5/1-7/11	5/5-7/26	5/12-7/15	NA	NA
Maximum Active Preference (AUM <sup>1</sup> )	262	257	262	0	0
Jack and Pole Fence (miles)	0	0	0.15	0	0
Barbed Wire Fence (miles)	0	0	0.9	0	0
Timber Creek	The Timber Creek Allotment consists of approximately 7,000 acres of public lands managed by the BLM in two pastures with about 340 acres of other lands fenced within the allotment. The allotment is meeting Standards 1, 4 and 7, not meeting Standards 2, 3 and 8, and Standards 5 and 6 are not applicable. BLM determined that current livestock management is not a significant contributor to failing to meet Standards 2, 3 or 8.				

	Alternative 1 (No Action)	Alternative 2 (Actual Use)	Alternative 3 (Proposed Action)	Alternative 4 (No Grazing)	Alternative 5 (Reduced Grazing)
Maximum Livestock Number/Kind	420 Cattle; 5 Horses; 1200 Sheep	440 Cattle	443 Cattle; 5 Horses	0	420 Cattle
Maximum Grazing Period	5/6-10/31	4/12-7/10 (no grazing 1 out of 10 on one permit)	5/6-10/31	NA	5/6-7/15
Maximum Active Preference (AUM <sup>1</sup> )	909	543	670	0	312
Vegetation Project (acres)	0	0	721	0	721
Total maximum yearly AUMs for all allotments	15,915	9,001	12,332	0	6,082
Average acres/AUM	8.0	14.1	10.3	NA	20.9

<sup>1</sup> An Animal Unit Month (AUM) is the amount of forage needed to sustain one cow and her calf, one horse, or five sheep or goats for a month.

All grazing permit information, including Mandatory Terms and Conditions described in 43 CFR 4130.3, will be displayed using the following format:

Permit	Number/Kind	Grazing Period	% Public Land	Active Preference	Suspended AUMs	Total Preference
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Permit: Letters will be used to show how many different permits are on the allotment. Each letter represents a different permit.

Number/Kind: The kind of livestock allowed on the allotment and the maximum number of animals. Livestock numbers may be decreased so the Active Preference for the allotment is not exceeded. “Cattle” refer to a bull, or a cow and her calf (as long as the calf is under the age of 6 months at the time of entering public land).

Grazing Period: The maximum time period that livestock can be on the allotment. Grazing period may be decreased so the Active Preference for the allotment is not exceeded.

%Public Land: The percentage of public land use (AUMs) determined by the proportion of livestock forage available on public lands within the allotment compared to the total amount available from both public lands and those owned or controlled by the permittee or lessee. This number is tied to AUMs not to acres within the allotment. This number will decrease as Active Preference decreases if there are non-BLM managed lands within the allotment.

Active Preference: The number of AUMs that the permittee can use on the allotment. This number cannot be exceeded and Active Use will remain at or below this number.

Suspended AUMs: AUMs that have been removed from Active Preference on the allotment and suspended from the permit and can no longer be used without a decision that makes them Active.

Total Preference: The total of the Active Preference and Suspended AUMs on the Permit.

In addition to Mandatory Terms and Conditions, Other Terms and Conditions may be added to permits.

**Description of Alternative 1 (No Action):**

Alternative 1 is to reissue ten-year term grazing permits on 16 allotments as currently permitted. No crossing authorizations would be authorized. No new range improvement projects would be constructed and no modifications would be made to existing projects. No new vegetation treatments would be implemented.

Other Terms and Conditions common to all grazing permits:

1. As provided in Title 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual grazing use report within 15 days after completion of your annual grazing use. Failure to comply could result in the cancellation of your permit in whole or part.

**Alternative 1 by Allotment:**

***Bull Creek Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	150 Cattle	4/20-5/11	69%	75	150	0	150
	150 Cattle	9/15-10/6	69%	75			

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

***Center Ridge Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	1200 Sheep	5/22-6/12	90%	156	166	0	166
	1200 Sheep	7/13-7/13	90%	7			
B	407 Cattle	5/24-10/31	100%	2154	2170	1361	3531
	500 Cattle	11/1-11/1	100%	16			

**Other Terms and Conditions (A and B):**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.
2. All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.
3. To allow flexibility, an earlier turn-out date may be applied for annually, and may be approved when range readiness has been determined to be appropriate.
4. Salt and/or mineral supplements will be placed in areas agreed upon by BLM and the permittee.

**Other Terms and Conditions (B):**

5. Active trailing will be permitted for one day between 11/1 and 12/31 for up to 500 head of cattle.

***Chamberlain Creek Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	309 Cattle	6/1-9/30	100%	1239	1249	1331	2580

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.
2. Use in the Chamberlain Creek Allotment will be in accordance with the Chamberlain Creek Allotment Management Plan (AMP).

***Dump Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	460 Cattle	6/1-6/2	100%	30	30	0	30

**Other Terms and Conditions:**

1. Livestock numbers may increase and/or number of days may decrease as long as the total AUM use does not exceed the permitted 30 AUMs.

***Free Strip Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	158 Cattle	6/1-10/31	92%	731	728	310	1038

**Other Terms and Conditions:**

1. Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.
2. Use in the Free Strip Allotment will be limited to a maximum of four weeks, not to exceed 481 AUMs.
3. Free Strip Allotment can be used in conjunction with the USFS Grizzly Hill Allotment as a pasture, and will be rested in the rotation with the other four Grizzly Hill pastures in the Canyon Creek watershed. Free Strip will not be utilized more than three years out of four.
4. Unless permitted by the Authorized Officer, the west side of the Free Strip Allotment may be used for trailing only. Livestock are to stay on the Railroad Canyon Road, and shall not be left in this corridor during pasture changes.

***Hawley Creek Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	450 Cattle	6/1-6/1	100%	15	30	0	30
	450 Cattle	9/10-9/10	100%	15			
B	193 Cattle	5/15-6/30	100%	298	598	4	602
	193 Cattle	9/15-10/31	100%	298			

**Other Terms and Conditions (A and B):**

1. Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.

**Other Terms and Conditions (A):**

2. Livestock use will occur for trailing to and from the FS Hawley Creek C&H Allotment. Trailing use will not exceed the 30 permitted AUMs.

**Other Terms and Conditions (B):**

3. Cattle numbers in the Hawley Creek Allotment may be increased up to a maximum of 296 cattle for a maximum of 6 weeks (maximum 438 AUMs). Use on the allotment can occur in the spring or the fall as long as the use is within the permit dates. In the third year only fall use will be allowed unless authorized by the Authorized Officer.

### ***Jakes Canyon Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	15 Cattle	5/15-7/15	100%	31	31	31	62

### **Other Terms and Conditions:**

1. The total active use is not to exceed 31 AUMs. Number of cattle on the allotment can be increased as long as the dates are decreased and the total number of cow/calf pairs does not exceed 40. This change will occur through the application process and will be approved by the Authorized Officer.

### ***Leadore Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	22 Cattle	7/15-8/5	100%	16	30	20	50
	41 Cattle	6/16-7/15	34%	14			

### **Other Terms and Conditions:**

1. Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.
2. Supplemental Feed is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used on Public Land, these supplements must be placed at least one-quarter (1/4) miles away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on Public Land unless variance is approved by the Authorized Officer.
3. Livestock grazing in the (North Pasture) will not occur until 2011. The season of use will not occur before July 15. Grazing Actual Use will not Exceed 16 AUMs.
4. Livestock grazing in the (South Pasture) and (Middle Pasture) will not occur after July 15<sup>th</sup> and will not exceed 14 AUMs total.

### ***Leadore Hill Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	39 Cattle	5/16-7/31	94%	93	93	39	132

### **Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.
2. 21 AUMs will be held in temporary suspension due to the conversion from sheep to cattle. These AUMs may be adjusted to active if it is deemed appropriate by the authorized officer after three years.

### ***Leadville Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	500 Cattle	5/10-5/31	100%	362	528	398	926
	500 Cattle	10/1-10/10	100%	164			

**Other Terms and Conditions:**

1. Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.
2. Supplemental Feed is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used on Public Land, these supplements must be placed at least one-quarter (1/4) miles away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on Public Land unless variance is approved by the Authorized Officer.
3. Livestock grazing will not occur in the Canyon Creek Pasture from October 1 – October 10.

***Nez Perce Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	125 Cattle	5/20-10/1	26%	144	144	119	263
B	600 Cattle	5/20-5/31	26%	62	833	687	1520
	750 Cattle	6/1-9/29	26%	776			

**Other Terms and Conditions:**

1. The allotments shown on this permit shall meet the requirements as described in 43 CFR subpart 4180—Fundamentals of Rangeland Health and the Standards and Guidelines for grazing administration. Any changes in management will be based upon the resource evaluations and analysis as scheduled and completed by the area manager.

***Powderhorn Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	350 Cattle	4/15-5/1	96%	188	4212	3065	7277
	37 Cattle	5/1-12/12	96%	264			
	625 Cattle	5/1-6/30	96%	1203			
	782 Cattle	7/1-7/15	96%	370			
	734 Cattle	7/16-7/31	96%	371			
	635 Cattle	8/1-9/15	96%	922			
	332 Cattle	9/16-12/10	96%	901			
B	200 Cattle	6/16-9/15	100%	605	802	592	1394
	200 Cattle	11/1-11/30	100%	197			

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

***Purcell Creek Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	21 Cattle	5/1-6/30	50%	21	28	0	28

**Other Terms and Conditions:**

1. The allotments shown on this permit shall meet the requirements as described in 43 CFR subpart 4180—Fundamentals of Rangeland Health and the Standards and Guidelines for grazing administration. Any changes in management will be based upon the resource evaluations and analysis as scheduled and completed by the area manager.

***Spring Canyon Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	220 Cattle	5/15-5/31	83%	102	3329	988	4317
	420 Cattle	6/1-6/17	83%	195			
	720 Cattle	6/18-7/24	83%	727			
	720 Cattle	7/25-9/5	83%	845			
	399 Cattle	8/24-10/24	83%	675			
	1200 Sheep	6/14-10/11	83%	786			

**Other Terms and Conditions:**

1. Salt and/or mineral supplements will be placed in areas agreed upon by the BLM and the permittee. Placement will emphasize mitigating impacts to streams and undeveloped springs or seeps (including Texas Creek and Poison Springs), pygmy rabbit burrow sites, and critical sage grouse habitat.
2. The maximum allowable cattle use in the Spring Canyon Allotment is 2,544 BLM AUMs.
3. All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.

***Tex Creek Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	112 Cattle	5/12-7/11	100%	225	224	174	398
B	20 Cattle	5/13-6/30	100%	32	38	49	87
	3 Horse	5/1-6/30	100%	6			

**Other Terms and Conditions:**

1. The allotments shown on this permit shall meet the requirements as described in 43 CFR subpart 4180—Fundamentals of Rangeland Health and the Standards and Guidelines for grazing administration. Any changes in management will be based upon the resource evaluations and analysis as scheduled and completed by the area manager.

***Timber Creek Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total AUMs
A	100 Cattle	5/6-6/15	100%	135	134	52	186
B	75 Cattle	5/6-6/30	100%	138	138	17	155
C	245 Cattle	5/6-6/15	100%	330	398	163	561
	245 Cattle	10/1-10/5	100%	40			
	5 Horse	5/6-10/31	100%	29			
D	1200 Sheep	5/1-6/6	82%	239	239	0	239

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

**Description of Alternative 2 (Actual Use):**

Alternative 2 is to reissue ten-year term grazing permits on 16 allotments at the average level they have been utilized over the last five years (actual use). If the average actual use has been less than Active Preference, the difference would be converted to Suspended AUMs. No crossing authorizations would be authorized. No new range improvement projects would be constructed and no modifications would be made to existing projects. No new vegetation treatments would be implemented.

Other Terms and Conditions common to all grazing permits:

1. Cattle numbers shown under the Mandatory Terms and Conditions above reflect the maximum number of livestock, the maximum allowable season of use, and the maximum number of AUMs of forage that can be used in any given year. The number of livestock may be reduced within the season indicated, or the season of use may be shortened, in order to not exceed the maximum number of AUMs indicated. A reduced number of AUMs may be used in any given year to allow flexibility to respond to weather conditions, etc. Under no circumstances may Active Preference AUMs be exceeded.
2. As provided in Title 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual grazing use report within 15 days after completion of your annual grazing use. Failure to comply could result in the cancellation of your permit in whole or part.

**Alternative 2 by Allotment:**

***Bull Creek Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	230 Cattle	5/1-9/20	69%	150	0	150

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

***Center Ridge Allotment***

Permit	Number/Kind	Grazing Period	% Public Land	Active Preference	Suspended AUMs	Total Preference
A	Sheep	NA	NA	0	166	166
B	675 Cattle	5/10-10/22	100%	1151	2380	3531

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.
2. All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.
3. To allow flexibility, an earlier turn-out date may be applied for annually, and may be approved when range readiness has been determined to be appropriate.
4. Salt and/or mineral supplements will be placed in areas agreed upon by BLM and the Permittee.

***Chamberlain Creek Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	337 Cattle	5/20-9/25	100%	1033	1547	2580

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.
2. Use in the Chamberlain Creek Allotment will be in accordance with the Chamberlain Creek Allotment Management Plan (AMP).

***Dump Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	86 Cattle	5/20-6/15	100%	30	0	30

**Other Terms and Conditions:**

1. The allotment will be rested for four of the ten years.

***Free Strip Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	535 Cattle	6/19-7/24	92%	487	551	1038

**Other Terms and Conditions:**

1. Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.
2. Use in the Free Strip Allotment will be limited to a maximum of four weeks, not to exceed 481 AUMs.
3. Free Strip Allotment can be used in conjunction with the USFS Grizzly Hill Allotment as a pasture, and will be rested in the rotation with the other four Grizzly Hill pastures in the Canyon Creek watershed. Free Strip will not be utilized more than three years out of four.

- Unless permitted by the Authorized Officer, the west side of the Free Strip Allotment may be used for trailing only. Livestock are to stay on the Railroad Canyon Road, and shall not be left in this corridor during pasture changes.

***Hawley Creek Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	500 Cattle	6/1-9/8	100%	15	15	30
B	252 Cattle	5/19-7/1	100%	259	343	602

**Other Terms and Conditions (A and B):**

- Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.

**Other Terms and Conditions (A):**

- Livestock use will occur for trailing to and from the FS Hawley Creek C&H Allotment. Trailing use will not exceed the 15 permitted AUMs.
- The allotment will be rested for six of the ten years.

**Other Terms and Conditions (B):**

- Use on the allotment can occur in the spring or the fall as long as the use is within the permit dates. In the third year only fall use will be allowed unless authorized by the Authorized Officer.
- The allotment will be rested for one of the ten years.

***Jakes Canyon Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	21 Cattle	5/20-7/14	100%	29	33	62

**Other Terms and Conditions:**

- The allotment will be rested for one of the ten years.

***Leadore Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	48 Cattle	6/6-7/1	100%	8	42	50

**Other Terms and Conditions:**

- Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.
- Supplemental Feed is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used on Public Land, these supplements must be placed at least one-quarter

(1/4) miles away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on Public Land unless variance is approved by the Authorized Officer.

3. Livestock grazing in the (North Pasture) will not occur until 2011. The season of use will not occur before July 15.
4. Livestock grazing in the (South Pasture) and (Middle Pasture) will not occur after July 15<sup>th</sup>.
5. The allotment will be rested one year out of the ten years.

#### ***Leadore Hill Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	58 Cattle	5/13-7/31	94%	83	49	132

#### **Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.
2. 21 AUMs will be held in temporary suspension due to the conversion from sheep to cattle. These AUMs may be adjusted to active if it is deemed appropriate by the authorized officer after three years.
3. The allotment will be rested one year out of the ten years.

#### ***Leadville Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	535 Cattle	5/6-6/30	100%	415	511	926

#### **Other Terms and Conditions:**

1. Management of the allotment will continue to maintain or improve riparian communities found within the allotment, as well as, continue to achieve or make significant progress toward the Idaho Standards of Rangeland Health.
2. Supplemental Feed is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used on Public Land, these supplements must be placed at least one-quarter (1/4) miles away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on Public Land unless variance is approved by the Authorized Officer.
3. Livestock grazing will not occur in the Canyon Creek Pasture from October 1 – October 10.

#### ***Nez Perce Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	94 Cattle	5/24-9/10	26%	76	187	263
B	536 Cattle	5/24-9/10	26%	433	1087	1520

**Other Terms and Conditions:**

None proposed for this allotment

***Powderhorn Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	552 Cattle	4/21-12/13	96%	1963	5314	7277
B	159 Cattle	5/20-12/16	100%	656	738	1394

**Other Terms and Conditions:**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

***Purcell Creek Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	235 Cattle	6/1-6/16	100%	19	9	28

**Other Terms and Conditions:**

1. The allotment will be rested for four years of the ten years.

***Spring Canyon Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	560 Cattle	5/16-10/18	83%	1400	2917	4317

**Other Terms and Conditions:**

1. Salt and/or mineral supplements will be placed in areas agreed upon by the BLM and the permittee. Placement will emphasize mitigating impacts to streams and undeveloped springs or seeps (including Texas Creek and Poison Springs), pygmy rabbit burrow sites, and critical sage grouse habitat.
2. All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.

***Tex Creek Allotment***

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	134 Cattle	5/12-7/26	100%	202	196	398
B	38 Horse	5/5-7/12	100%	55	32	87

**Other Terms and Conditions:**

None proposed for this allotment

### **Timber Creek Allotment**

<b>Permit</b>	<b>Number/Kind</b>	<b>Grazing Period</b>	<b>% Public Land</b>	<b>Active Preference</b>	<b>Suspended AUMs</b>	<b>Total Preference</b>
<b>A</b>	120 Cattle	4/12-6/19	100%	160	26	186
<b>B</b>	75 Cattle	5/7-7/10	100%	139	16	155
<b>C</b>	245 Cattle	5/12-6/20	100%	244	317	561
<b>D</b>	Sheep	NA	NA	0	239	239

#### **Other Terms and Conditions (A, B C and D):**

1. BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

#### **Other Terms and Conditions (A):**

1. The allotment will be rested one year out of the ten years.

#### **Description of Alternative 3 (Proposed Action):**

The Proposed Action is to reissue ten-year term grazing permits on 16 allotments. Permits with Active Preference AUMs for sheep will have those AUMs suspended. In addition, the Proposed Action would include construction of two water developments (pipeline and trough systems), four exclosures, one new fence and four existing fence relocations; aeration site preparation and native plant seeding of rangelands; removal of Douglas-fir encroachment from mountain big sagebrush and aspen communities; and thinning of trees from Douglas-fir stands in the vicinity of a WUI. All project and vegetation work would follow design criteria described in Appendix B.

Other Terms and Conditions common to all grazing permits:

1. Cattle numbers shown under the Mandatory Terms and Conditions above reflect the maximum number of livestock, the maximum allowable season of use, and the maximum number of AUMs of forage that can be used in any given year. The number of livestock may be reduced within the season indicated, or the season of use may be shortened, in order to not exceed the maximum number of AUMs indicated. A reduced number of AUMs may be used in any given year to allow flexibility to respond to weather conditions, etc. Under no circumstances may Active Preference AUMs be exceeded.
2. As provided in Title 43 of the Code of Federal Regulations (43 CFR) 4130.3-2(d), you are hereby required to submit an actual grazing use report within 15 days after completion of your annual grazing use. Failure to comply could result in penalties as described at 43 CFR 4170.1.
3. Exclosures in the allotment cannot be grazed by livestock at any time.
4. All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.

- Supplemental feeding is authorized and is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used, these supplements must be placed at least one-quarter (1/4) mile away from any stream and 500 feet away from any spring.

**The Proposed Action by Allotment:**

***Bull Creek Allotment (Figure 2)***

Since the allotment is meeting all applicable standards, the BLM proposes to renew the permit with an Active Preference of 150 AUMs, the current permitted level. The BLM also proposes to increase the maximum number of cattle allowed on the allotment to 350 as applied for by the permittee. The BLM also proposes to allow use in the allotment to occur from May 1<sup>st</sup> through September 15<sup>th</sup> based on the permittees application and allotment conditions.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	350 Cattle	5/1-9/15	53%	150	0	150

**Other Terms and Conditions:**

- The corral in the northwest corner of the Bull Creek Pasture can be used for two days to sort cattle.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Center Ridge Allotment (Figure 3)***

The allotment is currently not meeting Standard 7. The BLM has determined that the existing grazing management is not a significant causal factor. The failure to achieve standards is most likely due to grazing management on state and private lands and the road system. Due to possible disease transfer to Rocky Mountain bighorn sheep, the active preference sheep AUMs on the allotment would be suspended. Since current BLM grazing management is not a significant factor in the allotment not meeting the standard, the BLM proposes to renew the permit with an Active Preference of 1,947 AUMs, which is equal to the long-term preference from the Lemhi RMP, leading to stocking rate of 8 acres/AUM. The BLM also proposes to continue to allow a maximum of 500 cattle on the allotment between May 24<sup>th</sup> and November 1<sup>st</sup>. In addition, to maintain riparian habitat, the A Pasture of the allotment would not be grazed after July 15<sup>th</sup> and Poison Spring would be excluded from grazing to improve riparian habitat as identified in the CBT Watershed Assessment.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	Sheep	NA	NA	0	166	166
B	500 Cattle	5/24-11/1	98%	1947	1361	3308

**Other Terms and Conditions:**

1. Livestock grazing of the A Pasture will not occur after 7/15.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

*Poison Spring Exclosure (Figure 4)*

The project area is located in a draw east of Highway 28, approximately ten miles south of Leadore, Idaho; it is not visible from the highway. The project area consists of two springs that drain to a man-made pond. A natural wetland area exists in the bottom of the draw, both up and downstream from the man-made pond. Both springs are currently surrounded by un-wired metal t-posts. The pond is fenced on the down slope side with jack and pole fence; unwired metal t-posts from a prior fence project remain on either side of the draw near the pond.

All existing metal t-posts, wood brace panels, and the existing jack and pole fence would be removed. An exclosure fence would be constructed around the spring complex. The exclosure fence would encompass approximately 4.5 acres and would be constructed using jacks and poles. The man-made pond would remain open for livestock access.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Chamberlain Creek Allotment (Figure 5)***

The allotment is currently not meeting Standards 2, 3, 7 and 8. The BLM has determined that the existing grazing management is not a significant causal factor for not meeting Standard 7. The failure to achieve Standard 7 is most likely due to grazing management on state and private lands and the road system. To make significant progress toward meeting Standards 2, 3 and 8, the BLM proposes to reduce the Active Preference on the allotment and create a new pasture by constructing a fence and pipeline and limit grazing to only the upland pasture, Big Bend, after September 15<sup>th</sup>. In addition, to further improve riparian condition along McGinty Creek, the McGinty Creek Pasture would not be grazed after June 30<sup>th</sup>. An in-season monitoring term and condition would be placed on the permit. The BLM proposes to renew the permit with an Active Preference of 1,081 AUMs, an 8.5% reduction from the current permit, leading to stocking rate of 15 acres/AUM. The BLM also proposes to allow the allotment to be grazed with up to 410 cattle, as applied for by the permittee, for the same timeframe as the current permit.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	410 Cattle	6/1-9/30	66%	1081	1331	2412

**Other Terms and Conditions:**

1. Only the Big Bend Pasture can be grazed after 9/15.
2. If in-season monitoring on any key area finds > 15% alteration or <4” of stubble height livestock will be removed from the pasture with the key area for the rest of the season.
3. The McGinty Creek Pasture will not be grazed after 6/30.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

*McGinty Creek Division Fence (Figure 5)*

A new 3.3 mile barbed wire division fence would be constructed to separate the Big Bend Pasture into two new pastures, the Big Bend and McGinty Creek Pastures. Approximately 2.75 miles of the new fence would run near and parallel to an existing two-track road on the ridge to the south of McGinty Creek. The remainder of the fence would run off of the ridge through the sagebrush to the west, and tie in with the division fence between the Chamberlain Creek and Center Ridge Allotments. The new fence would allow the McGinty Creek Pasture to be managed as a riparian pasture and the Big Bend Pasture to be managed as an upland pasture.

*McGinty Creek Pipeline (Figure 5)*

The proposed pipeline would run northwest approximately 1.25 miles, then turn southwest and run another one mile. There would be one trough located at the end of the pipeline. A hydro-screen water collector or headbox would be installed at the point of diversion in McGinty Creek on private land. The landowner would transfer a 0.02 cubic foot per second water right to the BLM for the pipeline project. The landowner would also grant the BLM an easement for the distance the pipeline crosses private land (approximately 0.75 mile).

**Vegetation Manipulation Projects:**

None proposed for this allotment.

**Dump Allotment (Figure 6)**

Since the allotment is meeting all applicable standards the BLM proposes to renew the permit with an Active Preference of 25 AUMs, which is equal to the long-term preference from the Lemhi RMP. The BLM also proposes to allow the allotment to be grazed with a maximum of 90 cattle from June 1<sup>st</sup> through July 15<sup>th</sup>, as long as the Active Preference of 25 AUMs is not exceeded.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	90 Cattle	6/1-7/15	100%	25	0	25

**Other Terms and Conditions:**

None proposed for this allotment

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Free Strip Allotment (Figure 7)***

The allotment is currently not meeting Standards 2 and 3, but significant progress toward meeting those standards is being made. The BLM proposes to renew the permit with an Active Preference of 475 AUMs, which is equal to the long-term preference from the Lemhi RMP, leading to stocking rate of 7.5 acres/AUM. The BLM also proposes to authorize a maximum of 550 cattle from June 1<sup>st</sup> through October 31<sup>st</sup>, as long as the Active Preference is not exceeded. Use in the majority of the allotment, Free Strip and Bell Field Pastures, would be limited to June 1<sup>st</sup> through July 15<sup>th</sup> to enhance riparian conditions. In addition, the Freestrip Pasture would be rested one out of every four years.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	550 Cattle	6/1-10/31	79%	475	310	785

**Other Terms and Conditions:**

1. The Freestrip Pasture will not be grazed more than three years out of four.
2. Use in Free Strip and Bell Field pastures will only occur between 6/1 and 7/15.
3. Livestock grazing in the Bell Field Pasture will not exceed 35 AUMs in a year.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Hawley Creek Allotment (Figure 2)***

The allotment is currently not meeting Standards 2, 3, 4, 7 and 8. The BLM has determined that the existing grazing management is not a significant causal factor for not meeting Standard 2, 3, 7 or 8. The failure to achieve Standard 7 is most likely due to grazing management on state and private lands and the road system. The failure to achieve Standards 2, 3 and 8 is due to private irrigation diversions dewatering streams. The allotment is making significant progress toward

meeting Standard 4. Since existing grazing management is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permits with an Active Preference of 468 AUMs, the level of the current permit through a term and condition, leading to stocking rate of 16 acres/AUM. The BLM also proposes to authorize a maximum of 616 cattle, as applied for by the permittees, from May 15<sup>th</sup> through October 31<sup>st</sup>.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	316 Cattle	6/1-10/1	100%	30	0	30
B	300 Cattle	5/15-6/30	100%	438	4	442
	300 Cattle	9/15-10/31	100%			

**Other Terms and Conditions (A):**

1. Cattle will not be left on the allotment overnight; they will be actively trailed across the allotment.
2. Trailing will only occur in the Hawley Creek Pasture.
3. The two corrals at the mouth of the Hawley Creek Canyon can be used for two days to sort cattle.

**Other Terms and Conditions (B):**

1. Livestock grazing in the Eighteenmile Creek Pasture will not occur after 6/30.
2. The two corrals at the mouth of the Hawley Creek Canyon can be used for two days to sort cattle.

**Crossing Authorizations:**

Crossing authorizations would be restricted to a maximum of 350 cattle at one time and cattle would not be left on the allotment overnight. A maximum of 1800 cattle would be allowed to cross the allotment in a year. Cattle will only be authorized to cross the allotment from 4/15 – 12/1. Cattle crossing the allotment would be authorized only in the Hawley Creek Pasture, and would have access to the two corrals at the mouth of Hawley Creek Canyon to sort cattle. Crossing would only occur on routes shown in Figure 2.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Jakes Canyon Allotment (Figure 8)***

The allotment is currently not meeting Standards 4 and 7. The BLM has determined that the existing grazing management is not a significant causal factor for not meeting the standards. The failure to achieve Standard 7 is most likely due to grazing management on state and private lands and the road system. The failure to achieve Standard 4 is most likely due to historic grazing management. To make significant progress toward meeting Standard 4, the BLM proposes to aerate and seed 225 acres of the allotment which would then be rested until the seeding establishes. After establishment, the North Pasture would not be grazed before July 1<sup>st</sup> in two

out of three years to further benefit native vegetation. In addition, grazing would not occur after July 1<sup>st</sup> in the South Pasture to limit impacts to riparian habitat along Canyon Creek. If steelhead, or their redds, are found in the allotment grazing in the south pasture would not occur after May 31<sup>st</sup> that year. The BLM proposes to renew the permit at the current Active Preference of 31 AUMs with a stocking rate of 17.5 acres/AUM. The BLM also proposes to authorize a maximum of 40 cattle from May 20<sup>th</sup> through July 15<sup>th</sup> as applied for by the permittee.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	40 Cattle	5/20-7/15	100%	31	31	62

**Other Terms and Conditions:**

1. Livestock grazing of the South Pasture will be limited to a total of 9 AUMs and will not occur after 7/1.
2. If an adult steelhead or steelhead redd is found in the allotment, livestock will not be allowed in the South Pasture after 5/31 for that year.
3. In two out of three years, grazing of the North Pasture will not occur before 7/1.
4. After seeding, the allotment will not be grazed until bluebunch wheatgrass is established. Bluebunch will be considered established when the plants are well-rooted (not easily pulled out of ground by hand) and/or are producing reproductive stems. The seeding may require two or more growing seasons for establishment.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

*Jakes Canyon Vegetation Treatment (Figure 8)*

The Jakes Canyon Allotment is located about three-quarter miles northeast of Leadore, Idaho. The area was historically overgrazed by numerous local herds of sheep, cattle, and horses due to its proximity to the towns of Junction and Leadore. Due to this historic overgrazing, the current ecological condition reflects a lack of deep-rooted perennial grasses and forbs, as documented in the CBT Watershed Assessment.

With the implementation of the *Jakes Canyon Vegetation Treatment*, the entire allotment, approximately 548 acres, would be rested (removed from livestock grazing) until seeding establishment. Mechanical vegetation treatment would be applied on up to 225 acres. The treatment would involve a single-drum pasture aerator. The aerator consists of a large, heavy drum mounted with tines that are designed to break up the soil surface and improve the infiltration of water. The aerator would be pulled across the ground surface by a rubber-tired tractor or track-mounted dozer. The heavy drum is designed to break down and crush the older shrub overstory as the unit is pulled along, yet leave some young sagebrush plants and seedlings to re-colonize the treated area. Actual treatment with the aerator would be in a mosaic pattern designed to provide a variety of habitats for wildlife as well as sources for sagebrush and forb

colonization. A mix of native forb species would be seeded along with bluebunch wheatgrass on the aerated acres. The remaining untreated portions (323 acres) of the allotment would also be rested from livestock grazing until the seeding establishes.

***Leadore Allotment (Figure 6)***

Since the allotment is meeting, or making significant progress toward meeting, all of the Standards the BLM propose to renew the permit with an Active Preference of 28 AUMs, which is equal to the long-term preference from the Lemhi RMP, leading to stocking rate of 15 acres/AUM. The BLM would authorize a maximum of 60 cattle from June 16<sup>th</sup> through August 5<sup>th</sup>, which is the same as the current permit. In addition, grazing would not occur in the North Pasture before July 15<sup>th</sup> to continue to improve the upland habitat. A fence would be constructed to eliminate grazing on the stream/riparian habitat on Big Timber Creek in the South Pasture.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	60 Cattle	6/16-8/5	29%	28	20	48

**Other Terms and Conditions:**

1. The North Pasture will not be grazed before July 15.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

*Big Timber Exclosure (Figure 6)*

The new exclosure fence would prevent cattle from accessing Big Timber Creek on public lands managed by the BLM. The exclosure would be in the South Pasture and measure 1880 feet in length and exclude 3 acres from cattle grazing. The exclosure fence would be constructed of barbed wire and would follow the BLM/private boundary on the north and west sides.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Leadore Hill Allotment (Figure 6)***

The allotment is currently meeting all applicable Standards. The BLM proposes to renew the permit with an Active Preference of 114 AUMs, replacing 21 AUMs that were removed from the current permit when the sheep use on the allotment was changed to cattle use, leading to a stocking rate of 13 acres/AUM. The BLM would authorize a maximum of 80 cattle from May 16<sup>th</sup> through June 30<sup>th</sup>, as applied for.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	85 Cattle	5/15-6/30	91%	114	18	132

**Other Terms and Conditions:**

None proposed for this allotment.

**Crossing Authorizations:**

Crossing authorizations would be restricted to a maximum of 1200 cattle at one time and cattle would not be left on the allotment overnight. A maximum of 5000 cattle would be allowed to cross the allotment in a year. Cattle will only be authorized to cross the allotment from 3/1 – 12/19. Cattle crossing the allotment would only use the Upper Pasture. Crossing would only occur on routes shown on Figure 6.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Leadville Allotment (Figure 9)***

The allotment is currently not meeting Standards 2, 3, 4, 7 and 8. The BLM has determined that the existing grazing management is not a significant causal factor for not meeting Standards 2, 3, 7 or 8. The failure to achieve Standard 7 is most likely due to grazing management on state and private lands. The failure to achieve Standards 2, 3 and 8 is due to private irrigation diversions dewatering streams. The allotment was seeded in 2010 and is now making significant progress toward meeting Standard 4. The BLM proposes to renew the permit with an Active Preference of 528 AUMs leading to a stocking rate of 12 acres/AUM. The BLM would authorize a maximum of 500 cattle from May 1<sup>st</sup> through September 30<sup>th</sup>, as applied for.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	500 Cattle	5/1-9/30	96%	528	398	926

**Other Terms and Conditions:**

1. Livestock grazing will only occur in the Canyon Creek Pasture from May 1 to May 31 with a maximum of 115 AUMs.
2. The Lower Pasture of the allotment will not be grazed, except for trailing, until 2013 to allow establishment of the Leadville seeding.

**Crossing Authorizations:**

Crossing authorizations would be restricted to a maximum of 500 cattle at one time and cattle would not be left on the allotment overnight. A maximum of 2,300 cattle would be allowed to cross the allotment in a year. Cattle will only be authorized to cross the allotment from 4/15 – 12/1. Cattle crossing the allotment would only use the Lower Pasture. Crossing would only occur on routes shown in Figure 9.

**Range Improvement Projects:**

*Rocky Canyon Fence Relocation (Figure 9)*

The Rocky Canyon Fence separates the Upper and Lower pastures of the allotment. In order to allow cattle access to water in the southern portion of the Upper Pasture, the southern portion of the Rocky Canyon Fence would be relocated approximately 0.5 miles to the west; the new fence would be approximately 0.75 miles in length, and would allow access to Hawley Creek from both the Upper and Lower Pastures. The existing southern pasture division fence (0.5 mi) would be removed.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Nez Perce Allotment (Figure 10)***

The allotment is currently not meeting Standards 7 and 8. The BLM has determined that the existing grazing management is not a significant causal factor. The failure to achieve standards is most likely due to grazing management on private lands for Standard 7 and private irrigation diversion dewatering Deer Creek for Standard 8 in relation to bull trout. Since existing grazing management is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 466 AUMs, the long-term preference from the Lemhi RMP, leading to stocking rate of 9 acres/AUM. The BLM would authorize a maximum of 864 cattle between May 20<sup>th</sup> and October 1<sup>st</sup>.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	142 Cattle	5/20-10/1	11%	69	119	188
B	722 Cattle	5/20-10/1	15%	397	687	1084

**Other Terms and Conditions:**

None proposed for this allotment.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Powderhorn Allotment (Figure 11)***

The allotment is currently not meeting Standards 2, 3, 7 or 8. The BLM has determined that existing grazing management is a significant factor in not achieving Standards 2, 3 and 8. The failure to achieve Standard 7 is most likely due to grazing management on private and state lands and the road system. To make significant progress toward meeting Standards 2, 3 and 8 the BLM proposes to reduce the Active Preference on the allotment from what is currently permitted. The

Clear Creek Pasture would not be grazed after August 15<sup>th</sup> to improve riparian habitat and the Clear Creek Drainage would only be used for 7 days. In addition, fence adjustments would be made to protect bull trout spawning areas in Clear Creek and riparian habitat along Eighteenmile Creek. The BLM proposes to renew the permit with an Active Preference of 3,517 AUMs, the long-term rate in the Lemhi RMP and a reduction of 30% from the current permit, leading to stocking rate of 12 acres/AUM. The BLM would authorize a maximum of 982 cattle between April 15<sup>th</sup> and December 12<sup>th</sup>.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	782 Cattle	4/15-12/12	80%	2954	3065	6019
B	200 Cattle	4/15-12/12	97%	563	592	1155

**Other Terms and Conditions:**

1. The Clear Creek Pasture will be grazed for a maximum of 3 weeks and no grazing will occur after 8/15 in the pasture.
2. If in-season monitoring on any key area in the Clear Creek Pasture finds >15% alteration or <6” of stubble height livestock will be removed from the pasture for the rest of the season.

**Crossing Authorizations:**

Crossing authorizations would be restricted to a maximum of 350 cattle at one time and cattle would not be left on the allotment overnight. A maximum of 700 cattle would be allowed to cross the allotment in a year. Cattle will only be authorized to cross the allotment from 5/15 – 10/15. Cattle crossing the allotment would not use the Clear Creek Pasture. Crossing would only occur on routes shown in Figure 11.

**Range Improvement Projects:**

*18 Mile Pipeline (Figure 11)*

The pipeline would run approximately four miles to the west from Eighteenmile Creek. Three troughs would be installed with one being placed in the Steer Pasture, one in the Center Field Pasture, and one in the 18 Mile Flat Pasture. An existing two-track road would provide access to most of the pipeline route. The landowner at the point of diversion would transfer a 0.02 cubic foot per second water right to the pipeline. The BLM would obtain an easement from the landowner for the portion of pipeline crossing the private land, approximately 7,500 feet.

*18 Mile Flat Fence Relocation (Figure 12)*

An existing water gap provides cattle with access to Eighteenmile Creek in the southernmost portion of the 18 Mile Flat Pasture. With the addition of the trough in the 18 Mile Flat Pasture as described above, the water gap would become unnecessary. The current fence (approximately 0.3 miles) on the south side of the 18 Mile Flat Pasture would be removed and a new 0.3 mile barbed wire fence would be constructed to the north of the existing fence. The new fence would prevent cattle from accessing Eighteenmile Creek from the allotment. The cattleguard would also be moved from its present location and reinstalled to where the new fence would cross the road.

*Clear Creek Division Fence (Figure 13)*

A large spring complex exists at the mouth of Clear Creek Canyon. The spring complex provides approximately half of the flow to Clear Creek below the complex. Cattle have access to this complex in the winter months when grazing the Winter Range Pasture of the Powderhorn Allotment. In order to keep cattle from accessing this spring complex in winter months, a new 0.5 mile fence would be built to include this spring complex into the Clear Creek Pasture, which is used early in the year. This would ensure that cattle would not enter the creek during the winter months, thus protecting bull trout redds. Due to physical landscape features, cattle from the Clear Creek Pasture would rarely access the spring complex, therefore mostly excluding the area from livestock access. When cattle do access the complex, it would be early in the season and for a limited amount of time.

The new fence would include 0.1 mile of barbed wire fence that would be constructed to the north of the existing fence. The new fence would prevent cattle from accessing Clear Creek from the Winter Range Pasture. The rest of the fence, crossing Clear Creek and along the road would be constructed of wooden jack and/or post and poles.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Purcell Creek Allotment (Figure 14)***

Since the allotment is meeting all applicable Standards, the BLM proposes to renew the permit with an Active Preference of 28 AUMs. The BLM would authorize a maximum of 200 cattle from May 1<sup>st</sup> through June 30<sup>th</sup>, as requested in the application.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	200 Cattle	5/1-6/30	100%	28	0	28

**Other Terms and Conditions:**

None proposed for this allotment

**Crossing Authorizations:**

Crossing authorizations would be restricted to a maximum of 1,200 cattle at one time and cattle would not be left on the allotment overnight. A maximum of 5,000 cattle would be allowed to cross the allotment in a year. Cattle will only be authorized to cross the allotment from 3/1 – 12/19. Crossing would only occur on routes shown in Figure 14.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

### ***Spring Canyon Allotment (Figure 15)***

The allotment is currently not meeting Standards 2, 3 and 7. The BLM has determined that existing grazing management is not a significant causal factor for not meeting Standard 7 which is most likely due to grazing management on private lands. Due to possible disease transfer to Rocky Mountain bighorn sheep the active preference sheep AUMs on the allotment would be suspended. An enclosure fence was constructed in 2010 which has led to the allotment making significant progress toward meeting Standards 2 and 3. Since existing grazing management is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 2,542 AUMs, leading to stocking rate of 9 acres/AUM. The BLM also proposes to continue to allow a maximum of 720 cattle on the allotment between May 15<sup>th</sup> and October 31<sup>st</sup>.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	720 Cattle	5/15-10/31	79%	2542	1775	4317

### **Other Terms and Conditions:**

None proposed for this allotment.

### **Crossing Authorizations:**

None authorized for this allotment.

### **Range Improvement Projects:**

#### ***All Hands Spring Exclosure (Figure 16)***

The existing exclosure at All Hands Spring would be removed and replaced with a larger exclosure that would run along the upland vegetated banks of the draw from above the spring and downhill to the toe of the slope. The new exclosure fence would encompass approximately 1/2 acre, and would be constructed using jack and poles.

#### ***Highway Spring Exclosure (Figure 17)***

The existing jack and pole exclosure would be adjusted to include the spring source while leaving two water gaps below the source for livestock access.

### **Vegetation Manipulation Projects:**

#### ***Silver Moon Gulch Hazardous Fuel Reduction (Figure 18)***

This project prescribes commercial (harvesting) and/or pre-commercial thinning of small-diameter trees (<12 inches in diameter at breast height (dbh)), and activity-generated slash disposal within a WUI area at the mouth of Silver Moon Gulch.

Approximately 314 acres of dry Douglas-fir forest would be treated by “low” thinning (thin from below), where tree cutting is focused in the lower crown canopy levels (Graham, 1999). Where existing roads, topography, and commercial product value permit, thinning and harvesting would be implemented by falling, bucking and limbing, skidding, decking, loading and hauling, and subsequent slash disposal (pile and burn, or lop and scatter). Where limited access or adverse topography makes harvesting uneconomical, thinning would be implemented using machinery to

masticate material, or by hand crews (chainsaw) to cut and pile (or cut and scatter) material for subsequent disposal through burning or decay.

*Gilmore Hazardous Fuel Reduction (Figure 18)*

Between 2005 and 2007 the SFO thinned dry Douglas-fir forests within six treatment units utilizing hand crews (chainsaws). The thinning prescription included low thinning of small-diameter trees up to 8 inches dbh and subsequent slash disposal through piling and burning. Post-treatment monitoring concluded a need for additional thinning to reduce tree stocking and crown fire risk further within these areas.

This project prescribes follow-up thinning on approximately 238 acres of dry Douglas-fir forest within a WUI area at the Gilmore townsite and the mouth of Silver Moon Gulch, and would be implemented as described above under the *Silver Moon Gulch Hazardous Fuel Reduction* project.

*Gilmore Summit Rangeland Restoration (Figure 18)*

This project prescribes pre-commercial thinning of small-diameter trees (<10 inches dbh), and activity-generated slash disposal in an area of mountain big sagebrush that is transitional to dry Douglas-fir forest within the allotment.

Approximately 210 acres of rangeland that has advanced Douglas-fir regeneration (encroachment) would be treated by “free” thinning (favor specific trees) (Graham, 1999) to protect widely scattered “legacy” trees, combined with low thinning to emphasize and promote rangeland attributes while providing a small number of recruitment trees to function as prospective legacy trees in the future. Where adverse slope (>40%) requires thinning by hand, field crews would identify legacy trees and recruitment trees (minimum of three per acre) to be protected; and all remaining trees cut with resultant slash material either piled, or lopped and scattered for subsequent disposal through burning or decay.

If the prescription for portions of these areas can physically be carried out mechanically (slopes < 40%) and it is not cost prohibitive to do so, thinning may be carried out in one operation by mastication with machinery. Burning would not be necessary to reduce activity fuels in these areas post-treatment as the fire hazard is mitigated by the mastication process.

***Tex Creek Allotment (Figure 19)***

The allotment is currently not meeting Standards 2, 3, 7 and 8. The BLM has determined that existing grazing management is not a significant causal factor for not meeting Standard 7 which is most likely due to grazing management on private and state lands and the road system in the watershed. Changes in private irrigation have allowed the allotment to make significant progress toward meeting Standards 3 and 8. The BLM determined that Standard 2 is not being met and that current livestock management is a significant factor. To make significant progress toward meeting Standard 2 the BLM proposes to build the Tex Creek Pond Enclosure to improve riparian habitat and until the enclosure is complete, grazing would not occur in the allotment after June 15<sup>th</sup>. The BLM proposes to renew the permit with an Active Preference of 262 AUMs leading to stocking rate of 10 acres/AUM. The BLM would authorize a maximum of 175 cattle between May 12<sup>th</sup> and July 15<sup>th</sup>.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	150 Cattle	5/12-7/15	100%	224	174	398
B	25 Cattle	5/12-7/15	100%	38	49	87

**Other Terms and Conditions:**

1. Until the Tex Creek Pond Enclosure is constructed, livestock will not graze the allotment after 6/15.

**Crossing Authorizations:**

None authorized for this allotment.

**Range Improvement Projects:**

*Tex Creek Ponds Enclosure (Figure 19)*

A natural pond complex approximately 50 acres in size exists within the Tex Creek Allotment. During summer months this pond complex receives sub-surface water seepage from an irrigation ditch on adjacent private lands to the west. These ponds are utilized as a water source by cattle and horses in the Tex Creek Allotment. During the growing season, the pond banks and the associated vegetation receive heavy grazing use.

In order to improve riparian habitat around the pond complex, a new enclosure fence would be built to prevent cattle from accessing the Tex Creek ponds. A small water gap would be left on the north side of the biggest pond. The enclosure would be approximately 45 acres in size and be constructed of approximately 1.36 miles of barbed wire fence and 400 feet of jack and pole fence. The water gap would be constructed with jack and pole fence and would extend along either side of the water gap pond for 200 feet before turning to barbed wire fence for the remainder of the enclosure.

**Vegetation Manipulation Projects:**

None proposed for this allotment.

***Timber Creek Allotment (Figure 6)***

The allotment is currently meeting all applicable Standards. Due to possible disease transfer to Rocky Mountain bighorn sheep the active preference sheep AUMs on the allotment would be suspended. Since existing grazing management is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 670 AUMs, leading to stocking rate of 10.5 acres/AUM. The BLM also proposes to continue to allow a maximum of 443 cattle on the allotment between May 6<sup>th</sup> and September 30<sup>th</sup> and 5 horses between May 6<sup>th</sup> and October 31<sup>st</sup>.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	100 Cattle	5/6-6/15	100%	134	52	186
B	75 Cattle	5/6-6/30	100%	138	17	155
C	268 Cattle	5/6-6/15	100%	398	163	561
	245 Cattle	8/15-9/30	100%			
	5 Horse	5/6-10/31	100%			
D	Sheep	NA	NA	0	239	239

**Other Terms and Conditions (C):**

1. After 6/15 cattle cannot be left on the allotment overnight. All cattle must be actively trailed across the allotment.

**Crossing Authorizations:**

Crossing authorizations would be restricted to a maximum of 1200 livestock at one time and livestock would not be left on the allotment overnight. A maximum of 5000 livestock would be allowed to cross the allotment in a year. Cattle will only be authorized to cross the allotment between 3/1 and 12/19. Crossing of Big Timber Creek would take place on the Carey Act Dam, fording of the stream would not be authorized. Fording Little Timber Creek would occur at a designated two-track road. Crossing would only occur on routes shown in Figure 6.

**Range Improvement Projects:**

None proposed for this allotment.

**Vegetation Manipulation Projects:**

*Swan Basin Rangeland Restoration (Figure 20)*

This project prescribes pre-commercial thinning of small-diameter trees (<10 inches dbh), and activity-generated slash disposal in an area of mountain big sagebrush that is transitional to dry Douglas-fir forest within the allotment.

Approximately 579 acres of rangeland that has advanced Douglas-fir regeneration (encroachment) would be treated as described under the *Gilmore Summit Rangeland Restoration* project (page 44).

*Swan Basin Aspen Restoration (Figure 20)*

This project prescribes pre-commercial thinning of small-diameter conifer trees (<10 inches dbh); girdling of larger conifer trees (>10 inches dbh up to 18 inches dbh); and activity-generated slash disposal within aspen stands near the confluence of Basin and Timber creeks within the allotment.

Approximately 142 acres of aspen that has advanced juniper and Douglas-fir regeneration (encroachment) would be treated by low thinning, combined with girdling of these conifer species to emphasize and promote aspen community attributes while providing for retention of larger (>18 inches dbh) conifer legacy trees. Field crews would identify legacy trees to be protected; and all remaining conifer trees cut or girdled with resultant slash material either piled, or lopped and scattered for subsequent disposal through burning or decay.

**Description of Alternative 4 (No Grazing):**

Alternative 4 is to reissue ten-year term grazing permits on 16 allotments with 0 authorized AUMs for Active Preference. Livestock grazing would be deferred for the ten-year permit period on public lands managed by the BLM. No new range improvement projects would be constructed and no modifications would be made to existing projects. No new vegetation treatments would be implemented. No crossing would be authorized.

**Description of Alternative 5 (Reduced Grazing):**

Alternative 5 would reissue ten-year term grazing permits on 16 allotments. Pastures that contain occupied bull trout habitat and are within allotments that are failing to meet Idaho Standards for Rangeland Health and existing grazing management is a significant causal factor would not be grazed. Pastures with important riparian habitat would not be grazed after July 15 to allow regrowth of vegetation. If those pastures also contain nesting habitat for greater sage-grouse, as mapped by the Challis Local Working Group, they would not be grazed. Pastures that do not have important riparian habitat would be grazed after July 15<sup>th</sup> to allow a majority of upland grass plants to set seed before being utilized. No crossing authorizations would be authorized. No new range improvement projects would be constructed and no modifications would be made to existing projects. Vegetation manipulation projects would include removal of Douglas-fir encroachment from mountain big sagebrush and aspen communities; and thinning of trees from Douglas-fir stands in the vicinity of a WUI. All vegetation work would follow design criteria described in Appendix B.

Other Terms and Conditions common to all grazing permits:

1. Cattle numbers shown under the Mandatory Terms and Conditions above reflect the maximum number of livestock, the maximum allowable season of use, and the maximum number of AUMs of forage that can be used in any given year. The number of livestock may be reduced within the season indicated, or the season of use may be shortened, in order to not exceed the maximum number of AUMs indicated. A reduced number of AUMs may be used in any given year to allow flexibility to respond to weather conditions, etc. Under no circumstances may Active Preference AUMs be exceeded.
2. As provided in Title 43 of the Code of Federal Regulations (43 CFR) 4130.3-2(d), you are hereby required to submit an actual grazing use report within 15 days after completion of your annual grazing use. Failure to comply could result in penalties as described at 43 CFR 4170.1.
3. Exclosures in the allotment cannot be grazed by livestock at any time.
4. All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.
5. Supplemental feeding is authorized and is limited to salt, mineral, and/or energy/protein in block, granular, or liquid form. If used, these supplements must be placed at least one-quarter (1/4) mile away from any stream and 500 feet away from any spring.

**Alternative 5 by Allotment:**

***Bull Creek Allotment***

The allotment does not have important riparian areas. Grazing in the allotment would only occur after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	230 Cattle	7/15-9/15	53%	150	0	150

**Other Terms and Conditions:**

1. The corral in the northwest corner of the Bull Creek Pasture can be used for two days to sort cattle.

***Center Ridge Allotment***

There is riparian and nesting sage-grouse habitat in the A Pasture, it would not be grazed. The rest of the allotment does not have important riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	Sheep	NA	NA	0	166	166
B	500 Cattle	7/15-11/1	100%	854	2677	3531

**Other Terms and Conditions:**

1. Livestock grazing will not occur in the A Pasture.

***Chamberlain Creek Allotment***

The No. 18 Mile and 18 Mile pastures have occupied bull trout habitat, they would not be grazed. There is riparian habitat in the Big Bend and So. 18 Mile Pastures; they would not be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	350 Cattle	6/1-7/15	59%	816	1764	2580

**Other Terms and Conditions:**

1. Livestock grazing will not occur in the 18 Mile or No. 18 Mile Pastures.
2. The Big Bend Pasture will not be grazed after 6/30.

***Dump Allotment***

There is no riparian habitat in the allotment; it would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
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A	90 Cattle	7/15-8/29	100%	25	5	30
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**Other Terms and Conditions:**

None proposed for this allotment

***Free Strip Allotment***

There is riparian habitat in the Free Strip and Bell Field Pastures; they would not be grazed after 7/15. The rest of the allotment does not have riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	550 Cattle	6/1-10/31	79%	475	563	1038

**Other Terms and Conditions:**

1. The Freestrip Pasture will not be grazed more than three years out of four.
2. Use in Free Strip and Bell Field pastures will not occur after 7/15.
3. Livestock grazing in the Bell Field Pasture will not exceed 35 AUMs in a grazing period.

***Hawley Creek Allotment***

There is riparian and nesting sage-grouse habitat within both pastures in the allotment, the allotment would be issued a ten-year term grazing permit with 0 authorized AUMs for Active Preference. Livestock grazing would be deferred for the ten-year permit period on public land.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	0 Cattle	6/1-10/1	100%	0	30	30
B	0 Cattle	5/15-6/30	100%	0	602	602

**Other Terms and Conditions:**

None proposed for this allotment

***Jakes Canyon Allotment***

The North Pasture does not have riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	40 Cattle	5/20-9/6	100%	29	33	62

**Other Terms and Conditions:**

1. Livestock grazing of the South Pasture will be limited to a total of 9 AUMs and will not occur after 7/1.
2. Livestock grazing in the North Pasture would not occur before 7/15.

### ***Leadore Allotment***

There is riparian habitat in the South Pasture it would not be grazed after 7/15. The other pastures do not have riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	48 Cattle	6/16-8/5	10%	8	42	50

#### **Other Terms and Conditions:**

1. The South Pasture will not be grazed after 7/15.
2. The Middle and North Pasture will not be grazed before 7/15.

### ***Leadore Hill Allotment***

There is riparian and nesting sage-grouse habitat in the Lower Pasture it would be closed to grazing. The Upper Pasture contains riparian habitat and would not be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	80 Cattle	5/16-6/30	100%	78	54	132

#### **Other Terms and Conditions:**

1. The Lower Pasture will not be grazed.

### ***Leadville Allotment***

There is riparian and nesting sage-grouse habitat in the Lower Pasture it would be closed to grazing. The Upper Pasture does not have riparian concerns and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	500 Cattle	5/1-9/30	100%	207	719	926

#### **Other Terms and Conditions:**

1. Livestock grazing will only occur in the Canyon Creek Pasture from May 1 to May 31 with a maximum of 115 AUMs.
2. The Lower Pasture of the allotment will not be grazed.
3. Livestock Grazing in the Upper Pasture will not occur before 7/15.

### ***Nez Perce Allotment***

There is riparian habitat in the Queenie and Lower Riparian pastures they would not be grazed after 7/15. The other pastures do not have important riparian concerns and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
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A	142 Cattle	5/20-10/1	11%	69	194	263
B	722 Cattle	5/20-10/1	15%	397	1123	1520

**Other Terms and Conditions:**

1. Livestock grazing will not occur in the Queenie or Lower Riparian pastures after 7/15.
2. Livestock grazing will not occur before 7/15 in the Nez Perce, Negro Green, Lower Riparian or Gilmore Pastures.

***Powderhorn Allotment***

The Clear Creek and Winter Range pastures have occupied bull trout habitat, they would be closed to grazing. There is riparian and nesting sage-grouse habitat in the 18 Mile Flat, Winter Range and Steer Pastures, they would be closed to grazing. The Carlton's Field, 10 Mile, Powderhorn and Center Field pastures do not have important riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	782 Cattle	7/15-12/12	90%	934	6343	7277
B	200 Cattle	7/15-12/12	100%	312	1082	1394

**Other Terms and Conditions:**

1. Livestock grazing will not occur in the 18 Mile Flat, Steer, Winter Range or Clear Creek Pastures.
2. Livestock grazing in the Carlton's Field, 10 Mile, Powderhorn and Center Field pastures will not occur before 7/15.

***Purcell Creek Allotment***

The allotment does not have riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	200 Cattle	7/15-9/15	100%	19	9	28

**Other Terms and Conditions:**

None proposed for this allotment

***Spring Canyon Allotment***

There is riparian habitat in the Shearing Corral Pasture; it would not be grazed after 7/15. The other pastures do not have important riparian habitat and would be grazed after 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	720 Cattle	5/15-10/31	68%	1400	2917	4317

**Other Terms and Conditions:**

1. Livestock grazing will not occur in the Shearing Corral Pasture after 7/15.
2. Livestock grazing will not occur before 7/15 in the Coal Kiln, Gilmore, Lemhi Union or Windmill Pastures.

**Vegetation Manipulation Projects:**

*Silver Moon Gulch Hazardous Fuel Reduction (Figure 18)*

This project would be implemented as described under Alternative 3, Spring Canyon Allotment.

*Gilmore Hazardous Fuel Reduction (Figure 18)*

This project would be implemented as described under Alternative 3, Spring Canyon Allotment.

*Gilmore Summit Rangeland Restoration (Figure 18)*

This project would be implemented as described under Alternative 3, Spring Canyon Allotment.

***Tex Creek Allotment***

There is riparian and nesting sage-grouse habitat within the allotment, the allotment would be issued a ten-year term grazing permit with 0 authorized AUMs for Active Preference. Livestock grazing would be deferred for the ten-year permit period on public land.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	0 Cattle	5/12-7/15	100%	0	398	398
B	0 Cattle	5/12-7/15	100%	0	87	87

**Other Terms and Conditions:**

None proposed for this allotment

***Timber Creek Allotment***

There is riparian and nesting sage-grouse habitat in the Lower Pasture; it would be closed to grazing. The Upper Pasture has riparian habitat and would only be grazed before 7/15.

Permit	Maximum Number/Kind	Maximum Grazing Period	% Public Land	Maximum Active Preference	Suspended AUMs	Total Preference
A	100 Cattle	5/6-6/15	100%	63	123	186
B	75 Cattle	5/6-6/30	100%	64	91	155
C	245 Cattle	5/6-7/15	100%	185	376	561
D	Sheep	NA	NA	0	239	239

**Other Terms and Conditions:**

1. Livestock grazing would not occur in the Lower Pasture.

**Vegetation Manipulation Projects:**

*Swan Basin Rangeland Restoration (Figure 20)*

This project would be implemented as described under Alternative 3, Timber Creek Allotment.

*Swan Basin Aspen Restoration (Figure 20)*

This project would be implemented as described under Alternative 3, Timber Creek Allotment.

**Projects Considered but not Analyzed in Detail:**

Additional project proposals were considered but not analyzed since the projects would not meet the Purpose and Need for action. The projects that will not be analyzed further because they would not have contributed to fixing an issue presented in the CBT Watershed Assessment are:

1. A three mile pipeline in the Timber Creek Allotment with up to two trough locations.
2. Placing a trough in the Gilmore Pasture of the Spring Canyon Allotment for hauling water to.
3. A two mile pipeline in the C Pasture of the Center Ridge Allotment.
4. An additional two miles of pipeline with two additional trough locations in the A Pasture of the Center Ridge Allotment.
5. A one-half mile pipeline in the North Pasture of the Jakes Canyon Allotment.

The projects that will not be analyzed further because they were not feasible without the permission of adjacent land owners are:

1. Prescribed fire in the Upper Pasture of the Timber Creek Allotment.
2. Small exclosures in the Lower Riparian and Queenie pastures of the Nez Perce Allotment.
3. A one mile pipeline in the So. 18 Mile and Big Bend pastures of the Chamberlain Creek Allotment.
4. A one-half mile pipeline in the Tex Creek Allotment.

The project that will not be analyzed further because it was not feasible based on engineering results is:

1. Placing a trough on Highway Spring to the south of the headbox instead of the watergaps.

**AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES:**

This section 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 environmental impacts likely to result from the implementation of the various alternatives. The resources considered in the analysis are portrayed in Table 3.

**General Setting:**

The CBT area is located 45 to 55 miles southeast of Salmon. It consists of Eighteenmile Creek, including most of the Eighteenmile Wilderness Study Area (WSA), and the mid to lower reaches of Canyon Creek, Hawley Creek, Texas Creek, and Big Timber Creek, plus an isolated island of public lands managed by the BLM along the Continental Divide (Figure 1). Topography is relatively flat over most of the CBT area except the WSA; elevation ranges from approximately 6,200 feet to nearly 10,200 feet.

**Table 3: Resources Considered in the Impact Analysis**

Resource	Not Present	Present Not Impacted	Present Impacted	Impacts
Mineral Resources		X		Mineral Resources would not be impacted by the Proposed Action or Alternatives.
Soil Resources			X	Impacts are disclosed under Soil Resources.
Paleontological Resources		X		Paleontological Resources are documented in the watershed area but are not located within areas of potential effect by alternatives.
Floodplains	X			FEMA identified floodplains would not be impacted by the Proposed Action or Alternatives because they are not present.
Vegetation			X	Impacts are disclosed below under Vegetation.
Forest Resources			X	Impacts are disclosed below under Forest Resources.
Wetland and Riparian Zones			X	Impacts are disclosed below under Wetland and Riparian Zones.
Invasive, Non-Native Species			X	Impacts are disclosed below under Invasive, Non-Native Species.
Threatened, Endangered, and Sensitive Plants			X	Impacts are disclosed below under Threatened, Endangered, and Sensitive Plants.
Air Quality			X	Potential impacts would include emissions from vehicles/equipment during project implementation and from burning of natural and activity fuels following completion of vegetation manipulation projects. Impacts are anticipated to be very localized (roughly project boundaries), of short duration (hours to one-two days) and low intensity (regulatory air quality standards met), and therefore are being considered negligible.
Water Quality (Surface and Ground)			X	Impacts are disclosed below under Water Quality.
Fisheries			X	Impacts are disclosed below under Fisheries including Threatened, Endangered, and Sensitive Fish.
Threatened, Endangered, and Sensitive Fish			X	Impacts are disclosed below under Fisheries including Threatened, Endangered, and Sensitive Fish.
Wildlife Resources			X	Impacts are disclosed below under Wildlife Resources including Threatened, Endangered, and Sensitive Animals and Migratory Birds.
Threatened, Endangered, and Sensitive Animals			X	Impacts are disclosed below under Wildlife Resources including Threatened, Endangered, and Sensitive Animals and Migratory Birds
Migratory Birds			X	Impacts are disclosed below under Wildlife Resources including Threatened, Endangered, and Sensitive Animals and Migratory Birds
Range Resources			X	Impacts are disclosed below under Range Resources.
Economic and Social Values			X	Impacts are disclosed below under Economic and Social Values.
Existing and Potential Land Uses		X		Existing and Potential Land Uses would not be impacted by the Proposed Action or Alternatives. Current authorized uses would continue and any potential new uses would be evaluated as required.
Access		X		Access to lands in the CBT area would continue and would not be impacted by the Proposed Action or the Alternatives. The public would still be allowed to access public lands managed by the BLM where authorized, i.e., easements and rights-of-way

Resource	Not Present	Present Not Impacted	Present Impacted	Impacts
Prime and Unique Farmlands	X			There are no prime and unique farmlands located within the project area.
Wastes, Hazardous and Solid	X			There are no hazardous or solid wastes located within the project area.
Environmental Justice		X		There are some scattered minority and low-income populations in the CBT area however, the projects and actions described in the Proposed Action or Alternatives would not affect these populations as described under Executive Order 12898 of 2/11/1994. There would be no disproportionately high and adverse human health or environmental effects to the minority and low-income populations in the area resulting from the proposed activities.
Cultural Resource		X		Cultural resource permit renewal reviews were previously completed and concurred in by the Idaho State Historic Preservation Office for individual allotments considered in this EA between FY 2000 and FY 2007. In FY 2010, Section 106 inventory and mitigation procedures were conducted in response to all proposed actions set forth in this document.
Tribal Treaty Rights and Interests			X	Impacts are disclosed below under Tribal Treaty Rights and Interests.
Native American Religious Concerns		X		The BLM is not aware of specific ceremonial sites or resources associated with ceremonial practices in the proposed project area.
Recreational Use			X	Impacts to recreation would be negligible directly, indirectly, and cumulatively. Short-term impacts could include visual and noise disturbance near dispersed recreation areas for a period of less than one month.
Visual Resources			X	Visual Resource impacts resulting from implementing the Proposed Action or alternatives would be negligible.
Areas of Critical Environmental Concern (ACEC)	X			There are no ACECs within the CBT area.
Wilderness/WSA			X	Impacts are disclosed below under Wilderness/WSA.
Wild and Scenic Rivers	X			There are no Wild and Scenic Rivers within the CBT area.
Wild Horse and Burro HMAs	X			There are no Wild Horse and Burro HMAs within the SFO area.

### Impact Terminology:

Beneficial – positive change that enhances the condition or appearance of the resource, or a change that moves the resource toward desired condition or goals.

Adverse – negative change that detracts from the condition or appearance of the resource, or a change that moves the resource away from desired condition or goals.

No effect – no discernible effect.

Negligible – effects are at the lowest level of detection and cause very little or no disturbance or improvement.

Minor – effects are slight but detectable, with some perceptible disturbance or improvement.

Moderate – effects are readily apparent, with measureable disturbance or improvement.

Short-term – effects last no longer than the immediate 1-5 year implementation and restoration periods.

Long-term – effects last beyond the implementation period or indefinitely.

Localized – the impact would occur in a discrete site or area. In comparing changes to existing conditions, localized impacts would be detectable only in discrete areas.

Project area – The impact would occur or extend throughout the CBT area. In comparing changes to existing conditions, project-area impacts may be detectable at the population, watershed or county levels.

Seral – A species or community that is replaced by another species or community as ecological succession progresses.

## **Soil Resources**

### **Affected Environment:**

The CBT area contains many diverse and complex soil patterns that parallel the area's complex topography and lithology. The soil types in the area are the result of erosional activities acting in a region that exhibits broad variations in elevation, precipitation, and temperature. Much of the area's topography consists of broad expanses of flat areas broken by drainages and flat terrace-like areas of varying elevations. Also contained within the area is the Eighteenmile WSA, consisting of steeper, more mountainous terrain, and the foothills of the Lemhi Range. Each soil profile in the area formed in response to changing climatic conditions as a result of weathering of local rock formations.

The soils within the CBT area are usually moderately deep (20-40 inches) to deep (greater than 40 inches). The soils related to fluvial-alluvial action are mostly gravelly clay loams with low organic contents, extremely friable (crumbles easily), and dependent on ground cover for stability. Dominant soil textural classes in the CBT area are gravelly loam and gravelly silt loam, but other soil surface textures, such as loam, stony loam, very gravelly loam and others exist within the CBT area.

In general, soils within the CBT area are stable. Where erosion does occur, as it does for all soils over time, it falls within the range of variability expected for the site. Soil stability has been rated as "none to slight" departure from a reference state for all Rangeland Health Assessment (RHA) sites within the CBT area (Table 4). No recommendations for soil-related management objectives were made in the CBT Watershed Assessment. Additionally, soils were not identified as a "value at risk" in the Salmon Field Office Fire Management Plan (USDI-BLM, 2004). The livestock use described in Alternative 2-Actual Use has contributed to the current condition of soils across the CBT area. Areas of heavy livestock use occur around existing water sources, such as troughs or watergaps, salt licks, areas along certain fence lines and near gates, and areas

providing cover or shade during the hot season. Use decreases as distance from these areas increases.

**Table 4. Soil and Site Stability Ratings from Rangeland Health Assessments.**

Allotment	Pasture	Soil & Site Stability Rating *	Surface texture	Ecological Site Name	Soil Map Unit/ Component Name
Bull Creek	Ellsworth Field	None to slight	Gravelly loam	Gravelly loam 8-12"	Whiteknob
Center Ridge	A Pasture	None to slight	Gravelly clay loam	Loamy 8-12"	Oxhead
Chamberlain Creek	Big Bend pasture	None to slight	Loamy	Loam 12-16"	Chamberlain
Dump	Dump	None to slight	Gravelly loam	Gravelly loam 8-12"	Leadore
Free Strip	Free Strip	None to slight	Loamy	Loamy 16-22"	Resoot
Hawley Creek	Hawley Creek	None to slight	Gravelly loam	Gravelly loam 8-12"	Whiteknob
Jakes Canyon	Upland pasture	None to slight	Loamy	Loamy 8-12"	Sparmo
Leadore	North pasture	None to slight	Gravelly loam	Gravelly loam 8-12"	Leadore
Leadore	South pasture	None to slight	Gravelly loam	Gravelly loam 8-12"	Leadore
Leadore Hill	Lower	None to slight	Gravelly loam	Gravelly loam 8-12"	Mountain Boy
Leadville	North pasture	None to slight	Gravelly loam	Gravelly loam 8-12"	Whiteknob
Nez Perce	Lower Upland	None to slight	Gravelly silt loam	North slope Loamy 12-16"	Wiggleton
Powderhorn	18 Mile Flat	None to slight	Gravelly silt loam	Gravelly Loamy 12-16"	Mountain Boy
Powderhorn	Carlton's Field	None to slight	Gravelly loam	Loamy 8-12"	Oxhead
Purcell Creek	Purcell	None to slight	Silt loam	Loamy 8-12"	Oxhead
Spring Canyon	Coal Kiln	None to slight	Cobbly Loam	Gravelly Loam 8-12"	White knob
Spring Canyon	Shearing Corral	None to slight	Silt loam	Loamy 12-16"	Heathcoat
Tex Creek	Tex Creek	None to slight	Gravelly Loam	Gravelly Loam 8-12"	Leadore
Timber Creek	Lower Pasture	None to slight	Loam to silt loam	Gravelly Loam 8-12"	Leadore

\* the soil and stability rating is based upon departure from a reference state (a discussion of the RHA methodology, from which this rating is derived, is provided in the Upland Vegetation section below)

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

The effects of continued livestock grazing on soils would be influenced by the complex interaction between soil texture, soil moisture, slope, vegetative cover, and degree of use by

livestock. Impacts to the soil resource from grazing activities include compaction (Wheeler, 2002), soil surface disturbance, and disruption or destruction of physical or microbiotic soil crusts (Memmott, 1998), which can result in soil erosion.

Compaction from livestock grazing activities would result in an increase in bulk density and soil strength; a decrease in water infiltration (Abdel-Magid, 1987) and an increase in resistance to root penetration (McIlvanie, 1942). Compaction effects would occur around water troughs and water gaps, near salting areas, near gates used to move cattle to other pastures or off the allotment, and along repeatedly used trails or crossing locations (such as along some fence lines or other areas repeatedly walked along by cattle). In these areas, reductions in plant available water and increased resistance to root penetration would diminish the soil's ability to support vegetation. The depth to which compaction occurs is dependent on soil texture, organic matter content, and moisture content. Soil compaction can occur to depths of 15 cm in moist riparian soils (Wheeler, 2002) and at least to 5 cm in drier upland soils (Abdel-Magid, 1987). However, frost action during the winter months can restore natural bulk density, particularly in riparian areas (Wheeler, 2002). This freeze-thaw action promotes soil stability by decreasing compaction, reducing evidence of hoof action and hoof prints, and increasing surface area and safe sites for seed germination and vegetative establishment. This would occur mainly in riparian-spring areas, as spring and fall diurnal temperatures begin to fluctuate more widely.

Excepting soils that remain moist year-round, areas grazed later in the season would have lower soil moisture content. These soils would be less likely to be compacted and fewer hoof-prints would be evident due to decreased soil moisture. In these cases, beneficial impacts to soils would be detectable compared to early season grazing in these areas.

Surface disturbance that disrupts or destroys physical or microbiotic soil crusts could lead to erosion by wind or water. Erosion of the soil surface following disturbances would remove the litter layer and potentially portions of the A horizon. Of the entire soil profile, the litter layer and the A horizon contain the greatest amount of organic matter that is the source of available plant nutrients (Neff, 2005). Alterations to the nutrient cycle via erosion can reduce plant community productivity and create conditions which are conducive to the introduction of non-native species (Kourtev, 2002). These types of effects would be greatest near concentrated use areas and would decrease as distance from the use area increases.

Although localized impacts would occur near concentrated use areas, the majority of the soil surface would be stabilized by root mass, organic matter inputs (herbaceous/woody litter, manure from both livestock and wildlife), decomposition products, and/or a biological crust. High use areas are estimated to comprise only a tiny fraction of 1 percent of the total acreage included within the CBT area. In areas of infrequent use or disturbance (the vast majority of the CBT area), negligible effects to soils would occur as a result of livestock grazing at the levels anticipated from Alternatives 1, 2, 3, or 5.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Overall livestock impacts to soils would include those general impacts described in the '*Effects Common to the Grazing Alternatives*' section, above. On the Bull Creek, Dump, and Free Strip allotments, the amount of forage removed would not change from current levels (due to the

Terms and Conditions limiting AUMs to 481). For all three allotments the AUMs removed would be the same as current condition. Under this alternative, additional impacts to soils over and above what is already occurring on these three allotments would be negligible. Ongoing impacts to the soil resource would continue to occur and would include compaction, crushing of biological soil crusts, and erosion.

Due to small increases in AUMs on the Jakes Canyon (6.9%), Leadore Hill (12%), and Tex Creek (1.9%) allotments, negligible adverse effects from compaction, crushing of biological soil crusts and erosion would occur over and above what is occurring under the current condition. The increase in actual AUMs is small and would be 2, 10, and 5 AUMs, respectively. These increases would have a negligible additive effect over existing condition; impacts would be at the lowest level of detection and would cause very little additional disturbance when compared to current condition. These AUM figures are the same as currently permitted and are at, or below, the RMP long-term figures (USDI-BLM, 1985).

Due to increases in AUMs on the Center Ridge (103%), Chamberlain Creek (20.9%), Hawley Creek (70.8%), Leadore (275%), Leadville (27.2%), Nez Perce (91.9%), Powderhorn (91.4%), Purcell Creek (47.4%), Spring Canyon (137.8%), and Timber Creek (67.4%), minor to moderate adverse impacts to soils, such as increased compaction, biological soil crust alteration, and increased potential for erosion would occur. Over and above current condition, these impacts would range from slight but detectable, to readily apparent and measureable in some locations. These AUM figures would be greater than actual use for the last 5 years, but reflect what is on the current permit.

This alternative would have the greatest increase in AUMs when compared to current condition (an average of the last 5 years of actual use); an increase of 76.8%. However, these numbers, number of cattle and AUMs, are what are currently permitted. This alternative would have the most potential for soil loss from wind and water erosion because of increased livestock activity. Infiltration of precipitation into soils on these sites would be reduced by soil compaction, reduced plant and ground cover to intercept overland flow and reduced organic matter near the soil surface. Accelerated erosion would not occur on allotments that are meeting the upland standard as plant cover and type on these allotments would remain adequate to resist erosion.

For all allotments, soil impacts would not be spread equally across the allotment and would be concentrated near water sources, salting areas or other areas of livestock congregation. Soil impacts would decrease as distance from concentrated use areas increases.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Overall livestock impacts to soils would include those general impacts described in the ‘*Effects Common to the Grazing Alternatives*’ section, above. Under Alternative 2, livestock impacts to soils from compaction, loss of microbiotic soil crusts, and erosion would not change from the current condition. Under this alternative, there would be no additional impacts to soils over and above what is already occurring on these allotments. Ongoing impacts to the soil resource would continue to occur and would include compaction, crushing of biological soil crusts, and erosion. Because current conditions exhibit a “none to slight” variation from expected soil stability,

impacts would be negligible. All allotments would continue to exhibit a “none to slight” variation from expected soil stability.

For all allotments, soil impacts would not be spread equally across the allotment and would be concentrated near water sources, salting areas or other areas of livestock congregation. Soil impacts would decrease as distance from concentrated use areas increases.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Overall livestock impacts to soils would include those general impacts described in the ‘*Effects Common to the Grazing Alternatives*’ section, above. For pastures that are not grazed until later in the season (compared to current condition) when soil moisture is reduced, soils would be less likely to be compacted and fewer hoof-prints would be evident due to decreased soil moisture. In these cases, beneficial impacts to soils would be detectable, particularly in areas of higher soil moisture, such as depressions, draws, near water sources, and so forth. Impacts to soils along riparian areas would be mitigated by freeze-thaw action and water flow events along the greenline. Freeze-thaw events would occur where soils remain moist throughout the year, particularly into the fall/spring timeframes as diurnal temperatures begin to more widely fluctuate. Ongoing impacts to the soil resource would continue to occur and would include compaction, crushing of biological soil crusts, and erosion. These impacts would occur near areas of concentrated use and would decrease as distance from these areas increases.

Authorized AUMs would be lower on the Dump (-16.7%), Free Strip (-1.2%), and Nez Perce (-8.4%) allotments, as compared to current condition. On these allotments, improvement in soil conditions would not likely be measurable because the difference in AUMs would be small; 5 fewer on Dump, 6 fewer on Free Strip, and 43 fewer on Nez Perce. Improvements could include less compaction and trampling near areas of concentrated livestock use. Soil biological crusts would be less likely to be crushed or displaced, but this difference would not be discernible. These AUM decreases would have a negligible beneficial effect; improvement would be at the lowest level of detection when compared to current condition.

On the Bull Creek Allotment, the number of AUMs removed from grazing would not change from current condition, although the number of cattle that would be authorized to be on the allotment would be higher. Because the number of AUMs would be the same, when cattle numbers are higher, the number of days cattle would be on the allotment would decrease. Under this alternative, additional impacts to soils over and above what is already occurring would be negligible.

Due to small increases (as compared to current condition) in AUMs on the Chamberlain Creek (4.6%), Jakes Canyon (6.9%), and Tex Creek (1.6%) allotments, negligible adverse effects from compaction, crushing of biological soil crusts and erosion would occur. Adverse effects to soils would not likely be measurable because the increase in AUMs would be small; 48 for Chamberlain (within a large allotment – about 16,472 acres), 2 for Jakes Canyon, and 4 for Tex Creek. Impacts from these minor increases would be at the lowest level of detection and would cause very little additional disturbance when compared to current condition.

Because of moderate to large increases (as compared to current condition) in AUMs on the Center Ridge (69.2%), Hawley Creek (70.8%), Leadore (250%), Leadore Hill (37.3%), Leadville (27.2%), Powderhorn (34.3%), Purcell Creek (47.4%), Spring Canyon (81.6%), and Timber Creek (23.4%) Allotments, adverse impacts to soils such as increased compaction, biological soil crust alteration and increased potential for erosion would occur. Over and above current condition, these impacts would range from slight but detectable (where actual stocking rates remain quite low), to readily apparent and measureable in some locations (where stocking rates are closer to the RMP long-term average stocking rate of approximately 8 acres/AUM). Increased compaction and trampling would be readily apparent near water sources and salting areas. Impacts to biological soil crusts and from erosion would be more widespread as compared to current condition.

For all allotments, soil impacts would not be spread equally across the allotment and would be concentrated near water sources, salting areas or other areas of livestock congregation. Soil impacts would decrease as distance from concentrated use areas increases.

### **Crossing Authorizations**

Under Alternative 3, livestock crossing would be authorized in the Hawley Creek, Leadore Hill, Leadville, Powderhorn, Purcell Creek, and Timber Creek allotments. For soils and biological soil crusts along crossing routes, a temporary decrease in soil surface stability would be balanced by a temporary increase in soil fertility. Damage to shrubs could increase vascular plant litter creating opportunities for herbaceous plants as competition from shrubs along the crossing route is decreased. Biological soil crusts (particularly mosses) would be detached or scattered. Soils and biological soil crusts would have only short-term limited effects from the authorized time- and trail-limited crossing activities.

### **Range Improvement Projects**

*Fences* – Fence installation would result in short-term minor to moderate disturbance to the upper horizons of the soil profile. Disturbance to the soil surface would occur along the four fence routes (Table 5) and would be evident for up to approximately 5 years, depending on the rate of site re-vegetation; grasses and forbs would recolonize disturbed areas within 2 years, while shrubs could take up to 5 years. Site re-vegetation rates would be dependent on seed bank integrity and climatic factors such as timing and amount of precipitation and springtime temperatures.

Up to an 8 foot disturbance width would occur along the fence installation route. Vegetation along the route could be mowed or cut to facilitate fence installation. Vegetation removal and profile disturbance would make the soil surface more vulnerable to erosion. Over time, shrubs would re-colonize the disturbance footprint, which at 8 feet wide by 4.5 miles long (total of all new fences) would result in a 4.36 acre disturbance footprint (Table 5). Many immature shrubs and the more flexible, low-growing plants (grasses, forbs, and certain rabbit brushes) would remain alive and rooted in the soil, though they would likely sustain breakage or crushing during the fence installation process. These remaining plants would protect and help stabilize the soil.

Similar damage would occur along fence removal areas, although the estimated disturbance width would be approximately four feet. Fence removal would disturb the soil surface and portions of the soil profile when mature shrubs, that are intertwined with the fence, and fence

posts are removed. The estimated disturbance width for fence removal would be up to four feet and would have minor to moderate short-term adverse impacts on 0.24 acres of the soil resource.

**Table 5. Fence Project Soil Disturbance Areas.**

<i>Fence Name/Type</i>	<i>Allotment</i>	<i>New Fence (miles)</i>	<i>Short-term Soil Disturbance (acres)</i>	<i>Fence Removed (miles)</i>	<i>Short-term Soil Disturbance (acres)</i>
McGinty Cr. Division barbed wire	Chamberlain	3.3	3.2	-	-
Rocky Canyon barbed wire	Leadville	0.7	0.68	0.50	0.24
Clear Cr. Division jack and pole	Powderhorn	0.40	0.39	-	-
Clear Cr. Division barbed wire	Powderhorn	0.10	0.10	-	-
<b>Totals</b>	-	<b>4.5</b>	<b>4.36</b>	<b>0.50</b>	<b>0.24</b>

Assumptions: Fence installation disturbance width = 8 ft.; Fence removal disturbance width = 4 ft.

*Exclosures* – The effects of exclosure fence installation are described in the above fence section; installation and removal of fences would have a short-term minor to moderate adverse impact on the soil resource. Approximately 2.29 miles of new exclosure fence would be constructed and approximately 0.30 miles of fence would be removed. Collectively, this would impact 2.38 acres of the soil resource.

Exclusion of livestock would result in minor to moderate long-term benefit to 77 acres of the soil resource by providing protection from compaction and erosion. Additional benefits would occur because consumption of plant material would be reduced and allow for increases in soil organic matter and soil carbon to occur. However, some livestock may be attracted to exclosure fences and fenced water sources and their activity would disturb soils bordering these features. Because of this, trails along exclosure fences could be created over time.

**Table 6. Exclosure Project Disturbance Areas.**

<i>Exclosure Fence Name/Type</i>	<i>Allotment</i>	<i>New Exclosure Fence (miles)</i>	<i>Short-term Soil Disturbance (acres)</i>	<i>Exclosure Size (acres)</i>	<i>Fence Removed (miles)</i>	<i>Short-term Soil Disturbance (acres)</i>
Poison Spring jack and pole	Center Ridge	0.30	0.29	4.5	-	-
Big Timber Exclosure barbed wires	Leadore	0.35	0.34	3	-	-
18 Mile Flat Exclosure Expansion barbed wire	Powderhorn	0.30	0.29	22.5 (increase from 8.5 acres)	0.30	0.15
All Hands Spring jack and pole	Spring Canyon	0.20	0.19	0.50	-	-
Highway Springs jack and pole	Spring Canyon	500 ft.	0.09	3.5	-	-

<i>Exclosure Fence Name/Type</i>	<i>Allotment</i>	<i>New Exclosure Fence (miles)</i>	<i>Short-term Soil Disturbance (acres)</i>	<i>Exclosure Size (acres)</i>	<i>Fence Removed (miles)</i>	<i>Short-term Soil Disturbance (acres)</i>
Tex Cr. jack and pole	Tex Creek	0.15	0.15	43.0	-	-
Tex Cr. barbed wire	Tex Creek	0.90	0.87	above	-	-
<b>Totals</b>	-	<b>2.2 +</b>	<b>2.22</b>	<b>77</b>	<b>0.30</b>	<b>0.15</b>

Assumptions: Fence installation disturbance width = 8 ft.; Fence removal disturbance width = 4 ft.

*Pipeline and Trough Systems* – As a result of construction activities, the two pipeline/trough systems would have immediate, short-term minor to moderate adverse impacts to soils (Table 7). Disturbances to the soil would occur from equipment travel and use. Vehicular travel would have minor short-term adverse impacts in the form of disruption of the soil surface from tractor tire tracks. The ripper blade, used to create the trench in which the pipe is laid, would have moderate adverse impacts to the soil by cutting through and exposing the soil profile. The total disturbance width occurring during installation would be approximately 8 feet. Of the 8 foot disturbance width, 2 feet would be subject to profile disturbance while the remaining 6 feet would experience only surface disturbance. Impacts to the soil would persist until the disturbance line becomes re-vegetated, which would take up to 2 years for herbaceous vegetation, and up to 5 years for shrubby vegetation. Pipeline route re-vegetation rates would be dependent on seed bank integrity and climatic factors such as timing and amount of precipitation and springtime temperatures.

**Table 7. Pipeline and Trough Soil Disturbance Areas.**

<i>Pipeline Name</i>	<i>Allotment</i>	<i>Pipeline Distance (miles)</i>	<i>Short-Term Soil Disturbance (acres)</i>	<i>Short-Term Installation Disturbance Total (acres)</i>	<i># of Troughs</i>	<i>Long-Term Soil Disturbance (acres)</i>
McGinty Cr.	Chamberlain	2.25	0.55	2.18	1	0.50
18 Mile Cr.	Powderhorn	4.0	0.97	3.88	3	1.5
<b>Totals</b>		<b>6.25</b>	<b>1.52</b>	<b>6.06</b>	<b>4</b>	<b>2.0</b>

Assumptions: Pipeline soil disturbance width = 2 ft.; Installation disturbance width = 8 ft. (includes both soil disturbance and crushed vegetation from installation equipment); Trough disturbance footprint = 0.50 acre

Trough placement would have a lasting impact to an estimated 2.0 acres of the soil resource. These impacts would be the long-term compaction and denuding of the soil surface. Impacts from trough placement would be considered minor because this type of disturbance would be localized and occur to a very small fraction of a percent of the soil resource in the CBT area; the effect would be slight but detectable.

The proposed water developments would allow for improved livestock distribution across uplands in the Chamberlain and Powderhorn allotments, ultimately having a minor benefit to the soil resource near existing water sources. Dispersion of livestock would reduce livestock concentration around these sources and would disperse general use throughout these allotments.

Soils in areas receiving an increase in use would be affected by this increase in livestock activity, resulting in negligible to minor adverse impacts to those soils; the effects would be slight but detectable, to readily apparent and measureable in some instances, particularly in areas of close proximity to the new water sources.

### **Vegetation Manipulation Projects**

The *Jakes Canyon Vegetation Treatment* project would result in minor short-term adverse impacts via soil disturbance. Disturbances would occur predominantly where the aerator tines make contact with the soil. Herbaceous vegetation would occupy the favorable sites created by the aerator tines within two years of disturbance; most perennial grasses and forbs and low-growing shrubs would remain intact, thus protecting the soil surface. Because native grasses and forbs would be seeded, the project would have a long-term moderate benefit to the soil resource through the stabilization of the soil due to the increase in deep-rooted perennial grasses.

The *Silver Moon Gulch Hazardous Fuel Reduction* and *Gilmore Hazardous Fuel Reduction* projects would result in localized, short-term effects on soil resources predominantly from compaction and vegetation removal where directly run-over by machinery.

#### Logging- Skidding, decking, and loading

In areas where skidding and landing operations are concentrated, soil compaction would occur, increasing soil bulk density and strength while decreasing permeability. The impacts from compaction to the soil resource would be similar to those discussed under the *Common to the Grazing Alternatives* section; however these impacts would be amplified due to the use of heavy equipment. Impacts would be short-term, moderate adverse impacts because frost action and other natural processes would return bulk density, soil strength, and local infiltration rates to pre-treatment levels.

Although site-specific impacts to soils would occur, the majority of the soil surface would remain intact and would be stabilized by root mass and organic matter (herbaceous/woody litter). Any sites impacted to the point where natural recovery of the native shrubs, forbs, and grasses is unlikely within five years, would be rehabilitated with a native plant seed mix (Appendix B). The extent of area estimated to be impacted to this degree would be less than 5% of the planned hazardous fuel reduction acres.

#### Hazardous Fuel Reduction- Mastication

Effects to soils from this activity would be negligible as the activity is dispersed versus concentrated, and is typically performed by machinery with low wheel or track pressures.

#### Hazardous Fuel Reduction- Pile Burning

Effects to soils from burning activities would be short-term minor to moderate adverse impacts. Fire can modify the physical, physio-chemical, mineralogical, chemical, and biological properties of the soil resource (Certini, 2005). According to Ice *et al* (2004), a low severity fire results in no changes to the mineral soil and only partial consumption of the litter layer whereas a moderate severity fire heats the soil, possibly causes hydrophobic layers to form, may volatilize nitrogen, and litter is mostly consumed. Impacts would be dependent on the intensity of the fire within the burn pile, which is generally a low to moderate severity, and would affect the soil

horizons directly under and immediately adjacent to piles. An increase in nutrient availability would occur that would benefit soil microbial communities and localized plant populations.

The *Gilmore Summit Rangeland Restoration* and *Swan Basin Rangeland Restoration* projects would have similar effects on soil resources as that described for the *Silver Moon Gulch Hazardous Fuel Reduction* and *Gilmore Hazardous Fuel Reduction* projects above, excepting the logging operations discussion. Logging would not occur as part of these projects.

The *Swan Basin Aspen Restoration* project would have negligible effects on soil resources because the restoration activities, as described in the Proposed Action, would cause very little or no disturbance to the soil resource. Decreased evergreen competition would increase available resources (sunlight, nutrients, and water) to understory herbaceous vegetation, which could increase soil organic matter content over time.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

Soils would have the best opportunity for stabilization, soil organic matter accumulation, and carbon sequestration over the long-term. Impacts would be moderately beneficial to the soil resource. On upland sites, ground cover and soil stability would improve in a shorter time frame. Because no livestock grazing would occur, maximum above and below-ground biomass productivity would be attained in most years. This would result in an increase in soil organic matter and other nutrient inputs. Increases in residual vegetation, energy flow and nutrient cycling, ground cover and soil stability should be near optimum over the long-term.

**Alternative 5- Reduced Grazing, Direct/Indirect Impacts:**

**Grazing Permits**

Overall livestock impacts to soils in grazed pastures would include those general impacts described in the '*Effects Common to the Grazing Alternatives*' section, above. For all grazed pastures, ongoing impacts to the soil resource would continue to occur and would include compaction, crushing of biological soil crusts, and erosion. These impacts would occur near areas of concentrated use and would decrease as distance from these areas increases.

For pastures or allotments that are not grazed until later in the season (compared to the current situation), when soil moisture is reduced, soils would be less likely to be compacted and fewer hoof-prints would be evident due to decreased soil moisture on upland sites. In these cases, beneficial impacts to soils would be detectable. Areas of higher soil moisture, such as depressions, draws, near water sources, would be more susceptible to alteration by hoof action. Freeze-thaw action in fall and spring should help reduce bulk density in these areas. Overall, soil impacts to upland sites would be minimal, although erosion and crushing of biological soil crusts would still occur.

Pastures containing riparian habitat would only be grazed prior to 7/15; alterations and bulk density increases in these pastures would be mitigated by freeze-thaw action and, along streambanks, by water flow events. Freeze-thaw events would occur where soils remain moist throughout the year, particularly into the fall/spring timeframes as diurnal temperatures begin to more widely fluctuate; through each freeze-thaw cycle, bulk density and compaction would be reduced.

On closed pastures, and on the Tex and Hawley Creek allotments, no AUMs would be authorized and livestock grazing would not occur; readily apparent beneficial impacts to soils, such as decreased compaction, decreased biological soil crust alteration and decreased potential for erosion would occur. Impacts in these pastures and allotments would be similar to those described in Alternative 4. There would be no impacts from cattle grazing to soils. Soils would have the greatest opportunity for stabilization, soil organic matter accumulation, and carbon sequestration over the long-term. On upland sites, ground cover and soil stability would improve in a shorter time frame as compared to current condition. Because no livestock grazing would occur, maximum above and below-ground biomass productivity would be attained in most years. This would result in an increase in soil organic matter and other nutrient inputs on these allotments. Increases in residual vegetation, energy flow and nutrient cycling, ground cover and soil stability should be near optimum over the long-term for these pastures and allotments.

### **Vegetation Manipulation Projects**

Impacts to the soil resource from these projects would be as described above in '*Alternative 3-Proposed Action, Direct/Indirect Impacts*' excepting those impacts associated with the *Jakes Canyon Vegetation Treatment* project. The *Jakes Canyon Vegetation Treatment* project would not be implemented under this alternative.

## **Vegetation**

The CBT area includes eight classes of land cover as defined by BLM Idaho Instruction Memorandum No. ID-2009-053 (USDI-BLM, 2009). Using the Northwest ReGap (USDI-BLM, 2009) satellite-based vegetation layer for the Cumulative Impact Analysis Area, these classes are: Forest & Woodland (27%); Mesic Shrubland & Grassland (4%); Semi-desert Shrubland & Grassland (60%); High Montane Vegetation (4%); Sparse Vegetation & Natural Barren Areas (2%), Agriculture (2%); Urban & Other Developed Lands (1%); and Open water (<1%). Agricultural lands, Urban & Other Developed Lands, and Open Water cover types are not considered native plant communities and are not discussed here (see Figure 21).

## **Forest Resources**

### **Affected Environment**

#### **Forest and Woodland**

This land cover class includes natural vegetation dominated or characterized by tree species requiring environmental conditions of moderate moisture and temperature or which are only partially protected against desiccation. The CBT area contains approximately 95,728 acres of forested and woodland vegetation. The BLM administers approximately 10,692 acres of this total.

Elevation, aspect, precipitation, and soil type are the primary determinants of forest and woodland distribution due to their influence on daily temperature extremes and available moisture for plant growth. Generally, persistent forest and woodland acres are found at higher elevations (above 7,000 feet) and on more mesic sites on north and east facing slopes within the CBT area. However, the ecotone (transition) between rangeland and forest communities can

fluctuate significantly up or down slope depending on aspect. Drier south and west aspects often support rangeland communities to higher elevations, while north and east slopes support forest stringers lower into the valley. Productivity and growth rates of forest and woodland vegetation within the CBT area are relatively low compared to other regions within the larger Columbia River Basin, primarily because of limited precipitation.

Composition: Lowest-elevation forest and woodlands contain Douglas-fir, limber pine, curl-leaf mountain mahogany (rocky outcrops, slopes and ridges), and scattered Rocky Mountain juniper. As a result of fire exclusion over the past 100 years, the lower forest boundary has been encroaching into what would be considered historically as rangelands. Given enough time these areas are slowly converting from range to forest/woodland communities as the result of tree canopy closure.

Mid-elevation forests are dominated by Douglas-fir. With increasing elevation, Douglas-fir gives way to mixed conifer communities of lodgepole pine, subalpine fir, and Engelmann spruce. Finally, whitebark pine is a minor type found at the highest forested elevations, generally above 8,600 feet, on windswept ridgelines.

Quaking aspen and black cottonwood are two hardwood tree species present within the CBT area, and are typically constrained to drainage bottoms and/or moist upland areas (seeps, springs, etc.). Stands of these species tend to be narrow (linear), and/or are usually small (less than five acres) and often have other tree species or mesic shrubs interspersed. The extent and integrity of the aspen cover type within the CBT area has been significantly reduced due to aggressive wildfire suppression, browsing by ungulates, and land-use practices.

Structure: The current stand structure and age-class distribution is primarily the by-product of forest succession coupled with a relatively successful fire suppression policy during the past 50-100 years. These factors have added significantly to an abundance of younger age and smaller size-classes.

Historically, the preponderance of CBT area stands established and developed under a mixed-severity fire regime. Effects of variable burn severity included maintaining a fine-grained forest community mosaic across much of the forested landscape. Elements of this mosaic were small stands dominated by various age classes of seral coniferous species (Douglas-fir, lodgepole pine, limber pine, whitebark pine) and seral hardwoods such as aspen. Some stands experienced non-lethal underburns that maintained open understories by killing saplings and fire-sensitive species. Others experienced patchy fire mortality that gave rise to patchy tree regeneration including seral species. Occasional large stand-replacement fires may have reduced the spatial diversity, but the varying distribution of seed sources and sprouting shrubs in the pre-burn mosaic probably enhanced variability in post-burn vegetation (Brown & Smith, 2000). A fire effect near the lower forest boundary was to maintain seral grasslands, shrublands, and aspen groves by periodically removing most of the invading young Douglas-fir (Arno & Gruell, 1986).

Vestiges of the historic, mixed-severity fire regime “effect” are still visible throughout the CBT area. However, the fine-grained community mosaic indicative of a functioning mixed-severity

regime is slowly fading from the landscape as successional processes continue to coalesce and homogenize forest patches over time in the absence of fire.

Forest Health: In broad terms, a healthy forest is one that maintains desirable ecosystem functions and processes. Aspects of forest health include biological diversity; soil, air, and water productivity; resilience or resistance to natural disturbances; and the ability to provide for the needs of people.

The predominant forest health issue within the CBT area is reduced stand and tree vigor due to overstocking. Overstocking is primarily the result of fire exclusion since the early 1900's. Few of the forest stands within the CBT area have experienced the thinning, sanitation, and fuel-reducing benefits of mixed-severity fire since Euro-American settlement. In southwestern Montana, Arno and Gruell (1983) estimated a mean fire-free interval of only 41 years within similar habitat types.

The state of decreased forest vigor and overstocking within the CBT area is increasing the risk of tree mortality due to greater susceptibility to insects, disease, and stand-replacing fire. Stand replacement (high-severity) fire potential is positively correlated to increases in the accumulation of dead material on the forest floor and increases in stocking density characteristic of forest stands within the CBT area.

Mountain pine beetle activity is currently at epidemic levels throughout the CBT area causing extensive mortality in lodgepole pine, whitebark pine and limber pine. During low beetle population levels, attacks are primarily on individual or small groups of trees under stress due to injury, drought, overcrowding, etc. However as beetle populations increase, attacks may involve most trees 8 inches dbh or greater, regardless of their apparent health. Epidemic levels of infestation are expected to continue until suitable stand conditions have been exhausted.

Douglas-fir bark beetle activity is currently at elevated levels throughout the Douglas-fir forest type causing mortality to large, mature Douglas-fir where it occurs. Douglas-fir most susceptible to bark beetle attack are generally larger than 14 inches dbh; older than 120 years; growing in dense stands; or are weakened by drought, root disease, or defoliation.

Western spruce budworm defoliation is widespread within Douglas-fir, subalpine fir and Engelmann spruce stands of the CBT area, causing extensive mortality in mid- and lower-canopy levels of those host species due to expansive areas with multi-storied stand structures. Generally, western spruce budworm does not cause direct tree mortality, however it can predispose trees to attacks by other insects or diseases. Budworms grow more vigorously in stressed trees, and budworm populations can increase dramatically during drought conditions. Densely stocked and/or multi-storied stands with predominantly Douglas-fir or subalpine fir are at highest risk to budworm infestation.

Douglas-fir dwarf mistletoe and lodgepole pine dwarf mistletoe disease is conspicuous throughout the CBT area with significant areas being characterized as having 'heavy' infection levels as rated using the 6-class dwarf mistletoe rating system (Hawksworth, 1977).

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Reissuing ten-year term grazing permits on 16 allotments within the CBT area as currently permitted would have negligible direct and indirect effects on forest resources because of dietary preference and selectivity of forage by livestock towards grasses and forbs, and overall limited residence time in forested areas.

There would be no direct or indirect effects from crossing authorizations or range improvement projects because none are being proposed for consideration under this alternative.

There would be no direct effects from vegetation manipulation projects under this alternative because none are being proposed for implementation under this alternative. Indirect effects to forest resources from not implementing proposed vegetation treatments (as described in Alternatives 3 and 5) would include:

- maintenance of the status quo concerning successional trajectory, stand structure and species composition that is less resilient/resistant to stand-replacing insects, disease, and wildfire effects (escalating risk to overstory tree component); and
- continued conifer encroachment into rangeland and aspen communities, and associated loss or decline in productivity and richness of native grass, forb, and shrub species.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Reissuing ten-year term grazing permits on 16 allotments within the CBT area at the average level they have been utilized over the last five years (actual use) would have negligible direct and indirect effects on forest resources for similar reasons as stated under Alternative 1 in this section.

Effects would be the same as for Alternative 1 for crossing authorizations, range improvement projects and vegetation manipulation projects.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Reissuing ten-year term grazing permits on 16 allotments within the CBT area with revised Terms and Conditions would have negligible direct and indirect effects on forest resources for similar reasons as stated under Alternative 1 in this section.

**Crossing Authorizations**

Crossing authorizations within the CBT area would have negligible effects on forest resources because of dietary preference and selectivity of forage by livestock towards grasses and forbs, and overall limited residence time in forested areas.

**Range Improvement Projects**

Construction of identified range improvement projects including fences, exclosures, and pipeline and trough systems within the CBT area would have no direct or indirect effect on forest resources because of their location.

## Vegetation Manipulation Projects

The *Jakes Canyon Vegetation Treatment* project would have no direct or indirect effect on forest resources because of its location.

The *Silver Moon Gulch Hazardous Fuel Reduction* and *Gilmore Hazardous Fuel Reduction* projects would have the following direct and indirect effects on forest resources:

Cutting trees: Proposed thinning would reduce stand density (trees/acre or basal area/acre), alter tree species composition (% of basal area by species), and modify stand structure (diameter and height-class distribution).

Site characteristics important to plant growth that would be directly affected by the thinning of trees include increased penetration of sunlight to the forest floor and reduced interception of precipitation from a thinned tree canopy. With fewer trees competing for water, nutrients, and light, these scarce resources would be redistributed to the residual stand, effectively shifting growth potential. Understory shrubs, forbs, and grasses would also be expected to respond to improved growing conditions with a relative increase in biomass production and species richness.

Improved tree/stand vigor would reduce susceptibility to spruce budworm (Carlson & Wulf, 1989) and Douglas-fir bark beetle (Furniss, 1962) (Furniss, et al., 1981) (Gibson & Byler, 1981). In the case of spruce budworm, selective thinning further reduces the susceptibility of treated stands by reducing stand layering (Carlson & Wulf, 1989).

Site characteristics relevant to potential fire behavior and crown-fire hazard directly affected by thinning are increased solarization at the ground surface and rate of surface fuel drying; a relative increase in surface-level winds; a short-term increase in surface fuel loading (slash); increased crown base height; and reduction of crown bulk density in the tree canopy.

Thinning would contribute substantially to surface fuel loading and have major impacts on expected fire intensities prior to planned disposal of slash fuels (Agee, 1996) (Graham, 1999). Increased production of fine herbaceous fuels in the understory coupled with reduced fuel moisture content and increased wind exposure following slash disposal would continue to facilitate intensified surface fire behavior.

Effects of thinning prescriptions on key components of stand canopy structure and resultant crown-fire hazard are summarized in Table 8 below.

**Table 8. Effects of thinning prescriptions on key components of canopy structure and crown-fire hazard.** (Adapted from Peterson et al.)

Thinning Treatment	Canopy Base Height	Canopy Bulk Density	Canopy Continuity	Overall Effect
Low	Large Increase	Large decrease in lower canopy, some decrease in upper canopy depending on tree sizes removed	Large decrease in lower canopy, some decrease in upper canopy depending on tree sizes removed	Would greatly reduce crown-fire initiation and torching
Free	Small to moderate increase, depending on trees removed	Small to moderate decrease throughout canopy, depending on trees removed	Small to moderate decrease throughout canopy, depending on trees removed	May reduce crown-fire spread slightly if many trees removed; torching reduced slightly

Severity of potential wildfire effects, as measured by mortality of overstory trees following an unplanned ignition, are anticipated to be further reduced through thinning by retaining larger trees which increase the average stand diameter and height, reducing relative risk from crown fire (Agee, 1996) (Graham, 1999).

Logging- Falling, limbing and bucking, skidding, decking, loading: In areas where cut material is harvested, physical injury (skinning) or mortality to residual trees from falling and skidding operations may occur to some degree based on experience with similar prescriptions. Understory vegetation, particularly where skidding and landing operations are concentrated, may be impacted to the point where natural recovery of the native shrubs, forbs, and grasses is unlikely. These areas would be rehabilitated with a native plant seed mix (Appendix B). The extent of area estimated to be impacted to this degree would be less than 5% of the planned harvestable acres.

Hazardous Fuel Reduction- Mastication: In areas where cut material is masticated, physical injury (skinning) or mortality to residual trees from grinding operations may occur to some degree based on experience with similar prescriptions. Understory vegetation may be impacted where directly run-over by machinery, however crushed vegetation typically recovers from this action due to low wheel and track pressures by the following growing season. Understory vegetation may be impacted following mastication due to the distribution of processed material forming a somewhat compact and sometimes thick layer that may inhibit plant growth and species richness (Kane, et al., 2006) (Resh, et al., 2007). The depth of this material would be monitored during operations by a project inspector and corrective action taken as necessary to minimize impacts to understory vegetation (Appendix B).

Hazardous Fuel Reduction- Piling, Pile Burning: Slash generated from cutting activities would be disposed of through pile burning as soon as fuel and weather conditions permit meeting fuel reduction objectives. Where pile burning is implemented, activity fuels would be reduced mostly through consumption of the smaller size-classes (1/4 to 5 inches in diameter) contained within piles. First order (direct) effects would include plant mortality, consumption of above-ground biomass, consumption of organic material in the litter and duff layers, and changes to the physical-chemical environment important to plant growth. (Effects are primarily to understory vegetation, litter, duff, and soil horizons directly under and immediately adjacent to piles; and/or to occasional overstory trees from torching or scorch.)

Second order (indirect) effects on vegetation through pile burning would vary and depend on the nature of the first order effects. These effects include: change in microclimate, soil nutrients, and microbial activity; response (regeneration) of vegetation; succession and new generation patterns; and change in plant growth rates and competitive interactions (Brown & Smith, 2000). Specifically, post-fire plant and microbial responses depend upon the duration and intensity of the heat flux generated, the characteristics of the species (flora and fauna) on the site, their susceptibility to fire, and the means by which they recover after fire.

The *Gilmore Summit Rangeland Restoration* and *Swan Basin Rangeland Restoration* projects would have negligible direct and indirect effects on forest resources because of the location, scope and intensity of the associated activities.

The *Swan Basin Aspen Restoration* project would have the following direct and indirect effects on forest resources:

Cutting trees: Effects would be the same as for the *Silver Moon Gulch Hazardous Fuel Reduction* and *Gilmore Hazardous Fuel Reduction* projects described above. In addition, selectively removing the conifer component within the project area would produce the overall effect of maintaining and perpetuating typical attributes of the aspen community type.

Hazardous Fuel Reduction- Piling, Pile Burning: Effects would be the same as for the *Silver Moon Gulch Hazardous Fuel Reduction* and *Gilmore Hazardous Fuel Reduction* projects described above.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

Reissuing ten-year term grazing permits on 16 allotments within the CBT area with no authorized AUMs for Active Preference would have negligible direct and indirect effects on forest resources for similar reasons as stated under Alternative 1 in this section.

Effects would be the same as Alternative 1 for crossing authorizations, range improvement projects and vegetation manipulation projects.

**Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

**Grazing Permits**

Effects would be the same as for Alternative 1.

**Vegetation Manipulation Projects**

Effects would be the same as for Alternative 3 excepting the *Jakes Canyon Vegetation Treatment* project. The *Jakes Canyon Vegetation Treatment* project is not being proposed for implementation under this alternative.

## **Upland Vegetation**

**Affected Environment**

**Semi-desert Shrubland and Grassland**

This land cover class includes natural vegetation dominated or characterized by shrub and/or herb species having structural or functional adaptations to prevent or reduce water loss by transpiration. This land cover class includes various ecological sites. About a third of the semi-desert type is dominated by Wyoming big sagebrush with a bluebunch wheatgrass dominated understory, mostly in the lower, drier elevations near the town of Leadore. As the elevation and amount of precipitation increases, there is a shift to mountain big sagebrush with an Idaho fescue dominated understory. Again, this represents about a third of the semi-desert landscape. The other third is a mix of other vegetation types, with the majority of these being threetip sagebrush with an understory of Idaho fescue, and low sagebrush with a bluebunch wheatgrass understory. These two types tend to occur in the transition areas between the Wyoming big sagebrush sites and the higher elevation, moister sites that support mountain big sagebrush. Forbs typically

found in these systems include, but are not limited to, various species each of *Antennaria* (pussytoes), *Eriogonum* (buckwheat), *Erigeron* (fleabane or daisy), *Castilleja* (indian paintbrush), *Arenaria* (sandwort), *Astragalus* (milkvetch), *Mertensia* (bluebells), *Crepis* (hawksbeard), *Penstemon* (beardstongue) and *Phlox*.

### *Ecological Site Inventory*

In the early 1980's, an Ecological Site Inventory was completed on rangelands in the assessment area. At the time of the Lemhi RMP (USDI-BLM, 1985), about two-thirds of the semi-desert shrubland and grassland landscape was in "good" condition, and slightly less than a third was in "fair" condition. The rest was split between "excellent" and "poor" condition. An excellent condition community would have 76 to 100 percent of the kinds, amounts, and proportions of vegetation produced in the potential plant community; good, fair, and poor condition classes would have 51 to 75 percent, 26 to 50 percent, and 0 to 25 percent, respectively, of these factors (USDI-BLM, 1985). This protocol and terminology has largely been replaced by the Rangeland Health Assessment process described below.

### *Rangeland Health Assessment*

Between 2006 and 2009, the SFO conducted RHAs on the allotments in the assessment area using the "Interpreting the Indicators of Rangeland Health" methodology (Pellant, et al., 2005). During this process, the BLM assessed the seventeen indicators of rangeland health and how they related to a "reference state" as described by the appropriate rangeland ecological site description (Pellant, et al., 2005). The "reference state" is the state where the functional capacities represented by soil/site stability, hydrologic function, and biotic integrity are performing at an optimum level under the natural disturbance regime; the state usually includes, but is not limited to, what is often referred to as the potential natural plant community.

The RHA is not a single rating of Rangeland Health, but an assessment of the three Attributes of Rangeland Health, which are: 1) Soil/Site Stability, 2) Hydrologic Function, and 3) Biotic Integrity. Seventeen indicators drive the three rangeland health attribute ratings, they are; 1) rills, 2) water flow patterns, 3) pedestal and/or terracettes, 4) bare ground, 5) gullies, 6) wind scoured, blowout and/or depositional areas, 7) litter movement, 8) soil surface resistance to erosion, 9) soil surface loss or degradation, 10) plant community composition and distribution relative to infiltration and runoff, 11) compaction layer, 12) functional/structural groups, 13) plant mortality/decadence, 14) litter amount, 15) annual production, 16) invasive plants, and 17) reproductive capability of perennial plants.

At each assessment site, the 17 indicators were assigned a modifier describing the "degree of departure" from the reference state described on the ecological site description. The rating categories are "none-to-slight", "slight-to-moderate", "moderate", "moderate-to-extreme" and "extreme-to-total". The ratings indicate the degree of departure, or "undesirable" change, from the reference state (Pellant, et al., 2005). The attributes of rangeland health are then assigned an overall rating depending on how its individual indicators rate once the site is assessed.

Of the seventeen indicators described in this technical reference (Pellant, et al., 2005), nine (indicators # 8, 9, 11, 12, 13, 14, 15, 16, and 17) are relevant to biotic integrity and thus native

plant communities; the attribute rating is determined by how the indicators rate in terms of their departure from the “reference” state.

Across the CBT area the majority of these nine indicators were considered to be a “none to slight” or “slight to moderate” departure from expected (Table 9 Biotic Integrity Ratings), meaning that the sites were very similar to what was expected for those sites based on the ecological site description. Where departures did occur, it was often because of the order of dominance of functional/structural groups on the sites and the annual production.

**Table 9. Biotic Integrity Attribute Ratings**

<b>Allotment</b>	<b>Pasture</b>	<b>Ecological Site Name</b>	<b>Biotic Integrity Attribute Rating</b>
<b>Bull Creek</b>	Ellsworth Field	Gravelly loam 8-12”	None to slight
<b>Center Ridge</b>	A Pasture	Loamy 8-12”	None to slight
<b>Chamberlain Creek</b>	Big Bend pasture	Loamy 12-16”	None to slight
<b>Dump</b>	Dump	Gravelly loam 8-12”	None to slight
<b>Free Strip</b>	Free Strip	Loamy 16-22”	None to slight
<b>Hawley Creek</b>	Hawley Creek	Gravelly loam 8-12”	Slight to moderate
<b>Jakes Canyon</b>	Upland pasture	Loamy 8-12”	Moderate
<b>Leadore</b>	North pasture	Gravelly loam 8-12”	None to slight
<b>Leadore</b>	South pasture	Gravelly loam 8-12”	Slight to moderate
<b>Leadore Hill</b>	Lower	Gravelly loam 8-12”	None to slight
<b>Leadville</b>	North pasture	Gravelly loam 8-12”	Moderate
<b>Nez Perce</b>	Lower Upland	North slope Loamy 12-16”	None to slight
<b>Powderhorn</b>	18 Mile Flat	Gravelly Loam 12-16”	Slight to moderate
<b>Powderhorn</b>	Carlton’s Field	Loamy 8-12”	Moderate
<b>Purcell Creek</b>	Purcell	Loamy 8-12”	None to slight
<b>Spring Canyon</b>	Coal Kiln	Gravelly Loam 8-12”	Slight to moderate
<b>Spring Canyon</b>	Shearing Corral	Loamy 12-16”	None to slight
<b>Tex Creek</b>	Tex Creek	Gravelly Loam 8-12”	Slight to moderate
<b>Timber Creek</b>	Lower Pasture	Gravelly Loam 8-12”	Slight to moderate

Indicators #12 (Functional/Structural Groups), 14 (Litter Amount), 15 (Annual Production), 16 (Invasive Plants), and 17 (Reproductive Capability of Perennial Plants), most influenced the overall rangeland biotic integrity attribute rating.

Indicator #12 (Functional/Structural Groups) was rated as a “moderate” departure on three allotments (Hawley Creek, Jakes Canyon, and Leadville) and a “slight to moderate” departure on six allotments (Bull Creek, Free Strip, Leadore, Powderhorn, Spring Canyon, and Timber

Creek). Functional/structural groups are a suite of species that are grouped together, on an ecological site basis, because of similar shoot (height and volume) or root (fibrous vs. tap) structure, photosynthetic pathways, nitrogen fixing ability, or life cycle (Pellant, et al., 2005).

The Hawley Creek, Jakes Canyon, and Leadville Allotments were rated as having a “moderate” departure for this indicator and are in the lower elevations of the area on a gravelly loam soil type dominated by a Wyoming big sagebrush overstory and bluebunch wheatgrass understory. The Gravelly Loam 8-12” ecological site description describes a site with a composition, by weight, of 55-70% grasses; 20-30% shrubs; and 5-15% forbs. However the composition by weight on all three allotments is currently dominated by shrubs. Within the grass component, the sites should be dominated by deep-rooted, perennial grasses (e.g. bluebunch wheatgrass). On both the Hawley Creek and Leadville Allotments there has been a shift in the grass component from deep-rooted grasses to more shallow-rooted grasses (e.g. Sandberg bluegrass). Some causes for this shift is historical (inappropriate) grazing management and lack of fire as a disturbance on the landscape. Of the six allotments that had sites with a “slight to moderate” departure, four (Bull Creek, Leadore, Spring Canyon, and Timber Creek) were also in the Gravelly Loam 8-12” ecological site. There were also shifts in composition on these sites, but to a lesser degree than on the allotments that showed a “moderate” departure.

The Free Strip Allotment supports primarily mountain big sagebrush with an Idaho fescue understory on a loamy soil type. The description for the Loamy 16-22” ecological site describes a site with a composition by weight of 50-70% grasses; 20-30% shrubs; and 10-20% forbs. The RHA showed that the composition on the allotment was dominated by shrubs. However, unlike with the “moderate” departure allotments, the grass component was still dominated by deep-rooted grasses and had not shifted in favor of the shallow-rooted grasses. This shift to a higher composition of shrubs is predominantly due to lack of fire as a disturbance on the landscape.

The Powderhorn Allotment site is dominated by low sagebrush and bluebunch wheatgrass on a gravelly loam soil type. The site description for the Gravelly Loam 12-16” ecological site describes a site with a composition by weight of 50-60% grasses; 25-35% shrubs; and 10-15% forbs. Composition was as expected for the site; however within the grass component site dominance was shared between deep-rooted grasses and shallow-rooted grasses.

Indicator #15 (Annual Production) was rated as a “moderate” departure on two allotments (Jakes Canyon, and Leadville) and a “slight to moderate” departure on five allotments (Hawley Creek, Leadore, Powderhorn, Spring Canyon, and Timber Creek). The site was rated at a “moderate” departure if the shift was 40-60% compared to expected, and a “slight to moderate” departure when the shift was 60- 80% compared to what is expected. The departure for this indicator parallels Indicator #12. Annual production, as used in this document, is the net quantity of above-ground vascular plant material produced within a year. It is an indicator of the energy captured by plants and its availability for secondary consumers in an ecosystem given current weather conditions. Production potential will change with communities or ecological sites, biological diversity, and latitude (Pellant, et al., 2005). Sites generally had lower annual production due to shifts from deep-rooted grass dominance to sites with more shrubs and shallow-rooted grasses. Annual production by weight for shrubs and shallow-rooted grasses is less than for deep-rooted grasses.

Other indicators with a “slight to moderate” departure include Indicator #14 (Litter Amount), #16 (Invasive Plants), and #17 (Reproductive Capability of Perennial Plants). Five allotments (Free Strip, Jakes Canyon, Leadore, Leadville, and Spring Canyon) had a “slight to moderate” departure in the amount of litter on the allotment. This was due to the decrease in the amount of deep-rooted grasses on the sites which limited the amount of litter that could be produced. Two allotments (Dump and Timber Creek) were a “slight to moderate” departure for invasive species. These sites had some cheatgrass present along abandoned ditches and two-track roads. Most of the cheatgrass was within the disturbed area. Two allotments (Jakes Canyon and Leadore) had a “slight to moderate” departure for the reproductive capability of perennial plants. The apparent reproduction on the sites was less than expected and not uniform across the site.

*Standard 4, Native Plant Communities*

All allotments were meeting Standard 4 except Hawley Creek, Jakes Canyon, Leadore, and Leadville. None of these allotments failed to meet Standard 4 due to current livestock practices.

**Table 10. Evaluation Finding for Standard 4.**

<b>Allotments “Meeting the Standard”</b>			
Bull Creek	Center Ridge	Chamberlain Creek	Dump
Free Strip	Leadore Hill	Nez Perce	Powderhorn
Purcell Creek	Spring Canyon	Tex Creek	Timber Creek
Two Dot (Leadore Hill East Pasture)			
<b>Allotments “Not meeting the Standard, but making significant progress toward meeting”</b>			
Hawley Creek	Leadore	Leadville	
<b>Allotments “Not meeting the Standard”</b>			
Jakes Canyon			

Allotments “Not meeting the Standard, but making significant progress toward meeting”:

*Hawley Creek Allotment:* Due to changes in management in recent years, the allotment is making significant progress toward meeting Standard 4. Half the grazing use in the allotment was moved from the growing season to fall use, after the grasses in the allotment have completed their growth cycles. This is allowing the allotment to make significant progress toward meeting this standard.

*Leadore Allotment:* BLM grazing management was changed in 2008 and the allotment is now making significant progress toward meeting all Standards. In October 2008, a grazing decision was issued for the Leadore Allotment which called for resting the northern pasture for 3 years and then stipulating use to occur after the 15<sup>th</sup> of July in that pasture. This management is allowing the native grasses to complete the critical growth period (CGP) without being utilized by domestic cattle. This is allowing the allotment to make significant progress toward meeting this standard.

*Leadville Allotment:* The allotment was seeded in 2010 and is now making significant progress toward meeting Standard 4. Understory composition had shifted from being dominated by deep-rooted bunch grasses, to being dominated by shallow-rooted grasses. The allotment is also

dominated by shrubs and grasses which are considered sub-dominant with forbs comprising a minor component. The allotment would have greater grass production and greater diversity of grass and forb species if it were meeting the Standard at this time.

Allotments “Not meeting the Standard”:

*Jakes Canyon Allotment:* The allotment is not meeting Standard 4 because of historic grazing management. Understory composition shifted from being dominated by deep-rooted bunch grasses, to being dominated by shallow-rooted grasses. The allotment is also dominated by shrubs; grasses are considered sub-dominant with forbs comprising a minor component. The allotment would have greater grass production and greater diversity of grass and forb species if it were meeting Standard 4.

**High Montane Vegetation**

This land cover class includes natural vegetation dominated or characterized by shrub and/or herb species having structural or functional adaptations to survive cold temperatures and resist frost damage. Most of this cover type within the area is found on lands managed by the SCNF. The only BLM-managed allotments in the assessment area that have “high montane” vegetation are the Chamberlain Creek and Powderhorn allotments. These areas are located within the Eighteenmile WSA, high on the slopes near the Continental Divide.

**Sparse Vegetation & Natural Barren Areas**

This land cover class includes natural vegetation dominated or characterized by shrub, herb, or non-vascular plant species having structural or functional adaptations for living on rock surfaces or in rocky substrates. Vegetation is scattered or nearly absent; total vegetation cover, excluding crustose lichens, is generally 1-10% at the peak of the growing season. In addition, natural areas (undisturbed by man) where vegetation is generally less than 1% of the surface area are included. Most of this relatively rare cover type within the CBT area is found on lands managed by the SCNF at or above timberline on the Continental Divide and the Lemhi Range sides of the assessment area. The only BLM-managed allotments in the assessment area that have “sparse vegetation and natural barren areas” are the Chamberlain Creek and Powderhorn Allotments. These areas are located within the Eighteenmile WSA, high on the slopes near the Continental Divide.

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Continued livestock (primarily cattle) grazing would influence composition of vegetation due to dietary preference and selectivity of forage by livestock. This is because cattle are considered “grazers” and prefer a grass-dominated diet, although forbs and shrubs are consumed to a higher degree when green grass is not available. Cattle show a strong avoidance of shrubs high in volatile oils, such as juniper, rabbitbrush, and various sagebrush species because they lack mechanisms to reduce the toxic effects of these volatile oils (Holochek, et al., 1989). However, cattle are more likely to graze shrubs when they comprise a higher percentage of site plant community composition. Cattle would be authorized to graze in every allotment under Alternatives 1, 2, and 3. Cattle would not be grazed in any allotment under Alternative 4. Under Alternative 5, all allotments would be grazed except Hawley Creek and Tex Creek, although a number of the allotments would have pastures where grazing would not be authorized. Over time, grass preference by cattle could affect deep-rooted perennial grass productivity and

composition, although under appropriate grazing management, the grazing influence would be minor (slight, but detectable).

Under each of the grazing alternatives, livestock would consume or alter vegetation, redistribute nutrients and plant seeds, trample sagebrush and other plants, and would disrupt microbiotic crusts (Miller, et al., 1994) (West, 1996) (Belnap & Lange, 2001), which contribute to nitrogen fixation that benefits plant communities. The extent to which these mechanisms would influence habitats depends on the relationship between level of grazing disturbance and the resiliency of the habitat. In areas where unsustainable levels of grazing could occur, these changes could lead to loss of vegetative cover, reduced water infiltration rates, and increased soil erosion (Society for Range Management, 1995). These impacts would occur mainly in concentrated use areas, such as near water sources, salting areas, frequently used gates or trails, or other such areas.

Season of use, or grazing period (Table 11), would influence grazing effects on vegetation. Areas that would be grazed early in the season only, where livestock are removed prior to the end of the CGP, would continue to fix carbon, reproduce and set seed as the growing season progresses into the summer. Hot season, regrowth, and dormant season grazing with no early season or CGP use, would have neutral to negligible effects on plant communities because plants would be able to fix a significant amount of carbon prior to biomass removal and would be able to set seed. These three periods occur after the CGP, which typically occurs from early May through mid- to late-June, depending on site characteristics such as elevation, temperature, and precipitation timing and amount. During these periods, perennial plants would have increased capability to produce seed because grazing would occur after bluebunch wheatgrass has produced much of its annual above ground biomass. Overall plant vigor would be maintained by grazing because plants would be close to, or already would have, dropped seed and would be beginning to senesce (the plant growth phase from full maturity to death or dormancy).

**Table 11. Factors Influencing Grazing Period Approximate Timeframes.**

<b>Grazing Period Term</b>	<b>Approximate Timeframe</b> (+/- up to 2 weeks on either end)	<b>Factors Influencing Timeframes</b> (temperature, precipitation, and elevation driven)
Early Season	April 1 to May 31	Post dormant season; begins when some green growth is evident; much of available forage is from previous year's residual growth; dates driven by warming temperatures and precipitation timing and amount.
Critical Growth Period	May 1 to June 15	Period of most active growth, where plant is most sensitive to water deficit; apical meristem (site of actively growing tissue) is elevated; occurs just prior to boot stage through flowering (Anderson, 1991).
Non-critical Growth Period	June 15 to July 15	Period between the end of the CGP and the beginning of the hot season; occurs after most active plant growth, but before maturity and seed set.
Hot Season	July 15 to September 15	Period of maturity to senescence (the plant growth phase from full maturity to death or dormancy); timeframe determined by duration of high temperatures; can be modified by precipitation amount and duration; period where cattle seek riparian areas because of cooler temperatures and because upland plants are senescing.

<b>Grazing Period Term</b>	<b>Approximate Timeframe</b> (+/- up to 2 weeks on either end)	<b>Factors Influencing Timeframes</b> (temperature, precipitation, and elevation driven)
Regrowth	September 15 to October 31	Root and shoot regeneration occurs at this time; regrowth of root material because of increased water availability and moderate temperatures; influenced by variability in daytime high and nighttime low temperatures and fall moisture availability.
Dormant Season	November 1 to March 31	Period of non-growth characterized by low soil temperature and water availability; low soil and plant biological activity due to temperature

Areas grazed repeatedly through the CGP would remain static or degrade due to repeated removal of apical meristematic tissue from deep-rooted perennial grasses (Anderson, 1991). These areas would show decreased percent composition of grasses such as bluebunch wheatgrass and increased percent composition of shallow-rooted grasses such as Sandberg bluegrass. Areas that are repetitively grazed from the early season, through the CGP, and into the hot summer season would remain static or degrade because repetitively grazed plants would not fix sufficient carbon over the long-term, and would have a reduced chance of successful reproduction (Anderson, 1991).

Areas of livestock congregation (e.g. salt licks, shaded sites, or near water sources, such as troughs or water gaps) and crossing routes would remain trampled and relatively devoid of vegetation for the long-term. These areas comprise a very small fraction of a percentage of the entire CBT area. Because of their woody nature, shrubs, such as Wyoming big sagebrush, would be susceptible to breakage and trampling from livestock movement.

Overall, the majority of the CBT area would remain stabilized by plant root mass, herbaceous and woody litter, embedded litter, duff, manure from both livestock and wildlife, lichen, moss, decomposition products, soil biological crust and/or physical crust.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Overall livestock impacts to vegetation under this alternative would include those general impacts described in the ‘*Effects Common to the Grazing Alternatives*’ section, above. Ongoing impacts to upland vegetation would continue to occur and would include removal of above-ground biomass and trampling, although many plants would remain ungrazed due to selectivity of palatable forage by livestock. Alternative 1 AUMs removed would be the same as the current situation for three allotments, they are: Bull Creek, Dump, and Free Strip (due to the Terms and Conditions limiting AUMs to 481). For the Bull Creek Allotment the number of cattle on the allotment would be reduced to 150 (from 230 under current situation), which would result in an increase in days that cattle would be on the allotment, although AUMs would not change. Cattle would also not graze between 5/12 and 9/15, which would exclude livestock grazing for much of the CGP, as compared to Alternative 2. For the Dump allotment, the number of cattle would be increased to 460 and cattle would only be on the allotment from 6/1-6/2, as compared to 86 cattle from 5/20 to 6/15 under the current situation. Native plant communities would benefit from this intense, two days of use, followed by no use for the rest of the season. Native plant communities would be grazed only during two days of the CGP,

allowing for recovery and reproduction for the majority of plants. On the Free Strip Allotment, the number of cattle would be 158, compared to 535 under the current situation, although the grazing period would be longer. Grazing would occur earlier in the season, during the CGP (6/1 vs. 6/19) and on through 10/31, which could benefit plants when grazing is done later in the growing season and into the dormant period. Native plant community effects for these three allotments would be slight, but detectable; Standard 4 would continue to be met for these allotments under this alternative.

Compared to the current situation, small increases in AUMs removed would occur on the Jakes Canyon (6.9%), Leadore Hill (12%), and Tex Creek (1.9%) allotments. Negligible impacts to community composition and above-ground biomass availability would occur as compared to the current situation; grass and forb diversity, abundance and productivity would change very little from what they are now. Only 2, 10, and 5 more AUMs would be removed, respectively, from these allotments. For the Jakes Canyon Allotment, the maximum grazing period would be similar to the current situation, but 19 more cattle could be on the allotment at any one time, which could lead to fewer actual livestock-days within the period of use. For the Leadore Hill Allotment, the number of cattle on the allotment would be fewer than the current situation and the maximum grazing season would be similar; there would be negligible impacts to this allotment. For the Tex Creek Allotment, there would be only small differences in the number of cattle (2) and horse use would be reduced from 38 horses to 3; the maximum grazing periods would be similar to the current situation. Impacts on this allotment would be negligible. Leadore Hill and Tex Creek allotments would continue to meet Standard 4. The Jakes Canyon Allotment would continue to “not meet” Standard 4. This allotment would continue to lack sufficient kinds and amounts of vegetation (primarily bluebunch wheatgrass and native forbs) that would move it towards meeting Standard 4.

Compared to the current situation, greater increases in AUMs removed would occur on the Center Ridge (103%), Chamberlain Creek (20.9%), Hawley Creek (70.8%), Leadore (275%), Leadville (27.2%), Nez Perce (91.9%), Powderhorn (91.4%), Purcell Creek (47.4%), Spring Canyon (137.8%), and Timber Creek (67.4%) allotments. The percent increase would range from moderate (20.9% for Chamberlain) to large (137.8% for Spring Canyon and 275% for Leadore). Effects to native plant populations would range from slight, but detectable, with some perceptible effects of disturbance, to readily apparent and measureable, particularly for those allotments showing a greater actual AUM increase.

For these allotments, the effects to native plant communities would decrease as distance to water or salting areas increases; readily apparent effects would occur and would be measureable in concentrated use areas. In these concentrated use areas, native plant communities would be reduced in abundance, diversity and productivity; weedy species, such as cheatgrass or mustard, would likely replace native vegetation. However, despite showing a large percent increase on paper, the on-the-ground stocking rates for most allotments would be appropriate for the kinds and amounts of forage available. For instance, on the Leadore Allotment, the current stocking rate is 52.4 acres per AUM (a very low stocking rate) and the Alternative 1 stocking rate would be 14.0 acres per AUM, a more appropriate stocking rate. The comparatively large increase (275%) compared to the current situation figures, is because the permittee utilized fewer AUMs over the last 5 years than were available on the permit. For this allotment, the increase in AUMs

would be relatively small - a total of just 22 AUMs. While these AUM figures are higher than the current situation, they reflect what would be available to the permittee under the current permit. It would be expected that these allotments would continue to either “meet” or “make significant progress” towards meeting Standard 4.

While cattle grazing would be authorized on all allotments, domestic sheep grazing would be authorized on three allotments, they are Center Ridge, Spring Canyon, and Timber Creek. Domestic sheep are considered “intermediate” feeders because they have the greatest capability to adjust their feeding habits to whatever forage is available (Holoček, et al., 1989). Although sheep utilize grasses, forbs, or shrubs, depending on availability, Beck & Peek (2005) suggests that cattle and sheep diets on summer rangelands overlap by up to 68%. Because of this large overlap, sheep grazing effects on plant community composition would be similar to those areas grazed solely by cattle, although forbs and shrubs would receive higher grazing pressure on these three allotments. Grasses in these allotments would receive less grazing pressure from sheep, resulting in a minor benefit to grass species not selected for grazing because of the increased preference for forbs and shrubs by sheep.

Across all allotments, the total maximum yearly AUMs authorized under Alternative 1 would be 15,915 compared to 9,001 under the current situation, a difference of approximately 77%. The permits proposed under this alternative are currently authorized. This alternative would have the most potential to affect upland vegetation because of increased livestock activity and AUMs removed. Impacts described in the “*Effects Common to the Grazing Alternative*” section, would be greater than what would be observed under the current situation. Impacted areas would be more widespread than under the current situation, but would still be greatest near water sources or other livestock congregation areas. Impacts would decrease as distance to water increases.

Allotments currently meeting Standard 4 would likely continue to do so because healthy native plant communities are both resistant and resilient to appropriate livestock grazing; stocking rates under this alternative, while higher than the current situation, are appropriate for the kinds and amounts of vegetation found on these allotments. Allotments making significant progress toward meeting Idaho Standards for Rangeland Health because of recent management changes would continue to make significant progress toward meeting Standard 4. Although the Leadville Allotment was not meeting Standard 4 at the time of the assessment, the Leadville vegetation treatment project (executed in 2010) will help the allotment meet Standard 4, Native Plant Communities. The Jakes Canyon Allotment would continue to “not meet” Standard 4 because of a lack of bluebunch wheatgrass and forb diversity/abundance from historical grazing practices.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

There would be no additional effects to native plant communities under this alternative from what has been occurring on average for the last five years. Under the current situation, allotments that are meeting standards would continue to do so. Allotments not meeting Standard 4 would remain the same in terms of productivity and upland health. Without grazing management changes, perennial grasses in degraded areas would continue to have low vigor and density, with limited reproduction.

Under Alternative 2, bluebunch wheatgrass cover and forb diversity and cover would not increase in the Jakes Canyon Allotment. Native plant communities in this allotment would continue to not meet Standard 4 of the Idaho Standards for Rangeland Health. Shallow rooted perennial grasses would continue to dominate the understory and bluebunch wheatgrass cover would remain static, or increase slowly over time.

Although the Leadville Allotment was not meeting Standard 4, at the time of the assessment, the Leadville vegetation treatment project (completed in 2010) and associated rest are improving native plant community health. Under this alternative, the allotment would continue to make significant progress toward meeting Standard 4.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Alternative 3 would maintain or improve native plant community health within the next 3-5 years through changes in grazing management and project implementation. There are three allotments where the number of AUMs removed would be less than the current situation; they are Dump (-16.7%), Free Strip (-1.2%), and Nez Perce (-8.4%). In these allotments, beneficial effects to native plant communities would occur, but would be difficult to detect in the short-term. Effects on upland vegetation would be least detectable on the Free Strip Allotment because of the very small decrease (6 AUMs) in AUMs removed, however, the Freestrip Pasture would be rested 1 of every 4 years, which would benefit upland vegetation in that pasture for reasons described in Alternative 4. There would be slight but detectable improvement on the Dump (5 fewer AUMs) and Nez Perce (43 fewer AUMs) Allotments. The improvement would be more pronounced on the Dump Allotment, not entirely due to the decrease, but because livestock would no longer graze during the month of May, which comprises a large portion of the CGP. These allotments are currently meeting and would continue to meet Standard 4.

On the Bull Creek Allotment, there would be no difference in the number of AUMs removed, but the season of use would be 5 days shorter than Alternative 2. The number of cattle that could be on the allotment at any one time would be increased to 350, compared to the current situation, but the amount of forage removed would not change and the number of days the cattle would be on the allotment (within the maximum grazing period) could be decreased. Impacts of this alternative would not be discernible and this allotment would continue to meet Standard 4.

Slight increases in AUMs removed would occur on the Chamberlain Creek (4.6%), Jakes Canyon (6.9%) and Tex Creek (1.5%) Allotments when compared to the last 5 years of actual use. Use on the Chamberlain Creek Allotment would begin 10 days later compared to the current situation, which would slightly reduce impacts to upland native vegetation in the turn-out pasture during the CGP. Impacts would be difficult to discern on the Tex Creek Allotment, where the increase would only be 4 AUMS and the grazing period slightly deferred by 7 days. The Chamberlain Creek and Tex Creek Allotments are currently meeting Standard 4 and would continue to meet Standard 4; stocking rates would be 15.2 and 10.3 acres/AUM, respectively. Although the number of AUMs removed from the Jakes Canyon Allotment would be slightly higher (2 AUMs) than the current situation, vegetative health would still improve because of the aeration and seeding treatment and associated rest that would occur. The aeration, seeding, and rest would move the allotment towards meeting Standard 4 because it would increase the kinds

and amounts of vegetation expected for the site; specifically, bluebunch wheatgrass and native forbs would increase. Additionally, the North Pasture would not be grazed before July 1<sup>st</sup> in two out of three years, which would reduce the amount of grazing that would occur during the CGP; beneficial effects to upland native plant communities would be readily apparent in this pasture. With the low stocking rate (17.6 acres/AUM), deferred grazing in the North Pasture, the aeration, seeding and two years rest, the allotment would be expected to make significant progress toward meeting Standard 4.

Compared to the current situation, larger % increases in AUMs removed would occur on the Center Ridge (69.2%), Hawley Creek (70.8%), Leadore (250%), Leadore Hill (37.3%), Leadville (27.2%), Powderhorn (34.3%), Purcell Creek (47.4%), Spring Canyon (81.6%), and Timber Creek (23.4%) allotments. Authorized AUMs would be at or below the long-term AUM preference authorized in the Lemhi RMP, as amended (USDI-BLM, 1985). Stocking rates for this group of allotments would range from a moderate rate of approximately 8 acres/AUM to a low rate of 22.8 acres/AUM. Discussion for each allotment follows.

The Center Ridge Allotment is currently meeting Standard 4 and was rated as having a “none-to-slight” departure from the reference for the RHA Biotic Attribute, meaning the allotment is producing the kinds and amounts of vegetation expected (as described on the ecological site descriptions). The AUMs proposed under this alternative would be in conformance with those authorized in the Lemhi RMP (USDI-BLM, 1985); current use is approximately half of what was authorized in the Lemhi RMP and the allotment is producing the kinds and amounts of vegetation expected for the sites. It is expected that because the allotment is meeting Standard 4, and shows no departure from the reference state, the use levels authorized under the Lemhi RMP would not impact the ability of the allotment to meet Standard 4. This is not only due to the findings of the RHA, but, compared to the current situation, cattle numbers would be reduced by 175 to a maximum of 500 and the grazing period would be deferred 14 days, which would reduce impacts to upland vegetation during the CGP. The reduction in cattle numbers and 14 day turn-out deferment would benefit native plant communities by reducing grazing during the period of most active plant growth. The use period would also be extended into the dormant season by 10 days; use during this period would increase plant vigor, reproduction, and seedling establishment of key native species (Laycock, 1970). The stocking rate for this allotment under this alternative would be 8.1 acres/AUM, a moderate rate that is in conformance with the Lemhi RMP, as amended (USDI-BLM, 1985).

The Hawley Creek Allotment is currently not meeting Standard 4, but is making significant progress toward meeting the Standard because BLM grazing management was changed in 2007. The allotment was rated as having a “slight-to-moderate” departure from the reference state for the RHA Biotic Attribute, meaning the allotment is producing slightly to moderately less of the kinds and amounts of vegetation expected (as described on the Ecological Site Descriptions). The AUMs proposed under this alternative would be approximately 75% of the long-term maximum authorized in the Lemhi RMP (USDI-BLM, 1985); current use is approximately 45% of what was authorized in the Lemhi RMP. It is expected that because the allotment is making significant progress towards Standard 4, and shows only a slight-to-moderate departure from the reference state, the proposed use levels (still less than those authorized under the Lemhi RMP) would not impact the future ability of the allotment to meet Standard 4. This is not only due to

the findings of the RHA, but, compared to the current situation, cattle numbers would be reduced by 136 to a maximum of 616 and the use period would be extended into the dormant season; use during this period would increase plant vigor, reproduction, and seedling establishment of key native species (Laycock, 1970). Additionally, use during the CGP would be restricted and only limited use would occur during the hot season; a maximum of 30 AUMs could be removed during the hot season. The stocking rate under this alternative would be 15.7 acres/AUM, a low stocking rate.

The Leadore Allotment is currently not meeting Standard 4, but is making significant progress toward meeting the Standard because BLM grazing management was changed in 2008. Two sites were evaluated during the RHA; the allotment was rated as having a “none-to-slight” and “slight-to-moderate” departure from the reference state for the RHA Biotic Attribute at the two sites. The AUMs proposed under this alternative would be the long-term maximum authorized in the Lemhi RMP (USDI-BLM, 1985); current use is approximately 25% of what was authorized in the Lemhi RMP. It is expected that because the allotment is making significant progress towards Standard 4, and shows only a none-to-slight and slight-to-moderate departure from the reference state, the proposed use levels would not impact the future ability of the allotment to meet Standard 4. This is not only due to the findings of the RHA, but, the grazing period would be deferred 10 days compared to the current situation, which would reduce or eliminate impacts to upland vegetation during the CGP (depending on temperature and timing and amounts of precipitation). The stocking rate under this alternative would be 15 acres/AUM, a low stocking rate.

The Leadore Hill Allotment is currently meeting Standard 4 and was rated as having a “none-to-slight” departure from the reference for the RHA Biotic Attribute, meaning the allotment is producing the kinds and amounts of vegetation expected (as described on the ecological site descriptions). The 114 AUMs proposed under this alternative would be in conformance with those authorized in the Lemhi RMP (USDI-BLM, 1985); current use is 72% of what was authorized in the Lemhi RMP and the allotment is producing the kinds and amounts of vegetation expected for the sites. It is expected that because the allotment is meeting Standard 4, and shows little departure from the reference state, the long-term use levels authorized under the Lemhi RMP would not impact the ability of the allotment to meet Standard 4. This is not only due to the findings of the RHA, but, under this alternative, grazing during the hot season would be eliminated, which would reduce grazing impacts as seed set occurs. The overall grazing season would change from 5/13-7/31 to 5/15-6/30, a reduction of 33 days. Grazing during the first approximate 1/3 of the CGP would not occur, which would be similar to the current situation, although there would be a deferment of 2 days, providing a slight benefit during the CGP. Because grazing would not occur during the entire CGP through and into the hot season, plants would be better able to fix carbon and would have an increased opportunity for successful reproduction as compared to the current condition where grazing would occur earlier in the CGP and well into the hot season. The stocking rate under this alternative would be approximately 13 acres/AUM, a low stocking rate.

Although the Leadville Allotment was not meeting Standard 4 at the time of the determination (not due to current livestock management), the 2010 Leadville vegetation treatment project and associated rest is helping the allotment make significant progress toward meeting the Standard.

The allotment was rated as having a “moderate” departure from the reference state for the RHA Biotic Attribute, meaning the allotment was producing moderately less of the kinds and amounts of vegetation expected (as described on the ecological site descriptions). The AUMs proposed under this alternative would be approximately 93% of the long-term maximum authorized in the Lemhi RMP (USDI-BLM, 1985); current use is approximately 73% of what was authorized in the Lemhi RMP. It is expected that because the allotment is now making significant progress towards Standard 4, the proposed use levels (less than the long-term AUMs authorized under the Lemhi RMP) would not impact the future ability of the allotment to meet Standard 4. Compared to the current situation, cattle numbers would be reduced by 35 to a maximum of 500 and the use period would be extended by three months; this would allow for less use during the CGP, which would benefit upland vegetation. Limited early season use (a maximum of 115 AUMs from 5/1-5/31) in the Canyon Creek Pasture would benefit upland vegetation by reducing the amount of biomass removed during the period of most active growth and susceptibility to water deficit. Under this alternative, the stocking rate would be 12.3 acres/AUM, a low stocking rate and one that is below the average long-term stocking rate described in the Lemhi RMP, as amended (USDI-BLM, 1985).

The Powderhorn Allotment is currently meeting Standard 4. At the time of the RHA, the assessment sites were rated as having a “none-to-slight”, “slight-to-moderate” and “moderate” departure from a reference for the Biotic Attribute. The “slight to moderate” departure was due to a lower than expected amount of bluebunch wheatgrass, although it was noted that forb abundance and diversity was high and prairie Junegrass, a perennial native grass, cover was 14%. The “moderate” departure at the third site was due to a crested wheatgrass seeding that was implemented in the 1960’s. The AUMs proposed under this alternative would be 34% above those utilized over the last 5 years. The stocking rate would be 9.3 acres/AUM and would allow the allotment to continue to meet Standard 4. The *18 Mile Pipeline* would provide water sources in the Steer, Center Field, and 18 Mile Flat Pastures, which would increase use in these pastures. Impacts to Upland vegetation in these pastures would include those described in the *Effects common to the Grazing Alternatives section*, above. These impacts would be to a greater degree than they have been under the current condition. The number of AUMs proposed under this alternative would be in conformance with those long-term AUMs authorized in the Lemhi RMP (USDI-BLM, 1985).

The Purcell Creek Allotment is meeting Standard 4. This allotment was rated as having a “none-to-slight” departure for the Biotic Attribute in the RHA. The stocking rate would be 22.8 acres/AUM, a low stocking rate, and would allow the allotment to continue to meet Standard 4. Although AUMs would be increased by 47.4% compared to the current situation, the actual increase would only be 9 AUMs and would be in conformance with long-term AUMs authorized in the Lemhi RMP (USDI-BLM, 1985). The number of AUMs would be the same as what are authorized under the current permit.

The Spring Canyon Allotment is meeting Standard 4. The RHA assessment sites were rated as having “none-to-slight” and “slight-to-moderate” departures for the Biotic Attribute. The stocking rate under this alternative would be 9.1 acres/AUM and would allow the allotment to continue to meet Standard 4. Authorized AUMs would increase by 1,142 (81.6%) from the last 5 years actual use, but would be 787 fewer AUMs than are authorized under the current permit.

The 2,542 AUMs under this alternative would be in conformance with long-term AUMs authorized in the Lemhi RMP (USDI-BLM, 1985).

The Timber Creek Allotment is meeting Standard 4. The RHA assessment sites were rated as having “slight-to-moderate” departure for the Biotic Attribute. The stocking rate would be 10.5 acres/AUM and would allow the allotment to continue to meet Standard 4. Authorized AUMs would increase by 23.4% from the current situation (last 5 years actual use), but would be 239 fewer AUMs than are authorized under the current permits. The 670 AUMs would be in conformance with long-term AUMs authorized in the Lemhi RMP (USDI-BLM, 1985).

Overall, minor to moderate adverse effects to native plant populations would occur at localized, concentrated use areas, such as water sources, trailing or crossing areas, fence lines, salting and resting areas, and so forth. In some cases, due to Terms and Conditions, beneficial effects (as described above) would occur. In these cases, upland vegetation would benefit from management changes. At the landscape level, minor grazing effects would be evident.

### **Crossing Authorizations**

Where crossing occurs, livestock would mainly walk along existing trails or pathways and would take the easiest route through sagebrush-dominated areas; they would avoid walking directly through shrubs in most cases. In some locations, damage to shrubs from crossing events could occur. In these areas, there could be an increase in vascular plant litter and an increase in resource availability (light, nutrients, water) for herbaceous vegetation. This decrease in competition from shrubs would benefit herbaceous vegetation. Under this alternative, crossing would occur in the Hawley Creek, Leadore Hill, Leadville, Powderhorn, Purcell Creek, and Timber Creek Allotments.

### **Range Improvement Projects**

Additional fencing, riparian exclosures, and water developments would improve overall rangeland conditions by providing management options for both upland and riparian area pastures (see *Wetland and Riparian Zones* discussion for impacts to these areas).

*Fences* – Fences would be installed to facilitate grazing management. Rotating livestock grazing through more pastures would improve the vigor of upland species by utilizing the plants at different growth stages each year. Plants in a given year of the rotation would be able to complete growth cycles prior to, or after grazing, which would further improve reproduction and seedling establishment. Fence lines could receive repeated use as cattle trail along them; in these cases vegetation would be repeatedly trampled and cow trails would be created.

Fence installation would require short-term moderate disturbance to the existing native plant community. An approximately 8 foot disturbance width would occur along the fence installation routes. Vegetation along the routes could be mowed or otherwise cut to facilitate fence installation (no blading of the routes would be allowed). This would result in the mortality of mature shrubs along the route. Some vegetation would be broken or crushed due to vehicle travel activity along the routes. Many immature shrubs and the more flexible, low-growing plants (grasses, forbs, and certain rabbitbrushes) would remain alive, although they would likely sustain breakage or crushing during the fence installation process. Over time, shrubs would recolonize the disturbance footprint, which at 8 feet wide by 4.5 miles long (total of all new fences) would result in a 4.37 acre disturbance footprint (Table 12). Similar damage would

occur along fence removal areas, although the estimated disturbance width would be approximately four feet, with a total short-term disturbance footprint of 0.24 acre.

**Table 12. Fence Project Disturbance Areas.**

<i>Fence Name/Type</i>	<i>Allotment</i>	<i>New Fence (miles)</i>	<i>Short-term Vegetative Disturbance (acres)</i>	<i>Fence Removed (miles)</i>	<i>Short-term Vegetative Disturbance (acres)</i>
McGinty Cr. Division barbed wire	Chamberlain	3.3	3.2	-	-
Rocky Canyon barbed wire	Leadville	0.7	0.68	0.50	0.24
Clear Cr. Division jack and pole	Powderhorn	0.40	0.39	-	-
Clear Cr. Division barbed wire	Powderhorn	0.10	0.10	-	-
<b>Totals</b>	-	<b>4.5</b>	<b>4.37</b>	<b>0.50</b>	<b>0.24</b>

Assumptions: Fence installation disturbance width = 8 ft.; Fence removal disturbance width = 4 ft.

The *McGinty Creek Division Fence* would create the Big Bend Pasture, which would be the only Chamberlain Creek Allotment pasture available for grazing after 9/15. The Big Bend Pasture would not be grazed until late in the season and the native perennial grasses and forbs in that pasture would have the ability to fully complete their life cycles prior to being grazed in mid-August. The upland plant community would benefit because, by mid-August, grasses and forbs would have completed their life-cycles and set seed with no livestock grazing pressure. Benefits this fence would provide to the McGinty Creek riparian area are discussed in the Wetland and Riparian Zones section of this document.

The *Rocky Canyon Fence Relocation* would have negligible effects to native vegetation in the allotment because the area is currently grazed as a part of another pasture. Vegetation impacts would be mainly due to fence removal and relocation effects are described above.

The *Clear Creek Division Fence*, located at the mouth of Clear Creek, would prevent cattle from accessing the Clear Creek Springs area after June 15. Negligible effects would occur to upland native plant communities because the fence would not exclude upland areas from grazing; trailing impacts could occur along the fence line.

*Exclosures* - Exclusion of livestock would result in minor to moderate benefits to vegetation where there are currently trailing or trampling impacts to sensitive areas or to areas receiving heavy use. Some livestock may be attracted to exclosure fences, or by fenced water sources. Because of this, trails along exclosure fences could be created over time. Vegetation inside of the proposed exclosures would not receive grazing pressure by livestock. Residual grass height in excluded areas and cover would increase due to lack of biomass removal through livestock grazing. Root carbohydrate reserves would be maximized and most plants would reproduce annually. Effects of riparian exclosures are discussed in the Wetland and Riparian Zones section of this document.

The effects of fence installation are described in the above section. Approximately 2.2 miles (Table 13) of new enclosure fence would be constructed, resulting in a net 2.22 acres of short-term moderate adverse effects to native plant communities at the disturbance location (described in fence effects above). Approximately 0.30 acre of fence would be removed, a net 0.15 acre short-term disturbance. A moderate long-term benefit to excluded areas would occur; total new enclosure acreage would be 68.5 acres.

**Table 13. Enclosure Project Disturbance Areas.**

<i>Enclosure Fence Name/Type</i>	<i>Allotment</i>	<i>New Enclosure Fence (miles)</i>	<i>Short-term Vegetative Disturbance (acres)</i>	<i>Enclosure Size (acres)</i>	<i>Fence Removed (miles)</i>	<i>Short-term Vegetative Disturbance (acres)</i>
Poison Spring jack and pole	Center Ridge	0.30	0.29	4.5	-	-
Big Timber Enclosure barbed wire	Leadore	0.35	0.34	3	-	-
18 Mile Flat Enclosure Expansion barbed wire	Powderhorn	0.30	0.29	22.5 (increase from 8.5 acres)	0.30	0.15
All Hands Spring jack and pole	Spring Canyon	0.20	0.19	0.50	-	-
Highway Springs jack and pole	Spring Canyon	500 ft.	0.09	3.5	-	-
Tex Cr. jack and pole	Tex Creek	0.15	0.15	43.0	-	-
Tex Cr. barbed wire	Tex Creek	0.90	0.87	above	-	-
<b>Totals</b>	-	<b>2.2</b>	<b>2.22</b>	<b>77</b>	<b>0.30</b>	<b>0.15</b>

Assumptions: Fence installation disturbance width = 8 ft.; Fence removal disturbance width = 4 ft.

*Pipeline and Trough Systems* - The predominant vegetation type affected by pipeline and trough installation would be mountain big sagebrush/bluebunch wheatgrass, although basin big sage could be disturbed where the pipeline crosses draws or depressions with deeper soils.

Minor to moderate short-term adverse effects would occur during pipeline installation and would persist until the disturbance line becomes re-vegetated which would take approximately 2 years for herbaceous vegetation and up to 5 years for shrubby species, such as sagebrush. The ripper blade used to install the pipe would produce the most disturbances. The disturbance width that would occur during installation would be approximately eight feet, two of which would be complete vegetative and soil disturbance where the pipe is laid; six feet of which would occur from crushing/breakage of vegetation from installation equipment and support vehicles. Minor to moderate short-term damage would occur to perennial vegetation from tractor tracks, particularly in areas with soils that are difficult to lay pipe in. The short-term disturbance from pipeline installation would be approximately 1.5 net acres, not including vehicle impact footprint (Table 14). The total of all disturbed acres from pipeline installation (full width including crushed vegetation and ripper impact) would be 6.06 acres.

Vegetation would be disturbed at each trough site. The Proposed Action would result in loss of perennial native vegetation adjacent to the troughs and trampling of vegetation from increased trailing near water features. The total long-term adverse vegetative disturbance at trough locations would be approximately two acres.

Proposed water developments would further distribute cattle across uplands and would reduce livestock use concentration around existing water developments and riparian areas. Livestock use patterns would change, with an increase in upland utilization in areas that previously were not frequently visited by cattle due to the lack of water. Grasses in these areas would receive more grazing pressure than they had in the past, although effects (as described in the ‘*Effects Common to the Grazing Alternatives*’ section above) would be negligible to minor. Further distribution of water would ease the use in the currently watered areas and make utilization more evenly dispersed throughout the uplands of the allotment.

**Table 14. Pipeline and Trough Vegetative/Soil Disturbance Areas.**

<i>Pipeline Name</i>	<i>Allotment</i>	<i>Pipeline Distance (miles)</i>	<i>Short-Term Soil Disturbance (acres)</i>	<i>Short-Term Installation Disturbance Total (acres)</i>	<i># of Troughs</i>	<i>Long-Term Vegetative Disturbance (acres)</i>
McGinty Cr.	Chamberlain	2.25	0.55	2.18	1	0.50
18 Mile	Powderhorn	4.0	0.97	3.88	3	1.5
<b>Totals</b>		<b>6.25</b>	<b>1.52</b>	<b>6.06</b>	<b>4</b>	<b>2.0</b>

Assumptions: Pipeline soil disturbance width = 2 ft.; Installation disturbance width = 8 ft. (includes both soil disturbance and crushed vegetation from installation equipment); Trough disturbance footprint = 0.50 acre

### **Vegetation Manipulation Projects**

The *Jakes Canyon Vegetation Treatment* project would modify vegetation composition to better reflect what would be expected for the site based on the ecological site description for the area. This project would result in rangeland vegetation conditions that are closer to the natural vegetation community expected for the site. The expected restoration of a diverse and productive grass, forb, and sagebrush community would improve upland conditions. This project in conjunction with prescribed rest would help the allotment make significant progress toward meeting Standard 4. A similar project that was completed in 2010, the Leadville Seeding (aeration plus rest) has resulted in the Leadville Allotment making significant progress towards Standard 4.

The *Gilmore Summit* and *Swan Basin Rangeland Restoration* projects, the *Silver Moon Gulch* and *Gilmore Hazardous Fuel Reduction* projects, and the *Swan Basin Aspen Restoration* project would result in the removal of overstory and/or overstocked trees, as described in Alternative 3 (Proposed Action). The effects to forested habitat and forest species are discussed in the Forest Resources section. By removing overstory or overstocked trees, competition for resources, such as light, water, and nutrients, would be reduced. In most cases, there would be an increase in vegetative understory biomass and vigor in the years following tree removal. Over time, and with the absence of fire, these areas would likely be re-colonized by trees, resulting in increased competition for resources and subsequent reductions in understory biomass.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

Under Alternative 4, upland vegetation would have the most rest and recovery as compared to the other alternatives. Although most allotments are meeting, or making significant progress toward meeting Standard 4, plant communities in these allotments would still benefit from rest. Jakes Canyon and Leadville Allotments would have the most opportunity to improve in terms of native vegetation, making significant progress toward meeting Standard 4.

On upland sites, reproductive rates, ground cover and soil stability would improve in a shorter time frame as compared to other alternatives. Because no livestock grazing would occur, and most plants would remain ungrazed or minimally grazed (by wildlife) each season, annual potential above- and below-ground biomass productivity would be reached in most years. Increases in plant health, residual vegetation, energy flow and nutrient cycling, ground cover and soil stability should be near optimum over the 10-year term. On upland sites, increases and improvement in plant vigor, seed production, herbage production, and basal area size would evolve the quickest.

**Alternative 5- Reduced Grazing, Direct/Indirect Impacts:**

**Grazing Permits**

Overall livestock impacts to vegetation would include those general impacts described in the ‘*Effects Common to the Grazing Alternatives*’ section, above. On the Bull Creek, Jakes Canyon, Leadore, Purcell Creek, and Spring Canyon allotments, the number of AUMs removed by livestock would not change from the current situation. On the Bull Creek Allotment, the season of use would be moved from 5/1-9/20 to 7/15-9/15, thus eliminating grazing during the CGP, which would benefit native plant communities. On the Jakes Canyon Allotment, although the AUMs would be the same as the current situation, the number of cattle that could be on the allotment would increase to 40; the grazing start date would be the same, although cattle could graze to 9/6, as opposed to 7/14 under the current situation. This would allow for almost two months of non-CGP grazing compared to the current situation, which would potentially benefit upland vegetation. On the Leadore Allotment, the number of cattle would be the same as the current situation; the grazing period would be changed to 6/16-8/5, compared to 6/6-7/1 under Alternative 2. The 10 day deferment under this alternative would benefit upland plants in the turn-out pasture; an additional approximately 1 month would be available for grazing, which could benefit plants if more grazing were done later in the season, as opposed to earlier in the season. On the Purcell Creek Allotment, the number of cattle would be reduced from 235 to 200 and the grazing period would change from 6/1-6/16 to 7/15-9/15. Under this alternative, no grazing would occur during the CGP, which would benefit upland vegetation because most plants would have either set seed or would be close to completing their reproductive cycle. On the Spring Canyon Allotment, the number of cattle would be increased to 720 from 560; the maximum grazing season would be similar to the current situation, and would be 5/15-10/31, compared to 5/16-10/18. Because the number of AUMs would be the same, the timeframe that cattle would be on the allotment within the maximum grazing period could be shorter.

On the Dump Allotment, the number of AUMs would decrease by 5 (-16.7%) and the number of livestock would increase by 4. The AUM decrease, coupled with a later turnout date (7/15 vs. 5/20) would benefit this allotment because no grazing would occur during the CGP. On the Free Strip Allotment, the number of AUMs would decrease by 6 (1.2%) and the number of livestock

would be 15 greater than Alternative 2. The turn-out date would be 18 days earlier, which would allow for more grazing during the CGP. However, the grazing end date would be extended by approximately 3 months, so there would be much more opportunity for late season or dormant season grazing, which would benefit upland plant communities. Additionally, the Freestrip Pasture would not be grazed more than 3 years of 4, which would benefit upland plants in that pasture as described in Alternative 4. There would be a small reduction of 5 AUMs (6%) on the Leadore Hill Allotment. The Lower Pasture would be closed to grazing and the Upper Pasture would not be grazed after 7/15. These beneficial effects would be slight but detectable in the Upper Pasture and would be readily apparent and measureable in the Lower Pasture, which would not be grazed. On the Nez Perce Allotment, the number of AUMs would be decreased by 43 (8.4%); the maximum number of cattle would be increased by 217 to 847. The grazing period would start 4 days earlier (5/20 vs. 5/24) and the end date would be extended to 10/1 from 9/10 under Alternative 2. The decrease in AUMs and the extension of the grazing period would slightly benefit upland plants, as less biomass would be removed and a greater proportion of the season's grazing could occur in the dormant season.

The A Pasture of the Center Ridge allotment would be closed to grazing and would result in a 25.8% decrease in AUMS on the allotment overall. Within the remaining Center Ridge pastures, use would occur only after 7/15; this would result in readily apparent benefits to native plant communities because no grazing would occur during the CGP. Within the Chamberlain Creek Allotment, overall reductions of 21% would occur; this would be due to the closure of the No. 18 Mile and 18 Mile pastures (impacts to these pastures would be as described in Alternative 4) and a timing restriction in the Big Bend and So. 18 Mile Pastures, which would not be grazed after 7/15; livestock grazing would not occur during the CGP in these pastures. A reduction of 50.1% would occur in the Leadville Allotment due the Lower Pasture being closed and the Upper Pasture being grazed only after 7/15; this would eliminate CGP livestock grazing, which would benefit upland plants. A reduction of 52.4% would occur on the Powderhorn Allotment because the 18 Mile Flat, Steer, Winter Range, and Clear Creek pastures would be closed to grazing (impacts to these pastures would be as described in Alternative 4) and the Carlton's Field, Powderhorn, 10 Mile and Center Field pastures would be grazed only after 7/15, which would eliminate livestock grazing during the CGP. The Timber Creek Allotment would receive reductions of 42.5% because the Lower Pasture would be closed to grazing and the Upper Pasture would only be grazed before 7/15. On all closed pastures, readily apparent beneficial impacts to upland vegetation would occur and would be similar to those described below for the Tex Creek and Hawley Creek Allotments and Alternative 4. Where pastures or allotments are not grazed until after 7/15, readily apparent improvements, particularly of native bunchgrasses, would occur because livestock grazing during the CGP would not occur.

On the Tex Creek and Hawley Creek Allotments, no AUMs would be authorized and livestock grazing would not occur. Impacts in these allotments would be similar to those described in Alternative 4. On these two allotments there would be no impacts from cattle grazing to native plant communities. Because no livestock grazing would occur, maximum above and below-ground biomass productivity would be attained in most years. Increases in residual vegetation, energy flow and nutrient cycling and ground cover should be near optimum over the 10-year period of the permits for these two allotments.

For all allotments that would be grazed, vegetative impacts would not be spread equally across the allotment and would be concentrated near water sources, salting areas or other areas of livestock congregation. Impacts would decrease as distance from concentrated use areas increases.

### **Vegetation Manipulation Projects**

Impacts to upland vegetation from these projects would be as described above in ‘*Alternative 3-Proposed Action, Direct/Indirect Impacts*’ except those impacts associated with the *Jakes Canyon Vegetation Treatment* project. The *Jakes Canyon Vegetation Treatment* project would not be implemented under this alternative.

## **Riparian Areas and Wetlands**

### **Affected Environment**

This land cover class includes natural vegetation dominated or characterized by shrub and/or herbaceous species requiring environmental conditions of moderate moisture and temperature or which are only partially protected against desiccation.

Riparian-wetland areas are some of the most productive resources found on public and private lands (USDI-BLM, 1997). Riparian-wetland habitats (Riparian Ecosystems) are generally defined as a body of water with its adjacent soil and vegetation (Hall & Bryant, 1995). Riparian ecosystems have two important components: 1) woody vegetation for shade, cover, and streambank protection; and 2) the streambanks themselves, often called the “greenline,” with their protective herbaceous plant community. Riparian-wetland vegetation should also control erosion, stabilize streambanks, provide shading, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase groundwater recharge. Proper Functioning Condition (PFC) is a qualitative method for assessing the condition of riparian-wetland areas. The term PFC is used to describe both the assessment process, and a defined, on-the-ground condition of a riparian-wetland area (USDI-BLM, 1997). The BLM utilizes PFC as the primary indicator for riparian-wetland habitats (Standards 2 and 3).

The riparian-wetland habitat in the CBT area is comprised of many different riparian-wetland species including beaked sedge, Northwest Territory sedge, Nebraska sedge, brookgrass, seep monkeyflower, and multiple species of rushes and other riparian grasses. Riparian trees and shrubs that are also found include aspen, Booth willow, Geyer willow, Bebb willow, coyote willow, Sitka alder, and gray alder. Habitat associations that include sedges and willows (plants with deep, binding root masses) tend to provide higher levels of bank stability. Habitat associated with the upper Lemhi River and tributary mountain streams also includes water birch, Engelmann spruce, cottonwood, and Douglas-fir.

*Allotments in the Canyon Creek Watershed:*

**Table 15: Proper Functioning Condition for the Canyon Creek Watershed**

<b>Allotment</b>	<b>Stream</b>	<b>PFC</b>	<b>(FAR-up)</b>	<b>(FAR-static)</b>	<b>(FAR-down)</b>	<b>(NF)</b>
		miles				
Jakes Canyon	Canyon	0.3				
Leadville	Canyon	2.0				
	Hawley					1.1*
Free Strip	Chippie	1.7		0.5	1.1	
	Whiskey Springs	0.6	2.0			0.3
	Canyon	0.3				
<b>Total Miles</b>		<b>4.9</b>	<b>2.0</b>	<b>0.5</b>	<b>1.1</b>	<b>1.4</b>

PFC = Proper Functioning Condition

FAR-up = Functional-at Risk upward trend

FAR-static = Functional-at Risk static trend

FAR-down = Functional-at Risk downward trend

NF = Non-Functional

\*Non-Functional due to private irrigation withdrawal

Jakes Canyon Allotment: Currently meeting Standards 2 and 3. The section of Canyon Creek in this allotment (approx. 0.3 miles) is rated as PFC. Livestock access to the stream is restricted in most places because of the dense growth of willows and other riparian-wetland shrubs.

Leadville Allotment: Canyon Creek is currently rated as being in PFC (approx. 2.0 miles) and is densely vegetated with Geyer, Booth, and coyote willows, water birch, aspen, beaked sedge, Kentucky bluegrass, currant, Wood's rose, basin wildrye, red top, aster, and common yarrow. Livestock impact along the stream is restricted by the density of willows and other shrubs. Very little evidence of erosion exists, and the stream is vertically stable and in balance with the water and sediment being supplied by the watershed. Data collected at designated monitoring areas (DMAs) show that Canyon Creek is mid-seral with 21.5% of the vegetation composition made up of hydric riparian species on the greenline in 1994, 64.5% in 2001 and 84% in 2009. Greenline hydric species are dominated by woody vegetation. In general, the substrate conditions on Canyon Creek have a higher fine sediment component than expected. Substrate monitoring data for 2009 shows 40% surface fines at the Canyon Creek DMA in the Canyon Creek Pasture. Due to past grazing practices, historic mining and road conditions in the drainage along with erodible soils and historic railroad channelization of the stream, large amounts of sediment have been diverted into Canyon Creek, particularly in the upper reaches. Substrate conditions on the allotment are not meeting the objective of 20% fines due to more fine sediment in the substrate than desired, but the stream is vertically stable and appears to be in balance with the water and sediment being supplied by the watershed.

Leadville Allotment is currently not meeting Standards 2 or 3 due to the dewatered Hawley Creek channel and not due to existing grazing management. The other riparian habitats in the

allotment are meeting standards. One undeveloped spring exists on the Leadville Allotment. This spring is near the Hawley Creek ditch and has spring characteristics when the ditch is running water. Hawley Creek is currently rated as NF (approx. 1.1 miles) on the allotment. See '*Hawley Creek Allotment*' below.

Free Strip Allotment: Currently not meeting but making significant progress toward meeting Standards 2 and 3. The Free Strip Allotment includes many undeveloped springs. Most of these areas are moderately reduced in potential size and permanence. These springs show moderate evidence of trampling and soil alteration by livestock grazing; cattle grazing in the past caused an increased amount of hummocks in these spring areas. Most of these undeveloped spring areas consist of mainly riparian-wetland grasses and shrubs, although some mesic forbs and Kentucky bluegrass do exist. Also, there is not a diverse age-class distribution of riparian-wetland vegetation recruitment occurring in most of the springs. The vegetation is mature/decadent with only a few seedling/young plants.

The upper segment of Chippie Creek (approx. 1.1 miles) is rated as FAR-down; although, a FAR-static trend is evident in areas within this reach. The downward trend segment is based on an approximately 200 meter down-cut stream channel segment. The down-cutting occurred in 2009 after a high spring runoff event. The segment is in a meadow reach with historic beaver dams and scattered willows. The area appears to have had this type of down cutting in the past and most likely prior to any grazing impacts. Historic cattle grazing reduced the amount and extent of the riparian shrub and aspen community making the stream more susceptible to down-cutting and other channel altering that created a less stable and more eroding situation than prior to domestic livestock. Grazing in the past ten years has been significantly reduced compared to historic levels and improvements to the deep-rooted plants have occurred. However, the runoff events in 2010 and 2011 were much more severe and the 200 meter segment down-cut further. Much of the Chippie Creek channel remained intact with the improvement in deep-rooted herbaceous and woody plants.

This segment contains two narrow, steep forks that form the stream. The stream-riparian habitat is a rocky channel dominated by heartleaf arnica, common dandelion, Kentucky bluegrass, cinquefoil on the intermittent portions and a mix of these mesic species with a sedge community. Due to historic heavy livestock and wildlife browsing, very few young woody species exist. Below the two forks (approx. 0.5 miles), the area is classified as FAR-static. This section of the stream shows improvement from the upper forks, although the channel has been incised, preventing water from accessing the floodplain in some areas. Riparian-wetland vegetation is dominated by aspen, willow, Nebraska sedge, tufted hairgrass, common yarrow, cinquefoil, and aster. There is a decrease in browse and increase in woody species recruitment compared to the upper forks. The third segment of Chippie Creek (approx. 1.7 miles) is rated as PFC. This segment and the included tributaries receive a considerable amount of livestock impact, but the channels are well protected by willows and downfall and the open meadow areas maintain an excellent sedge cover.

Beaver have had a major impact in the past, falling large aspen in several locations, providing added protection to stream stability. Greenline studies at the Chippie Creek DMA found stable conditions in greenline vegetation type and condition. Monitoring data at the DMA show the

stream to be in late-seral condition with 92% hydric riparian vegetation on the Greenline in 2009. Streambank stability was 42% in 2009.

Whiskey Springs Creek: Most of Whiskey Springs Creek is in PFC (approx. 0.6 miles) and FAR-up (approx. 2.0 miles). One small segment on Whiskey Springs Creek is considered NF (approx. 0.3 miles). Most of the stream’s riparian-wetland area is vegetated with a variety of wetland woody and herbaceous species. Overall, there is a diverse age-class distribution and composition of riparian-wetland vegetation present. The vegetation also exhibits high vigor and there is an adequate amount of cover and stability to protect banks and dissipate energy during high flows. In the 0.3 mile NF condition segment, a three to four feet deep gully was cut during the 2009 spring runoff. This segment of the stream has been severely set back ecologically. A few young willows have recently established in this segment, but most of the vegetation is mature or decadent riparian-wetland shrubs. Overall, Whiskey Springs Creek has benefitted from early season use the past five years and visual observations show most of the channel has increasing deep-rooted hydric plants on the greenline and an increase in the riparian shrub community.

**Table 16: Proper Functioning Condition for the Eighteenmile/Hawley Creek and Texas Creek Watersheds**

Allotment	Stream	PFC	(FAR-up)	(FAR-static)	(FAR-down)	(NF)
		miles				
Bull Creek		0.1				
Center Ridge	Eighteenmile	1.2				
Hawley Creek	Hawley/ Eighteenmile	0.7		0.6		3.0*
Tex Creek	Eighteenmile			0.3		
Powderhorn	Clear	0.6			3.0	
	Eighteenmile	0.2				0.1*
	Poison	2.6		0.7		
	Tenmile	1.4				
	Bull	0.2				
Chamberlain Creek	Divide	1.4		2.0		
	Eighteenmile	4.7				
	McGinty			1.7		0.6*
	Pass			2.2		
Nez Perce	Texas	0.9		0.6		
<b>Total Miles</b>		<b>14.0</b>	<b>0</b>	<b>8.1</b>	<b>3.0</b>	<b>3.7</b>

\*Non-Functional due, at least in part, to private irrigation withdrawal

***Allotments in the Eighteenmile/Hawley Creek Watershed:***

**Bull Creek Allotment:** Currently meeting Standard 2; Standard 3 is not applicable. Bull Creek is diverted into an irrigation ditch and is considered Non-Riparian on the Bull Creek Allotment. The ditch is stable, does not exhibit any risk factors, and has reached its capability given the constraints. The historic channel is now a dry-wash with upland vegetation and little to no erosion. There are three undeveloped upland springs present in the Bull Creek Allotment. Two of these springs are on the Non-Riparian Bull Creek ditch and exist only because of the ditch

water present in the area. The other spring is located in a steep draw with little livestock access and is in good condition.

Center Ridge Allotment: Currently meeting Standards 2 and 3. There are approximately eight undeveloped upland springs in the Center Ridge Allotment. A few of these springs are located near Eighteenmile Creek and are in the same PFC as the stream segment. The other springs are very small, less than one acre, and intermittent with very little water at surface year round. Wetland vegetation is moderately reduced and only a small amount of wetland grasses exist. Douglas-fir is present at a few of these springs which are competing with the wetland vegetation in the area.

Two segments of Eighteenmile Creek reside in the Center Ridge Allotment and both are rated as PFC. The larger segment (approx. 1.0 mile) in the A Pasture is grazed by livestock and is dominated by willow and riparian-wetland grasses. The smaller segment in the C Pasture (approx. 0.2 mile) is excluded from livestock grazing. Stream/riparian conditions at the A Pasture DMA were rated at 63% hydric riparian vegetation on the greenline in 2010. Streambank stability was 83% in 2010 due the extensive woody vegetation on the greenline.

Hawley Creek Allotment: Currently not meeting Standards 2 or 3. This is due to non-discretionary private irrigation withdrawal along most of Hawley Creek and not related to the grazing permit. The stream segments that are not altered by private land irrigation withdrawals are meeting, or making significant progress toward meeting, Standards 2 and 3.

Two segments of Hawley Creek are included in the allotment. The upstream section of Hawley Creek (approx. 0.3 miles) from the SCNF boundary to the irrigation diversion below the mouth of the canyon is rated as PFC. It has a thick riparian-wetland vegetation cover and a rocky channel creating stable streambanks. The overstory cover includes Douglas-fir; Geyer, Booth, and coyote willow; water birch, aspen, scouringrush horsetail, tufted hairgrass, and sedges. The other segment (approx. 3.0 miles) is the natural channel below an irrigation diversion which dewateres the channel for most of the year and is rated as NF. Irrigation practices have kept this segment dry for many years; however flows have been restored from November through April for the last two years. Recent winter flows do not show erosion and are favorably influencing riparian-wetland vegetation by displacing some of the sagebrush in the channel, allowing young willows to reestablish in several areas.

Three small segments of Eighteenmile Creek exist on the allotment. Two of the segments (approx. 0.2 miles each) are rated as PFC. The green zone on these segments is widening and many new willows are establishing. Streambank vegetation includes willow, Wood's rose, currant, Nebraska sedge, redtop, Kentucky bluegrass, Garrison creeping foxtail, bald spikerush, wildrye, aster, and goldenrod. The third and lowest segment (approx. 0.6 miles) is rated as FAR-static. It is similar to the other two segments but has some areas where the vegetation has not recovered at the same rate as the upstream portions. This segment also has less willow recruitment. Streambank stability at the DMA was 85% in 2009 due the sedge/woody vegetation on the greenline. The DMA was rated as early-seral ecological status with 89% hydric riparian vegetation on the greenline in 2009.

Tex Creek Allotment: Currently not meeting Standard 2 and not meeting, but making significant progress toward meeting, Standard 3 due to the heavy grazing impacts on the Tex Creek ponds wetland area. Very few riparian-wetland areas exist on the allotment. A few undeveloped springs exist along with sections of Eighteenmile Creek and the Tex Creek ponds. The Tex Creek ponds are NF due to heavy livestock grazing, the lack of riparian-wetland vegetation and large amounts of soil erosion. The ponds are approximately 20 acres and consist mainly of upland vegetation. The riparian-wetland vegetation around the ponds is heavily impacted by livestock grazing, severely reducing soil stability of pond banks and decreasing the soil moisture of the site.

Two small segments of Eighteenmile Creek are present on the allotment. These segments are rated as FAR-static (approx. 0.3 miles) and have benefitted from a change in the irrigation practices on the adjacent ranches which now leave more water in the stream channel. In the past, these areas were completely dewatered in many summers and now with year-round flow, the stream/riparian habitat has improved substantially. The upper segment is FAR-static with numerous willows and sedge reestablishing. The lower site is in FAR-static trend and also has hydric riparian vegetation reestablishing, but has more of an entrenched channel. This area receives moderate grazing in the early- to mid-summer and has time during the growing season to have some vegetative recovery and streambank stabilization. Conditions are similar to the adjacent DMA on the Hawley Creek Allotment.

Powderhorn Allotment: Currently not meeting Standards 2 or 3. The Powderhorn Allotment includes many undeveloped upland springs. Most of these springs are in good ecological condition. They are at or near their potential size, extent, and permanence, and are dominated by riparian-wetland vegetation with proper age structure and diversity. There is minimal evidence of trampling or soil alteration by livestock, and soil moisture and stability is being maintained. A few upland springs in the allotment are moderately impacted by livestock. These spring areas are moderately reduced from their potential size, extent, and permanence. Bank alteration at these springs is also moderate and vegetation recruitment is low.

The allotment contains three general segments of Clear Creek: the upper reach above the private mine parcel, the segment between the mine and the irrigation diversion on state land and the dewatered segment downstream of the diversion. The upper reach (approx. 3.0 miles), rated as FAR-down, and is a mix of stable and unstable sections in the headwaters with intermittent and perennial areas. In general, this area has been destabilized from livestock grazing and is lacking riparian shrub and herbaceous vegetation. Currently, there is not a DMA established. The very topmost stream reach consists of springs protected by steep terrain and forest vegetation and in good condition.

Below the private mine property, Clear Creek is rated as PFC (approx. 0.6 miles). The stream is well protected with riparian-wetland shrubs. The lower end of this segment is characterized by a broad willow meadow. The topography becomes narrower on the upper end of this segment near the private property, and has a spruce, fir, and aspen overstory. Riparian-wetland vegetation includes Geyer, Booth, and coyote willow, currant, Nebraska sedge, beaked sedge, red top, Kentucky bluegrass, meadow barley, aster, and common yarrow. Both DMAs are located in this segment, but in different pastures. Substrate data show 22% and 14% surface fines respectively.

Also, bank stability is 33% and 93% respectively. Bank alteration from 2009 showed 69% and 6% respectively. Monitoring documented a late-seral ecological status at the upper DMA with 94% hydric greenline vegetation. The lower DMA showed an early-seral ecological status with 37% hydric greenline vegetation. The data for this DMA is misleading due to a large amount of shallow-rooted herbaceous plants on the greenline. In reality, the entire site is covered with riparian shrubs and sedges, with one side mostly bedrock and is close to the potential natural community (PNC) for the site. Clear Creek is diverted below the PFC reach and is considered Non-Riparian.

Two small segments of Eighteenmile Creek exist on the Powderhorn Allotment. The upper segment, referred to as the Eighteenmile water gap (approx. 0.1 mile) at McFarland Boulevard, is impacted by livestock grazing but is Non-Functional mainly due to private irrigation withdrawal. Grazing on this segment has reduced plant vigor and composition, decreased bank stability, increased erosion, and decreased riparian-wetland conditions. The lower segment (approx. 0.2 mile) is excluded from livestock grazing. This section of the stream is representative of the PNC and rated as PFC.

The upper reaches of Poison Creek on the allotment (approx. 2.0 miles) are rated as PFC with sections of dense willow and aspen stands and protected from livestock impacts. The floodplain is regularly inundated, and sinuosity, width/depth ratio, and gradient are in balance with the landscape. The amount of sedges and willows present protect the streambank from erosion and limit access to the stream. Below the upper reach, there is a small segment impacted by an old irrigation diversion (approx. 0.7 miles) and is rated as FAR-static. It has caused some of the wet meadow habitat to become drier and smaller in size with decadent woody species. Past slumping caused the old irrigation diversion to breach, allowing the flow to return to the natural channel. The stream is rated as PFC after the reconnection and until it reaches a private property boundary (approx. 0.6 miles). This segment maintains a dense cover of Geyer and Booth willows.

The intermittent upper reach of Tenmile Creek, above the private land, is rated as PFC (approx. 1.4 miles). This area is a series of distinct wet meadows that appear to be glacial cirque basins. Streambank vegetation includes sedges, meadow barley, red top, tufted hairgrass, bearded wheatgrass, bluebells, and nettles. There is an overstory of Douglas-fir and aspen in some areas. Surface flow occurs in the channel below the upper meadows, but the majority of the water is still sub-surface. The channel is well protected by sedges, rushes, and red top and bearded wheatgrass. Below the private land, Tenmile Creek is completely diverted into an irrigation ditch and does not flow across public lands managed by the BLM in the stream channel.

Chamberlain Creek Allotment: Currently not meeting Standards 2 or 3 due to moderate to heavy livestock grazing on McGinty Creek and Pass Creek. There are several undeveloped springs in the Chamberlain Creek Allotment. Most of these springs are very close to Eighteenmile Creek, Divide Creek, McGinty Creek, or Pass Creek, and are in the same condition as these streams.

The upper section of Divide Creek (approx. 1.4 miles), above the private property, in the So. 18 Mile Pasture is rated as PFC. This section of stream has thick riparian-wetland vegetation cover and a rocky channel creating stable streambanks. The overstory cover includes Douglas-fir, aspen, Geyer willow, Booth willow, and coyote willow. The lower section of Divide Creek

(approx. 2.0 miles) in the Big Bend Pasture, is rated as FAR-static, and is completely dewatered from a stock-water irrigation system on private land. This limits the riparian community and results in Divide Creek being an intermittent channel with sagebrush and other upland species for most of its length down to Eighteenmile Creek. It is naturally dry in the lower half of the channel.

Chamberlain Creek Allotment contains the headwaters of Eighteenmile Creek. Below the headwaters, the stream crosses a patchwork of public, private and state lands. All stream segments on BLM in the allotment (approx. 4.7 miles) are rated as PFC. Eighteenmile Creek's riparian-wetland area is close to its potential extent and is mostly undisturbed. In the headwaters reach, riparian-wetland vegetation along the stream is diverse in age class and composition. The species present include spruce, lodgepole pine, Geyer willow, Booth willow, coyote willow, aspen and sedges and overall are maintaining high vigor and have root masses capable of bank stabilization. The stream channel is also very rocky which helps stabilize the banks. Some willow die-off has occurred in the past in the upper end of the stream from an unknown cause. A few areas show some grazing of the greenline vegetation along with limited bank trampling. Visual observations and data show that Eighteenmile Creek is continuing an upward trend in condition with a good quality willow/sedge community and 90% stable banks.

The upper section of McGinty Creek (approx. 1.7 miles) consists of a series of springs at the base of a mountain ridge and is rated as FAR-static. The aspen/willow communities that do exist are mature or decadent and lacking a diverse age class of riparian-wetland vegetation. Only a few, if any, seedling or young aspen and willow are present near the stream. The area receives heavy summer livestock use and streambanks are being altered by livestock causing an increase in sedimentation and decreased bank stability. The streambank herbaceous community consists mainly of Kentucky bluegrass that has a very short stubble height with very few types of sedge present. All riparian-wetland vegetation types are present near the stream which assist maintenance and/or recovery. The lower section of McGinty Creek (approx. 0.6 miles) on BLM is below private property. This segment of stream is rated as NF due to the channel drying up from a combination of natural infiltration and a private stock-water diversion. Water flows in the lower half only during extremely high run-off events.

Pass Creek (approx. 2.2 miles) is rated as FAR-static. Much of the stream has mature willows and scattered aspen with a limited sedge/rush community. Pass Creek has received moderate grazing in the late summer for the past ten or more years. Riparian herbaceous vegetation has been grazed to a short stubble height annually, and summer-long grazing has limited sedge, willow and aspen recruitment. The stream channel is also boulder controlled which contributes to high streambank stability. Stream/riparian conditions in the No. 18 Mile Pasture on Pass Creek are rated as FAR-static trend. The DMA is rated at mid-seral condition with 43% hydric riparian vegetation on the greenline in 2010. It also has 84% stable banks at the Pass Creek DMA.

*Allotments in the Texas Creek Watershed:*

Nez Perce Allotment: Currently meeting Standards 2 and 3. The allotment contains three streams with associated riparian habitat on multiple short segments of upper Texas Creek, lower Deer Creek and Negro Green Creek. These segments are interspersed with private, state and

SCNF lands. The private irrigation diversions that dewater Deer and Negro Green Creek channels cause the Non-Riparian rating. The stream segments that are not altered by private land irrigation withdrawals are meeting standards 2 and 3.

Most of Texas Creek in this allotment (approx. 5.6 miles) is on private land. There is approximately 1.5 miles on the public lands managed by the BLM. Approximately 0.9 miles of the stream is on the southern end of the allotment and is rated as PFC, and the other 0.6 miles is broken up on three private/boundary corners. These corners, rated as FAR-static, are not fenced and livestock move back and forth between private and public lands managed by the BLM. These corners have all the riparian-wetland vegetation components. Banks are stable on these corners, although some bank alterations/hummocking does exist. Rushes and sedges are growing on the “green-line” near the stream. The DMA in the lower pasture showed streambank stability was 91% in 2010. The DMA is at mid-seral ecological status with 55% hydric riparian vegetation on the greenline in 2010. Queenie (upper riparian) Pasture has two short segments (about 700 feet in length each) of Texas Creek. Additionally, it contains a ¾ mile segment in the uppermost part of the pasture. This upper reach is a very small spring-fed reach with no fish habitat. The thick vegetation on the greenline limits the potential for impacts by livestock to streambank stability. The reaches within the allotment are a meadow complex with a mix of herbaceous/willow/rock controlled channel with good habitat components.

The Deer Creek stream channel on BLM is below an irrigation diversion and has been dry for many years. The streambed is filled with upland vegetation and no riparian-wetland vegetation exists along the stream. The stream is rated as Non-Riparian. The Negro Green Creek channel on the BLM is dry and is located below an irrigation diversion. Negro Green Creek appears to be naturally intermittent due to the alluvial soils that cause natural infiltration. There is no existing riparian-wetland vegetation present. The stream is rated as Non-Riparian.

Purcell Creek Allotment: Standards 2 and 3 are not applicable. No riparian-wetland areas exist on the allotment.

Spring Canyon Allotment: Currently not meeting, but making significant progress toward meeting, Standards 2 and 3. Very few riparian-wetland areas exist on the allotment. Four small wet meadow springs, including Highway Spring, All Hands Spring, Wildhorse Spring and Slaughterhouse Spring are present on the allotment. Highway and Wildhorse Springs are about 90% excluded from livestock via fencing. The vegetation in these meadows consists of a mix of riparian and upland grasses. Conditions of these wet meadow springs are being maintained and improving by the vegetation and large amount of rocks in the soil. Livestock have access to All Hands Spring and Slaughterhouse Spring wetland areas and they show some soil erosion. Some of these meadows have a mix of upland herbaceous and riparian-wetland vegetation.

*Allotments in the Big Timber Creek Watershed:*

**Table 17: Proper Functioning Condition for the Big Timber Creek Watershed**

Allotment	Stream	PFC	(FAR-up)	(FAR-static)	(FAR-down)	(NF)
		miles				
Leadore	Big Timber			0.1		

<b>Allotment</b>	<b>Stream</b>	<b>PFC</b>	<b>(FAR-up)</b>	<b>(FAR-static)</b>	<b>(FAR-down)</b>	<b>(NF)</b>
Leadore Hill	Big Timber	2.0				
	Little Timber		0.25			0.25*
Timber Creek	Big Timber	3.1				
	Little Timber	0.7				0.4*
	Swan Basin		0.8			
<b>Total Miles</b>		<b>5.8</b>	<b>1.1</b>	<b>0.1</b>		<b>0.7</b>

\*Non-Functional due to private irrigation withdrawal

Dump Allotment: Standards 2 and 3 are not applicable. No riparian-wetland areas exist on the allotment.

Leadore Allotment: Currently not meeting, but making significant progress toward meeting, Standards 2 and 3. A small segment of Big Timber Creek (approx. 0.1 mile) exists on public lands managed by the BLM in the South Pasture of the Leadore Allotment. The segment is in FAR-static condition with a mix of shallow and deep-rooted riparian vegetation. The stream segment has some mature cottonwoods and alders that are expected to continue to stabilize habitat and provide for young plant recruitment. This parcel was historically utilized with the adjacent private lands for most of the year, leaving the stream/riparian condition in poor condition. Since about 2006, the allotment is used in the late-spring and early summer in the pasture containing Big Timber Creek and is showing early improvement, but not yet crossed the threshold of upward trend. Some grazing of the greenline vegetation occurs along with limited bank trampling, but visual observations show the stream is maintaining and improving a good quality willow/sedge community on the upper segment and an improving herbaceous community on the lower segment.

Leadore Hill Allotment: Currently meeting Standards 2 and 3. Even with the approximately 0.25 mile of stream channel dewatered from non-discretionary private irrigation withdrawal along the lower end of Little Timber Creek not related to the grazing permit, the overall habitat is in PFC.

Big Timber Creek: The stream (approx. 2.0 miles) flows on the boundary of the Leadore Hill and Timber Creek Allotments and is rated as PFC. There is a diverse age-class distribution and composition of riparian-wetland vegetation. The vegetation that exists maintains high vigor and is comprised of plants or plant communities that have root masses capable of withstanding high stream flows. The stream channel is controlled by boulders and riparian-wetland vegetation, the floodplain is regularly inundated above bank-full and little erosion is occurring. The channel is vertically stable and in balance with the water and sediment being supplied by the watershed.

On the allotment, Little Timber Creek is completely dewatered (approx. 0.25 mile) from July through October due to an irrigation diversion at the upper allotment boundary. The dewatered channel is rated as NF due to lack of riparian-wetland vegetation and down cutting in some areas. A wet meadow in the lower portion, influenced by natural springs, is adjacent to the dry stream channel near the private boundary. This area is almost entirely covered with deep-rooted

herbaceous species. Although the stream is dewatered, the channel near the meadow is maintaining riparian-wetland vegetation. This segment of stream is rated as FAR-up.

Timber Creek Allotment: Currently meeting Standards 2 and 3. Even with the approximately 0.4 mile of stream channel dewatered from non-discretionary private irrigation withdrawal along the lower end of Little Timber Creek not related to the grazing permit, the overall habitat is in PFC.

Approximately four upland springs exist on the allotment. The springs maintain a high vegetation community condition with a diverse age-class of riparian-wetland shrubs. Shrub recruitment is occurring in these areas; however the springs have not yet met their potential extent. Also, there is little alteration or erosion due to the amount of riparian-wetland grasses near the springs. Big Timber Creek segments on the allotment have a heavily vegetated community with cottonwoods, aspen and willow, with a sparser sedge/rush component, which is typical of the site type. Upper reaches of Big Timber Creek and its tributaries above the allotment on BLM and National Forest lands are in good ecological condition.

The allotment contains five stream segments: two on Big Timber Creek, two on Little Timber Creek and one on Swan Basin Creek. Lower Big Timber Creek in the Lower Pasture has a one mile segment and the Timber Creek Allotment DMA. At that site, streambank stability was 84% in 2009. The DMA is rated at late-seral ecological status with 88% hydric riparian vegetation on the greenline in 2008. Big Timber Creek in the Upper Pasture has a two mile segment bordering SCNF and is the boundary of the Leadore Hill and Timber Creek Allotments. It is in PFC with a high quality willow shrub community and near PNC with beaver ponds and very good quality in-channel conditions with very few livestock impacts.

Lower Little Timber Creek in the Lower Pasture has a 0.2 mile water gap. This is just below the lowest diversion which dewateres the stream, consequently causing a complete loss of riparian shrubs. Even with the short early season grazing, the segment is in FAR-static condition with a mix of shallow and deep-rooted riparian vegetation. Conditions are less than expected due to private irrigation water withdrawal. Lower Little Timber Creek in the Upper Pasture has a one mile segment where about ½ of the length is above and ½ below the lowest diversion. Above the diversion, there is perennial flow and a thick riparian community of willow/aspen in PFC. The lowest portion is dewatered and similar to the adjacent segment in the Lower Pasture. Water flows in this segment until early summer, but then is diverted for private irrigation until fall. Only a few decadent species of riparian-wetland shrubs exist where the stream is rated as NF. Some erosion is occurring on streambanks on this segment of Little Timber Creek due to the lack of riparian-wetland vegetation present. The channel is exceptionally rocky which contributes to adequately dissipating energy during high flows.

Swan Basin Creek (tributary to Big Timber Creek) has about 0.8 mile of stream in two pieces adjacent to private land. The upper reaches of this stream are used for private irrigation but do not completely dewater the channel. Multiple springs arise on the BLM and private and have maintained a series of well-vegetated meadows with thick willows/aspen and beaver activity. The channel is narrowing and riparian-wetland grasses and shrubs are expanding on the greenline. There is a large amount of mature and decadent riparian-wetland shrubs and good

recruitment of seedling shrubs, but a middle age-class of shrubs is absent. The channel is also very rocky which assists in stabilizing the banks and aids in dissipating energy. The DMA has been in place since mid-1990. It shows FAR-up trend with data showing mid-seral ecological status for 2008. Also, the percent hydric riparian vegetation on the greenline has changed from 16% in 1999 to 75% in 2009. There are multiple undeveloped springs adjacent to the stream that are in PFC. These springs have a diverse riparian-wetland plant community. They include large aspen stands with good recruitment and age-class diversity and are at or near potential size, extent and permanence.

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Continued livestock grazing would influence composition of riparian-wetland vegetation due to dietary preference and selectivity of forage by livestock. Cattle prefer a grass-dominated diet, although forbs and shrubs are consumed to a higher degree when graminoids are not available.

Season of use would influence grazing effects on vegetation. Livestock grazing can coexist with these use patterns due to the general behavior of cattle to use mostly upland habitat while these grasses/forbs are green in May through mid-July. Additionally, riparian plants that are grazed or trampled in this season have time to regrow and recover from July to late-September. In general, riparian conditions are growing and maintaining to their fullest extent in the absence of grazing; however, riparian plant recovery and function if grazed early shows the communities able to maintain functioning characteristics that have minimal impacts to other related ecological resources. If riparian plant communities and function are not at PFC, they can show an upward trend with early season grazing, but at a recovery rate that is generally longer than in the absence of grazing.

Areas that would be grazed early in the season only (before mid-July) would continue to fix carbon, reproduce, and set seed as the growing season progresses into the summer. Early season (spring) grazing, compared with grazing in other seasons, would be the least harmful to the majority of plant species in riparian areas (Platts & Nelson, 1985), partly because of the opportunity for regrowth and partly because of avoidance. During the spring timeframe, riparian vegetation could receive reduced grazing because livestock would tend to avoid certain riparian areas characterized by wet soil, cold temperatures, and immature forage (Platts & Nelson, 1985) (Kovalchik & Elmore, 1991). In these cases, cattle would concentrate their foraging effort in uplands rather than riparian areas in spring because forage palatability and climate are more favorable in uplands compared with riparian areas (Platts & Nelson, 1985). Grazing prior to the hot season has been shown to allow vegetation the remainder of the growing season to re-grow and reproduce, and over time, improves condition along the creek (Kovalchik & Elmore, 1991) (USDI-BLM, 2006).

Removing livestock before the hot summer months (mid-July through mid-September) would permit vegetation regrowth for physiological maintenance of the plants, but this pattern would not recover riparian plant communities as quickly as no grazing. This regrowth would function as a filter for instream and flood flows, and would reduce water velocity and permit sediment deposition. Early season grazing would produce more regrowth than later season clipping (Boyd & Svejcar, 2004). In riparian sedge communities root production would be resilient to moderate

levels of defoliation during the growing season and grazing to a 10.2 cm stubble height would not substantially reduce below-ground production (Boyd & Svejcar, 2008).

Limited (two weeks or less) hot season grazing (usually July-mid-September), with no early season use, would have a positive effect on riparian plant communities (as compared to continuous hot season grazing) because plants would be able to fix a significant amount of carbon prior to biomass removal, and would have time to re-grow prior to the dormant season. But this pattern would not recover riparian plant communities as quickly as no grazing. Grazing in riparian areas for longer periods during the hot season should be limited or carefully controlled because of the strong tendency of cattle to concentrate there in the hot and often dry months (Clary & Webster, 1989). This can occur with the implementation of some of the alternatives in certain allotments. Areas that are repetitively grazed from the early season through the CGP and into the hot summer season would remain static or degrade because repetitively grazed plants would not fix sufficient carbon over the long-term and they would have a reduced chance of successful reproduction.

Grazing in riparian areas during the fall season, as compared to the summer hot season, after the shrubs go dormant and drop their leaves would allow the riparian-wetland vegetation to complete its growth cycle for the entire growing season with no impacts from livestock. All of the allotments in the CBT area are above 6,000 feet in elevation and many are above 7,000 feet, which causes fall conditions usually in the second half of September. This would improve plant cover and density of woody species in riparian-wetland areas as compared to hot season grazing. Fall grazing in these situations (and not during the hot season) can improve the overall riparian-wetland conditions of the allotments relative to spring, summer and late-summer grazing, but not as fast as no grazing. The impacts of grazing in the fall would be minimal since cattle are expected to spend much less time in these areas relative to hot season use (Clary & Webster, 1989).

Areas of livestock congregation or trailing would remain trampled and relatively devoid of vegetation for the long-term.

Riparian-wetlands do not exist on the Dump and Purcell Creek Allotments. Impacts to riparian and stream channels from livestock use on the allotments would not occur. Due to private irrigation diversions on Hawley Creek, the Hawley Creek and Leadville Allotments would continue to not meet Standards 2 and 3 under all alternatives.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon Allotment: Early season use in the Jakes Canyon Allotment would be expected to maintain or improve riparian conditions because livestock tend to spend very little time in the riparian area during this grazing season. When the upland grasses are green and palatable in May through early July, cattle usually graze away from the riparian areas. This substantially reduces grazing impacts including bank trampling and loss of vegetative cover. Early use on the allotment would be expected to maintain or improve wetland/riparian conditions and continue to meet Standards 2 and 3.

Leadville Allotment: The Leadville Allotment has only been grazed during the early season for the last five years and Canyon Creek is in PFC. The early season of use on Canyon Creek allows time for regrowth at the end of the grazing season, and thus plants have the ability to increase in composition and vigor in conjunction with the grazing use. This pattern would be expected to fully recover the riparian community at a longer rate as compared to no grazing.

The segment of Hawley Creek on the allotment has been dewatered for many years from irrigation withdrawal. Under this alternative, early season use in the Leadville Allotment (similar to Jakes Canyon above) would be expected to maintain or improve riparian conditions because livestock tend to spend very little time in the riparian area during this grazing season. When the upland grasses are green and palatable in May through early July, cattle usually graze away from the riparian areas. This early season grazing substantially reduces grazing impacts including bank trampling and loss of vegetative cover compared to hot season grazing, however the allotment would not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Free Strip Allotment: The Free Strip Allotment has only been grazed during the early season in the last five years which has shown evidence of an upward trend in the riparian areas. Under this alternative, yearly hot season use would be possible and could cause the riparian conditions to decline. Extensive grazing during the hot season could reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions. Increased use during the hot season would cause a decrease in riparian condition and eventually lead to the allotment not meeting Standards 2 and 3.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Bull Creek Allotment: Under this alternative, the early season or fall use could maintain or improve riparian conditions and continue to meet Standard 2 on the Bull Creek Allotment. Bull Creek would continue to be rated as Non-Riparian because of the irrigation ditch/diversion and complete lack of riparian vegetation.

Center Ridge Allotment: Under this alternative, livestock may be increased to full permit numbers relative to the reduced actual use of the past five years. The permitted grazing period would allow livestock to use Eighteenmile Creek and Poison Spring in the A Pasture longer into the hot season. This could reduce riparian plant vigor and increase bank trampling, and eventually decrease deep-rooted riparian vegetation along Eighteenmile Creek in the pasture which may cause a decline in PFC. In the C pasture, the Eighteenmile Creek segment would continue to be excluded and remain in PFC. Increasing use to full permit numbers and hot season grazing could cause a decrease in riparian condition and may eventually lead to the allotment not meeting Standards 2 and 3.

Hawley Creek Allotment: Under this alternative, the uppermost section of Hawley Creek, in the Hawley Creek Allotment, from the SCNF boundary to the irrigation diversion below the mouth of the canyon would be expected to maintain its PFC rating because it would not be grazed during the hot season. The rest of Hawley Creek, rated as NF, has been dewatered by an irrigation diversion/ditch. Early season or fall use would be expected to maintain or improve the segments of Eighteenmile Creek by increasing riparian plant vigor and decreasing bank

trampling, and eventually increasing deep-rooted riparian vegetation along the stream. Collectively, early season or fall use on the allotment would be expected to maintain or improve wetland/riparian conditions. This use would allow the allotment to meet Standards 2 and 3 relative to livestock grazing; however, the allotment would continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Tex Creek Allotment: Under this alternative, the Tex Creek Allotment would be used prior to July 11<sup>th</sup>. Over the past five years this use has maintained a FAR-static on the Eighteenmile Creek segments. Changes in irrigation practices on the adjacent ranch have improved summer instream flows and allowed riparian vegetation to substantially improve. The early season use would be expected to maintain or improve riparian conditions along Eighteenmile Creek. The Tex Creek ponds are located much closer to the preferred grazing areas on the allotment and have received higher levels of use. This has reduced and in some cases eliminated deep-rooted riparian plant species. Under this alternative, Standards 2 and 3 would not be met due to the heavy use at the Tex Creek ponds.

Powderhorn Allotment: In the previous five years, lower numbers of cattle have been rotated in the Powderhorn Allotment to minimize use on Eighteenmile and Clear creeks. Under this alternative, riparian conditions may decrease if full livestock numbers are utilized and hot season grazing is increased. Extensive grazing during the hot season could reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions on Clear Creek, Poison Creek, and the Eighteenmile water gap. Upper Tenmile Creek and the sections of Clear, Eighteenmile, Poison, and Bull creeks that are presently rated as PFC could also show a decrease in riparian conditions due to livestock grazing the stream during the hot season every year. Increased use during the hot season could cause a decrease in riparian condition and continue not to meet Standards 2 and 3.

Chamberlain Creek Allotment: In the previous five years, cattle have been rotated in the Chamberlain Creek Allotment to minimize use on Eighteenmile and Pass creeks. Under this alternative, Chamberlain Creek Allotment riparian conditions may decrease with no formalized stipulations for riparian grazing management. Extensive grazing during the hot season could reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions on Eighteenmile, Divide, McGinty, and Pass creeks. Increased use during the hot season could cause a decrease in riparian condition and the allotment would continue to not meet Standards 2 and 3.

*Allotments in the Texas Creek Watershed:*

Spring Canyon Allotment: Under this alternative, the protected springs in the Spring Canyon Allotment would be expected to maintain current conditions and most likely improve over time. The two unprotected springs could decrease in wetland/riparian habitat condition if full numbers of livestock are utilized. This could reduce riparian plant composition and vigor, increase erosion, and decrease riparian conditions. Increased use during the hot season could cause a decrease in riparian condition and eventually lead to the allotment not meeting Standard 2 and 3.

Nez Perce Allotment: In the previous five years, cattle have been rotated in the Nez Perce Allotment to minimize use on Texas Creek. Most of the riparian habitat on the allotment is on

private land with only 15% of the stream being on public lands managed by the BLM. Under this alternative, riparian conditions may decrease on the public lands managed by the BLM if full livestock numbers are utilized. Extensive grazing during the hot season could reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions. Increased use during the hot season could cause a decrease in riparian condition and may eventually lead to the allotment not meeting Standards 2 and 3.

*Allotments in the Big Timber Creek Watershed:*

Leadore Allotment: The Leadore Allotment has only been grazed during the early season for the last three years and Big Timber Creek, on the allotment, is in a static trend. Under this alternative the management changes started in 2008 which continued the early season grazing in the South pasture would be expected to increase plant composition and vigor, increase bank stability, decrease erosion, and improve riparian conditions. Use during the early season would be expected to cause an increase in riparian conditions and continue to make significant progress toward meeting Standards 2 and 3.

Leadore Hill Allotment: On the Leadore Hill Allotment, grazing in the past five years has been a rotation that uses the lower pasture early in the spring each year. Use on Big Timber Creek has been limited in the past by early season use and the dense riparian plant community. The impacts from Alternative 1 are expected to maintain current conditions. It is possible to have a decline in riparian conditions if more use occurs in the latter half of the grazing season. Increased use in late July could reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions. Increased use during the hot season could cause a decrease in riparian condition on both Big and Little Timber stream segments.

Timber Creek Allotment: In the past five years, the Timber Creek Allotment has been used during the early season and the riparian areas on the allotment are either in PFC or FAR-up. Under this alternative, grazing would continue to be in the early season and would also include five days in the fall. The increases in grazing use on the allotment would increase impacts to riparian plant composition and vigor, bank stability, erosion, and riparian conditions. This may cause the allotment to eventually slightly decline in wetland/riparian conditions and may move toward not meeting Standards 2 and 3.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon and Leadville Allotments: Early season use on these allotments would be expected to maintain or improve riparian conditions because use would occur prior to July 15<sup>th</sup>. This would be expected to maintain or improve wetland/riparian conditions and continue to meet or make significant progress toward meeting Standards 2 and 3 from livestock grazing. However, Leadville Allotment would continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Free Strip Allotment: The Free Strip Allotment has only been grazed during the early season during the last five years, which has shown evidence of an upward trend in the riparian areas on the allotment. The early season use would be expected to maintain the riparian conditions on Canyon, Chippie, and Whiskey Springs creeks, and the allotment would be expected to maintain

wetland/riparian conditions and continue to make significant progress toward meeting Standards 2 and 3.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Bull Creek Allotment: Under this alternative, riparian conditions in the Bull Creek Allotment would be expected to maintain and continue to meet Standard 2 due to the limited AUMs authorized on the permit. Bull Creek would continue to be Non-Riparian because of the irrigation ditch/diversion.

Hawley Creek Allotment: Impacts to the Hawley Creek Allotment would be similar to Alternative 1, and would continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Center Ridge Allotment: Under Alternative 2, impacts to the allotment would be similar in nature but considerably less than Alternative 1 due to utilization of about half of the AUMs. Livestock numbers would be reduced to the average actual use for the last five years. For the past five years, the Center Ridge Allotment has been utilized in a way which Eighteenmile Creek in the A pasture has received early season use contributing to good riparian conditions. Hot season grazing could occur under this alternative which could cause a decrease in riparian condition and may eventually lead to the allotment not meeting Standards 2 and 3. In the C pasture, the Eighteenmile Creek segment would continue to be excluded and remain in PFC.

Tex Creek Allotment: Under Alternative 2, Tex Creek Allotment impacts would be similar to Alternative 1 with numbers and AUMs. Grazing based on the actual use would be expected to continue to reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions on the Tex Creek ponds. The continued use during the hot season would not make significant progress toward meeting Standard 2.

Powderhorn Allotment: In the previous five years, about 30% less cattle have been rotated through the Powderhorn Allotment than have been permitted, to minimize use on Eighteenmile and Clear creeks during the hot season. Despite this voluntary decrease, heavy grazing in riparian areas during the hot season has degraded riparian areas. Accordingly, under Alternative 2, riparian areas would be expected to maintain or degrade from current conditions. Extensive grazing during the hot season could reduce riparian plant composition and vigor, decrease bank stability, increase erosion, and decrease riparian conditions on Clear and Poison creeks, and the Eighteenmile water gap. Upper Tenmile Creek and the sections of Clear, Eighteenmile, Poison, and Bull creeks that are presently rated as PFC would be likely to maintain their functioning condition. Hot season grazing on the FAR portions of Clear and Poison creeks, and the Eighteenmile water gap would maintain or degrade present riparian conditions and continue not to meet Standards 2 and 3.

Chamberlain Creek Allotment: Impacts to the Chamberlain Creek Allotment would be similar to Alternative 1 and would maintain or decrease present riparian conditions and continue to not meet Standards 2 and 3.

*Allotments in the Texas Creek Watershed:*

Spring Canyon Allotment: About half of the permitted AUM numbers on the Spring Canyon Allotment have been utilized over the past five years. Under this alternative, the protected springs would be expected to maintain current conditions and most likely improve over time since they would not be impacted by cattle. The allotment would continue to make significant progress toward meeting Standard 2.

Nez Perce Allotment: In the previous five years, cattle have been rotated in the Nez Perce Allotment to minimize use on Texas Creek. Most of the riparian habitat on the allotment is on private land with only 15% of Texas Creek on public lands managed by the BLM. Under this alternative, PFC riparian conditions would be expected to be maintained on the public lands managed by the BLM with the lower cattle numbers and AUMs. Impacts to the allotment would be similar in nature but considerably less than Alternative 1 due to utilization of about half of the AUMs.

*Allotments in the Big Timber Creek Watershed:*

Leadore Allotment: Early season use in the Leadore Allotment would be expected to maintain or improve riparian conditions because use would occur prior to July 1<sup>st</sup>. Impacts to the allotment would be similar in nature but considerably less than Alternative 1 due to substantially less AUMs authorized. Early season of use and relatively low livestock numbers would improve wetland/riparian conditions and the allotment would continue to make significant progress toward meeting Standards 2 and 3.

Leadore Hill Allotment: Impacts to the allotment would be similar to Alternative 1 due to similar season of use and livestock numbers. Early use on the allotment would be expected to maintain or improve wetland/riparian conditions and continue to meet Standards 2 and 3.

Timber Creek Allotment: Under this alternative, the Timber Creek Allotment would only be used during the early season. Big Timber and Swan Basin creeks would be expected to maintain or improve riparian conditions because use would occur prior to July 10<sup>th</sup>. Early use and substantially fewer numbers of AUMs on the allotment would be expected to maintain or improve wetland/riparian conditions and continue to meet Standards 2 and 3.

**Alternative 3 - Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Changes in livestock management, overall, would benefit riparian-wetland areas under this alternative. The proposed grazing strategy would: 1) limit grazing intensity and season of use to provide sufficient rest to encourage plant vigor, regrowth, and energy storage; 2) ensure sufficient vegetation during periods of high flow to protect streambanks, dissipate energy, and trap sediments; and 3) control the timing of grazing to prevent damage to streambanks when they are most vulnerable to trampling. Timing of grazing (spring), intensity (light to moderate), and duration (short-term) would maintain and/or improve riparian-wetland conditions. Under the Proposed Action, all allotments in the CBT area would be expected to meet or make significant progress toward meeting Standards 2 and 3.

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon Allotment: Impacts to the Jakes Canyon Allotment would be similar to Alternative 1. Early season use would be expected to improve riparian conditions on the allotment as compared to hot season grazing and continue to meet Standards 2 and 3.

Leadville Allotment: Impacts to the Leadville Allotment would be similar to Alternative 1 and 2, and would be expected to maintain or improve riparian conditions because grazing in the Canyon Creek Pasture would only occur from May 1<sup>st</sup> until May 31<sup>st</sup> with a lower maximum number of AUMs authorized. Early season use would be expected to improve riparian conditions on the allotment as compared to hot season grazing, but continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Free Strip Allotment: On the Free Strip Allotment, riparian conditions would be expected to be maintained or improved under the Proposed Action. AUMs would be similar to Alternatives 1 and 2, but Terms and Conditions on the permit would be expected to improve riparian conditions on Chippie and Whiskey Springs Creeks. Resting the Freestrip Pasture one out of four years, early season grazing on Bell Field and Freestrip Pastures, and not exceeding 35 AUMs in the Bell Field Pasture would be expected to increase riparian plant vigor and decrease bank trampling, and eventually increase deep-rooted riparian vegetation along Canyon, Chippie, and Whiskey Springs Creeks. Adding these Terms and Conditions to the permit would maintain or improve wetland/riparian conditions and the allotment would continue to make significant progress toward meeting Standards 2 and 3.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Bull Creek Allotment: Impacts to the Bull Creek Allotment would be similar to those described under Alternative 2. The implementation of this alternative would maintain present riparian conditions and the allotment would continue to meet Standard 2.

Center Ridge Allotment: Under the Proposed Action, the Center Ridge Allotment authorized use would be substantially increased relative to the reduced actual use in the past five years. However, livestock may only use Eighteenmile Creek in the A pasture until July 15<sup>th</sup> (early season). Early use on the stream would be expected to maintain or improve wetland/riparian conditions and maintain Eighteenmile Creek's PFC rating in the A Pasture. In the C pasture, the Eighteenmile Creek segment would continue to be excluded and remain in PFC. Fencing Poison Spring in the A Pasture to exclude livestock would be expected to increase riparian-wetland conditions around the springs. Early season use on Eighteenmile Creek and excluding Poison Spring would be expected to maintain or improve wetland/riparian conditions and the allotment would continue to meet Standards 2 and 3. In 2011, the cattle used the segment on Eighteenmile Creek with a maximum bank alteration measured at 17% and hydric herbaceous height at 13 inches in July. At the end of the growing season, bank alteration improved to 13% and the hydric herbaceous height was 16 inches. Even with twice as many cattle in the early season, allowing time for riparian plants to regrow after grazing, along with the good existing ecological conditions, reduced negative impacts to an insignificant level.

Hawley Creek Allotment: Impacts to the Hawley Creek Allotment would be similar to Alternative 1 along with the Terms and Conditions that the Eighteenmile Pasture cannot be

grazed after June 30<sup>th</sup>. Grazing Eighteenmile Creek only during the spring would increase riparian plant vigor and decrease bank trampling, and eventually increase deep-rooted riparian vegetation along the stream. Early season and fall use would be expected to maintain or improve wetland/riparian conditions on the allotment, but it would continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Tex Creek Allotment: Impacts to the Tex Creek Allotment would be similar to Alternative 1. Under the Proposed Action, the Tex Creek ponds would be fenced and livestock grazing eliminated except for a small water gap. The early season use and proposed fence would be expected to improve riparian conditions and make significant progress toward meeting Standard 2 and continue making significant progress toward Standard 3.

Powderhorn Allotment: On the Powderhorn Allotment, riparian conditions would be expected to improve under the Proposed Action. Authorized use would be increased compared to Alternative 2, but Terms and Conditions on the permit and proposed projects are expected to improve riparian conditions on Clear, Eighteenmile, Poison, and upper Tenmile Creeks. The *Clear Creek Division Fence* would be constructed to keep livestock off of the spring complex riparian-wetland area on Clear Creek during the winter months to protect riparian habitat. The Clear Creek Pasture would also be modified with the new fence, and use limited to three weeks with an off date of August 15<sup>th</sup>. The limited use in Clear, Poison, and upper Tenmile Creeks would be expected to increase riparian plant vigor and decrease bank trampling, and eventually increase deep-rooted riparian vegetation. The Eighteenmile water gap at McFarland Boulevard would also be fenced to prevent cattle from accessing Eighteenmile Creek from the allotment. Excluding cattle would be expected to improve riparian-wetland conditions on this segment of Eighteenmile Creek. The Terms and Conditions and improvement projects proposed would improve riparian conditions on the allotment, and make significant progress toward meeting Standards 2 and 3.

Chamberlain Creek Allotment: On the Chamberlain Creek Allotment, riparian conditions would be expected to improve under the Proposed Action. AUMs are similar to Alternatives 1 and 2, but Terms and Conditions on the permit are expected to improve riparian conditions on Eighteenmile, Pass, McGinty, and Divide Creeks. Limited use on Eighteenmile Creek would be expected to maintain its good riparian-wetland conditions and PFC rating. A new division fence would be constructed to separate the Big Bend Pasture into two new pastures, the Big Bend and McGinty Creek Pastures. The McGinty Creek Pasture would only be grazed in the early season, with cattle off by June 30<sup>th</sup>. Early use on this pasture would improve riparian-wetland conditions on McGinty Creek. The only pasture to be used after September 15<sup>th</sup> would be the new Big Bend Pasture, which consists of upland vegetation and the intermittent, diverted channel of Divide Creek. Divide Creek would be expected to remain FAR-static and dry in the Big Bend Pasture due to the irrigation diversion and its naturally dry/intermittent state. The new terms and conditions on the permit would be expected to result in the improvement of wetland/riparian conditions and make significant progress toward meeting Standards 2 and 3.

**Allotments in the Texas Creek Watershed:**

Spring Canyon Allotment: On the Spring Canyon Allotment, riparian conditions would be expected to be maintained or improve under the Proposed Action. The proposed projects are

expected to improve riparian conditions. Excluding livestock from a larger portion of Highway Spring would be expected to increase riparian plant vigor, eliminate trampling, and eventually improve riparian condition to PFC. The proposed projects on the allotment would be expected to result in an improvement over present riparian conditions and the allotment would continue to make significant progress toward meeting Standards 2 and 3.

Nez Perce Allotment: In the previous five years, cattle have been rotated in the Nez Perce Allotment to minimize use on Texas Creek. Most of the riparian habitat on the allotment is on private land with only about 15% of Texas Creek on public lands managed by the BLM. Under this alternative, riparian conditions would be expected to be maintained and potentially improved over current conditions. The use levels proposed, less than half of Alternative 1 numbers, would be much less of an impact under the Proposed Action on the public lands managed by the BLM. The reduced number of cattle and AUMs, compared to Alternative 1, would be expected to maintain the PFC riparian conditions in the allotment. The allotment wetland/riparian habitat would be expected to improve and the allotment would continue to meet Standards 2 and 3.

***Allotments in the Big Timber Creek Watershed:***

Leadore Allotment: Under Alternative 3, the impacts to riparian habitat would be expected to improve on the short segment of lower Big Timber Creek with the implementation of the exclusion fence. Grazing would be eliminated on the stream/riparian habitat, giving the riparian plant community the ability to fully recover from livestock impacts including bank trampling and vegetative removal. Under the Proposed Action, livestock would not have access to Big Timber Creek and the associated riparian area which would be expected to result in an upward trend in conditions. Under the Proposed Action, the allotment would continue to make significant progress toward meeting Standards 2 and 3.

Leadore Hill Allotment: Under this alternative, early season use in the Leadore Hill Allotment would be expected to maintain or improve riparian conditions because use would occur prior to June 30<sup>th</sup>. Early use on the allotment would be expected to maintain or improve wetland/riparian conditions. The short segment of Little Timber Creek that is dewatered in the allotment would remain static but overall, the allotment would continue to meet Standards 2 and 3.

Timber Creek Allotment: Impacts to the Timber Creek Allotment would be similar to Alternative 1 and 2, and would result in the maintenance or improvement of present riparian conditions. The short segment of Little Timber Creek that is dewatered in the allotment would remain static but overall, the allotment would continue to meet Standards 2 and 3.

**Crossing Authorizations**

Under the Proposed Action, crossing would be authorized on the Hawley, Leadore Hill, Leadville, Powderhorn, Purcell Creek and Timber Creek Allotments. Crossing would be limited to very short duration (one day), active trailing which would not measurably impact riparian-wetland conditions since it would take place almost entirely on existing roads/trails and upland habitat. This activity would not have measurable impacts to wetland/riparian habitat on the allotments nor affect the allotments ability to meet or make significant progress toward meeting Standards 2 and 3.

### **Range Improvement Projects**

*Fences and Enclosures* - The fence and enclosure proposals would be expected to improve riparian-wetland areas and stream channels. The fences and/or enclosures built in the vicinity of riparian-wetland areas would benefit riparian-wetland areas because they would be designed to keep livestock off these areas either year-round or during the hot season (mid-July through September), depending on the project. For complete exclusion, no livestock grazing would be expected. For pasture fences, livestock have reduced time in the pasture containing riparian habitat, which would be expected to improve habitat conditions. No short-term impacts would be expected due to actual construction being completed outside of the riparian-wetland habitat.

*Pipeline and Trough Systems* - Pipeline and trough system proposals would be designed to provide livestock a way to obtain water away from riparian-wetland areas. This would reduce impacts including bank alteration and vegetative cover removal. With off-site water available, fencing cattle to remove or reduce time on riparian-wetland areas would be likely to improve habitat conditions.

### **Vegetation Manipulation Projects**

The *Jakes Canyon Vegetation Treatment* project, the *Swan Basin* and *Gilmore Summit Rangeland Restoration* projects, and the *Silver Moon Gulch* and *Gilmore Hazardous Fuel Reduction* projects would not impact riparian-wetland areas or stream channels. These projects would be located in upland habitat exclusively and outside of any stream channel or riparian habitat.

The *Swan Basin Aspen Restoration* project in the Timber Creek Allotment would have a minor beneficial effect to riparian-wetland areas and stream channels. Removing Douglas-fir and juniper trees from the riparian area near and upslope from Swan Basin Creek would be expected to increase the number and vigor of riparian-wetland shrubs at that site. This would occur by reducing competition for water, nutrients and space within the riparian-wetland area.

### **Alternative 4 - No Grazing, Direct/Indirect Impacts:**

With no livestock grazing authorized for the next ten years, stresses on riparian-wetland vegetation and soils would be reduced. Riparian-wetland areas that are currently subject to grazing would be likely to increase in vegetative cover of hydric and riparian shrub species. Where grazing is currently not impacting riparian-wetland habitat such as in fenced enclosures or areas too rugged or remote for livestock, conditions would be expected to remain static. Opportunity for riparian sites in the CBT area to improve in condition would be greatest with this alternative. All allotments would meet or make significant progress toward meeting Standards 2 and 3, except for those segments negatively impacted from private irrigation withdrawals. These would be expected to remain in similar conditions even if grazing did not occur on the public land allotments.

### **Alternative 5 - Proposed Action, Direct/Indirect Impacts:**

#### **Grazing Permits**

Alternative 5 would not graze pastures with important riparian habitat after July 15 to allow regrowth of vegetation. No crossing authorizations would be authorized. No new range

improvement projects would be constructed and no modifications would be made to existing projects but vegetation manipulation would occur.

Changes in livestock management would benefit riparian-wetland areas under this alternative including reduced or eliminated use to provide sufficient rest to encourage plant vigor, regrowth, and energy storage; to ensure sufficient vegetation during periods of high flow to protect streambanks, dissipate energy, and trap sediments; and 3) control the timing of grazing to prevent damage to streambanks when they are most vulnerable to trampling. Timing of grazing (spring), intensity (light to moderate), and duration (short-term) would maintain and/or improve riparian-wetland conditions. Under Alternative 5, all allotments in the CBT area would be expected to meet or make significant progress toward meeting Standards 2 and 3, with the exception of the segments dewatered from private irrigation withdrawals.

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon Allotment: Impacts to the Jakes Canyon Allotment would be similar to Alternative 3. Early use on the South Pasture would be expected to maintain or improve wetland/riparian conditions and continue to meet Standards 2 and 3.

Leadville Allotment: Impacts to the Leadville Allotment would be similar to Alternative 3. Additionally, no grazing on lower Hawley Creek would allow riparian conditions to improve if non-discretionary private irrigation withdrawal allowed for water to flow in the stream channel to establish a riparian plant community that is currently only upland habitat. Early season use would be expected to improve riparian condition on the allotment as compared to hot season grazing. Early use on the allotment would be expected to maintain or improve wetland/riparian conditions, but continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Free Strip Allotment: Impacts to the Free Strip Allotment would be similar to Alternative 3. Early use and periodic rest on the allotment would be expected to maintain or improve wetland/riparian conditions and the allotment would continue to make significant progress toward meeting Standards 2 and 3.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Bull Creek Allotment: Impacts to the Bull Creek Allotment would be similar to Alternative 3, would maintain present riparian conditions and the allotment would continue to meet Standard 2.

Center Ridge Allotment: Under Alternative 5, the Center Ridge Allotment A Pasture would not be grazed. Riparian plant communities on Eighteenmile Creek and Poison Spring in the pasture would improve at their full rate of recovery as compared to some level of grazing. In the C pasture, the Eighteenmile Creek segment would continue to be excluded and remain in PFC. Alternative 5 would improve wetland/riparian conditions on the allotment and continue to meet Standards 2 and 3.

Hawley Creek Allotment: Impacts to the Hawley Creek Allotment would be the same as Alternative 4. Alternative 5 would maintain and improve wetland/riparian conditions on the

allotment, but continue to not meet Standards 2 and 3 due to private irrigation withdrawal on Hawley Creek.

Tex Creek Allotment: Impacts to the Tex Creek Allotment would be the same as Alternative 4. Alternative 5 would improve wetland/riparian conditions on the allotment and make significant progress toward meeting Standards 2 and 3.

Powderhorn Allotment: Riparian habitat conditions on the allotment would be expected to improve under Alternative 5 and at a faster rate than under Alternative 3. With no use in the Clear Creek and Winter Range pastures the riparian areas including the Clear Creek riparian and associated stream channel habitat would recover at natural rates. Additionally, the riparian areas in the Carlton's Field and 18 Mile Flat pastures would not be grazed. Alternative 5 would improve riparian conditions on the allotment, and make significant progress toward meeting Standards 2 and 3.

Chamberlain Creek Allotment: Riparian habitat conditions on the allotment would be expected to improve under Alternative 5. Cattle would not graze the No. 18 Mile and the 18 Mile pastures which would improve riparian conditions on Eighteenmile and Pass creeks. Additionally, McGinty and Divide creeks would not be grazed after June 30 which would maintain and improve riparian-wetland conditions over current conditions. Alternative 5 would be expected to result in the maintenance and improvement of wetland/riparian conditions and make significant progress toward meeting Standards 2 and 3.

*Allotments in the Texas Creek Watershed:*

Spring Canyon Allotment: Riparian habitat conditions on the allotment would be expected to be maintained or improve under Alternative 5. Most of the limited riparian habitat on the allotment is currently excluded from livestock grazing and would improve at natural rates. The very small areas outside the fencing, less than one acre, would improve at a faster rate in the Shearing Corral Pasture as compared to hot season grazing that has occurred in the past. Alternative 5 would be expected to result in an improvement over present riparian conditions and the allotment would continue to make significant progress toward meeting Standards 2 and 3.

Nez Perce Allotment: Riparian habitat conditions on the allotment would be expected to improve at a faster rate than under Alternatives 1-3 because grazing would only occur in the Queenie and Lower Riparian pastures until July 15. Early season grazing in these areas would cause grazing to occur in a shorter season than in the past ten years. This would allow riparian plant communities more of the growing season to recover. Due to the riparian habitat in PFC on public lands managed by the BLM and no grazing on Queenie and Lower Riparian pastures after July 15, Alternative 5 would result in the improvement of riparian conditions and allotment would continue to meet Standards 2 and 3.

*Allotments in the Big Timber Creek Watershed:*

Leadore Allotment: Impacts to the allotment would be similar to Alternative 1 and 2 due to similar season of use and livestock numbers. Under Alternative 5, the allotment would not have use after July 15 on the South Pasture and would continue to make significant progress toward meeting Standards 2 and 3.

Leadore Hill Allotment: Under Alternative 5, no use on the Lower Pasture and early season use only in the Upper Pasture would be expected to improve riparian conditions at the same or faster rate than Alternative 3. Alternative 5 would maintain and improve wetland/riparian conditions on the allotment and continue to meet Standards 2 and 3.

Timber Creek Allotment: Under Alternative 5, no use on the Lower Pasture and early season use only in the Upper Pasture would be expected to improve riparian conditions at the same or faster rate than Alternative 3. Alternative 5 would maintain and improve wetland/riparian conditions on the allotment and continue to meet Standards 2 and 3.

**Vegetation Manipulation Projects:** The impacts would be the same as Alternative 3.

## Threatened, Endangered and Sensitive Plants

### Affected Environment

In accordance with national policy (USDI-BLM, 2008), Idaho BLM uses the Special Status Species (SSS) list to help ensure that critical habitats and populations of sensitive species occurring on lands administered by the BLM are managed and/or conserved to minimize the need for listing these animals and plants. Although no ESA-listed plant species occur within the CBT area, the area contains habitat and populations of SSS plants. Populations of nine sensitive plant species are found on public lands managed by the BLM in the CBT area, some with more than one known population. They are the Salmon twin bladderpod, Lemhi penstemon, plains milkvetch, two-grooved milkvetch, meadow milkvetch, alkali primrose, Mill Creek/pink agoseris, hoary willow, and false mountain willow.

### **Upland Special Status Plants**

Upland plant species in the CBT area listed as sensitive by the Idaho State Director of the BLM include the plains milkvetch, Salmon twin bladderpod, and Lemhi penstemon.

- Plains milkvetch is a pterophytic shrub found growing among cushion plant communities. It is found on limestone rock domes, barren knolls, and outcrops with little plant cover (Elzinga, 2002). Vegetative canopy cover is usually between 15-30%. Plains milkvetch is found in the Hawley Creek Allotment.
- Salmon twin bladderpod is a long-lived endemic perennial found in sparsely vegetated habitats and natural barren areas of Lemhi County. It is primarily found on sloped habitats of barren knolls, rocky outcrops, scree and talus at mid-elevations amongst sagebrush habitats (Craig & Criag, 1996) (Ladyman, 2004). Some sites are almost completely scree/talus slopes while other sites have deeper clay and gravel soils interspersed with the talus slopes. Salmon twin bladderpod is found in the Leadville Allotment.
- Lemhi penstemon is a short-lived showy perennial. It is found in the interface between semi-desert shrubland and grasslands, and open forest and woodlands (Elzinga, 1997) (Elzinga, 2002). Lemhi penstemon may also be found in graminoid patches under sparse forests of ponderosa pine or Douglas-fir. In forest and woodland areas it is mainly found in open, grassy patches. Fire can help maintain open Lemhi penstemon habitat within the shrub steppe and open woodland landscape (Elzinga, 1997). Lemhi penstemon is found along

Canyon Creek within the BLM Free Strip Allotment, and along Tenmile and Clear creeks in the Powderhorn Allotment.

These species prefer open habitat. Lack of disturbance may allow shrubs and trees to encroach on this habitat, thus increasing competition for light, water, and nutrients. Fire can help reduce competition and can help maintain these open habitats. These species are easily outcompeted for light, water, and nutrients by invasive, non-native species, such as cheatgrass, spotted knapweed, leafy spurge, Canada thistle, and nodding plumeless (musk) thistle, which occur within the CBT area.

#### *Potential Special Status Upland Plants*

Three additional sensitive upland plants exist on lands just outside of the CBT area; these are the Idaho sedge, white spruce and the Lemhi milkvetch. The Idaho sedge is a grass-like plant that is found in calcareous fens. Known populations occur on the Cottonwood Allotment and at Birch Creek on sites having fine-textured soils, low organic matter and few coarse fragments. The white spruce is a boreal subalpine tree found within the high montane vegetation land cover class. Known populations occur west of the CBT area on the SCNF. It usually occurs in subalpine forests at tree line and in cool moist ravines among other spruce and fir species such as whitebark pine, Douglas-fir, lodgepole pine, and subalpine fir. Lemhi milkvetch is an endemic perennial legume. It can be found on dry slopes comprised of talus, in washes and on flats among alluvial debris.

#### **Riparian-Wetland Special Status Plants**

Most riparian-wetland SSS occur in the mesic shrubland and grassland land cover types that contain components of herbaceous wetlands. Species occurring in the CBT area include the meadow milkvetch, alkali primrose, Mill Creek (pink) agoseris, hoary willow, false mountain willow, and two-grooved milkvetch, all of which are listed as sensitive species by the Idaho State Director of the BLM.

- Meadow milkvetch and alkali primrose are perennials that inhabit wetland sites containing a peat-based soil layer that is basic in pH and considered a fen or alkaline wet meadow. Streams and springs are usually interwoven through the wetlands. Meadow milkvetch is found along Eighteenmile Creek in the Center Ridge Allotment. Alkali primrose is found in the Queenie Pasture of the Nez Perce Allotment and on public lands managed by the BLM adjacent to the Powderhorn Allotment; the Powderhorn site is fenced in with private land and is not a part of a grazing allotment.
- Mill Creek (pink) agoseris prefers sunny, open sites that have perennially moist soils that may be neutral or acidic in nature. Pink agoseris is found in the Chamberlin Creek Allotment, in wet meadows along Eighteenmile and Pass creeks.
- Hoary Willow is a shrub or sub-tree that prefers alkaline wetlands and associated springs. Hoary willow is found on public lands managed by the BLM in the Nez Perce and Powderhorn Allotments.
- False mountain willow is found on moist to wet bottomlands, often where alkaline. It is found in the Nez Perce and Powderhorn Allotments.

- Two grooved milkvetch is found in prairies, plains, foothills and barren sites, often on selenium rich soils. Soil types are typical of bottomlands and swales with alkaline soils containing gravel and selenium. Two-grooved milkvetch is found within the Powderhorn and Chamberlain Creek Allotments.

The above described species are not tolerant of large changes in hydrology or climate change (Decker, et al., 2006). These species are also susceptible to competition from invasive, non-native plants, such as Canada thistle, an invasive occurring in wetlands and along ditches. Pink agoseris and other natives in wet meadows are vulnerable to habitat encroachment from the common dandelion, Kentucky bluegrass, and smooth brome.

#### *Potential Special Status Wetland Plants*

Suitable habitat for marsh felwort and pale sedge exists within the CBT area, although these plants have not been found on public lands managed by the BLM within the CBT area. These species are found in peat wetlands and riparian sites associated with mesic shrubland and grassland cover types.

#### **Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Grazing would have negligible effects on overall sensitive plant population viability. In general, cattle would select more palatable and nutritious vegetation, such as bluebunch wheatgrass over many of the sensitive plant species found in the area. Impacts to sensitive plants would either not be discernible or would be at the lowest level of detection at most sites.

In some cases, disturbance from livestock grazing could provide a minor benefit to early-seral (those that colonize or increase on recently disturbed sites) species, such as the Lemhi penstemon and the Lemhi milkvetch. However, disturbed areas may be more susceptible to non-native plant invasion therefore increasing competition with these early-seral species. This could result in reduced reproductive success of these populations. Where species such as the Lemhi penstemon or Salmon twin bladderpod exist on slopes that are moderate to steep, sloughing of surrounding soils could occur which could adversely affect individuals within a population, but would not threaten any given population as a whole.

Riparian-wetland sensitive plant populations could receive grazing pressure and/or trampling near areas of water availability. Biomass removal or trampling could occur to individual plants within a group of plants during these isolated incidents, but these incidents would not affect the overall survivability of sensitive plant populations found within these riparian-wetland areas.

#### **Alternative 1 – No Action, Direct/Indirect Impacts:**

Under this alternative, the potential for adverse impacts to SSS plant populations would be slight, but detectable when compared to the current condition. This is because a greater amount of forage (AUMs) would be removed than occurs under current condition. The likelihood that a sensitive plant, or group of plants, would be grazed or trampled would increase under this alternative as compared to the current situation. However, while individual plants may be grazed or trampled, it would not present a threat to the overall survivability of any given species, or even necessarily to the affected individual plant. Under Alternative 1, there would be no change to SSS potential or suspected habitat in the project area.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Under this alternative, impacts or potential for impacts would not change from the current situation. The potential for sensitive plants to be grazed or trampled would be low. There would be no change to SSS habitat from existing condition; sensitive plant populations would continue to exist as they have in the past.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Because increased livestock activity would occur, and a greater amount of forage (AUMs) would be removed, the likelihood that a sensitive plant or group of plants would be grazed or trampled would be slightly greater than under current condition. However, the chance that a sensitive plant or group of plants would be intensely grazed or trampled would be low. There would be no change to SSS habitat in the project area. Grazing and/or trampling could potentially eliminate an individual plant, but livestock grazing levels under this alternative would not eliminate a group or population of plants. Because stocking levels would be moderate to low (ranging from 7.8 to 22.8 acres/AUM, with half of all allotments over 12 acres/AUM), high intensities of grazing would not likely occur near sensitive plant populations. Existing sensitive plant populations would be maintained, despite grazing pressure or trampling events that could occur.

**Crossing Authorizations**

Livestock would mainly walk along existing trails or pathways and would take the easiest route through sagebrush-dominated areas; they would avoid walking directly through dense vegetation in most cases. In some locations, impacts from trampling during crossing events could occur. In some areas, because of damage to shrubs, there could be an increase in vascular plant litter and an increase in resource availability (light, nutrients, water) for herbaceous vegetation. This decrease in competition from shrubs could benefit sensitive plant populations.

**Range Improvement Projects**

*Fences* - Sensitive plant clearances were performed for all proposed fences and no sensitive plant populations were found along proposed fence routes; no sensitive plants would be affected. Fence projects could provide a negligible beneficial effect for unknown/unsurveyed sensitive plant populations because of improved pasture management tied to project (fence) implementation.

*Exclosures* - Sensitive plant clearances were performed for all proposed exclosure fences and no sensitive plant populations were found along proposed fence routes; no sensitive plants would be affected. Riparian exclosure projects could result in a minor beneficial effect for riparian-wetland SSS; increasing riparian vegetation height and extent could slightly improve overall habitat condition for these species.

*Pipeline and Trough Systems* - Sensitive plant clearances were performed for all proposed pipeline routes and trough locations and no sensitive plant populations were found along proposed pipeline routes; no sensitive plants would be affected by pipeline and trough installation. Pipeline and trough systems could provide a minor beneficial effect for riparian-wetland SSS because grazing pressure would be reduced in these areas. This could result in an increase in riparian vegetation height and extent, which could slightly improve overall habitat

condition for SSS. Because of water availability at the new upland trough sites, grazing would increase in these areas. This would result in an increased chance that upland SSS plants would be grazed or trampled, although long-term effects to population survivability would be negligible. The impacts of taking 0.02 cfs of water from both Eighteenmile and McGinty creeks to soil moisture content of wetland and riparian areas would not be discernible and would be immeasurable. These species evolved with some degree of soil moisture fluctuation, and it is not expected that wetland sensitive plants would be impacted by this insignificant reduction in flow.

### **Vegetation Manipulation Projects**

No adverse effects would occur to SSS plants as a result of the proposed *Jakes Canyon Vegetation Treatment* project. The aerator would cause minor soil surface disturbance and the seeding would be performed using a BLM-approved seed mix. Early-seral species would benefit from aeration and soil disturbance, although no SSS are known to occur within the Jakes Canyon treatment area.

The *Gilmore Summit* and *Swan Basin Rangeland Restoration* projects, the *Silver Moon Gulch* and *Gilmore Hazardous Fuel Reduction* projects, and the *Swan Basin Aspen Restoration* project would result in the removal of overstory and overstocked trees, as described in Alternative 3. By removing overstory or overstocked trees, competition for resources, such as light, water, and nutrients, would be reduced, thus benefitting understory plants. This could result in an advantage for early-seral species, such as the Lemhi penstemon, although no sensitive species are known to occur in these project areas. In most cases, there would be an increase in overall vegetative understory biomass and vigor in the years following tree removal. Over time, these areas would likely be re-colonized by trees, resulting in increased competition for resources and subsequent reductions in understory biomass.

### **Alternative 4- No Grazing, Direct/Indirect Impacts:**

Sensitive plants or populations that have received historic livestock grazing pressure would have the best opportunity for rest and recovery under Alternative 4. There would be no livestock grazing pressure to SSS plants under this alternative.

Sensitive plant habitat could become more susceptible to fire because of fine fuel/litter buildup, although fire would remove dead and decadent material and improve conditions for early-seral species. On upland sites, ground cover and soil stability would improve in the shortest time frame. With full plant recovery and/or complete growth cycles occurring each year for most individuals, increases in plant health, residual vegetation, energy flow and nutrient cycling, ground cover and soil stability should be near optimum over the long-term. Increases and improvement in plant vigor, seed production, biomass production, and basal area size would occur more quickly as compared to any of the grazing alternatives.

### **Alternative 5- Reduced Grazing, Direct/Indirect Impacts:**

#### **Grazing Permits**

In grazed pastures, overall livestock impacts to sensitive plants would include those general impacts described in the '*Effects Common to the Grazing Alternatives*' section above. Where livestock grazing occurs only after 7/15, the elimination of grazing during the CGP would benefit sensitive plants, although the benefit would be negligible because many sensitive plant

populations would remain ungrazed under the current condition. Additionally, where plants occur near more palatable forage, sensitive plants are unlikely to be grazed.

Many of the same benefits described in the upland plant section would apply to sensitive plants, although benefits might not be as detectable because cattle would select more palatable species, such as bluebunch wheatgrass, over many sensitive plant species. On all closed pastures, beneficial impacts to sensitive species would occur because the chance that a sensitive plant or group of plants would be grazed by livestock would be eliminated. Effects in closed pastures would be similar to those described for Alternative 4. Because no livestock grazing would occur, maximum above and below-ground biomass productivity would be attained in most years. Increases in residual vegetation, energy flow and nutrient cycling and ground cover should be near optimum over the long-term for these species.

**Vegetation Manipulation Projects:** The impacts would be the same as for Alternative 3.

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

### **Affected Environment**

While most of the CBT area consists of intact native vegetation, a number of invasive, non-native species are present. These include spotted knapweed, cheatgrass, leafy spurge, houndstongue, Canada, musk, bull and Russian thistles, halogeton, black henbane and other less aggressive, yet non-native species such as Kentucky bluegrass and smooth brome. Despite localized areas of weed infestation along travel routes and disturbed areas, much of the CBT area remains relatively weed-free.

Noxious weed infestations requiring treatment occur in the CBT area. Treatment has consisted of herbicide application and the use of biological agents, such as *Rhinocyllus conicus*, which attacks the seedheads of musk thistle; *Cyphocleonus achates*, a root-boring insect that targets spotted knapweed; and *Apthona* spp., a flea beetle used for leafy spurge control. Herbicide application is coordinated between the BLM, SCNF and Lemhi County under a strategic plan managed by the local Lemhi Cooperative Weed Management Area.

### **Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Continued livestock grazing authorized through permit renewal would influence composition of vegetation due to dietary preference and selectivity of forage by livestock and soil disturbance, which together would affect system susceptibility to weed invasion. This is because reduced rangeland plant community vigor, coupled with soil disturbance, can weaken the ability of those systems to fend off weed invasion. By reducing the structural integrity of plant communities and increasing soil exposure from disturbance, niches can be created where the highly competitive and aggressive non-native species can become established.

Livestock ingestion of noxious weeds could result in positive or negative effects, depending on species ingested and plant phenology at the time of ingestion. Generally, livestock grazing on weeds during the rosette stage and up to seed puts stress on the plants and weaken their ability to spread and produce viable seed for that growing season. However, it is possible that grazing of the plants could actually stimulate additional root growth and increase seed production as long as

the plant is not reduced to the point of fixing carbon for survival rather than storage or reproduction. Spotted knapweed is a good example of this type of scenario. Depending on the species, grazing of weeds after seed ripe could spread weeds by the passing of viable weed seeds thru the digestive system and re-depositing them on the land at another location. Viable weed seeds could also be transported to new locations by attaching to hair or getting stuck in soil on hooves and transported by animal movement.

Repeated trampling related to congregation areas, such as water sources, salting areas and fences, would result in the decrease in cover of desirable plant species through crushing and breakage. This repeated grazing of plants would affect their ability to fix carbon and produce seed (Anderson, 1991). Soil disturbance from repeated use could create “safe sites” for weed seed to germinate, which over time, could result in undesirable plant communities becoming established.

Livestock could transport weed propagates from existing infestations on private lands to public lands managed by the BLM as the grazing season begins, or if livestock leave the allotment and return later in the season. This could result in a negligible to minor threat, depending on whether or not livestock move through weed-infested areas prior to entry onto public lands managed by the BLM.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Under Alternative 1, all current permitted AUMs would be authorized. Compared to Alternative 2, the number of AUMs consumed by livestock would be greater in 13 of the 16 allotments (Table 2). Because of the greater use and associated impacts, there would be a higher risk of weed invasion and colonization under Alternative 1 compared to Alternative 2. Increased forage removal could create niches for weeds to become established and increased ground disturbance could create conditions (safe sites) favorable for weed colonization.

The three allotments where there is no difference between Alternative 1 and Alternative 2 are Bull Creek, Dump and Free Strip. It is anticipated there would be no greater risk of weed impacts in these allotments than already exists.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Overall grazing impacts of Alternative 2, as related to invasive species, would be less than both Alternatives 1 and 3. This is due to a lower stocking rate, less forage consumed, and less time on the range. These three factors would leave more native vegetation intact to help protect against weed invasion. Less actual ground disturbance overall would help in the reduction of soil disturbance which provides niches that weeds find favorable for colonization. With less time on the allotment, native vegetation would have a better chance of recovery and an enhanced ability to complete the growth cycle and produce seed which would continue to keep the native communities viable. In contrast to Alternative 3, range improvement projects and vegetation treatment projects would not occur. Because of this, there would be no new ground disturbances associated with those projects which would create conditions favorable for the establishment of invasive, non-native species.

### **Alternative 3- Proposed Action, Direct/Indirect Impacts:**

#### **Grazing Permits**

Under Alternative 3, there are 12,332 AUMS authorized on the 16 allotments within the CBT area, approximately 37% more than proposed under Alternative 2. The difference in AUMs between 3 and 2 would be 3,330 AUMs. The implementation of Alternative 3 would improve native plant community conditions through changes in grazing management, elimination of some areas to grazing, changes in season of use, number of livestock, improved livestock distribution, and amount of forage consumed as described in the Proposed Action. This improvement in the overall native plant community would help the ability of the native plant community to remain intact and prevent excess ground disturbance and establishment of new invasive species infestations.

#### **Crossing Authorizations**

Authorized trailing on established roads, trails and upland routes on an annual basis may have both positive and negative impacts depending on the situation. Livestock coming from a ranch with weed infestations onto public lands managed by the BLM have a greater chance of depositing weed propagates along the crossing routes than livestock that are coming off a weed free ranch. The same may be said for livestock that have been utilizing weed infested public lands managed by the BLM and deposit seeds onto un-infested areas while trailing to the home ranch. Most authorized crossing would be on established roadways and two-track roads that are easily accessible for inventory, monitoring and control. Crossing authorizations are also limited to one day, thus limiting the amount of time the livestock have to deposit seeds onto public lands managed by the BLM while crossing. Crossing routes are part of the overall weed inventory and monitoring that occurs on grazing allotments and are part of the overall land base that is included in the SFO weed management program.

#### **Range Improvement Projects**

Under Alternative 3 the new pipelines and fences and associated ground disturbance would occur with both short-term impacts, such as soil disturbance, from installation of the projects and long-term impacts such as new livestock congregation areas and impacts to vegetation near those areas. Additional fencing, the creation of riparian exclosures, and water developments would improve overall rangeland conditions by providing options to further manage both upland and riparian area pastures, however the proposed ground disturbing projects would increase the likelihood that weeds could invade previously uninfested areas. A negligible to minor long-term risk, tied to range improvement maintenance, would result from repeated entries by vehicles that could carry weed propagules on the tires and/or undercarriage.

*Fences* - Under Alternative 3 there would be 4.5 miles of new fences. With the process of fence installation there would be approximately 4.4 acres of short-term disturbance including vegetative trampling, vegetative removal, soil exposure and possible importation of seed on equipment that could have the potential to either establish new weed infestations or create niches for future weed infestations. Approximately 0.5 miles of fencing would be removed, which would result in ground disturbance, soil exposure, and possible seed importation on equipment. The total acreage impact through fence removal would be approximately 0.24 acre.

*Exclosures* - With the building of the proposed exclosures, approximately 2.2 miles of new fence would be constructed, with a net impact of approximately 2.22 acres. Impacts would be similar to those described in the above fence section. Between exclosure extension and new exclosures, the total acreage that would be excluded from livestock grazing would be approximately 77 acres. In exclosures where weed infestations already occur, there would be a risk of increased weed expansion with the elimination of grazing, which may have held weed densities in check. However, with the increased biomass of native vegetation, particularly riparian vegetation, existing weed species would likely be outcompeted and eventually crowded out.

*Pipeline and Trough Systems* - Pipeline construction would cause ground disturbance by the heavy equipment used for the installation and the actual ripping of the ground and trenching for the placement of the water line. Trough placement and the site associated with the trough would have a long-term adverse effect on the vegetation surrounding the site due to concentrated grazing and trampling, continual soil exposure and nutrient deposition which would stimulate weed production. Approximately 0.5 acre around a trough location would be directly affected by vegetation removal, compaction, and trampling around the new water source. These sites would become vulnerable to weed invasion for the life of the project.

With the proposed pipelines in the Chamberlain Creek and Powderhorn allotments, there would be 6.25 miles of new pipeline with approximately 1.52 acres of direct short-term disturbance associated with the installation of these pipelines. The process of pipeline installation exposes newly disturbed soil to the possibility of weed invasion, either from possible seed bank already existing at the site, from seed deposition from the heavy equipment used for the installation, or importation of weed seed from new sources to the exposed soil after the project has been completed. The acreage associated with the placement of the four permanent troughs would be approximately 0.5 acre per trough.

### **Vegetation Manipulation Projects**

Under Alternative 3, approximately 225 acres of rangeland would be treated with a pasture aerator in the Jakes Canyon area. The use of this machine, as it breaks up the soil and opens the soil structure, would have the potential to expose the disturbed areas to invasion by noxious weeds and other invasive species, and by possibly creating favorable conditions for existing weed seed to be exposed and germinate. Noxious weed seed could also be transported to the project site by the equipment itself. In addition to the Jakes Canyon project, there would be an additional 931 acres of rangeland restoration work. In the process of tree removal from open rangeland and within aspen stands, the potential to increase or establish new weed infestation would be there. In the case of the tree removal from open land, the method of removal may be either with machinery, or hand crews with chainsaws, or a combination of both. This may depend on the slope of the project area. The machinery would masticate the trees and scatter the slash, hand crews with chainsaws would cut the trees and either lop and scatter or pile and later burn the slash. As stated before, the machinery has a chance of introducing weed seed to the work sites and transporting seed from one site to another if it goes from an infested area to a non-infested area. The cutting of the trees with saws probably would not pose much of a risk as far as weed issues are concerned, but the burning of slash piles could create exposed sites that are very susceptible to weed invasion.

Under Alternative 3, the forestry related vegetative treatment proposed would include forest thinning of approximately 552 acres. The use of machinery in the thinning, skidding, piling and decking of wood materials from these projects would have the potential to introduce weed propagates from the machinery to the work sites. Additionally, the ground disturbance associated with the operation would have the potential to open niches where dormant weed seed bank may be stimulated to grow. Opening forest canopy would also have the potential to create favorable habitat conditions for weeds to become established and flourish by bringing more light to the forest floor where shade suppression has kept weeds from being able to thrive beforehand. Burning of slash piles and other debris also creates exposed bare area micro-sites rich in nutrients that have the potential to become infestation sites.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

Under Alternative 4, livestock would not be permitted to graze on any of the BLM allotments in the CBT area. Native plant communities would not be affected by livestock grazing and trampling pressure. These native plant communities would successfully reproduce and maximize biomass production (and store carbon) in most years and would be more resistant to invasive non-native plant invasion. Soil disturbance would be minimal and soil biological crust, a natural armoring that undisturbed plant communities maintain, would not be crushed by livestock hoof action and would help reduce the likelihood of invasive plant establishment. Where plant litter is limited in the interspaces, large native seeds often have self-burial mechanisms (such as hygroscopic awns) or are cached by rodents. Many exotic species, however, lack self-burial mechanisms and because biological soil crusts stabilize soils, germination of such seeds can be inhibited on sites with well-developed crusts and low plant litter **Invalid source specified.** **Invalid source specified.** Ground disturbance associated with livestock movement and loitering, especially within livestock congregation areas would not occur. This would reduce the chance of invasive species introduction through exposed soils and niches where weeds establish, reproduce and spread. There is and will always be a risk of weed invasion from other sources of establishment such as wildlife, roads, other surface disturbances, and human traffic. These sources could bring in weed seed from outside the area, as well as transport from within already established infestations. Invasion resistance would be maximized under this alternative.

**Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

**Grazing Permits**

Under Alternative 5, overall impacts to weeds and invasive species would include those general impacts described in the ‘*Effects Common to the Grazing Alternatives*’ section, above. On the Bull Creek, Dump and Free Strip (due to the Terms and Conditions limiting AUMS to 481), Jakes Canyon, Leadore, Nez Perce, Purcell Creek, and Spring Canyon allotments, grazing management and the number of AUMs removed by livestock would not change from current condition. Under this alternative, there would be no additional impacts to weeds over and above what is already occurring on these eight allotments. Ongoing impacts to weed issues would continue to occur at this level and would include soil disturbance, possible transportation and establishment of weed infestations, creation of habitat conditions favorable to weed invasion and expansion of already existing weed infestations.

As seen in the Alternative 5 grazing descriptions (reduced grazing), some pastures have reduced grazing levels with timing stipulations that generally do not start grazing until after 7/15 and

some pasture are closed to grazing altogether. In the allotments that have reduced grazing pressure and a turnout date after 7/15, it is anticipated that minor to moderate benefit would be seen from these restrictions in relation to weed and invasive species establishment, infestation and expansion from a cattle disturbance standpoint. Reduced grazing pressure would result in better retainment of native plant communities which in turn are better able to resist noxious weed and invasive species invasion. In addition, there would be less actual ground disturbance and possible transport of weed seed within the allotment from cattle that feed in infested areas or transport weed seed from private ranch land onto the allotment in feces, seed in hoofs and hair etc., due to there being less time on the allotment. Additionally, there would be a reduction in the actual ground disturbance that can open voids where weeds can colonize and become established.

In the pastures that are closed to cattle grazing, there would be no impacts to weeds in the allotments and pastures due to cattle activities. Native vegetative communities would not be impacted by cattle use, no ground disturbance would be seen by cattle such as trail use, trampling and compaction around water sources and there would be no voids created by cattle disturbances where niches are created that provide suitable habitat for weeds to colonize. As in the pastures with limited use, there is and will always be the chance that other sources of weed invasion will occur, but overall without cattle use on the land, the land would be better able to fend off noxious weed and invasive species invasion. Under Alternative 5, no projects would be constructed; therefore there would be no risk of weed colonization as a result of projects due to ground disturbance, loitering by cattle, etc.

### **Vegetation Manipulation Projects**

Under alternative 5, the *Silver Moon Gulch Hazardous Fuel Reduction* project; the *Gilmore Hazardous Fuel Reduction* project; the *Gilmore Summit Rangeland Restoration* project; the *Swan Basin Rangeland Restoration* project; and the *Swan Basin Aspen Restoration* project would go forward as in Alternative 3. These projects would encompass approximately 1,483 acres. The nature of these projects would have the chance of introducing weeds into the project areas either by transport on vehicles, actual ground disturbance associated with equipment use and or the weed site availability left from the burning of slash piles and windrows. The project areas would be monitored and treated as needed after completion.

## **Water Quality**

### **Affected Environment**

Water quality in the CBT area varies with the time of year and the extent of human influence. In 1998, the Idaho Department of Environmental Quality (DEQ) in conjunction with Idaho BLM assessed water quality and identified a state-wide list (“303(d)” list) of water quality-limited streams and water bodies on Idaho public lands in response to section 303(d) of the Clean Water Act. Assessment of water quality on public lands managed by the BLM is based on meeting beneficial uses with regards to stream/riparian habitat and using biological species as indicators. The DEQ subsequently published the Lemhi River Watershed Sub-basin Assessment (DEQ, 1998) and the Lemhi River Total Maximum Daily Load (TMDL) Report (DEQ, 1999) for streams included on the 1998 303(d) list, some of which occur within the CBT area. The DEQ

updates the 303(d) list every two years, the most recent being in 2008, with publication of the 2008 Integrated 303(d)/305(b) Report (DEQ, 2008).

All pollutants are from non-point sources, that is, no one single location or activity can be identified as the source. Sources of these pollutants found within the CBT watershed can include surface mining, mine tailings, streambank modification/destabilization, timber harvesting, reforestation, residue management, irrigated crop production, rangeland (livestock grazing), flow regulation/modification, highway/road/bridge construction and pastureland treatment. Generally, sedimentation from non-point sources such as irrigated crop production, rangeland, pastureland, streambank modification and roads is the primary pollutant of concern, although nutrients from pastureland and cropland are also of concern (DEQ, 1998).

Water bodies and streams within the CBT area that are listed as water quality-limited include segments of Canyon, Eighteenmile, Hawley and Texas creeks. Portions of these segments are on public lands managed by the BLM. More detailed information can be found in the DEQ Lemhi TMDL (DEQ, 1999) and Integrated Report (DEQ, 2008). Limiting factors to water quality can include flow regime alterations, altered combination of biota/habitat conditions, increased sedimentation, elevated water temperature, fish population structure, increased nutrients and elevated fecal coliform. The additional water bodies and streams within the CBT area support beneficial uses.

With regard to Idaho Standards for Rangeland Health #7 (Water Quality), if the allotment contained a segment DEQ listed as “Impaired”, the allotment was determined to be “Not Meeting” the standard. It was further determined whether actions related to the allotment were contributing factors to the limited water quality. Some of the actions involved grazing activities on public lands managed by the BLM while others were determined not to involve public land grazing.

Jakes Canyon, Leadville, Center Ridge, Hawley Creek, Tex Creek, Powderhorn, Chamberlain Creek, Spring Canyon and Nez Perce allotments contain water bodies and/or streams that are water quality-limited and are currently not meeting Standard 7. In most instances, BLM determined that current BLM authorized activities, including livestock management, are not significant causal factors in failing to meet these standards. The Lemhi TMDL describes how in most drainages, agricultural activities associated with private land grazing/irrigation are causing most of the water quality impacts. Grazing in the CBT area on BLM has been shown to contribute to degradation in water quality but in a minor way (DEQ, 1999).

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Grazing activities on public lands managed by the BLM in the CBT area have impacted water quality to varying degrees by decreasing deep-rooted riparian vegetation, destabilizing stream banks/channels, increasing sediment into streams and increasing water temperatures. Some of the stream segments in the CBT have been listed as water quality-limited, mostly from activities not on public land.

Grazing activities on the Jakes Canyon, Leadville and Free Strip allotments have had limited impacts that influence water quality in Canyon Creek. Grazing activities on the Center Ridge,

Hawley Creek, Tex Creek, Powderhorn and Chamberlain Creek allotments have had limited impacts that influence water quality in Eighteenmile Creek. Grazing activities on the Nez Perce Allotment have had limited impacts that influence water quality in Texas Creek. All these allotments have at least limited grazing on the stream segments listed as water quality-impaired in the Lemhi River TMDL.

The dewatered segments of Hawley, Tenmile, Clear, Deer and Little Timber Creeks would remain in Non-Functioning static condition due to irrigation withdrawal not related to BLM grazing management. BLM has no discretion over this activity. The allotments associated with these segments are currently not meeting Standard 7 due to irrigation withdrawal (Leadville, Hawley Creek, Powderhorn and Nez Perce) and are expected to continue to not meet the standard under all alternatives.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Impacts from grazing relative to water quality are similar to those described under the Riparian Areas and Wetlands section, since water quality impacts in the CBT area are increased sediment and water temperature above natural baseline conditions. Reducing riparian vegetation and bank trampling are the main vectors for water quality impacts. By reducing deep-rooted vegetation and decreasing bank stability, stream channels have more erosion that gets into the water; and reduced shading from less shrubs and tall grasses increases direct sun which increases water temperature in the summer months.

Parameters that are measurements for water quality related to the CBT area issues outlined by DEQ can be described via riparian vegetative conditions, stream PFC ratings, stream bank stability, stream substrate, and water temperature. Water quality impacts in the CBT area have been determined to be mostly from multiple-ownership roads and private land practices with secondary impact from livestock grazing on public lands managed by the BLM. Under Alternative 1, allotments currently meeting Standard 7 (Free Strip, Leadore, Leadore Hill, and Timber Creek) are expected to continue to meet Standard 7 due to the functioning condition and the upward trend of the streams on these allotments. Allotments not meeting (Center Ridge, Chamberlain Creek, Hawley Creek, Jakes Canyon, Leadville, Nez Perce, Powderhorn, Spring Canyon and Tex Creek) are expected to continue to not meet Standard 7 and remain on the 303(d)/305(b) lists.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Impacts are similar to Alternative 1. Measurements for water quality related to the CBT area issues outlined by DEQ can be described via riparian vegetative conditions, stream PFC ratings, stream bank stability, stream substrate, and water temperature. Impacts to riparian areas and related water quality parameters would be expected to maintain under this alternative.

Allotments (Free Strip, Leadore, Leadore Hill and Timber Creek) currently meeting Standard 7 would be expected to continue to meet the standard because of the same reasons as above. For allotments not meeting Standard 7 (Center Ridge, Chamberlain Creek, Hawley Creek, Jakes Canyon, Leadville, Nez Perce, Powderhorn, Spring Canyon, Tex Creek), water quality impacts have been determined to be mostly from multi-ownership roads, and private agricultural land practices. Impacts from grazing on public lands managed by the BLM relative to water quality

are similar since water quality impacts in the CBT area are increased sediment and water temperature above natural baseline conditions. Reducing riparian vegetation and bank trampling are the main vectors for water quality impacts. By reducing deep-rooted vegetation and decreasing bank stability, stream channels have more erosion that gets into the water; and reduced shading from less shrubs and tall grasses increases direct sun which increases water temperature in the summer months. The allotments would continue to not meet Standard 7.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

The impacts would be similar to those described under Alternatives 1 and 2. Reduced grazing impacts to stream/riparian habitat and associated parameters described above are expected on Jakes Canyon, Leadville, Center Ridge, Powderhorn and Chamberlain Creek allotments from changes in management and permit Terms and Conditions limiting grazing during key seasons. Jakes Canyon, Leadville and Center Ridge would have Terms and Conditions to limit grazing to the early season. This would be expected to improve water quality conditions by increasing streamside vegetative cover and bank stability, reducing erosion and sedimentation and decreasing water temperatures. These allotments would be expected to continue to not meet Standard 7, but not due to BLM grazing management.

In the Leadore Allotment, fish and their habitats are expected to improve on the short segment of lower Big Timber Creek with the implementation of the exclusion fence. Grazing would be eliminated on the stream/riparian habitat, giving the riparian plant community the ability to fully recover from livestock impacts and decrease sedimentation and water temperatures. Under the Proposed Action, livestock would not have access to Big Timber Creek and the associated riparian area which would be expected to result in an upward trend in conditions and not adversely affect listed species or their habitat. These allotments would be expected to continue to meet Standard 7 for livestock grazing management on public lands managed by the BLM.

**Crossing Authorizations**

Under the Proposed Action, crossing would be authorized on the Hawley Creek, Leadore Hill, Leadville, Powderhorn, Purcell Creek and Timber Creek allotments. Crossing would be limited to very short duration (one day), active trailing which would not measurably impact water quality conditions because it would take place almost entirely on existing roads/trails and upland habitat. This activity would not have measurable impacts to water quality on the allotments and the allotments would continue to meet Standard 7 relative to livestock grazing management on public lands managed by the BLM.

**Range Improvement Projects**

*Fences and Exclosures-* The fence and exclosure proposals would have no adverse effect on water quality. The fences built in the Powderhorn and Chamberlain Creek allotments would benefit water quality by reducing grazing impacts. This would include maintaining/improving vegetative cover and decreasing bank trampling. This would be expected to increase water quality conditions by increasing streamside vegetative cover, increasing bank stability, reducing erosion and sedimentation and decreasing water temperatures. For excluded areas, grazing would be eliminated on the stream/riparian habitat, giving the riparian plant community the

ability to fully recover from livestock impacts and decrease sedimentation and water temperatures.

*Pipeline and Trough Systems* – Pipeline and trough system proposals would have no adverse effect on water quality. These projects would decrease livestock grazing on streambanks which would be beneficial to riparian-wetland areas and water quality.

### **Vegetation Manipulation Projects**

The *Jakes Canyon Vegetation Treatment* project, *Silver Moon Gulch Hazardous Fuel Reduction* and *Gilmore Hazardous Fuel Reduction* projects, *Gilmore Summit Rangeland Restoration* and *Swan Basin Rangeland Restoration* projects, are located in upland habitat away from hydrologic channels and would not adversely impact water quality.

The *Swan Basin Aspen Restoration* project in the Timber Creek Allotment would have a beneficial, indirect effect to water quality. Removing Douglas-fir and juniper trees from the riparian area would increase the number and vigor of riparian-wetland shrubs near the stream, which in turn, would decrease water temperature, and increase the stability of the streambanks and decrease sedimentation. Removing existing conifer trees adjacent to the riparian community with hand tools and hand labor is not expected to cause any measurable increase towards instream sedimentation.

### **Alternative 4- No Grazing, Direct/Indirect Impacts:**

The streams on the 303(d)/305(b) lists in the project area would likely still be listed under this alternative. Historic grazing, mining, timber harvest, road construction, and wildfire along with historic and current private land practices have caused impairments in these streams. Removal of livestock grazing from public lands managed by the BLM would eliminate that specific contribution of fecal matter, vegetative removal and streambank trampling. This would remove the related potential impacts to water quality from public land, but not from the other lands and practices in the CBT area.

### **Alternative 5- Proposed Action, Direct/Indirect Impacts:**

#### **Grazing Permits**

Changes in livestock management would benefit water quality under this alternative including reduced or eliminated use to provide sufficient rest to encourage riparian plant vigor, regrowth, and energy storage; to ensure sufficient vegetation during periods of high flow to protect streambanks, dissipate energy, and trap sediments; and to control the timing of grazing to prevent damage to streambanks when they are most vulnerable to trampling. Timing of grazing (spring), intensity (light to moderate), and duration (short-term) would maintain and/or improve water quality conditions. Under Alternative 5, all allotments in the CBT area are expected to meet Standard 7 in relation to livestock grazing management on public lands managed by the BLM.

The impacts would be similar to those described under a combination of Alternatives 3 and 4, with extensive stream habitat excluded from grazing and additional areas limited to grazing prior to July 15. Powderhorn, Chamberlain Creek, Tex Creek, Nez Perce, Center Ridge, Leadore Hill and Timber Creek allotments would not have grazing in certain areas. Grazing would be limited to before July 15 on pastures of Chamberlain Creek, Free Strip, Jakes Canyon, Leadore Hill,

Leadville and Timber Creek allotments. This would be expected to improve water quality conditions by increasing streamside vegetative cover and bank stability, reducing erosion and sedimentation and decreasing water temperatures. The allotments would be expected to continue to meet Standard 7 in relation to livestock grazing management on public lands managed by the BLM.

**Vegetation Manipulation Projects**

The impacts would be the same as for Alternative 3.

**Fisheries including Threatened, Endangered, and Sensitive Fish**

**Affected Environment**

Resident fish species within the CBT area include bull trout, redband/resident rainbow trout, cutthroat trout, eastern brook trout and sculpin. Redband and westslope cutthroat trout are found in most stream reaches in the area. Additionally, streams in the area provided historic habitat for Chinook salmon and steelhead trout, but are currently unoccupied.

Chinook salmon, steelhead trout, and bull trout are listed as “threatened” under the ESA. Westslope cutthroat trout is listed as a sensitive species by the Idaho State Director of the BLM. Table 18 below summarizes distribution of Threatened, Endangered, and Sensitive (TES) fish species and designated critical habitat (DCH) found within the CBT area.

Distribution of TES fish species in the CBT area has been reduced from the historic extent. Fish access from the Lemhi River to the tributary streams is limited from the historical ranges mostly due to irrigation/diversion practices that started in the 1870’s and that continue today. Habitat has also been modified via historical grazing practices, beaver removal, mining and other activities. Additionally, bull trout may have been limited during this period due to increased water temperatures in the lower reaches of the streams.

**Table 18. TES Fish Species Distribution and Critical Habitat within the CBT area.**

Species	Drainage/Stream				
	Canyon	Hawley	Eighteenmile	Texas	Big Timber
Chinook*	NP - Historic	NP - Historic	NP - Historic	NP - Historic	NP - Historic
DCH	Yes	Yes	Yes	Yes	Yes
Steelhead*	NP - Historic	NP - Historic	NP - Historic	NP - Historic	NP - Historic
DCH	No	No	No	Yes	No
Bull Trout*	Present - Rough Canyon Cr only (headwaters)	Present - found on SCNF only	Present - Headwaters & Clear Cr only	Present - Deer Cr only	Present
DCH	Yes	Yes	Yes	Yes	Yes
Cutthroat Trout	Present	Present	Present	Present	Present
Redband Trout	Present	Present	Present	Present	Present

NP - Historic = Not currently present but was historically present.

\* = ESA Listed

DCH = ESA Designated Critical Habitat

The following grazing allotments within the CBT area contain a portion of a stream occupied by either resident or TES fish species: Jakes Canyon, Leadville, Free Strip, Hawley Creek, Powderhorn, Chamberlain Creek, Center Ridge, Tex Creek, Nez Perce, Timber Creek, Leadore Hill, and Leadore. The following grazing allotments do not contain fish habitat: Bull Creek, Dump, Purcell Creek and Spring Canyon.

Private land irrigation withdrawal occurs throughout the CBT area on all streams. Some of the segments of stream have reduced flows and some are completely dewatered during a variable window of time in the summer irrigation season. Canyon Creek has reduced flows on the Jakes Canyon and Leadville Allotments. Eighteenmile Creek has reduced flows in the Center Ridge, Hawley Creek, Tex Creek, and Powderhorn Allotments. Hawley Creek is completely dewatered on the Hawley Creek and Leadville Allotments. Bull Creek is completely dewatered on the Bull Creek Allotment. Clear and Tenmile creeks are completely dewatered on the Powderhorn Allotment. Texas Creek has reduced flows and Deer Creek is completely dewatered on the Nez Perce Allotment. Big Timber Creek has reduced flows on the Leadore, Leadore Hill and Timber Creek Allotments. Little Timber Creek has a small segment which is completely dewatered on most years during July-October. This occurs on the ¼ mile segment on the Timber Creek Allotment and a ¼ mile portion of the one mile segment on the Leadore Hill Allotment. BLM does not have control over these activities and they are not related to BLM grazing management. Water withdrawal has altered stream/riparian habitat by reducing greenline plant vigor and reproduction which reduces the quality of most fish habitat characteristics. These channels have warmer water temperatures, reduced cover, increased fine sediment, fewer pools and lower survivorship of fish. These segments are not meeting Standard 8 due to the irrigation withdrawal and dewatered channel conditions that are not related to livestock grazing. The Timber Creek and Leadore Hill allotments are meeting Standards 2, 3 and 8 with the vast majority of the habitat in PFC condition.

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon/Leadville: At this time, no anadromous fish use Canyon Creek or Hawley Creek on the Leadville Allotment. With the reconnection of Canyon Creek on downstream private land in 2010, it is possible for both spawning and rearing of steelhead to occur in the future, although very few steelhead adults have been found in the Lemhi River upstream of Hayden Creek. Chinook adults are not likely to spawn in Canyon Creek due to the small size of the stream, but juveniles may begin to utilize the habitat now that flows reach the Lemhi River where fish currently exist. Canyon Creek is currently occupied by bull trout only in the headwaters on the SCNF. No fall spawning surveys have been conducted by BLM staff because of the limited numbers of bull trout documented during presence/absence surveys in the lower reaches. Canyon Creek on BLM is unlikely to support bull trout habitat except possibly for migration. The Leadville Allotment also contains a segment of lower Hawley Creek which contains bull trout further upstream on SCNF lands.

Free Strip Allotment: The allotment includes Chippie Creek, Whiskey Springs Creek and a one mile segment of upper Canyon Creek. Chippie Creek is a very small perennial, non-fish-bearing stream that flows into a pond downstream of the BLM and does not influence Canyon Creek. Canyon Creek has a mainstem base flow of 5-10 cubic feet per second (cfs), and is characterized by stream gradients of 1-2% on the allotment.

Adult steelhead or Chinook are not currently known to spawn in the upper reaches of Canyon Creek and no intrinsic potential occurs above Cruikshank Creek about three miles downstream from the allotment. Juvenile anadromous fish do not have the ability to access upper Canyon Creek for rearing habitat due to a culvert barrier near the mouth of the canyon. Bull Trout are found in the headwater tributary of Rough Canyon Creek on the SCNF, but have not been found in Canyon Creek on BLM or in the Free Strip Allotment. The stream channels in the allotment are unlikely to support bull trout.

Whiskey Springs Creek is an intermittent, non-fish-bearing stream that flows into upper Canyon Creek during high run-off events. It is dry most of the year at the lower end. The one mile segment of upper Canyon Creek is in PFC and is above the occupied fish habitat. The closest fish habitat is downstream on Canyon Creek below the allotment. The nearest bull trout habitat is in Rough Canyon Creek, a tributary of Cruikshank Creek. The closest Chinook salmon and steelhead trout habitat is downstream in the Lemhi River.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Bull Creek Allotment: The allotment contains a portion of Bull Creek which is a perennial non-fish-bearing stream that is completely diverted into an irrigation ditch and flows onto private land. The stream is naturally hydrologically isolated and does not flow surface water into any down-valley stream channel and does not have any fish habitat.

Center Ridge Allotment: The allotment contains about 1.0 mile of Eighteenmile Creek in the A Pasture, which is the lowest in elevation and typically grazed first. The C Pasture historically had a water gap segment that was impacted by livestock. This area has been fenced and excluded from livestock since the mid-1990's and does not impact the stream.

Hawley Creek Allotment: The allotment contains segments of both Eighteenmile and Hawley creeks. It contains three small segments of Eighteenmile Creek totaling about one mile. Two of the segments (approx. 0.2 mile each) are rated as PFC. The allotment contains about 3.0 miles of Hawley Creek. The upper portion of Hawley Creek on public lands managed by the BLM above the diversion, does not have established monitoring data. It is rated as PFC with a thick riparian and a boulder controlled channel with very little cattle use. The other segment (approx. 3.0 miles) is the natural channel below the irrigation diversion which dewateres the channel for most of the year. This segment of stream is rated as NF. The segment is not meeting Standard 8 due to the irrigation withdrawal and dewatered channel.

Chinook salmon and steelhead are not currently found in Eighteenmile or Hawley creeks. There is a partial barrier at the mouth of the stream crossing under State Highway 29 in Leadore and a permanent barrier at the confluence of Hawley Creek about three miles upstream from the Lemhi River. No use by anadromous fish has been documented, nor is it expected to occur due to the

perennial disconnection of the stream. Chinook do spawn and rear in the Lemhi River starting below the Eighteenmile Creek/Lemhi River confluence. Recent irrigation projects have improved flows in lower Eighteenmile Creek along with riparian fencing on two of the lower ranches.

Additionally, bull trout found in the headwaters of both streams far above the allotment have not been found in any of the downstream reaches. Rainbow, cutthroat and eastern brook trout are scattered throughout the lower and middle reaches of Eighteenmile Creek in low densities (BLM electrofishing surveys in 2000-2008). The BLM reaches are unlikely to support bull trout except for migration habitat. No bull trout have been documented inhabiting or spawning in lower Eighteenmile or Hawley Creek.

Tex Creek: The allotment contains two short segments of lower Eighteenmile Creek totaling about ¼ mile that were historically heavily grazed and dewatered from adjacent private land irrigation diversions. See write-up for Hawley Creek Allotment for details of fish distribution and habitat conditions in lower Eighteenmile Creek.

Powderhorn Allotment: The allotment includes approximately 0.25 mile of Eighteenmile Creek in two segments. The upper segment is at the McFarland Boulevard crossing and is used as a water gap for the 18 Mile Flat Pasture. It is moderately impacted by livestock and not meeting standards. The second segment is roughly three miles downstream and has been excluded from livestock grazing since 1998, and is in PFC. The allotment contains approximately three miles of Clear Creek which contains bull trout on BLM, state and private lands.

Clear Creek can be broken out into three segments: 1) the upper reach on public lands managed by the BLM above the private mine site, 2) the reach in the canyon below the private mine site located in both the Clear Creek and Winter Range Pastures; and 3) the dewatered reaches below the diversion. The upper reach of Clear Creek, approximately three miles in length, is a relatively steep channel with limited natural flows and riparian vegetation. Most of this segment is too small to support fish but influences the occupied habitat downstream by providing stream flows to the lower reaches. Moderate to heavy hot season livestock grazing of this section in the past has influenced downstream fish habitat by increasing fine sediment to downstream habitats, negatively impacting spawning and rearing habitat for redband and bull trout. It also has erosive soil characteristics differing from the lower reaches. Segment 2 is below the private mine site and has good bull trout spawning and rearing habitat and is rated as PFC. The majority of the stream comes from large spring complexes just below the mine and at the canyon mouth. The water temperatures are relatively cold and suitable for bull trout with the 7-day average maximum water temperature at 51.0°F.

Clear Creek is diverted below the PFC reach on state land and is considered Non-Riparian. The segment is not meeting Standard 8 due to the irrigation withdrawal and dewatered channel. No use by anadromous fish has been currently documented in Eighteenmile or Clear creeks. Clear Creek is currently the only bull trout occupied stream in the allotment. This reach does have a small resident population of bull trout spawning on BLM. BLM has two electrofishing samples conducted with the Idaho Department of Fish and Game (IDFG) in 2009 showing a small

isolated population of bull trout and rainbow trout. Historically, livestock have grazed along both streams sometimes into October.

Poison and Tenmile creeks in the allotment do not connect to DCH or are completely diverted into irrigation systems on private land and do not influence DCH. Tenmile Creek originates from springs on private land and is diverted into an irrigation ditch on public lands managed by the BLM and then back onto private land. Redband trout are found in this stream but no stream channel exists on public lands managed by the BLM.

Chamberlain Creek Allotment: The allotment contains about four miles of the headwaters of Eighteenmile Creek and two miles of Pass Creek where redband and bull trout occur. Improvements from poor conditions caused by excessive grazing in the past have been demonstrated through limited grazing on Eighteenmile Creek (now PFC) in the past ten years. Pass Creek is a very small tributary stream to upper Eighteenmile Creek that provides habitat for a very small population of bull trout. The stream on public lands managed by the BLM is rated as FAR-static. This stream has been completely isolated from Eighteenmile Creek since the 1960's by a private irrigation diversion. In 2009, the stream was allowed to resume flow and connect with Eighteenmile Creek but has not yet formed a functioning channel where it was dewatered. The stream habitat for bull trout is marginally providing the appropriate components for spawning and rearing habitat.

No recent use by anadromous fish has been documented in Eighteenmile Creek. Eighteenmile and Pass creeks are currently occupied by bull trout only in the headwaters. The headwaters do have a small resident population of bull trout spawning on BLM. BLM has observed a small number of bull trout spawning in upper Eighteenmile Creek (<10 fish). Pass Creek is a very small stream with probably less than 100 individual fish (Jude Trapani, professional judgment). Historically, livestock have grazed along both streams, sometimes into October.

The upper portion of Eighteenmile Creek in the conifer tree zone is currently lacking in pool habitat, instream cover, and large woody debris. Historical grazing practices reduced the riparian-shrub community substantially causing a decrease in fish habitat, especially bull trout spawning and rearing habitat.

*Allotments in the Texas Creek Watershed:*

Purcell Creek and Spring Canyon Allotments: There is no fish-bearing stream habitat on these allotments.

Nez Perce Allotment: Most of Texas Creek on this allotment is on private lands. The public lands managed by the BLM are grazed as part of a much larger private land pasture. The allotment contains approximately one mile of Texas Creek consisting of six short segments of fish-bearing reaches on BLM and one segment of non-fish-bearing creek. Negro Green Creek is a very small intermittent channel that does not provide fish habitat. Deer Creek provides habitat for bull trout upstream on SCNF land but is dewatered for irrigation from April through November each year. The segment is not meeting Standard 8 due to the irrigation withdrawal and dewatered channel on public lands managed by the BLM.

Texas Creek in the Lower Riparian Pasture crosses five small corners of public lands managed by the BLM that include stream habitat totaling about ½ mile and are rated as PFC. Texas Creek in the Queenie Pasture has two short segments totaling 1,500 feet of occupied fish habitat and a ¾ mile segment upstream of suitable size for fish bordering private land. This segment was rated PFC. Lower Deer Creek in the Queenie Pasture has one mile of dewatered channel on public lands managed by the BLM downstream of an irrigation diversion.

Texas Creek has a slightly higher water temperature regime than desired. The multiple irrigation diversion systems are most likely causing a slight increase over natural conditions. The segments on the allotment are mostly well shaded and are most likely not contributing to temperature increases. There is a complete barrier on lower Texas Creek downstream of the allotment that precludes any upstream migration of Chinook, steelhead or bull trout. Occasionally, it is possible but unconfirmed, that bull trout migrate downstream through the allotment and further downstream to the Lemhi River. No bull trout were found on BLM from the 2003 IDFG electrofishing surveys. Chinook salmon, steelhead and bull trout have not been documented to spawn in Texas Creek due to upstream migration barriers, but historically used the stream extensively. Sediment input is not a limiting factor to fish production. Texas Creek is DCH for Chinook salmon and steelhead. Bull trout are currently found in the headwaters of Deer Creek, a tributary to Texas Creek in the upper end. It is unlikely to support bull trout habitat except for migration habitat on the allotment.

*Allotments in the Big Timber Creek Watershed:*

Dump Allotment: There is no fish-bearing stream habitat on this allotment.

Leadore: This allotment contains one small segment of Big Timber Creek totaling about 500 feet. This parcel was historically utilized with the adjacent private lands for most of the year, leaving the stream and riparian habitat in poor condition. Since about 2006, the pasture containing Big Timber Creek has been used in the late-spring and early summer and is showing improvement. Substrate monitoring elsewhere in the watershed shows that Big Timber Creek meets standards. The reach within the allotment is a tree/boulder controlled channel with limited suitable spawning substrate. Big Timber Creek in the lower reaches has a slightly higher water temperature regime than desired. The multiple irrigation diversion systems are most likely causing a slight increase over natural conditions. The short segment on the Leadore Allotment is well shaded and is most likely not contributing to temperature increases.

No use by anadromous fish has been currently documented in Big Timber Creek due to irrigation diversion barriers in the lower reaches both above and below the Leadore Allotment. Bull trout are only found in the upper reaches of the drainage and have not been documented on the allotment. No fall spawning surveys have been conducted by BLM staff downstream of the SCNF boundary because no bull trout have been documented during presence/absence surveys in the lower reaches. The allotment likely only provides bull trout migratory habitat. No bull trout have been documented inhabiting or spawning in lower Big Timber Creek.

Leadore Hill Allotment: The allotment contains a portion of both Big Timber and Little Timber creeks. On Big Timber Creek, the stream (approx. 2.0 miles) flows on the boundary of the Leadore Hill and Timber Creek Allotments and is rated as PFC. The stream channel is

controlled by boulders and riparian-wetland vegetation with little erosion and provides suitable fish habitat for all species. No use by anadromous fish has been currently documented in Big Timber Creek on the allotment due to irrigation diversion barriers in the lower reaches. Bull trout are only found in the upper reaches of the drainage and have not been documented on the allotment. The allotment likely only provides bull trout migratory habitat. No bull trout have been documented inhabiting or spawning on the allotment.

Timber Creek Allotment: The allotment contains five stream segments: two on Big Timber Creek, two in Little Timber Creek and one on Swan Basin Creek. Big Timber Creek is a larger tributary stream with a mainstem base flow of approximately 45 cfs before diversions begin to affect water quantity. Stream flows above and below the allotment are diverted seasonally for irrigation purposes. Occasionally, it is possible but unconfirmed, that bull trout migrate downstream through the allotment and further downstream to the Lemhi River. No bull trout were found on BLM from the 2003 IDFG electrofishing surveys.

Substrate monitoring elsewhere in the watershed shows that Big Timber Creek meets standards. Chinook salmon spawning has not been documented in Big Timber Creek due to upstream migration barriers, but historically Chinook used the stream extensively. Sediment input is not a limiting factor to fish production. Big Timber Creek in the lower reaches has a slightly higher water temperature regime than desired. The multiple irrigation diversion systems are most likely causing a slight increase over natural conditions. The segments on the Timber Creek Allotment are well shaded and are most likely not contributing to temperature increases.

No use by anadromous fish has been documented in Big Timber Creek on the allotment due to irrigation diversion barriers in the lower reaches. Bull trout are only found in the upper reaches of the drainage and have not been documented on the allotment. No fall spawning surveys have been conducted by BLM staff downstream of the SCNF boundary because no bull trout have been documented during presence/absence surveys in the lower reaches. The allotment likely only provides bull trout migratory habitat. No bull trout have been documented inhabiting or spawning in lower Big Timber or Little Timber creeks on the allotment.

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

See the Riparian Areas and Wetlands and the Water Quality sections for more details on general descriptions of grazing impacts. Allotments currently meeting Standard 8 include Bull Creek, Dump, Spring Canyon and Purcell Creek. Because they have no stream/riparian habitat or fish impacts, they would continue to meet the standard. There is no fish-bearing stream habitat on these allotments and the alternatives would not impact fish or their habitats. Additionally, allotments not meeting Standard 8 due to irrigation withdrawal (Leadville, Hawley Creek, and Nez Perce) are expected to continue to not meet the standard.

Greenline and other monitoring studies on the stream sites within the allotments generally show stable and improving habitat condition. Past changes in livestock grazing resulted in riparian vegetation recovery and allowed stream banks to stabilize. Details of current management are displayed by alternative by allotment below.

The dewatered segments of Hawley, Tenmile, Clear, Deer and Little Timber Creeks would remain in Non-Functioning static condition due to irrigation. BLM has no discretion over water being diverted.

Grazing impacts to stream/riparian habitat would result from removal of riparian herbaceous and woody plants through grazing and bank trampling. This could reduce survival of incubating fish eggs and juvenile and adult fish. Incubating eggs may be suffocated by increased fine sediment in the substrate. Juveniles would be at greater risk of predation with reduced instream cover, and both juvenile and adult survival may decrease if temperatures exceed optimal levels.

No current use by ESA-listed anadromous fish species has been documented in any of the streams in the CBT area. This is mostly due to barriers and dewatered segments of stream on Lower Canyon Creek, Eighteenmile/Hawley creeks, lower Texas Creek, and Big Timber Creek just upstream from the Lemhi River. It is unlikely that the BLM stream segments in these watersheds would provide for spawning and rearing of Chinook salmon or steelhead trout in the next ten years. It is unlikely that livestock grazing would have measureable impacts to adult spawning downstream in the Lemhi River. This is a result of the small volume of each tributary as it is combined with the much larger volume of the Lemhi River.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Impacts to stream/riparian habitat would be grazing and removal of riparian herbaceous and woody plants and bank trampling. This could reduce vegetative cover, plant function, riparian community function and shading. Additionally, grazing could reduce fish habitat, instream cover, raise water temperatures and increase fine sediment in the stream substrate. This could reduce survivorship of fish egg incubation, and juvenile and adult fish. While this alternative renews the existing permits, the full permitted AUMs have not been utilized over the past five years. Grazing full permitted AUMs could impact riparian areas by decreasing deep-rooted riparian vegetation, destabilizing stream channels and increasing sediment into the streams and ultimately negatively affect fish survival. Additional information can be found in the Riparian Areas and Wetlands section above.

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon: Under Alternative 1, the impacts to fish and their habitats are limited to the riparian pasture on Canyon Creek. Grazing would continue in the early portion of the season with a maximum of 40 cattle. The early season grazing and limited numbers on the allotment have maintained PFC on Canyon Creek, providing suitable stream/riparian and fish habitat on the allotment. Under this alternative, conditions would be expected to maintain or improve on Canyon Creek and continue to meet Standards 2, 3 and 8 related to fish and their habitats.

Leadville Allotment: Under Alternative 1, the impacts to fish and their habitats are limited to the riparian pasture on Canyon Creek. Grazing would continue in the early portion of the season with a maximum of 500 cattle. In the past ten years, the Canyon Creek pasture has been grazed first, for less than one week, and then cattle are moved to the upland pastures to the south. This would be expected to continue under Alternative 1, but more use in the pasture would be possible by up to 22 days. The early season grazing and limited time on the allotment have maintained PFC on Canyon Creek, providing suitable stream/riparian and fish habitat on the

allotment. Increased use could slightly reduce survival of juvenile and adult fish over current conditions. This could increase the use on the riparian shrub community along Canyon Creek and reduce the riparian shrub community. This would slightly decrease shading and instream cover and slightly increase erosion and sedimentation to the stream channel which would increase fine sediment in the substrate. This could slightly reduce survival of incubating resident redband trout eggs and juvenile and adult fish. Anadromous fish impacts downstream in the Lemhi River are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. In Canyon Creek, incubating eggs may be suffocated by increased fine sediment in the substrate. Juveniles would be at greater risk of predation with reduced instream cover, and both juvenile and adult survival may decrease if temperatures exceed optimal levels.

The dewatered segment of Hawley Creek would remain in NF static condition due to irrigation withdrawal unrelated to BLM grazing management. Under this alternative, conditions would be expected to be maintained or improve on Canyon Creek, but the allotment would continue to not meet Standards 2, 3 and 8 related to fish and their habitats, due to the dewatered segment of Hawley Creek.

Free Strip Allotment: Under Alternative 1, the impacts to fish and their habitats are limited to the Bell Field Pasture on Canyon Creek and to the intermittent Whiskey Springs Creek. Chippie Creek flows into a pond and does not influence fish habitat. Grazing would continue in conjunction with the SCNF Grizzly Hill Allotment which would be limited to four weeks with maximum of 158 cattle for a maximum of 475 AUMs. The allotment would be rested one out of four years and crossing would be limited to areas outside stream habitat.

This grazing system could reduce survival of incubating fish eggs and juvenile and adult fish downstream in Canyon Creek, but limited to resident redband and cutthroat trout. Incubating eggs may be suffocated by increased fine sediment in the substrate. Juveniles would be at greater risk of predation with reduced instream cover, and both juvenile and adult survival may decrease if temperatures exceed optimal levels.

The previous ten years of grazing with the rest and more early season grazing has maintained and improved habitat conditions on the allotment. However, if more hot season grazing is used, conditions may begin to degrade further downstream of the allotment on Canyon Creek resulting in poor fish habitat. Under this alternative, conditions would be expected to maintain or degrade over time and not continue to meet/make significant progress toward meeting Standards 2, 3 and 8 related to fish and their habitats.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Center Ridge: Under Alternative 1, the impacts to fish and their habitats are limited to the A Pasture on Eighteenmile Creek. Grazing would continue potentially throughout the season with a maximum of 500 cattle. Impacts to stream/riparian habitat would result from removal of riparian herbaceous and woody plants through grazing and bank trampling. With full numbers of livestock potentially utilizing the stream habitat during the hot season, conditions on Eighteenmile Creek may not maintain PFC, resulting in a potential decline in suitable stream/riparian condition and fish habitat on the allotment.

Specifically, more streamside vegetation would be grazed and increases in bank alteration would be expected. This would result in removal of riparian herbaceous and woody plants through grazing and bank trampling, reductions of instream cover, increases in erosion/sedimentation, thus decreasing the survival of incubating resident redband trout fish eggs and juvenile and adult fish. Incubating eggs may be suffocated by increased fine sediment in the substrate. Juveniles would be at greater risk of predation with reduced instream cover, and both juvenile and adult survival may decrease if temperatures exceed optimal levels. Under this alternative, conditions would be expected to be maintained or slightly decline on Eighteenmile Creek and may not continue to meet Standards 2, 3 and 8 related to fish and their habitats.

Hawley Creek: Under Alternative 1, the impacts to fish and their habitats are limited to the three segments on Eighteenmile Creek and a portion of upper Hawley Creek upstream of the diversion which dewateres the stream. Grazing would occur in the early part of the season up until 6/30 and could also occur in the fall for the AUM balance. Under this alternative, hot season grazing would be limited to the early season and fall season on stream/riparian habitats. Impacts to stream/riparian habitat would result from removal of riparian herbaceous and woody plants through grazing and bank trampling. Incubating eggs of resident redband trout may be suffocated by increased fine sediment in the substrate. Juveniles would be at greater risk of predation with reduced instream cover, and both juvenile and adult survival may decrease if temperatures exceed optimal levels. With full numbers of livestock potentially utilizing the stream habitat during the spring/early summer and fall seasons, conditions on Eighteenmile Creek are expected to be maintained and improve to PFC over time as compared to hot season grazing. Under this alternative, conditions would be expected to be maintained and improve on Eighteenmile and Hawley creeks. However, the allotment would continue to not meet Standards 2, 3 and 8 related to fish and their habitats, due to the three mile long dewatered segment of Hawley Creek.

Tex Creek: Under Alternative 1, the impacts to fish and their habitats would be limited to the two segments on Eighteenmile Creek. Grazing would occur in the early part of the season up until 7/11. The majority of grazing would take place on the uplands on the south side of the allotment with additional water from natural isolated ponds. Impacts to stream/riparian habitat would result from grazing and the associated removal of riparian herbaceous and woody plants and bank trampling. With full numbers of livestock potentially utilizing the stream habitat during the spring/early summer and fall seasons, conditions on Eighteenmile Creek would be expected to be maintained and improve to PFC over time. Under this alternative, conditions would be expected to be maintained and improve on Eighteenmile Creek and continue making significant progress toward meeting Standards 3 and 8 related to fish and their habitats.

Powderhorn: Under Alternative 1, fish and their habitats are expected to be maintained on Eighteenmile Creek and be maintained or degrade on Clear Creek. Livestock would continue to have access to the stream/riparian habitat on Eighteenmile Creek at the McFarland Boulevard water gap and conditions would remain in FAR-static trend. Without a change in use dates and full permitted livestock numbers for upper Clear Creek, conditions are expected to be maintained or degrade over time on public lands managed by the BLM both above and below the private mine. Bull trout spawning would be in conflict with the grazing management on Clear Creek

and negative impacts would be expected to spawning behavior and egg-fry survival. Spawning bull trout may be disturbed by cattle and abandon partially constructed redds and incubating eggs within redds are at risk of being trampled by cattle and killed. The allotment would not make significant progress toward meeting Standards 2, 3 or 8 due to the potential of diminished habitat conditions and the increased probability of bull trout/livestock spawning and incubation conflicts.

Chamberlain Creek: Under Alternative 1, fish and their habitats are expected to be maintained or degrade on Eighteenmile and Pass creeks. Reduced grazing on Eighteenmile and Pass creeks via fence/pasture management and reduced herd size over the past twenty years, have resulted in substantially improved conditions, especially on upper Eighteenmile Creek. Under this alternative, cattle would have full access to upper Eighteenmile and Pass creeks. Without prescribed management to reduce use along stream/riparian habitat, conditions would be expected to decline over time. Livestock would continue to have access to the stream/riparian habitat on Eighteenmile and Pass creeks and conditions would decline from the current PFC rating. Without a limit on use dates and full permitted livestock numbers for the allotment, conditions are expected to be maintained or degrade over time on public lands managed by the BLM. There is a relatively strong probability that livestock grazing would have measureable impacts on local bull trout habitat and spawning success. Bull trout spawning would potentially be in conflict with the grazing on both streams and negative impacts would be expected on spawning behavior and egg-fry survival. Spawning bull trout may be disturbed by cattle and abandon partially constructed redds and incubating eggs within redds are at risk of being trampled by cattle and killed.

Under this alternative, conditions would be expected to be maintained or slightly decline on Eighteenmile and Pass creeks and the allotment would continue to not meet Standards 2, 3 or 8 related to fish and their habitats.

*Allotments in the Texas Creek Watershed:*

Nez Perce Allotment: Under Alternative 1, the impacts to fish and their habitats would be limited to the riparian pastures along Texas Creek where most of the length of stream is on private land. The lower end of Deer Creek is currently dewatered and classified as Non-Riparian and lacking a proper stream channel due to lack of water. Under Alternative 1, the impacts to fish and their habitats would be expected to be maintained or decline on Texas Creek due to grazing by full numbers of livestock (maximum of 875 cattle totaling 977 AUMs) as compared to actual use over the last 5 years under Alternative 2 (maximum of 630 cattle totaling 509 AUMs). Impacts to habitat and key indicators could increase from the level that has occurred over the past five years with increased livestock use.

Increased use could slightly reduce survival of juvenile and adult fish below current conditions. This alternative could increase the use on the riparian shrub community along Texas Creek and reduce the riparian shrub community. This would slightly decrease shading and instream cover and slightly increase erosion and sedimentation to the stream channel which would increase fine sediment in the substrate. This could slightly reduce survival of incubating resident redband trout eggs and juvenile and adult fish. Overall, the public lands managed by the BLM have received light to moderate grazing in a pasture rotation system that has maintained PFC. The

majority of the increased use would be expected to take place on private land due to terrain and grazing accessibility, maintaining conditions on public lands managed by the BLM on Texas Creek. However, the allotment would continue to not meet Standard 8 due to the dewatered segment of Deer Creek not related to livestock grazing management on public lands managed by the BLM.

*Allotments in the Big Timber Creek Watershed:*

Leadore: Under Alternative 1, grazing would be limited to 6/16–7/15 each year in the South Pasture containing the short segment of Big Timber Creek. The impacts to fish and their habitats would be expected to be maintained or improve on Big Timber Creek. Overall, the public land receives light to moderate grazing in a pasture rotation system that has maintained PFC. The season of use would be expected to allow for riparian plant regrowth, especially on the existing tree/shrub community along the stream and associated channel. Grazing would remove some of the vegetation but limiting use prior to July 15 would maintain fair to good channel conditions, shading, instream cover and erosion/sedimentation within background levels. The allotment would be expected to continue to make significant progress towards meeting Standard 8 with limited grazing on Big Timber Creek.

Leadore Hill Allotment: Under Alternative 1, fish and their habitats would be expected to be maintained or improve on Big Timber and Little Timber creeks. The continuation of this area being grazed very lightly from livestock would be expected to maintain conditions. Livestock would have impacts to streambank stability and other habitat components, however the plants have most of the growing season to recover and therefore to reduce erosion and sedimentation into the stream. Impacts would be similar to Alternatives 2 and 3 and the allotment would continue to meet Standards 2, 3 and 8.

Timber Creek Allotment: Alternative 1 would authorize 909 AUMs which would be substantially higher than the 543 AUMs for the actual use over the last five years. With early season use, increased use levels would be expected to maintain or slightly decrease stream/riparian conditions over time on Big Timber and Little Timber creeks. The allotment would be expected to continue to meet Standards 2, 3 and 8 over the ten-year permit period, but may move toward not meeting these Standards over time.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon Allotment: Impacts would be expected to be the same as for Alternative 1 because the season of use and the AUMs would be very similar and would have the same relative impacts.

Leadville Allotment: Impacts would be expected to be similar to Alternative 1. The difference is that livestock can graze on Canyon Creek until June 30 instead of May 31. This would extend the season of use and subsequent impacts described in Alternative 1 and could negatively affect fish and their habitat. Specifically, this would increase the removal of riparian herbaceous and woody plants through grazing and bank trampling and would result in some reduction of incubating fish egg/juvenile/adult fish survival. Under this alternative, conditions would be

expected to be maintained or improve on Canyon Creek (meeting Standard 8) but the allotment would continue to not meet Standards 2, 3 or 8 due to private irrigation practices.

Free Strip Allotment: Impacts would be expected to be similar in intensity and duration to Alternative 1, but earlier in the grazing season. The difference is that the permitted grazing period would end July 24 instead of possibly October 31. The stream/riparian habitat would be able to recover and maintain PFC/FAR conditions better than under Alternative 1; however, impacts to stream/riparian habitat would be expected to occur. Specifically, this would include the removal of riparian herbaceous and woody plants through grazing and bank trampling and may result in some reduction of incubating fish egg/juvenile/adult fish survival downstream of the allotment. Under this alternative, conditions would be maintained and continue to make significant progress toward meeting Standards 2 and 3 related to fish and their habitats.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Center Ridge Allotment: Impacts would be expected to be similar to Alternative 1. Alternative 1 allows 2,336 AUMs, while Alternative 2 would only allow 1,151 AUMs. Grazing would continue potentially throughout the season with maximum of 675 cattle (as compared to 500 in Alternative 1). Eighteenmile Creek has benefitted from grazing in the early part of the season for the past ten years and is in PFC. Impacts to stream/riparian habitat would result from removal of riparian herbaceous and woody plants through grazing and bank trampling which could cause a decline in bank stability, increased erosion and sedimentation and decrease of instream cover. With livestock potentially utilizing the stream habitat during the hot season, conditions on Eighteenmile Creek may not maintain PFC, resulting in a potential decline in suitable stream/riparian condition and fish habitat on the allotment. Under this alternative, conditions would be expected to be maintained or slightly decline on Eighteenmile Creek and may not continue to meet Standards 2, 3 and 8 related to fish and their habitats.

Tex Creek: Under Alternative 2, the impacts to fish and their habitats may not maintain current conditions on Eighteenmile Creek. This would be different from Alternative 1 in that livestock would be able to graze the stream later in the summer until July 26, rather than July 11. Vegetation communities would have less time during the growing season to recover from grazing pressures and to stabilize the streambank. With full numbers of livestock potentially utilizing the stream habitat later into the hot season, Eighteenmile Creek condition may decline and cause a potential decrease in suitable stream/riparian condition and subsequent fish habitat on the allotment. The allotment would continue to make significant progress toward meeting Standards 3 and 8.

Hawley Creek Allotment: Impacts would be similar to Alternatives 1 and 3. Under this alternative, use would be limited to spring/early summer period only and would have slightly less impact to stream/riparian habitat than Alternative 1 which has limited fall grazing. The allotment would continue to not meet Standards 2, 3 or 8 due to the dewatered segment of Hawley Creek.

Powderhorn Allotment: Impacts would be similar to Alternative 1. Under Alternative 2, fish and their habitats would be expected to maintain current conditions on Eighteenmile Creek and maintain or degrade on Clear Creek. Livestock would continue to have access to the

stream/riparian habitat on the short segment of Eighteenmile Creek and conditions would remain in FAR-static trend. Even with lower numbers of livestock under this alternative compared with Alternative 1, without a change in use dates for upper Clear Creek, conditions would be expected to be maintained or degrade over time on public lands managed by the BLM both above and below the private mine. The allotment would not make significant progress toward meeting Standards 2, 3 and 8 for the allotment, mostly centered on the habitat on Eighteenmile Creek at the McFarland water gap and on Clear Creek due the potential of continued hot season livestock grazing. This would diminish habitat conditions in these areas and increase probability of bull trout spawning and incubation conflicts with livestock on Clear Creek.

Chamberlain Creek Allotment: Impacts would be similar to Alternative 1 except for slightly less utilization on Eighteenmile and Pass creeks. Eighteenmile and Pass creeks are currently occupied by bull trout only in the headwaters. The headwaters do have a small resident population of bull trout spawning on BLM. Alternative 2 would continue to have potential spawning conflicts and redd disturbance by allowing grazing after September 15 and would not make significant progress toward meeting Standards 2, 3 and 8.

*Allotments in the Texas Creek Watershed:*

Nez Perce Allotment: Impacts would be similar in nature to Alternative 1 but with less intensity due to the reduced number of livestock and use. Alternative 2 would have 509 AUMs as compared to 977 AUMs with Alternative 1. Under Alternative 2, the level of impacts to fish and their habitats would be expected to be maintained on Texas Creek with livestock numbers and a season of use similar to the previous five years. Due to the PFC on the BLM portions of the allotment, impacts would be expected to remain static on habitat and key indicators. The allotment would continue to meet Standards 2 and 3 and would continue to not meet Standard 8 due to private irrigation practices on Deer Creek.

*Allotments in the Big Timber Creek Watershed:*

Leadore: Under Alternative 2, fish and their habitats would be expected to maintain or improve on Big Timber Creek. Impacts would be similar in nature to Alternative 1 but to a much lesser degree due to 8 AUMs instead of 30 AUMs under Alternative 1. The allotment would continue to make significant progress toward meeting Standards 2, 3 and 8.

Leadore Hill Allotment: Under Alternative 2, impacts to the allotment would be similar to Alternative 1 due to similar season of use and livestock numbers. The early season of use on Big Timber and Little Timber creeks has shown to have light to moderate bank trampling and vegetative removal, which then has most of the growing season to recover and heal. Under this scenario, stream/riparian habitat conditions would be expected to maintain and improve during the permit period. The allotment would continue to meet Standards 2, 3 and 8.

Timber Creek Allotment: Under this alternative, the Timber Creek Allotment would only be used during the early season. Big Timber and Swan Basin creeks would be expected to maintain or improve riparian conditions because use would occur prior to July 10<sup>th</sup>. Early use and substantially fewer numbers of AUMs on the allotment would be expected to maintain or improve wetland/riparian conditions and would continue to meet Standards 2, 3 and 8.

### **Alternative 3- Proposed Action, Direct/Indirect Impacts:**

#### **Grazing Permits**

##### *Allotments in the Canyon Creek Watershed:*

Jakes Canyon Allotment: Impacts would be expected to be similar to Alternative 1. The difference is that livestock would graze on Canyon Creek for less time and intensity. They would be off the riparian pasture by July 1 and use only 9 AUMs in that pasture. Habitat conditions would be expected to be maintained and most likely improve over time. There is a small chance that grazing could damage spawning redds constructed by redband trout. Additionally, with migration barriers and flows restored in recent years on lower Canyon Creek, it is possible but not likely, that steelhead would use lower Canyon Creek and have similar spawning conflict potential as redband trout. Spawning redband and steelhead trout may be disturbed by cattle and abandon partially constructed redds, and incubating eggs within redds would be at risk of being trampled by cattle and killed. Under this alternative, conditions would be expected to be maintained or improve on Canyon Creek and the allotment would continue to meet Standards 2, 3 and 8 related to fish and their habitats.

Leadville Allotment: Impacts would be expected to be similar to Alternative 1. The difference is that livestock grazing on Canyon Creek would only be permitted until May 31 with a maximum of 115 AUMs. The additional use would occur on the remainder of the allotment on upland habitat. This would reduce potential habitat impacts described in Alternative 1. Early season use on the Canyon Creek Pasture and the stream/riparian habitat would be able to maintain PFC. See write-up for Jakes Canyon above for potential spawning conflicts. Under this alternative, conditions would be expected to be maintained or improved on Canyon Creek; however the allotment would continue to not meet Standards 2, 3 and 8 related to fish and their habitats due to private irrigation practices.

Free Strip Allotment: Impacts would be expected to be similar to Alternative 2. The difference is that livestock grazing would be limited to a maximum of 475 AUMs. Additionally, use would be limited in the Bell Field Pasture along upper Canyon Creek and the Freestrip Pasture would be rested once every four years. Grazing would occur early in the season in a similar fashion to the past ten years which has improved stream/riparian conditions. This would reduce potential habitat impacts described in Alternative 1. Due to the PFC/FAR conditions on the allotment and the limited grazing proposed, impacts to habitat would be expected to be minimal. Under this alternative, conditions would be expected to be maintained or improved on Canyon Creek and the allotment would continue to meet, or make significant progress toward meeting, Standards 2, 3 and 8 related to fish and their habitats. As a result, it is likely that instream cover for fish would increase which would reduce predation on juvenile fish and reduce stress on juvenile and adult fish. Increased riparian vegetation would also be likely to increase terrestrial macro invertebrate input to the stream and maintain cool water temperatures which would have the potential to increase fish growth and survival. Improved riparian condition would also result in decreased fine sediment input which would improve survival of incubating eggs. In addition, improved riparian condition creates velocity refuge areas for juveniles and adults during flood flows which would likely increase survival during high flow events.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Center Ridge Allotment: Under Alternative 3, grazing in the A Pasture would be limited to the early portion of the grazing season, only permitted through July 15. Even though Alternative 3 would allow 1,947 AUMs, and Alternative 2 (which led to current conditions) allowed 1,151 AUMs, conditions would be expected to remain in PFC. This is because most of the grazing would take place in the upland habitat with off-site water troughs away from the stream and the limited use of the A pasture to before July 15. This would give the riparian community time during the growing season to recover from most of the impacts from livestock including bank trampling and vegetative removal.

With no grazing use during the hot season, the riparian greenline condition would continue to remain in PFC. Streambank stability would be expected to be maintained and improve due to early use and the heavily wooded nature of the channel, limiting livestock impacts to streambank stability. Substrate would be expected to improve with the increases in riparian shrub cover and a reduction in seasonal bank alteration. Impacts from upstream of the allotment would be expected to remain the same and contribute to higher than expected fine sediment in the substrate, potentially resulting in decreased survival of incubating eggs. With the recovery of riparian vegetation, particularly woody species, an increase in water temperatures would not be expected. The allotment would continue to meet Standards 2, 3 and 8.

Tex Creek: Impacts would be expected to be similar to Alternative 1. Under Alternative 3, fish and their habitats would be expected to be maintained or improve on Eighteenmile Creek. This area would receive moderate grazing until July 15; allowing the riparian area time during the growing season for vegetative recovery and streambanks to stabilize. Eighteenmile Creek on the allotment has improved in the past ten or more years in vegetative condition, substrate quality and water temperature. The BLM segments are in overall good condition and would be expected to remain in PFC/FAR-static to upward trend with the proposed grazing management. Due to the limited grazing use on Eighteenmile Creek, the stream channels and streambank stability would be expected to continue the static to upward trends under the Proposed Action. The grazing management strategy under Alternative 3 would be expected to result in continuation of this trend and result in the desired conditions. Impacts would be expected to be minimal on habitat and key indicators and the allotment would make significant progress toward meeting Standards 2, 3 and 8 on the allotment.

Hawley Creek Allotment: Impacts would be expected to be similar to Alternative 1. Under Alternative 3, fish and their habitats would be expected to be maintained or improve on Eighteenmile and Hawley creeks. The upper portion of Hawley Creek on BLM above the diversion would continue to be in PFC with a thick riparian and a boulder controlled channel with very little cattle use. Due to the early season of use and limited fall grazing, the stream channels would be expected to have a long recovery time after grazing and continue the upward trends and streambank stability under the Proposed Action. Additionally, grazing would not occur after June 30 in the Eighteenmile Creek Pasture along Eighteenmile Creek. Alternative 3 impacts would be expected to result in the continuation of the maintenance or improvement of fisheries habitat; however private irrigation practices would continue to prohibit Standards 2, 3, and 8 from being met.

Powderhorn Allotment: Under Alternative 3, fish and their habitats would be expected to be maintained or improve on Eighteenmile and Clear Creeks. With the proposed fence along Eighteenmile Creek, livestock would no longer have access to the stream/riparian habitat and conditions would improve and move toward PFC. Alternative 3 seeks to change grazing use via a new division fence and a change in use dates for upper Clear Creek. Due to the PFC conditions on Clear Creek below the private mine site and the light grazing proposed, impacts would be expected to be minimal on habitat and key indicators and not adversely affect listed species or their habitat. With regard to bull trout and habitat, the Proposed Action would change the existing management by limiting use in the Clear Creek Pasture (the majority of the stream on BLM) to a maximum of three weeks and no grazing after August 15 to ensure no conflicts with spawning bull trout. The remainder of the free-flowing stream on BLM would be fenced out of the Winter Range Pasture and not allow livestock access to the stream. With the proposed fence along Clear Creek and the reduced time and earlier season proposed for the upper reaches, conditions would be expected to rapidly improve and provide suitable habitat conditions for fish. The allotment would make significant progress toward meeting Standards 2, 3 and 8. As a result, it is likely that instream cover for fish would increase which would reduce predation on juvenile fish and reduce stress on juvenile and adult fish. Increased riparian vegetation would also be likely to increase terrestrial macro invertebrate input to the stream and maintain cool water temperatures which would have the potential to increase fish growth and survival. Improved riparian condition would also result in decreased fine sediment input which would improve survival of incubating eggs. Also, improved riparian condition would create velocity refuge areas for juveniles and adults during flood flows which would likely increase survival during high flow events.

Chamberlain Creek Allotment: Under this alternative, impacts would decrease compared to Alternatives 1 and 2 due to the seasonal limitations on Eighteenmile and Pass Creeks. Eighteenmile and Pass Creeks are currently occupied by bull trout only in the headwaters. Historically, livestock have grazed along both streams as late as into October. The Proposed Action seeks to eliminate bull trout spawning conflicts and redd disturbance by not allowing grazing after September 15 in the pastures with Eighteenmile and Pass Creeks.

Streambank stability on Eighteenmile and Pass Creeks would be expected to be maintained and improve due to early season use and the extensive woody vegetation. Due to the heavily wooded nature of the Eighteenmile Creek channel, livestock would have limited potential to impact streambank stability under the Proposed Action. Substrate would be expected to improve with the increase in riparian shrub cover and a reduction of seasonal bank alteration. With the recovery of riparian vegetation, particularly woody species, water temperatures would be expected to decrease. The allotment would make significant progress toward meeting Standards 2, 3 and 8 on Eighteenmile and Pass creeks. As a result, it is likely that instream cover for fish would increase which would reduce predation on juvenile fish and reduce stress on juvenile and adult fish. Increased riparian vegetation would also be likely to increase terrestrial macro invertebrate input to the stream and maintain cool water temperatures which would have the potential to increase fish growth and survival. Improved riparian condition would also result in decreased fine sediment input which would improve survival of incubating eggs. In addition, improved riparian condition would create velocity refuge areas for juveniles and adults during flood flows which would likely increase survival during high flow events.

*Allotments in the Texas Creek Watershed:*

Nez Perce Allotment: Under Alternative 3, the impacts to fish and their habitat would be expected to be maintained or improve on Texas Creek. Impacts would be similar to Alternative 2 but with less AUMs. Alternative 2 would have 509 AUMs on public lands managed by the BLM and Alternative 3 would have 466 AUMs as compared to the existing permit at 977 AUMs.

Decreased use could slightly increase survival of juvenile and adult fish over current conditions. The alternative could decrease the use on the riparian shrub community along Texas Creek and enhance the riparian shrub community, increase shading and instream cover and decrease erosion and sedimentation to the stream channel which would decrease fine sediment in the substrate. Overall, the public lands managed by the BLM have received light to moderate grazing in a pasture rotation system that has maintained PFC. The allotment would continue to meet Standards 2 and 3 and would continue to not meet Standard 8 due to private irrigation practices on Deer Creek.

*Allotments in the Big Timber Creek Watershed:*

Leadore: Under Alternative 3, fish and their habitats would be expected to improve on the short segment of lower Big Timber Creek with the implementation of the exclusion fence. Grazing would be eliminated on the stream/riparian habitat, giving the riparian plant community the ability to fully recover from livestock impacts including bank trampling and vegetative removal. Under the Proposed Action, livestock would not have access to Big Timber Creek and the associated riparian area which would be expected to result in an upward trend in conditions and not adversely affect listed species or their habitat. Additionally, the allotment would continue to make significant progress toward meeting Standards 2, 3 and 8.

Leadore Hill and Timber Creek Allotments: Under Alternative 3, fish and their habitats would be expected to be maintained or improve on Big Timber, Little Timber and Swan Basin Creeks. Even though Alternative 3 would allow slightly more cattle than Alternative 2, which led to current conditions, the season of use would be shortened to June 30, except for the horse use in Timber Creek Allotment. This five-head horse use is expected to have an insignificant impact to stream/riparian habitats and associated fish habitat requirements. Conditions would be expected to remain in PFC because most of the grazing would take place in the upland habitat with off-site water away from the streams and the limited season of use. This would give the riparian community time during the growing season to recover from most of the impacts from livestock including bank trampling and vegetative removal. With no grazing use during the hot season, the riparian greenline condition would continue to remain in PFC. Streambank stability would be expected to be maintained and improve due to early season use and the extensive woody vegetation. Due to the heavily wooded nature of the stream channels, livestock would have limited potential to impact streambank stability under the Proposed Action. Both allotments would continue to meet Standards 2, 3 and 8.

**Crossing Authorizations**

Under the Proposed Action, crossing authorization would be allowed on the Hawley Creek, Leadore Hill, Leadville, Powderhorn, Purcell Creek and Timber Creek allotments. Crossing would be limited to very short duration (one day), active trailing which would not measurably

impact stream/riparian habitat conditions because it would take place almost entirely on existing roads/trails and upland habitat. There are no anadromous fish in the drainages and bull trout are only found in the headwaters of the streams.

Very small levels of bank trampling would be expected on Hawley and Little Timber creeks with an insignificant amount of measurable impacts to stream/riparian habitat expected from these activities. This activity would not have measurable impacts to stream habitat on the allotments and would not result in an allotment not meeting, or make significant progress toward meeting, Standards 2, 3 and 8 relative to livestock grazing.

### **Range Improvement Projects**

*Fences, Exclosures and Pipeline and Trough Systems* – The fence and exclosure proposals are designed specifically to improve riparian habitat, stream channel conditions, fish habitat and improve water quality. The majority of the fences would be built in semi-desert shrubland. The fences and/or exclosures built in the vicinity of riparian-wetland areas would be built to keep livestock off these areas at all times or during the hot season (August through September). These projects would reduce livestock grazing impacts to stream habitat and would be beneficial to fisheries habitat. The fence itself is not an impact to the fish/habitat but the grazing management as described in the section above would be.

### **Vegetation Manipulation Projects**

*The Jakes Canyon Vegetation Treatment, Swan Basin and Gilmore Summit Rangeland Restoration, and the Silver Moon Gulch and Gilmore Hazardous Fuel Reduction* projects would not adversely affect fisheries habitat. These projects would be in upland habitat well outside any Riparian Habitat Conservation Areas and would not be expected to influence any stream/riparian habitat.

The *Swan Basin Aspen Restoration* project in the Timber Creek Allotment would have a beneficial, indirect effect to fisheries habitat. Removing Douglas-fir and juniper trees from the riparian area would increase the number and vigor of riparian-wetland shrubs near the stream, which in turn would decrease water temperature, and increase the stability of the streambanks and decrease sedimentation. This would be expected to improve instream habitat conditions in Swan Basin Creek down to its confluence with Big Timber Creek, about 0.5 miles downstream.

### **Alternative 4- No Grazing, Direct/Indirect Impacts:**

With no livestock authorized in the area for the next ten years, stream/riparian habitat would no longer be grazed by livestock. This would allow streamside vegetation to fully grow, remove livestock bank trampling and associated erosion and sedimentation. Opportunity for these sites to improve in condition would be greatest with this alternative. As a result, it is likely that instream cover for fish would increase which would reduce predation on juvenile fish and reduce stress on juvenile and adult fish. Increased riparian vegetation would also be likely to increase terrestrial macro invertebrate input to the stream and maintain cool water temperatures which would have the potential to increase fish growth and survival. Improved riparian condition would also result in decreased fine sediment input which would improve survival of incubating eggs. In addition, improved riparian condition would create velocity refuge areas for juveniles and adults during flood flows which would likely increase survival during high flow events.

**Alternative 5 - Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Changes in livestock management on most allotments via reduced season of use and numbers of livestock as compared to Alternative 1 would benefit riparian-wetland areas under this alternative through reduced or eliminated use to provide sufficient rest to encourage plant vigor, regrowth, and energy storage; ensuring sufficient vegetation during periods of high flow to protect streambanks, dissipate energy, and trap sediments; and controlling the timing of grazing to prevent damage to streambanks when they are most vulnerable to trampling. Timing of grazing (spring), intensity (light to moderate), and duration (short-term) would maintain and/or improve riparian-wetland conditions. Additionally for most allotments, these improvements in habitat conditions would benefit all life-stages of fish as compared to higher levels of livestock grazing. Under Alternative 5, all allotments in the CBT area would be expected to meet, or make significant progress toward meeting, Standards 2, 3 and 8 for stream/riparian habitat conditions relative to livestock grazing.

*Allotments in the Canyon Creek Watershed:*

Jakes Canyon Allotment: Impacts to the Jakes Canyon Allotment would be similar to Alternative 3. Early use on the allotment would be expected to maintain or improve wetland/riparian conditions and continue to meet Standards 2 and 3.

Leadville Allotment: Impacts to the Leadville Allotment would be similar to Alternative 3. Early season use would be expected to improve riparian condition on the allotment as compared to hot season grazing. Early use on the allotment would be expected to maintain or improve wetland/riparian conditions, but continue to not meet Standards 2, 3 and 8 due to private irrigation withdrawal on Hawley Creek.

Free Strip Allotment: Impacts to the Free Strip Allotment would be similar to Alternative 3. Early use and periodic rest on the allotment would be expected to maintain or improve wetland/riparian conditions and the allotment would continue to meet, or make significant progress toward meeting, Standards 2, 3 and 8.

*Allotments in the Eighteenmile/Hawley Creek Watershed:*

Bull Creek Allotment: Impacts to the Bull Creek Allotment would be similar to Alternative 3.

Center Ridge Allotment: Under Alternative 5, the A Pasture in this allotment would not be grazed. Riparian plant communities on Eighteenmile Creek would improve at their full rate of recovery as compared to some level of grazing. In the C pasture, the Eighteenmile Creek segment would continue to be excluded and remain in PFC. Alternative 5 would improve wetland/riparian conditions on the allotment and continue to meet Standards 2, 3 and 8.

Hawley Creek Allotment: Impacts to the Hawley Creek Allotment would be the same as Alternative 4. Alternative 5 would maintain and improve wetland/riparian conditions on the allotment, but continue to not meet Standards 2, 3 and 8 due to private irrigation withdrawal on Hawley Creek.

Tex Creek Allotment: Impacts to the Tex Creek Allotment would be the same as Alternative 4. Alternative 5 would improve wetland/riparian conditions on the allotment and make significant progress toward meeting Standards 2, 3 and 8.

Powderhorn Allotment: Stream/riparian habitat conditions on the allotment would be expected to improve under Alternative 5 at a faster rate than under Alternative 3. With no use in the Clear Creek and Winter Range pastures the riparian areas including the Clear Creek riparian and associated stream channel habitat would recover at natural rates. Additionally, the riparian areas in the 18 Mile Flat Pasture would not be grazed. Alternative 5 would improve riparian conditions on the allotment, and make significant progress toward meeting Standards 2, 3 and 8.

Chamberlain Creek Allotment: Stream/riparian habitat conditions on the allotment would be expected to improve under Alternative 5 at a faster rate than under Alternative 3. Cattle would not graze the No. 18 Mile and the 18 Mile pastures which would improve conditions on Eighteenmile and Pass creeks. Alternative 5 would be expected to result in the maintenance and improvement of wetland/riparian conditions and make significant progress toward meeting Standards 2, 3 and 8.

*Allotments in the Texas Creek Watershed:*

Spring Canyon Allotment: Riparian habitat conditions on the allotment would be expected to be maintained or improve under Alternative 5. Most of the limited riparian habitat on the allotment is currently excluded from livestock grazing and would improve at natural rates. Alternative 5 would be expected to result in an improvement over present riparian conditions and the allotment would continue to make significant progress toward meeting Standards 2 and 3.

Nez Perce Allotment: Stream/riparian habitat conditions on the allotment would be expected to improve at a faster rate than under Alternatives 1-3 because grazing would only occur in the Queenie and Lower Riparian pastures until July 15. Early season grazing in these areas would cause grazing to occur in a shorter season than in the past ten years. This would allow riparian plant communities more of the growing season to recover. Due to the riparian habitat in PFC on public lands managed by the BLM and no grazing on Queenie and Lower Riparian pastures after July 15, Alternative 5 would result in the improvement of riparian conditions, but the allotment would continue to not meet Standard 8 due to private irrigation withdrawal on Deer Creek.

*Allotments in the Big Timber Creek Watershed:*

Leadore Allotment: Impacts to the allotment would be similar to Alternative 1 and 2 due to similar season of use and livestock numbers. Under Alternative 5, the allotment would not have use after July 15 on the South Pasture and would continue to make significant progress toward meeting Standards 2, 3 and 8.

Leadore Hill Allotment: Under Alternative 5, no use on the Lower Pasture and early season use only in the Upper Pasture would be expected to improve riparian conditions at the same or faster rate than Alternative 3. Alternative 5 would maintain and improve wetland/riparian conditions on the allotment and would continue to meet Standards 2, 3 and 8.

Timber Creek Allotment: Under Alternative 5, no use on the Lower Pasture and early season use only in the Upper Pasture would be expected to improve riparian conditions at the same or faster rate than Alternative 3. Alternative 5 would maintain and improve wetland/riparian conditions on the allotment and continue to meet Standards 2, 3 and 8.

**Vegetation Manipulation Projects:** The impacts would be the same as for Alternative 3.

## **Wildlife Resources including Threatened, Endangered, and Sensitive Animals and Migratory Birds**

### ***Affected Environment***

The CBT area includes habitat for a variety of wildlife species. Habitat in the area supports mammals, birds, amphibians and reptiles. Some of these species are listed under the ESA (1973), listed on the Idaho State Director's list of sensitive species (USDI-BLM, 2003), protected by the Migratory Bird Treaty Act (1918), and/or protected by other executive orders, policy or legislation.

Mammals in the area include the Canada lynx (listed as threatened under the ESA), wolverine (warranted for listing under the ESA but precluded by higher priority actions), gray wolf, pygmy rabbit, Townsend's big eared bat and fisher which are listed as sensitive species by the Idaho State Director of the BLM. Many other species, including big game, are also present in the area.

There is one Canada lynx Analysis Unit (LAU) comprising a total of approximately 500 acres of habitat on public lands managed by the BLM in the CBT area. The LAU crosses onto adjacent SCNF lands to incorporate enough habitat to meet the requirements of an LAU. Based on the Canada Lynx Conservation Assessment and Strategy (Ruediger, 2000), public lands managed by the BLM within the CBT area do not provide primary lynx habitat since the forest vegetation is considered a "dry site," which lacks adequate components for species reproduction and foraging. The SFO has fourteen reports of lynx occurring within the area; the five that occurred on public lands managed by the BLM were documented in the Free Strip (1978), Powderhorn (1978), Spring Canyon (1979), and Timber Creek (1978 and 1991) allotments. While riparian corridors in the CBT area may provide corridors for lynx to move through the area, the only two allotments that overlap with the LAU are the Nez Perce (approximately 260 acres of public lands managed by the BLM) and Spring Canyon allotments (approximately 240 acres of public lands managed by the BLM). The mapped habitat is all secondary consisting mostly of Douglas-fir and lodgepole pine with very few subalpine fir trees in the area.

The gray wolf occurs in parts of Idaho characterized by a mosaic of dry and mesic conifer and subalpine forest, as well as grassland and shrubland habitats. Large areas are required by individual wolves. Den sites are often in wooded, protected sites near water (IDFG, 2005). Wolves can be found throughout the CBT area from the town of Leadore to high-elevation conifer habitat. The wolves in the area continue to grow in population. The BLM has no record of rendezvous or den sites on public lands managed by the BLM in the area. The CBT area is part of the Southern Mountains Wolf Management Zone. Management direction in this zone is to reduce the number of wolves to the 2005-2007 level and then stabilize at that level. In 2010, the Nez Perce Tribe reported six resident packs, two resident border packs, one suspected pack

and four other wolf groups. The suspected pack is within the CBT area but program personnel have been unsuccessful in verifying the pack status even with continuing depredations (Holyan, et al., 2011).

The wolverine requires extensive tracts of land to accommodate large home ranges and extensive movements. The primary habitat during winter is mid-elevation conifer forest, and summer habitat is subalpine areas associated with high-elevation cirques. Summer use of high-elevation habitats is related to the availability of prey and den sites and human avoidance. Lower elevation forests likely contain the greatest amount of ungulate carrion in winter. Den sites are often in large boulder or talus fields in subalpine cirques (IDFG, 2005). The SFO has four reports of wolverine occurring with the CBT area; one within the Chamberlain Creek Allotment (1999) and three within the Spring Canyon Allotment (1983-2005).

Surveys for pygmy rabbits have found that they occupy semi-desert shrubland habitat throughout the CBT area. They have been recorded in every allotment except Dump, Leadore and Tex Creek. Densities vary across the landscape based on the dominant sage brush in the overstory and the type of soil. Pygmy rabbits tend to be found where the soils are slightly deeper and the sage brush slightly taller and denser.

The BLM does not have any reports of Townsend's big eared bats or fishers in the CBT area. There are records on the adjacent SCNF managed lands which suggest the species do use BLM-managed habitat in the area also.

Big game occurring in the CBT area includes bighorn sheep, deer, moose, mountain goat, elk and pronghorn. Rocky Mountain bighorn sheep and mountain goats are associated with high mountains and steep canyons. The Continental Divide provides most of the habitat for bighorn sheep in the area, including portions of the Bull Creek, Chamberlain Creek, Free Strip, Hawley Creek, Leadville and Powderhorn allotments. There are bighorn sheep in the Lemhi Mountains, but the habitat is either north or south of the BLM allotments, and at higher elevations. Bighorn sheep may move through the allotments in the area, especially during the breeding period when rams search out ewes for breeding. An issue for bighorn in the area is possible transmission of *Pasteurella* bacteria from domestic sheep, resulting in pneumonia in bighorn sheep herds. While domestic sheep are generally immune to the bacteria, bighorn sheep generally die from the infection. Currently, domestic sheep grazing is authorized on three allotments in the area. None of these allotments contain bighorn sheep habitat as mapped by the IDFG, however three population management units (PMU) are within the general area, the North Beaverhead, North Lemhi, and South Lemhi PMUs. (IDFG, 2010). Salmon Region bighorn sheep populations experienced major young and adult mortality (apparently disease-related) beginning in 1990 and very low lamb production for several years afterward (generally  $\leq 10$  lambs:100 ewes) (IDFG, 2009). For distances from each of the allotments that currently have domestic sheep use authorized to each of the PMUs see Table 19. Two of the allotments, Timber Creek (68 acres) and Spring Canyon (30 acres) contain bighorn sheep source habitat as mapped by the BLM. Source habitat has the characteristics of macrovegetation that contribute to stationary or positive population growth, which is distinguished from habitats associated with species occurrence since such habitats may or may not contribute to long-term population persistence. The mapping is based on topography, vegetation and other physical characteristics and does not necessarily mean

that bighorn sheep are currently using that habitat. A bighorn sheep/domestic sheep risk evaluation for the three allotments has been completed (Appendix C).

**Table 19: Distance from Allotment to IDFG PMUs**

Allotment Name	Distance (rounded to the nearest mile) to:		
	North Beaverhead PMU	North Lemhi PMU	South Lemhi PMU
Center Ridge	4 miles	8 miles	7 miles
Spring Canyon	4 miles	16 miles	1 mile
Timber Creek	2 miles	14 miles	17 miles

Pronghorn antelope occupy semi-desert shrubland and grassland habitats and can be found in most allotments in the CBT during the summer months, though some also winter in the lower elevations near the town of Leadore. Pronghorn move into the area in the summer from the wintering area near the mouth of Birch Creek, a portion of these animals also move north and summer in Montana. Fences on public lands managed by the BLM and adjoining lands, can impede the movement of pronghorn across the landscape. The IDFG does not have population goals for the pronghorn in the CBT area, but the numbers have been depressed since the early 1990s, due largely to a winter kill. If Standard 4 is being met, then habitat for pronghorn in the area would be adequate.

Moose and white-tail deer tend to be found along riparian areas, though they will cross semi-desert shrublands at times. If Standard 2 is being met then the area is providing adequate habitat for moose. Because of dense cover, low moose densities, and solitary habits of moose, formal population surveys are generally ineffective in occupied moose habitat in the Salmon Region (IDFG, 2010). White-tailed deer buck survival is managed to maintain a range of 10-30% of bucks with  $\geq 5$  antler points per side. In the past, this objective has been met easily for Data Analysis Unit 5 – Rangeland-Riparian Habitat which includes the CBT area (IDFG, 2010).

Mule deer occupy all habitat types from semi-desert shrub and grassland to high montane vegetation. They reach their greatest densities in semi-desert shrublands on rough, broken terrain and riparian areas that provide abundant browse and cover. Deer are migratory, meaning they summer at higher elevations and move down slope as fall approaches. Deer move to lower elevations and forage on more protected south-facing exposures during mid-winter. The CBT area is within the IDFG Mountain Valley Population Management Unit for mule deer. Objectives for the Unit are to maintain  $\geq 15$  bucks:100 does in post-season surveys and  $>25\% \geq 4$ -point bucks in the harvest. During the last ten years the Unit has met the objective four years, including the latest year reported, 2009 (IDFG, 2010).

Elk can be found in most habitat types and elevations at least on a seasonal basis. Elk are considered generalist feeders that utilize shrubs, grasses, and forbs. Calving grounds are carefully selected by cows and are generally in locations where cover, forage and water are found together. Elk tend to inhabit higher elevations during spring and summer and migrate to lower elevations for winter. Elk form large mixed herds on favored winter range. The CBT area is within the Lemhi and Beaverhead Zones for elk management, specifically Game Management Units (GMU) 29, 30 and 30A. Objectives for the Lemhi Zone are to reduce the elk population to

approximately 2,000 cows and 650 bulls. Harvest objectives designed to reduce elk numbers in the Lemhi Zone through 2007 were moderately successful. The reduction was intended to stimulate and maintain herd productivity, balance depredation concerns with maintaining a reasonably large elk population, and minimize potential impacts on mule deer. Herds will be managed to maintain 18-22 mature bulls:100 cows in GMU 29. Objectives for the Beaverhead Zone are to maintain elk densities in GMUs 30 and 30A at approximately 1,250 cows and 325 bulls. Herds will be managed to maintain 18-24 mature bulls:100 cows in GMUs 30 and 30A. To maintain herd productivity, balance depredation concerns with maintaining a reasonably large elk population, and minimize potential impacts on mule deer, a five-year period of herd reduction totaling about 40% was recommended in GMUs 30 and 30A during the late 1990s. Surveys in 2004 indicated populations are at or slightly below objective levels. Accordingly, cow harvest was reduced to maintain relatively high productivity and stabilize herd size (IDFG, 2010).

The winter range for deer and elk generally overlap in the CBT area. There is about 22,000 acres of winter range in the CBT area, of which 18,000 acres is considered crucial. Most of the winter habitat is along the south-facing slopes at the base of the foot hills leading up to the Continental Divide. There is also some winter habitat along Leadore Hill, just south of the town of Leadore, Idaho. Allotments with important elk winter range include Bull Creek, Hawley Creek, Leadore Hill, Leadville, Powderhorn, and Purcell Creek. In addition, Jakes Canyon, Leadore, and Timber Creek also provide winter range for deer. When the allotments are meeting Standard 4, then habitat quality for elk, including winter range, should be adequate.

Small mammals and carnivores are found in every habitat type. Small mammals are a main prey base for the smaller carnivores and both species groups serve as prey for raptors and larger carnivore species. Small mammals often reproduce in underground burrows or in tree cavities and generally forage on insects, lichens, and plant matter.

Federal agencies are required to consider the effect of projects on migratory birds with emphasis on species of concern. Species of concern (some of which are non-migratory) are described by the United States Fish and Wildlife Service (USFWS) in Birds of Conservation Concern (2008). Land administered by the BLM SFO is within either the Great Basin or Northern Rockies Bird Conservation Regions (BCR). A review of the conservation list indicates 33 species in the two BCRs. Seventeen of these species occur in both BCRs, the other 16 species occur in one or the other. Eleven of the species do not occur in the SFO area (Sibley, 2000) (IDFG, 2004), though they are present in the larger BCRs, leaving 22 species of Conservation Concern. Two of these, the yellow-billed cuckoo and greater sage-grouse are warranted for listing under the ESA but precluded by higher priority actions. Thirteen of the species are also listed as Sensitive Species by the Idaho State Director for the BLM as occurring in the SFO area, they are: bald eagle, greater sage-grouse, peregrine falcon, ferruginous hawk, flammulated owl, calliope hummingbird, Lewis's woodpecker, Williamson's sapsucker, willow flycatcher, olive-sided flycatcher, loggerhead shrike, sage sparrow, and Brewer's sparrow. The other eight species of conservation concern are: eared grebe, golden eagle, long-billed curlew, sage thrasher, green-tailed towhee, black rosy-finch, Swainson's hawk, and Cassin's finch. In addition, three species are listed by the State Director as Sensitive and are not on the USFWS list, they are: prairie falcon, northern goshawk, and Hammond's flycatcher.

Suitable habitat for the yellow-billed cuckoo is considered to be a large block (minimum of 25 acres to upwards of 99 acres) of cottonwood canopy and a thick willow understory (Federal Register, 2001). This type of habitat is rare within the SFO area, and does not occur in the CBT area. The only known sighting of yellow-billed cuckoo in the SFO area was reported at a backyard feeder just north of the city of Salmon. The bird was likely a migrant, vagrant, or transient bird since the habitat lacked the preferred vegetative composition. Within the CBT area there are some cottonwood galleries near the town of Leadore, but the size of the galleries are not as large as a yellow-billed cuckoo would prefer.

The CBT area is part of the Western Association of Fish and Wildlife Agencies Sage-grouse Management Zone IV, which include portions of Idaho, Nevada, Oregon, Wyoming, Utah and Montana (Stiver, et al., 2006). Within Management Zone IV the CBT area is part of the Snake-Salmon-Beaverhead, Idaho Population. The average number of leks counted for this population per five-year period increased substantially from 1965–1969 to 2000–2007, however population trends, as indicated by average number of males per lek, declined by 57% from 1965–1969 to 2000–2007 (Garton, et al., 2011). Approximately 101,000 acres of public lands managed by the BLM in the CBT area are currently identified as “key” greater sage-grouse habitat (Figure 22), including at least a portion of every grazing allotment. Key habitat consists of generally intact sagebrush that provides sage-grouse habitat during some portion of the year (Idaho Sage-grouse Advisory Committee, 2006). Within those acres, approximately 43,000 are mapped by the CSGLWG as nesting habitat (Bull Creek, Center Ridge, Dump, Hawley Creek, Leadore, Leadville, Powderhorn, Tex Creek, and Timber Creek); 33,000 as winter habitat (the same allotments as nesting with the addition of the Spring Canyon Allotment); and 84,000 as summer habitat (all allotments except Jakes Canyon) with overlap between the seasonal habitats (Figure 22). The CSGLWG has included about 75,000 acres of public lands managed by the BLM within the CBT area in the Upper Lemhi Priority Area (all allotments except Free Strip, Jakes Canyon and Nez Perce); this is an area where the group felt there was a high priority for protection and restoration (CSGLWG, 2007).

The BLM has mapped greater sage-grouse preliminary priority (PPH) and general habitat (PGH). PPH encompasses three subcategories of habitat including 1) sagebrush, 2) perennial grassland potential restoration areas, and 3) conifer encroachment potential restoration areas that are assumed to be relatively important for sage-grouse conservation planning efforts **Invalid source specified**. A majority of the land within the CBT area is within PPH or PGH, with approximately 100,000 acres of public lands managed by the BLM modeled as PPH and 21,000 acres as PGH (Figure 23). Every BLM-managed allotment in the CBT area contains acreage within PPH and most within PGH. In addition, the Idaho BLM also modeled areas that appear to be of higher relative importance for conservation of greater sage-grouse based on lek connectivity, habitat based persistence probability and breeding bird density. Within the CBT area the allotments that contain areas of higher conservation importance are the Bull Creek, Center Ridge, Chamberlain Creek, Hawley Creek, Powderhorn, Spring Canyon and Tex Creek Allotments.

There are 10 leks mapped within the CBT area, 7 of which are considered active. The Upper Lemhi lek route had a maximum count of 231 males in the spring of 2006, and 154 males in 2011 the second highest count on record. In 2006, the number of birds on a single lek more than

doubled that from the years prior and after. Researchers do not know where the birds came from or where they went. The Leadore East lek route had a maximum count of 55 in 2009 and a count of 43 for 2011. The Upper Birch Creek lek route had a maximum count of 217 in 1960, since then the numbers have dropped to zero and climbed back to 97 in 2007. In 2010, 37 birds were recorded on the lek route. Greater sage-grouse can be found in the area throughout the year with most of the wintering and nesting occurring at lower elevations near the town of Leadore and the birds moving to higher elevations to raise their young as lower elevation vegetation dries out. Greater sage-grouse from the south, Birch Creek drainage, are known to also summer in the upper elevations of the area, mostly in mountain big sagebrush habitat and along riparian areas.

Within each allotment where nesting habitat for the greater sage-grouse occurs, a breeding habitat assessment was completed **Invalid source specified**. Eight habitat indicators are rated as “unsuitable”, “marginal” or “suitable,” and then an overall rating is given to the site for greater sage-grouse nesting. Three allotments do not have nesting habitat due to elevation, slope, habitat type or distance from known leks. These allotments are Free Strip, Nez Perce, and Purcell Creek. Two allotments were rated as providing “suitable” habitat: Center Ridge and Spring Canyon (while Spring Canyon was not identified by the Challis LWG as containing nesting sage-grouse habitat, the portion of the allotment in the Birch Creek drainage does). Most of the allotments (ten) were rated as “marginal”: Bull Creek, Chamberlain Creek, Dump, Hawley Creek, Leadore, Leadore Hill, Leadville, Powderhorn, Tex Creek, and Timber Creek. Most of these allotments were rated as marginal instead of suitable due to either the average grass height or the average sagebrush height on the allotment not meeting the “suitable” threshold. Allotments with marginal or unsuitable sagebrush heights are either dominated by little sagebrush which is not expected to meet sage-grouse requirements (Powderhorn Allotment) or had a high percentage of seedlings that lowered the average height (Dump and Bull Creek allotments). Allotments with marginal or unsuitable grass heights had a shift from higher stature species like bluebunch wheatgrass to species like Sandberg’s bluegrass (Bull Creek, Hawley Creek, Leadore, Leadore Hill, Leadville, Powderhorn, and Timber Creek allotments) or had a higher percentage of younger grass plants which while showing an upward trend for the site decreases the average grass heights (Chamberlain Creek and Dump allotments). In the Powderhorn and Tex Creek allotments there is unsuitable forb canopy due to the crested wheatgrass seedlings. Jakes Canyon was rated unsuitable for greater sage-grouse nesting habitat due to grass and forb heights, sagebrush canopy cover and density. The BLM determined that the significant causal factor for these conditions on the Jakes Canyon Allotment was past grazing management, not the management that is currently in place. Around the turn of the last century the area was used by both local and transient sheep herds as well as wild horse herds which left lasting impacts on the vegetation in the Jakes Canyon and Leadville Allotments. West Nile Virus has been found in Lemhi County and is known to cause death in bird and mammals species, including greater sage-grouse.

There are six raptor species which are considered sensitive by the BLM that may occur in the area. Bald eagle activities within the area are concentrated along the Lemhi River, near the town of Leadore between late fall and early spring, but principally during the winter. These bald eagles generally utilize cottonwoods in the valley bottom, although conifers may provide perch or roosting sites. While lower valley bald eagles principally forage on fish and waterfowl, those found in the CBT area are likely feeding on animals that are winter-killed or vehicle mortalities.

There are no known bald eagle nests within the CBT area. There are also incidental observations within the area of golden eagle, prairie falcon, northern goshawk and ferruginous hawk. The golden eagle and prairie falcon sightings are near the mouth of Canyon Creek. The northern goshawk sightings are in the Douglas-fir portion of the forest habitat and have been located primarily on SCNF-managed lands. The ferruginous hawk sighting was on public lands managed by the BLM in the sage-steppe flats near Eighteenmile Creek and near the mouth of Canyon Creek.

Most migratory bird use is limited to the summer period due to the cool climate, low precipitation, and harsh fall, spring, and winter conditions in the assessment area. Birds arrive during late spring (April/May) and migrate from the area in late summer and early fall (August/September). The species present during summer are most likely breeding and rearing young. They leave as the weather changes in late summer. A few species are present during the wintertime, including the bald eagle. The other nine sensitive bird species could occur in the CBT area, and probably do, though records of their occurrence are lacking.

One amphibian, the western toad, and one reptile, the common garter snake, are on the Idaho BLM State Director's Sensitive Species list for the CBT area. The western toad has been recorded in the Hawley Creek drainage on SCNF-managed lands and may occur in other wet areas throughout the CBT area. The common garter snake is not expected to be found within the CBT area. There are very few records of snakes in the CBT area, and no records of the common garter snake. The Idaho point-headed grasshopper is also on the Idaho BLM State Director's Sensitive Species list but surveys, including one in 2010 by the IDFG **Invalid source specified.**, have yet to find the grasshopper in Lemhi County.

Wildlife rely on healthy ecosystems to remain healthy and productive. The habitat within the CBT area is described in detail under the previous vegetation sections of this analysis. Table 20 displays some of the wildlife within the SFO area and the primary habitat they rely on. The Idaho Standards for Rangeland Health are designed to ensure healthy, functional lands which in turn provide healthy functional wildlife habitat. In particular, if an allotment is meeting Standard 2 (Riparian Areas and Wetlands), Standard 4 (Native Plant Communities) and Standard 8 (Threatened and Endangered Plants and Animals) than it should be providing healthy, productive, and diverse native animal habitat which in turn maintains viable populations of wildlife species (USDI-BLM, 1997). Currently, three allotments are not meeting at least one of these Standards and existing grazing management is a significant factor; Chamberlain Creek (2), Powderhorn (2) and Tex Creek (2). In addition, four allotments are not meeting at least one of these Standards due to past grazing management, but with recent changes to grazing management Free Strip (2), Leadore (2, 4 and 8) and Spring Canyon (2) are currently making significant progress toward meeting those Standards. The Leadville Allotment was also not meeting standards but with management changes, a seeding in the fall of 2010 and two years of rest is starting to make significant progress toward meeting Standard 4. In addition, Jakes Canyon Allotment is failing to meet Standard 4 and Hawley Creek and Leadville are failing Standard 2 but existing grazing management is not a significant causal factor.

**Table 20: Important habitat for various wildlife species within the SFO area by cover type.**

Cover Type	Mammals	Birds	Reptiles and Amphibians
Forest and Woodland	Canada lynx, gray wolf, wolverine, Townsend's big-eared bat, fisher, white-tail deer, mule deer, moose, mountain goat, elk	flammulated owl, calliope hummingbird, Lewis's woodpecker, Williamson's woodpecker, olive-sided flycatcher, Cassin's finch, northern goshawk, Hammond's flycatcher	
Semi-desert Shrubland and Grassland (Sage-steppe)	gray wolf, pygmy rabbit, Townsend's big-eared bat, bighorn sheep, mule deer, elk, pronghorn	greater sage-grouse, ferruginous hawk, loggerhead shrike, sage sparrow, Brewer's sparrow, golden eagle, long-billed curlew, sage thrasher, green-tailed towhee, Swainson's hawk, prairie falcon	
Mesic Shrubland and Grassland (Riparian)	Townsend's big-eared bat, fisher, white-tail deer, mule deer, moose	yellow-billed cuckoo, bald eagle, Lewis's woodpecker, willow flycatcher, loggerhead shrike, eared grebe, green-tailed towhee	western toad, common garter snake
High Montane Vegetation	Canada lynx, gray wolf, wolverine, bighorn sheep, moose, mountain goat, elk	black rosy-finch	
Sparse Vegetation and Natural Barren Areas	wolverine, Townsend's big-eared bat, bighorn sheep, mountain goat	peregrine falcon, golden eagle	

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Herbaceous vegetation provides forage and concealment cover for wildlife species particularly during the spring breeding period when calving, fawning, nesting, and rearing of young occurs. Livestock grazing would reduce the height and amount of herbaceous vegetation. The presence of livestock and the movement of livestock between areas of use would result in the direct disturbance or displacement of some wildlife from preferred habitats, nesting/birthing sites, or water sources. Both the disturbance and displacement of wildlife and the reduction of herbaceous forage and cover could limit the productivity and reproductive success of some species.

None of the alternatives would affect the high montane vegetation or sparse vegetation and natural barren area cover types within the CBT area. Wildlife that rely on those cover types for habitat would not be affected by any alternative (Table 20). In addition, allotments that are not meeting Standard 2 (riparian areas), due to private irrigation practices, would continue to provide degraded riparian habitat along some streams while providing additional water and some riparian habitat along ditches for species that rely on that habitat under every alternative.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Impacts in allotments where permittees have been utilizing all or most of the authorized AUMs would be expected to remain similar to the last five years. The other allotments would be authorized for 21 to 275% more grazing than has been utilized in the last five years or would be

authorized under Alternative 2-Actual Use. Under this alternative, the increased grass consumption would decrease the available cover and forage for wildlife.

The forested and woodland habitat in the CBT area would be expected to continue to follow current trends. With no mechanical work to thin and remove encroaching conifers, wildlife would continue to have less forage under mature conifer stands and additional sage-steppe and riparian habitat would be slowly transformed into forested habitat as Douglas-fir move into mountain big sagebrush and aspen stands. This transformation would benefit species that prefer forested habitat, but over time aspen and mountain big sagebrush stands would be expected to decrease in extent. Compared to the CBT area, these transition areas are small and the transformation would continue slowly over time.

As described in the vegetation section, impacts to the semi-desert shrubland habitat under this alternative would vary. It would be expected that most of the semi-desert shrubland on public lands managed by the BLM within the CBT area would have a slight to readily apparent decrease in grass available for forage and cover. In particular, this would equate to less forage on 80% of mule deer winter range, 80% of the elk winter range compared to current conditions. Even with the increased utilization on the allotments, the stocking rates for the allotments would be appropriate for the area and, with the exception of Jakes Canyon, the allotments would provide healthy, functional upland wildlife habitat.

Greater sage-grouse nesting habitat in the CBT area would have less grass cover under this alternative than under the other alternatives. Under this alternative there would be less cover on 88% of the greater sage-grouse nesting habitat compared to current conditions. It is impossible to predict how much the stubble heights of grass during the nesting season would change in greater sage-grouse nesting habitat with the increased utilization by livestock. Under this alternative nesting habitat in the Bull Creek, Dump, Hawley Creek, Leadore and Leadville allotments are expected to continue to improve as additional young grass and shrub species continue to become established due to past changes in grazing management that would continue and the seeding in the Leadville Allotment. Nesting habitat in the Powderhorn and Tex Creek allotments would remain marginal due to the lack of forb cover and diversity in the crested wheatgrass seedings. The portion of the Powderhorn Allotment dominated by little sagebrush would continue to be marginal habitat based on sagebrush heights. Center Ridge, Spring Canyon, Timber Creek, Leadore Hill and portions of the Powderhorn allotments would continue to provide nesting habitat for greater sage-grouse but with reduced grass for cover which could lead to increased vulnerability of sage-grouse nests and chicks to predation. The Jakes Canyon Allotment would continue to provide unsuitable nesting habitat for greater sage-grouse. On the Center Ridge, Spring Canyon and Timber Creek allotments the forb cover may decrease over time due to sheep preferring those species more than cattle.

As described in the vegetation section, impacts to riparian habitat under this alternative would vary. It would be expected that most of the riparian habitat on public lands managed by the BLM within the CBT area would have less forage and cover available for wildlife than they currently do. The Hawley Creek and Leadville allotments would continue providing poor riparian habitat along portions of the streams that are dewatered by private irrigation practices. With the increased utilization and the timing of grazing, the riparian habitat on the Center Ridge,

Chamberlain Creek, Free Strip, Leadore Hill, Nez Perce, Powderhorn, Spring Canyon, Tex Creek and Timber Creek allotments is expected to maintain or degrade to a point where the allotments may not meet Standard 2 providing poor wildlife riparian habitat.

While the allotments permitted for domestic sheep grazing are not within the bighorn distribution map published by the IDFG (2010), bighorn sheep could cross the allotments during the year as they move between habitat in the Lemhi Mountains and the Beaverheads. During this movement if a bighorn sheep were to come in contact with an infected domestic sheep transmission of disease could occur. Of the three allotments, Spring Canyon is the closest to bighorn sheep habitat and is the most likely to have bighorn enter the allotment. Bighorn sheep tend to travel further during the breeding season in the late fall and early winter. Under this alternative no domestic sheep would remain on the allotments between October 11<sup>th</sup> and May 1<sup>st</sup>. The risk of bighorn sheep coming in contact with infected domestic sheep and then passing the infection on to additional bighorn sheep would exist under Alternative 1, but it would be low due to the timing of the domestic sheep grazing and the distance to bighorn sheep (Table 19).

There would be no displacement of wildlife from either vegetation or range improvement project implementation. There would be no new fences to impact wildlife movements or provide potential for fence strikes. There would be no chance of loss of small mammals and birds in new water troughs. However, the long-term benefits of the projects would also not occur.

Overall, the allotments in the CBT area would continue to provide wildlife habitat. The Jakes Canyon Allotment would continue to poorly meet the needs of wildlife in the semi-desert shrubland habitat, due to historic grazing management. In addition, the Center Ridge, Free Strip, Leadore Hill, Nez Perce, Spring Canyon and Timber Creek allotments may not provide healthy functional riparian habitat over time, and the Chamberlain Creek, Powderhorn and Tex Creek allotments would continue to not provide healthy, functional riparian habitat. The Hawley Creek and Leadville allotments would not provide healthy, functional riparian habitat where private irrigation diversions dewater streams.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Impacts to wildlife, including sensitive species and migratory birds, under this alternative would remain similar to the last five years. Population numbers and trends are expected to continue on the same trajectory, which differs by species. As described in the vegetation section the forested and woodland habitat in the CBT area is expected to continue to follow current trends. Impacts to forested and woodland habitat and the wildlife that use that habitat from this alternative would be the same as for Alternative 1.

As described in the vegetation section, impacts to the semi-desert shrubland habitat under this alternative would vary. The majority of the allotments would continue to meet Standard 4, and provide healthy, functioning upland habitat for wildlife populations. The exception would be the Jakes Canyon Allotment which would continue to not meet Standard 4, providing poor wildlife habitat. The uplands in the Leadore, Leadville and Hawley Creek allotments are making significant progress toward meeting Standard 4 and over time they would provide higher quality habitat for wildlife species. Over time, all allotments, with the exception of the Jakes Canyon Allotment would provide healthy, semi-desert shrubland habitat for productive wildlife

populations. Habitat for greater sage-grouse is expected to maintain or improve over time. Allotments where habitat is currently improving, and would be expected to continue to improve are Bull Creek, Chamberlain Creek, Dump, Hawley Creek, Leadore and Leadville allotments. The Center Ridge and Spring Canyon allotments are expected to continue to provide suitable nesting habitat for greater sage-grouse.

As described in the vegetation section, impacts to the riparian habitat under this alternative would be similar to existing trends. The Hawley Creek and Leadville allotments would continue providing poor riparian habitat along portions of the streams that are dewatered by private irrigation practices. Allotments currently meeting, or making significant progress towards meeting, Standard 2 are expected to continue doing so, these allotments are: Bull Creek, Free Strip, Jakes Canyon, Leadore, Leadore Hill, Nez Perce, Spring Canyon and Timber Creek. The allotments currently not providing healthy, functioning riparian areas would continue to provide poor riparian habitat, these allotments are: Chamberlain Creek, Powderhorn and Tex Creek. The Center Ridge Allotment, without a constraint on hot season grazing on Eighteenmile Creek, is expected to maintain or degrade to a point where there may not be healthy, functional riparian habitat for wildlife and the allotment may not meet Standard 2 in the future.

There would be no chance of disease spread from domestic sheep to bighorn sheep since no domestic sheep would be authorized on the BLM allotments. Impacts related to range improvement projects and vegetation manipulation projects would be the same as Alternative 1.

Overall, the allotments in the CBT area would continue to provide wildlife habitat. However, the Jakes Canyon Allotment would continue to not meet the needs of wildlife in the semi-desert shrubland habitat due to historic grazing. In addition, the Center Ridge Allotment may not provide healthy, functional riparian habitat over time and the Chamberlain Creek, Powderhorn and Tex Creek allotments would continue to provide poor riparian habitat. The Hawley Creek and Leadville allotments would not provide healthy, functional riparian habitat where private irrigation diversions dewater streams.

### **Alternative 3- Proposed Action, Direct/Indirect Impacts:**

#### **Grazing Permits**

Alternative 3 would continue to improve upland habitat in the Leadore, Leadville and Hawley Creek allotments. Riparian habitat would improve in the Chamberlain Creek, Powderhorn and Tex Creek allotments. In addition, resting the Jakes Canyon Allotment until seeding establishment would help improve the semi-desert shrubland habitat in that allotment. Impacts from grazing under this alternative to forested and woodland habitat and the wildlife that use that habitat would be the same as for Alternatives 1 and 2.

All of the allotments would meet or make significant progress toward meeting Standard 4, and provide adequate healthy, functioning habitat for wildlife populations although with less grass for forage and cover than under Alternatives 2, 4 and 5. In particular, this would equate to less forage on 83% (though 2% would have increased forage) of the mule deer winter range and 80% of the elk winter range than the current condition. Even with the increased utilization on the allotments, the stocking rates for the allotments would be appropriate for the area and the

allotments would provide healthy, functional upland wildlife habitat which would not affect the state's ability to meet their big game population objectives.

Under this alternative there would be less cover on 90% of the nesting habitat for greater sage-grouse than under the current conditions. It is impossible to predict how much the stubble heights of grasses would change in greater sage-grouse nesting habitat with the increased utilization by livestock. Under this alternative nesting habitat in the Bull Creek, Dump, Hawley Creek, Leadore and Leadville allotments are expected to continue to improve as additional young grass and shrub species continue to become established due to past changes in grazing management that would continue and the seeding in the Leadville Allotment. Nesting habitat in the Powderhorn and Tex Creek allotments would remain marginal due to the lack of forb diversity and canopy in the crested wheatgrass seedings. The portion of the Powderhorn Allotment dominated by little sagebrush would continue to be marginal habitat based on sagebrush heights. Center Ridge, Spring Canyon, Timber Creek, Leadore Hill and portions of the Powderhorn allotments would continue to provide nesting habitat for greater sage-grouse but with reduced grass for cover which could lead to more sage-grouse nests or chicks being lost to predation than under the current condition and Alternatives 2, 4 and 5 for these allotments. The nesting habitat on the Jakes Canyon Allotment would improve with the seeding and the associated rest of the allotment until the seeding establishes.

Under this alternative all of the allotments not meeting Standard 2, due to existing grazing management, would make significant progress towards meeting the standard, and over time provide healthy, functioning habitat for wildlife populations. The Hawley Creek and Leadville allotments would continue providing poor riparian habitat along portions of the streams that are dewatered by private irrigation practices. The impacts to bighorn sheep from permitted grazing by domestic sheep would not occur.

All of the allotments in the CBT area where existing grazing management was determined to be a significant factor in failing the Idaho Standards for Rangeland Health would make significant progress toward meeting the Standards, including Standard 8.

### **Crossing Authorizations**

Crossing authorizations would have little effect on wildlife. There could be some wildlife displacement as livestock move across an allotment, but since the livestock would be actively pushed and would not be on the allotments overnight the displacement and removal of grass through grazing would be minimal, leading to negligible effects on forage and cover for wildlife. The crossing would take place mostly in semi-desert shrubland habitat, but there could also be some displacement in riparian habitat along Timber Creek and Hawley Creek. The crossing authorizations would not be expected to affect other cover types.

The majority of the crossing routes are on, or adjacent to, maintained roads or two-tracks. In four allotments the routes cross nesting habitat for greater sage-grouse, and in all allotments they cross PPH. The crossing livestock are not permitted to overnight on the allotments they are crossing, this limits the impacts to displacement of birds and possible nest trampling to a minimal time period as the cattle are pushed through. The roads that are being used for crossing

do not provide habitat for nesting greater sage-grouse, so except where the cattle leave the roads and enter the sagebrush habitat the crossing would not affect nesting birds.

### **Range Improvement Projects**

*Fences* – The fence proposals would have no effect on the forest and woodland habitat or the wildlife that utilize it. The majority of the fences would be built in semi-desert shrubland habitat but would have effects on riparian habitat also. Wildlife could be displaced during the construction phases of the projects. Upon completion, the fences would be a passable obstacle for wildlife movement; however an individual deer, elk or pronghorn may become entangled in a fence resulting in death. There would be approximately four miles of new fence that wildlife, especially big game, would have to navigate over and around as they migrate across the CBT area. The fences would be built on flat ground or perpendicular to slopes to allow easier crossing by big game. The smooth bottom wire at 18 inches from the ground would allow pronghorn to pass under the fence, while deer and elk can cross over the fences (Appendix B). Deep, heavy fall snows may preclude pronghorn from moving under the bottom wire of barbed wire fences and increase the chance of entanglement and death. In addition, the fences would be flagged to help wildlife adjust to the new/moved fences (Appendix B).

The fences could be used by birds of prey to hunt from and may pose a strike hazard to upland game birds, such as the greater sage-grouse, especially during movement to and from leks or during periods where migratory movements are most likely to occur. The fences would be flagged to help reduce the risk of collision by wildlife species, including greater sage-grouse. One fence, the *Rocky Canyon Fence Relocation*, would be within 1.25 miles (USDI-BLM, 2011) of a known greater sage-grouse lek. The fence to be removed is also within 1.25 miles of the same lek. The new fence would be easier for big game to pass over or under and would have fewer wires for greater sage-grouse to strike than the existing fence. The *McGinty Creek Division Fence* would not be in greater sage-grouse nesting or wintering habitat nor would it be within winter range for deer or elk. The fence and grazing management changes would improve riparian conditions along McGinty Creek, which is important habitat for greater sage-grouse in the summer months. The *Clear Creek Division Fence* (less than a half mile) could be a harder fence for big game to move through given the location between the road and the stream, but would be constructed of wood to prevent wildlife from becoming ensnared as they might with a wire fence.

*Exclosures* – The physical structure of the exclosures would have the same impacts as described above. Most of the exclosures would be constructed of wood instead of wire which would be more visible to wildlife since the material is larger in diameter and less of a strike hazard to upland game birds. None of the exclosures are within 1.25 miles for greater sage-grouse leks (USDI-BLM, 2011). Where wire is used for an exclosure, the fence would be flagged to increase its visibility to wildlife. As the vegetation within the exclosures improves in density and diversity the quality of habitat for wildlife that prefer later-seral systems would also improve. Most of this improvement would be in riparian areas. The ponds within the *Tex Creek Ponds Exclosure* would provide improved habitat for some waterfowl and shore birds, providing additional cover around the edge of the ponds as the vegetation increases, and less suitable habitat for waterfowl that prefer banks without the vegetation diversity and height.

The *18 Mile Flat Fence Relocation* would increase the size of the enclosure on Eighteenmile Creek which would improve riparian habitat for wildlife; in addition the fence would be moved from the riparian to the adjacent semi-desert shrubland habitat, which would make it easier for wildlife to move through because of the conversion from a four strand to a three strand fence (Appendix B). The expansion of the *All Hands Spring Exclosure* would allow increased diversity and density of riparian vegetation within the enclosure. The larger size would allow a greater variety of wildlife to utilize the habitat. The small size of the current enclosure prevents big game from moving into and out of the enclosure. The *Big Timber Exclosure* would provide improved diversity and density of riparian habitat for migratory birds and small mammals that prefer that habitat.

*Pipeline and Trough Systems* - Wildlife could be displaced during the construction phases of the projects. There could be a slight effect on habitat due to weed expansion, though weeds would continue to be treated in the area. There would be 4 additional trough locations in the CBT area which could provide water for wildlife in addition to cattle. There would be removal of vegetation around those troughs resulting in a loss of approximately 2 acres of native, upland habitat. The troughs would also lead to a change in the grazing patterns in the two allotments: Chamberlain Creek and Powderhorn. In the Powderhorn Allotment, the troughs would move use to the south, decreasing the amount of grazing that occurs near greater sage-grouse leks and the surrounding nesting habitat. The troughs would provide a potential for small mammals and birds to drown, however small animal escape ramps would be placed in all troughs to allow the animals a method for escape.

### **Vegetation Manipulation Projects**

Wildlife could be displaced during the implementation phases of the projects, but the timing restriction would decrease the chance of the project destroying migratory bird nests (Appendix B). The *Jakes Canyon Vegetation Treatment* project would increase the amount of bluebunch wheatgrass and forb species on the allotment, but would also decrease the sagebrush cover on the allotment in the short-term. Over time, the allotment would provide better habitat for shrub steppe species with more grass available for cover and forage. Greater sage-grouse have not been documented on the allotment, however with the increased cover and forb diversity sage-grouse use of the area could increase. During the seeding and aeration of the allotment, burrows of small mammals may be crushed as the blades of the aerator impact the soil. Surveys in the treatment area have not found pygmy rabbits or their burrows, though there are burrows to the north of the treatment area on the boundary with the SCNF. If burrows occur within the treatment area then collapse of a burrow would be possible.

The *Silver Moon Gulch* and *Gilmore Hazardous Fuel Reduction* projects would decrease the density of trees within the Douglas-fir stands, but lead to larger trees in the stands over time. This treatment would increase the diversity and density of the understory and provide more cover and forage for wildlife using the stands. The *Gilmore* and *Swan Basin Rangeland Restoration* projects would reduce the number of small conifer trees that are beginning to grow in the mountain big sagebrush stands, largely due to the lack of fire in the area. This would keep the sagebrush habitat available for the wildlife that relies on it. There would still be conifer stands nearby, for conifer dependent species and hiding cover. The *Swan Basin Aspen Restoration* project would remove conifers that are encroaching into the aspen stringer along Big Timber and

Swan Basin creeks, leading to a healthier aspen stand. The aspen community is important to many wildlife species, including migratory birds.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

Herbaceous vegetation provides forage for many wildlife species and concealment cover for other species particularly during the spring when calving, fawning, nesting, and rearing of young occurs. Without domestic livestock grazing there would be more vegetation for forage and cover for wildlife species. There would not be displacement of wildlife by the livestock using the allotments or by the projects proposed for implementation under Alternative 3. Habitat in high montane and natural barren areas would remain similar to current conditions. The Hawley Creek and Leadville allotments which are not meeting Standard 2 due to private irrigation practices would continue to provide degraded riparian habitat along dewatered streams. Nesting habitat in the Powderhorn and Tex Creek allotments would remain marginal due to the lack of forbs in the crested wheatgrass seedings. The portion of the Powderhorn Allotment dominated by little sagebrush would continue to be marginal habitat based on sagebrush heights. Under this alternative there would be an upward trend in all other habitat in the respect of forage and cover for wildlife, but without the vegetation treatments described in Alternative 3 the upward trend would not be as fast in the semi-desert community on the Jakes Canyon Allotment, and the forested habitat in the Spring Canyon and Timber Creek allotments would not realize an increase in understory vegetation barring the removal of trees.

**Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

**Grazing Permits**

All of the allotments would meet or make significant progress toward meeting Standard 4, and provide habitat for wildlife, although with less grass for forage and cover than under Alternative 4. Grasses in the upland habitat of the CBT area would maintain or increase in vigor and cover compared to Alternatives 1, 2 and 3. The increased grass would provide more cover and forage for wildlife species. In particular, this would equate to increased forage on 48% of the mule deer winter range; on 47% of the elk winter range; and more cover on 65% of the nesting habitat for greater sage-grouse than the current condition. There would also be no grazing in mapped greater sage-grouse nesting habitat during the nesting season, eliminating completely the possibility of birds being displaced from nests by cattle.

All of the allotments not meeting Standard 2 due to existing grazing management would make progress towards meeting the standard, and provide adequate riparian habitat for wildlife populations. Riparian habitat that was not already at potential would be expected to improve in diversity and density of vegetation faster than under Alternative 3 but not as fast as under Alternative 4. The Hawley Creek and Leadville allotments would continue providing poor riparian habitat along portions of the streams that are dewatered by private irrigation practices.

All of the allotments in the CBT area where existing grazing management was determined to be a significant factor in failing the Idaho Standards for Rangeland Health would make significant progress toward meeting the standards.

**Vegetation Manipulation Projects**

The impacts to wildlife under this alternative for the vegetation manipulation projects would be the same as described under Alternative 3 with the exception of the Jakes Canyon Seeding. That project would not occur and the impacts would be the same as the other Alternatives.

## **Range Resources**

### **Affected Environment**

There are 16 grazing allotments within the CBT area managed by the SFO BLM (Figure 1) being analyzed in this EA. Public lands managed by the BLM provide a large proportion of the late spring, summer and fall forage base in the area. There are currently 15,915 active AUMs of livestock forage allocated on the 16 allotments. The livestock grazing allocation and management for BLM allotments within the CBT area is displayed in Table 2.

Stocking rates as currently permitted on public lands managed by the BLM within the CBT area averages approximately 7.9 acres per AUM and varies from 4.2 to 22.8 acres per AUM, with Alternative 1 representing the current permitted AUMs. Cattle (cow/calf pairs) are the primary type of livestock authorized on the allotments. Allotments are specifically permitted for cattle, sheep, and/or horses. The Livestock Number/Kind, Grazing Period and Active AUM preference are displayed in Table 2 with Alternative 1 representing the current permitted conditions.

Within the CBT area there are approximately 130 miles of BLM fences and an additional 170 miles of fence that border BLM, but that are not owned by BLM. Most of these fences are built by neighboring land owners to keep livestock off or on their land. In addition to fences, there are approximately 34 BLM cattleguards and 78 water locations developed primarily for domestic livestock use. There are approximately 142 acres excluded from livestock grazing within the allotments in the CBT area. Most cattleguards are under the maintenance responsibility of the BLM, while other rangeland projects (troughs, pipelines and fences) are typically maintained by the permittees.

### **Alternative 1 – No Action, Direct/Indirect Impacts:**

Under this alternative, the 15,915 AUMs authorized for utilization would be the same as the current permits. The mandatory terms and conditions on the ten-year grazing permits would remain identical to the current permits, including the Livestock Number/Kind and Grazing Period. There would be no additional range projects constructed, the projects would remain the same as described in the Affected Environment.

### **Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Under this alternative there would be 9,001 AUMs authorized for utilization within the CBT area, a decrease of 6,914 AUMs from the current permits, a 43% reduction. In addition, there would be additional rest built into the permits that would further decrease authorized AUMs on a yearly basis. Changes to the ten-year grazing permits would adjust the Livestock Numbers and Grazing Period to reflect what the actual use has averaged over the last five years; these changes can be seen in Table 2. The major change to current permits would be the change in Active Preference AUMs on both a yearly and ten-year basis (Table 2), and the Livestock Kind. There would be no sheep permitted under Alternative 2.

There would be no additional range projects constructed, the projects would remain the same as described in the Affected Environment.

### **Alternative 3- Proposed Action, Direct/Indirect Impacts:**

#### **Grazing Permits**

Under this alternative there would be 12,332 AUMs authorized as Active Preference within the CBT area, a decrease of 3,583 AUMs (23%) from the current authorized permits (Alternative 1), but an increase over what the permittees have actually used over the last 5 years (Alternative 2). In addition there would be additional rest built into the permits that would further decrease authorized AUMs on a yearly basis. Changes to the ten-year grazing permits would also adjust the Livestock Numbers/Kind and Grazing Period; these changes can be seen in Table 1. There would be no sheep permitted under Alternative 3. Additional Terms and Conditions have also been added to some permits to define grazing management.

#### **Crossing Authorizations**

Under this Alternative crossing would be authorized on six allotments: Hawley Creek, Leadore Hill, Leadville, Powderhorn, Purcell Creek and Timber Creek. The authorizations would be granted as needed to the levels described under this alternative.

#### **Range Improvement Projects**

Alternative 3 would add approximately 6.7 additional miles of new fence and 6.25 miles of pipelines with four new trough locations on 7 allotments. For the other allotments there are no range improvement projects being proposed under this alternative, for those allotments the impacts would be the same as the Alternative 1.

In allotments where projects are proposed there would be an additional workload for permittees to help construct and maintain those projects.

*Fences* – The Chamberlain Creek Allotment would have an increase of 3.3 miles of fence, resulting in approximately 12 miles total of BLM fence in the allotment. The Leadville Allotment would have a net increase of 0.2 miles of fence, resulting in approximately 11 miles total of BLM fence in the allotment. The Powderhorn Allotment would have an increase of 0.5 miles of fence, resulting in approximately 24 miles total of BLM fence in the allotment.

*Exclosures* – The Center Ridge Allotment would have an increase of 4.5 acres excluded from livestock grazing, resulting in approximately 5 total acres being excluded from grazing in the allotment. The Leadore Allotment would have an increase of 3 acres excluded from livestock, the only acreage excluded in the allotment. The Powderhorn Allotment would have an increase of 14 acres excluded from livestock grazing, resulting in approximately 33 total acres being excluded from grazing in the allotment. The Spring Canyon Allotment would have an increase of 4 acres excluded from livestock grazing, resulting in approximately 6 total acres being excluded from grazing in the allotment. The Tex Creek Allotment would have an increase of 43 acres excluded from livestock grazing, the only acreage excluded in the allotment.

*Pipelines and Trough Systems* – The Chamberlain Creek Allotment would have an increase of one developed watering location, resulting in 10 developed watering locations in the allotment. The Powderhorn Allotment would have an increase of three developed watering locations, resulting in 15 developed watering locations in the allotment.

### **Vegetation Manipulation Projects**

Most of the vegetation manipulation projects would not affect Rangeland Resources. The one exception is the *Jakes Canyon Vegetation Treatment*. This project would lead to no grazing being allowed in the allotment until the seeding is established. Additionally the treatment should lead to an increase in forage on the allotment once the seeding has established, leading to more flexibility in grazing management in the future.

#### **Alternative 4- No Grazing, Direct/Indirect Impacts:**

Under this alternative there would be 0 AUMs authorized as Active Preference within the CBT area, a 100% reduction. This alternative would issue ten-year permits that would authorize 0 AUMs as Active Preference, but it would not close the area to grazing. The rangeland improvements would remain on the landscape and need to be maintained. While this workload may be performed by the permittees it is reasonable to assume that the workload would fall to the BLM given the fact that the permittees would not have the incentive to maintain the projects without benefitting from them through grazing.

#### **Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

##### **Grazing Permits**

Under this alternative there would be 6,082 AUMs authorized as Active Preference within the CBT area, a decrease of 9,833 AUMs (62%) from the current authorized permits (Alternative 1), and a decrease of 32% from what the permittees have actually used over the last 5 years (Alternative 2). In addition there would be additional rest built into the permits that would further decrease authorized AUMs on a yearly basis. Changes to the ten-year grazing permits would also adjust the Livestock Numbers/Kind and Grazing Period; these changes can be seen in Table 1. There would be no sheep permitted under Alternative 5. Additional Terms and Conditions have also been added to some permits to define grazing management.

### **Vegetation Manipulation Projects**

The vegetation manipulation projects would not affect rangeland resources.

## **Economic and Social Values**

### **Affected Environment**

#### **Economics**

The CBT area is within Lemhi County, Idaho, a rural area with an estimated population of 7,936. Most of the population is concentrated in and around the communities of Salmon, North Fork, Tendoy, and Leadore. The community of Leadore is the only town in the CBT area and lies at the northern boundary of the CBT area. Human population south of Leadore and within the CBT area is sparse with 105 people living in and around the community of Leadore (Bureau, 2011).

Historically, the Lemhi County economy was based on mining activity which caused population and job numbers to fluctuate over time. The largest number of jobs in Lemhi County in 2011 included government, retail trade, construction and farming. In September 2011, the total employment of the Civilian Labor Force was 3,613 with the total unemployed of 399. The

average annual unemployment rate in 2011 for Lemhi County is 11% compared to 9% for the State of Idaho and 9.1% for the U.S. (Bureau, 2011).

Lemhi County's basic economic sections are services and retail (tied to tourism and ranch/farm activities), government, agriculture (ranching), mining, and construction. Government, including schools, is a basic sector of the economy in many small, rural economies like Salmon because it brings personal income and tax revenues from the state and federal levels into the community (Idaho Department of Labor, 2011).

Lemhi County's estimated per capita income in 2009 was \$30,092, compared with an average of \$31,857 for Idaho and \$39,635 nationally. This is an increase in per capita income of approximately \$10,000 since the year 2000 (Idaho Department of Labor, 2011).

Industries in the area which have the potential to be affected by the alternatives in this document are: (1) livestock grazing and production; and (2) retail sales and services related to agricultural production. Lands managed by the BLM comprise 40% of lands within the CBT area; most of these lands are utilized for livestock grazing. Livestock and associated agricultural production industries are important contributors to the economy of Lemhi County, with 2007 crop and livestock sales being \$1,401,000 and \$19,896,000, respectively (USDA, 2007). The highest agricultural sales revenues in the county are derived from livestock, poultry, and their products (92.43%). In 2008, earnings from agriculture accounted for 8.3% of total personal income for Lemhi County (Indicators Northwest, 2011).

Livestock prices rise and fall based on market conditions which are influenced by numerous factors. Year-to-year variability in sales largely reflects livestock price fluctuations. The BLM's contribution to the area's livestock industry is largely through provision of area grazing land. Private land in the area is utilized for grazing year-round but is more important for production of hay for feeding livestock through the winter months. Grazing is also provided on lands administered by the SCNF and to a lesser extent, the State of Idaho. Currently, grazing on BLM in the CBT area involves 18 livestock operators grazing on 16 separate allotments.

The BLM authorizes AUMs on an annual basis. The active preference for AUMs on public lands managed by the BLM in the CBT area is 15,915. However, the average actual use AUMs for the last five years has been 9,001 due to factors such as drought, financial limitations on the part of operators, or implementation of grazing practices to improve range conditions.

Fees charged by BLM for grazing are calculated using the formula required under BLM grazing regulations found at 43 CFR 4130.8-1(a)(1) and are considerably less than those charged for private land grazing. Currently, using the same formula, an AUM is valued by the BLM and the SCNF at \$1.35. The fee charged on Idaho state lands in the area is \$5.12 per AUM. The average fee for private grazing land in Idaho ranges from \$12 to \$22, with a state average of \$15 per AUM (Williams, 2011). Access to and use of federal lands for grazing purposes is highly coveted by area livestock producers as a source of relatively inexpensive forage, even though additional management costs are usually incurred to use these lands. Operating costs absorbed by the permittees include initial livestock grazing permit purchase, range improvement

maintenance (fences, trough and pipeline systems, etc.), herd management and transportation, and the time permittees spend coordinating with agency personnel to manage the allotment.

## **Social**

A variety of local individuals and organizations have shown interest in this analysis through input received during the scoping process. Many of their comments focus on wildlife and water issues. These groups indicate the condition of resources on public lands managed by the BLM is important to their supporters because they value these resources for wildlife, recreation, education, scenic qualities, wilderness, open space, and a variety of other reasons.

Many individuals and groups are concerned about limitations being put on the availability of public lands managed by the BLM for commercial uses such as livestock grazing and timber harvest. These individuals indicate public lands managed by the BLM need to be managed to be as productive as possible, and the survival of local economies and communities depends upon these industries.

Recreation on public lands managed by the BLM is increasing in popularity as is maintaining access to these lands where access through private land is required to reach the public lands.

As ranches are sold in whole or part, ranchers may have fewer options to graze livestock, which may result in increased costs and decreased viability of either continuing their operations or passing them on to their heirs. Small towns such as Leadore are unique places with shared values and a relationship with nearby farm and ranchlands. Quality of life issues such as a slower pace of life, low crime rates, high levels of interpersonal trust, opportunities for community involvement, a sense of belonging and a high value placed on the quality of nearby surroundings motivate people to live in these communities. Schools and athletic activities are an integrating force in these communities where people interact around common interests and concerns. Small towns are often service centers for nearby agricultural communities. Residents of these communities may be very concerned about the economic survival of their communities.

Small rural communities can be tied to public lands managed by the BLM in a variety of ways. Local businesses and governments depend upon the employees to maintain a population base for businesses and public services. Use of public lands managed by the BLM for livestock grazing, recreation activities, mineral development and other activities can provide employment and help maintain related businesses. In addition, the local residents depend upon the public lands managed by the BLM for recreation and open space.

Ranching is an important part of the history, culture and economy of Lemhi County. There are many challenges facing ranchers today including changes in federal regulations, economic issues and changing land use. Ranchers and permittees may face increasingly stressful social situations as they try to balance their traditional lifestyles with demands from government agencies and other public land users such as recreationists and decreasing wildlife habitats and populations.

Recreation is a component of most lifestyles in the analysis area. The substantial recreational opportunities for fishing, hunting, hiking, horseback riding, OHV use and sightseeing are an important element of the overall quality of life for residents. Many people have either moved to

or stayed in the county because of the recreation opportunities. Recreationists are very diverse groups of people and changes in recreation management can affect the people who engage in the various activities very differently. They tend to organize into interest groups; most recreational activities have at least one group advocating for their activity.

**Effects common to the Grazing Alternatives 1, 2, 3, and 5 Direct/Indirect Impacts:**

Continuing ranching operations would support the economy of Lemhi County through taxes and goods and services purchased by the ranches and people employed by these ranches. By maintaining ranching operations and improving rangeland conditions in the CBT area, traditions associated with the ranching communities of Lemhi County would be maintained. Permittees would continue to perform tasks such as maintaining existing range improvements, transporting and herding livestock, and working with BLM employees to manage range allotments.

These alternatives would provide for extractive commercial uses on public lands managed by the BLM in the form of public land grazing, this would be supported by individuals and organizations that believe such use is appropriate for public lands managed by the BLM. On the contrary, individuals and organizations that believe extractive uses are not appropriate for public lands managed by the BLM would not be as supportive.

**Alternative 1 – No Action, Direct/Indirect Impacts:**

Under Alternative 1, no change from currently permitted AUMs (15,915 AUMs) would occur. The BLM would collect up to \$21,485.25 in livestock grazing fees per year, assuming the fee does not change over the next ten years. Social and Economic values in the area would not change from current condition and viable ranching operations would continue in the area. Socially this alternative would probably be most supported by groups supporting extractive resource use of public lands managed by the BLM and least by those who do not support those activities.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

Under Alternative 2, permitted AUMs would be 9,001, allowing the BLM to collect up to \$12,151.35 in livestock grazing fees per year. This alternative would reduce permitted AUMs by 6,914 from Alternative 1, resulting in a reduction of \$9,339.90 in grazing fees. Due to the reduced livestock numbers, ranch values could be negatively affected. Reducing the ability of permittees to increase herds if environmental and economic conditions warrant doing so may lead to a decrease in permittees able to remain in the business over time. Under this alternative, there may be some benefits to other users of the public lands managed by the BLM in that there would be less AUMs consumed by livestock.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

**Grazing Permits**

Under Alternative 3, permitted AUMs would be 12,332, allowing the BLM to collect up to \$17,093.70 in livestock grazing fees per year, a reduction of \$4,391.55 over Alternative 1. This alternative would be a reduction of 3,583 AUMs from the current permits, a reduction of approximately 23%. Alternative 3 would result in continued viable ranching livelihoods for livestock operators and families employed by these ranches.

### **Crossing Authorizations**

Under the Proposed Action, crossing authorization would be allowed on the Hawley, Leadore Hill, Leadville, Powderhorn, and Timber Creek allotments. This activity is a historical use in which permittees have moved their livestock back and forth from private land to allotments on public lands managed by the BLM for many years. Permittees would incur an additional fee to cross public lands managed by the BLM which would increase the cost of public land grazing.

### **Range Improvement Projects**

*Fences, Exclosures, and Pipeline and Trough Systems* - An investment of public and private funding would be used to implement the proposed projects, which would provide economic opportunities for local contractors and vendors. The permittees would be responsible for at least 50% of the costs related to implementation of the proposed projects. The permittees would be responsible for the long-term maintenance of these projects. However, those added costs would result in improved livestock and public land management.

### **Vegetation Manipulation Projects**

The *Jakes Canyon Vegetation Treatment* would have short-term minor adverse economic impacts on the permittee until the seeding becomes established since the permittee would have to find alternative pasture or buy hay for the cattle herd (30 AUMs). The permittee would also be responsible for contributing 50% of the cost toward the project.

The other vegetation projects would be completed by contractors or seasonal government employees. This would provide for more jobs or longer term employment for existing employees. The work would cost approximately \$150 to \$950 an acre depending on slope and if the treatment is completed by hand or with machinery.

### **Alternative 4- No Grazing, Direct/Indirect Impacts:**

Grazing use would be reduced 100% under Alternative 4. The BLM would authorize 0 AUMs on the public lands managed by the BLM within the CBT area. The impact would vary from one producer to the next depending upon their relative dependence on public lands managed by the BLM for meeting and effectively managing their grazing needs. Permittees would likely respond by trying to restructure their existing operations (e.g. leasing other private pasture, feeding the livestock, reducing herd size, or leasing their base property to other livestock operators). Since grazing on BLM often provides a critical element of the livestock producer's matched complement of grazing, forage, and hay production, even a relatively small change in BLM grazing use in an allotment could have more than a proportional impact on the permittee's livestock operation. The number of livestock operators in the area would be expected to decrease under this alternative. Permittees with a larger private land base to work with would be able to restructure their operations allowing them to continue to function economically.

Approximately 15,915 AUMs would no longer be available for livestock grazing, resulting in a decrease of up to \$21,485.25 in annual grazing fees. Businesses throughout Lemhi County, especially those in and around Leadore, would be adversely affected because a large portion of the money tied to the livestock industry would no longer enter the economy. Socially, this alternative would be least supported by groups supporting extractive resource use of public lands managed by the BLM and most by those who do not support those activities.

### **Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

#### **Grazing Permits**

Under Alternative 5, permitted AUMs would be 6,085, allowing the BLM to collect up to \$8214.75 in livestock grazing fees per year. This alternative would reduce permitted AUMs by 9,830 from Alternative 1, resulting in a reduction of \$13,270.50 in grazing fees. Due to the reduced livestock numbers, ranch values could be negatively affected. Reducing the ability of permittees to increase herds if environmental and economic conditions warrant doing so may lead to a decrease in permittees able to remain in the business over time. Under this alternative, there may be some benefits to other users of the public lands managed by the BLM in that there would be less AUMs consumed by livestock.

#### **Vegetation Manipulation Projects**

Impacts would be the same as described for Alternative 3.

## **Tribal Treaty Rights and Interests**

### **Affected Environment**

The 1868 Fort Bridger Treaty, between the United States and the Shoshone and Bannock Tribes, reserves the Tribe's right to hunt, fish, gather, and exercise other traditional uses and practices on unoccupied federal lands.

The federal government has a unique trust relationship with federally-recognized American Indian Tribes including the Shoshone-Bannock Tribes. The 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. Resources or issues of interest to the Tribes that could have a bearing on their traditional use and/or treaty rights include: tribal historic and archaeological sites, sacred sites and traditional cultural properties, traditional use sites, fisheries, traditional use plant and animal species (including bighorn sheep and sage-grouse in the CBT area), noxious and invasive, non-native species, air and water quality, wildlife, access to lands and continued availability of traditional resources, land status, and the visual quality of the environment.

The CBT area is located on unoccupied federal lands outside of the ceded boundary. Therefore, Tribal treaty rights, as defined, are applicable.

### **Alternative 1 – No Action, Direct/Indirect Impacts:**

There would be no changes in land status or access associated with the existing permits, and the project area would retain its unoccupied federal land status. Therefore, the Shoshone-Bannock Tribe's right to access the lands to exercise treaty rights and traditional uses would be unaffected. Overall, the allotments in the CBT area would continue to provide wildlife habitat. The Jakes Canyon Allotment would continue to poorly meet the needs of wildlife in the semi-desert shrubland habitat, due to historic grazing management. In addition, the Center Ridge, Free Strip, Leadore Hill, Nez Perce, Spring Canyon and Timber Creek allotments may not provide healthy functional riparian habitat over time and the Chamberlain Creek, Powderhorn and Tex Creek allotments would continue to not provide healthy, functional riparian habitat. The Hawley Creek and Leadville allotments would not provide healthy, functional riparian habitat where private

irrigation diversions dewater streams. Effects to treaty right resources (both floral and faunal) particularly those found in riparian areas would be expected to increase.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

No changes in land status or access would be associated with management as it currently exists, and the project area would retain its unoccupied federal land status. The Shoshone-Bannock Tribe's right to access the lands to exercise treaty rights and traditional uses would be unaffected. Impacts from Alternative 2 would be the same as those described in Alternative 1 above.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

There would be no changes in land status or access associated with the Proposed Action and the project area would retain its unoccupied federal land status. Therefore, the Shoshone-Bannock Tribe's right to access the lands to exercise treaty rights and traditional uses would not be affected.

The proposed range improvement projects, forestry restoration projects, and vegetation manipulation projects proposed in Alternative 3 would have both adverse and beneficial impacts to wildlife and species of flora that the Tribes may require to exercise their treaty rights. In the short-term, minor impacts would be associated with the disturbance of vegetation communities in the areas of proposed forestry and vegetation manipulation projects. In addition, wildlife species sought by the Tribes for subsistence would temporarily be displaced during these treatments. But, over time, non-functioning habitats in those allotments selected for treatment would improve, and would provide adequate habitat for the Tribes in their practice of treaty rights.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

As with the first three alternatives, there would be no long-term change in land status or access under this alternative that would impact the Tribes' rights to access federal land. Under Alternative 4 all allotments in the CBT area would meet or make significant progress toward providing adequate habitat for wildlife and traditional use plants, and would experience increased vigor of cover and forage for wildlife species important to the Tribes in exercising treaty rights.

**Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

As with the first four alternatives, there would be no long-term change in land status or access under this alternative that would impact the Tribes' rights to access federal land.

Under Alternative 5, impacts to the wildlife species and vegetation habitats providing treaty rights resources in the CBT area would be expected to be similar to those described in Alternatives 1 and 2, with added long-term benefits provided by vegetation treatments described in this alternative similar to those offered in Alternative 3 (though reduced in extent to reflect the reduction in the number of proposed projects).

## Wilderness/WSA

### Affected Environment

**Naturalness:** The Eighteenmile WSA is 24,922 acres in size and is located along the Idaho side of the Continental Divide from Baldy Mountain south to Eighteenmile Peak. The topography is mountainous with numerous deep creek valleys draining into Eighteenmile Creek to the west. The Continental Divide offers rolling meadows and precipitous cliffs with elevation ranging from 7,600 to 11,141 feet. Vegetation varies from lowland sagebrush communities up through Douglas-fir, lodgepole pine, and limber pine to grassy meadows on the Divide. Willow-aspen riparian vegetation occupies most creek bottoms. Vegetation manipulations and timber harvest activities have included livestock grazing and minor fence post and rail cutting.

Approximately 6,000 acres of the Powderhorn and 10,800 acres of the Chamberlain Creek allotments are located in the WSA. A number of fences and range improvements are present as a result.

In 2001, the SFO amended its RMP by designating the entire Eighteenmile WSA as “closed” to OHV use. All points of vehicle access entering the WSA have been subsequently signed and gated “closed”. All day to day grazing permittee operations such as dropping/moving salt and herding are done from horseback.

**Solitude:** The WSA provides an outstanding opportunity for solitude due to rugged terrain, vegetative screening, remoteness and limited accessibility. Limited use of the area, during most times of year provides a high quality experience for those seeking solitude.

**Primitive and Unconfined Recreation:** The area offers excellent opportunities for backpacking, rockhounding, hunting, and wildlife viewing. Use is normally precluded between December and May because access roads are closed by snow.

**Special Features:** The Continental Divide forms the eastern boundary of the WSA. Congress designated the Continental Divide National Scenic Trail (CDNST) that closely follows the Divide through the WSA.

### Alternative 1 – No Action, Direct/Indirect Impacts:

Reissuing ten-year term grazing permits on the 16 allotments as currently permitted within the WSA would not exceed the non-impairment standards for the WSA and would not impact the naturalness, solitude, primitive and unconfined recreation, or special features making it unsuitable for Wilderness designation. The non-impairment mandate states, under FLPMA Section 603 (c):

“During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness.”

Livestock grazing was an existing use at the time of inventory and designation of the WSA and is considered a “grandfathered” use. According to BLM’s Interim Management Policy (IMP) for Lands Under Wilderness Review, H-8550-1, grandfathered uses are “[t]hose grazing...uses that existed on October 21, 1976, the date FLPMA was approved may continue in the same manner and degree as on that date...”

**Naturalness:** During the time the inventory was completed for the WSA, grazing was an existing and allowable use and did not impair the areas naturalness or suitability for preservation as Wilderness. Continuing to permit grazing in the same degree and manner would not impair or improve the areas naturalness or suitability for Wilderness.

**Solitude:** The WSA provides an outstanding opportunity for solitude due to rugged terrain, vegetative screening, remoteness and limited accessibility. Limited use of the area, during most times of year provides a high quality experience for those seeking solitude. Because grazing was an existing use at the time of inventory, eliminating grazing from the WSA would not impair or improve the WSA’s solitude or suitability for Wilderness designation.

**Primitive and Unconfined Recreation:** During the time the inventory was completed for the WSA, grazing was an existing and allowable use and did not impair the areas primitive or unconfined recreation. Eliminating grazing from the WSA would not detract from primitive or unconfined recreation or impair the areas suitability for Wilderness designation.

**Special Features:** Eliminating grazing from the WSA would not impact the scenic quality or recreation opportunity of the CDNST; subsequently it would not detract from the WSA’s suitability for Wilderness designation.

**Alternative 2 – Actual Use, Direct/Indirect Impacts:**

The effects would be the same as described in Alternative 1.

**Alternative 3- Proposed Action, Direct/Indirect Impacts:**

The effects would be the same as described in Alternative 1.

**Alternative 4- No Grazing, Direct/Indirect Impacts:**

Alternative 4 is to reissue ten-year term grazing permits on 16 allotments with 0 authorized AUMs for Active Preference. Livestock grazing would be deferred for the ten-year permit period on public lands managed by the BLM and within the WSA. Eliminating cattle from the landscape would have no effect on the areas suitability for Wilderness designation because grazing was an allowable and existing use at the time the original Wilderness inventory was completed.

**Naturalness:** During the time the inventory was completed for the WSA, grazing was an existing and allowable use, part of the landscape, and did not impair the areas naturalness or suitability for preservation as Wilderness. Removing grazing would also not impair or improve the areas suitability for Wilderness.

**Solitude:** The WSA provides an outstanding opportunity for solitude due to rugged terrain, vegetative screening, remoteness and limited accessibility. Limited use of the area, during most times of year provides a high quality experience for those seeking solitude. Because grazing was present at the time of inventory, eliminating grazing from the WSA would not impair or improve the WSA's suitability for Wilderness designation.

**Primitive and Unconfined Recreation:** During the time the inventory was completed for the WSA, grazing was an existing and allowable use and did not impair the areas primitive or unconfined recreation. Eliminating grazing from the WSA would not detract or improve primitive or unconfined recreation experiences making it unsuitable for Wilderness designation.

**Special Features:** Eliminating grazing from the WSA would not impair or improve the scenic quality or recreation opportunity of the CDNST; subsequently it would not detract from the WSA's suitability for Wilderness designation.

**Alternative 5-Reduced Grazing, Direct/Indirect Impacts:**

The effects would be the same as described in Alternative 1.

## **CUMULATIVE IMPACTS OF ALTERNATIVES**

This section discloses the incremental impacts that the alternatives are anticipated 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 Cumulative Impact Assessment Area (CIAA) consists of approximately 323,000 acres, with about 45% of those acres managed by the SCNF, 40% managed by the BLM, 2% managed by the Idaho Department of Lands (IDL), and the rest primarily privately owned.

Past, present, and reasonably foreseeable actions that have impacted the CIAA to varying degrees include livestock grazing, vegetation management, wildland fire, land use conversion and infrastructural development (Table 21). Although these actions probably do not account for all of the actions that have or are likely to occur in the CIAA, GIS analysis, agency records, and professional judgment suggest that they have contributed to the vast majority of cumulative impacts that have occurred in the CIAA.

### **Past and Present Actions**

#### *Livestock grazing*

By the beginning of the 18th century, the horse had made its way by "trade and raid" into the CIAA. When the first white explorers entered the Salmon River region in 1805, for instance, they found a local Shoshone band encamped in the rich grassy bottoms of the Lemhi River Valley along with approximately 700 head of horses. The new-found pressure of keeping large herds of horses, however, necessitated a constant search for grass and frequent camp moves during those seasons. The discovery of gold in the 1860's nearly instantaneously introduced a permanent European American presence, along with new kinds of livestock and settlement, into the region.

With the discovery of gold (1866) in Leesburg, near Salmon City, came continuous range use. The thousands of people in the mining area required horses for transportation. Milk cows were brought into the valley to service the mining families also. As Salmon City grew, the surrounding ranges supplied feed for the horses and milk cows; then beef cattle started to come in from Montana. Sheep herds came later than cattle but after the great loss of cattle herds in the late 1880's, cattlemen turned to raising sheep which proved to be quite profitable.

During the early years of Junction (1871), Gilmore (1902) and Leadore (1910), cattle, sheep and horses were put out on the surrounding rangelands to graze year-round. Grazing pressure generally decreased as the distance from these settlements increased. The forage was free and there were no barbed wire fences to limit the grazing areas.

The Salmon River Forest Reserve was established by proclamation of President Theodore Roosevelt on November 5, 1906. In 1910, the Salmon River Forest Reserve authorized 10,877 head of cattle and 15,920 sheep/goats to graze on forest lands in Lemhi County.

During the era of homesteading, western ranchers often crowded and overgrazed public rangelands because of a lack of understanding of these arid ecosystems. Congress passed the Taylor Grazing Act (TGA) of 1934, which led to the creation of grazing districts in which grazing use was apportioned and regulated; division fences and water developments were built to manage livestock. After the TGA was passed, the first grazing permits were issued. Some of the early grazing permits in Lemhi County were those of the upper Lemhi Valley within the CIAA.

In 1946, the BLM was created within the Department of the Interior. Production studies were conducted and the allotments were adjudicated in the 1950's.

Today, there are 17 operators permitted to graze 16,319 AUMs on public lands managed by the BLM in the CIAA (Table 21). In support of these operations, 162 water locations/troughs, 391 miles of fence, 28 cattleguards and 3 stock ponds/reservoirs have been constructed.

There are also 11 USFS allotments with 8 active permits to graze approximately 10,180 AUMs within the CIAA. At the present time, 2 of these permits are inactive and are not expected to be activated in the reasonably foreseeable future. There are approximately 86 water developments and 75 fences within the CIAA on SCNF managed lands. The IDL has issued 11 leases for 853 AUMs within the CIAA; State lands are usually sections 16 and 36 within a given township.

Crossing of livestock from SCNF allotments, BLM allotments, and other state and private inholdings occurs within the CIAA. A majority of the crossing occurs as part of the permittees active preference within their grazing allotments.

### *Vegetation Management*

There were two seedings on public lands managed by the BLM in the CIAA that involved predominately non-native plants. The first was the Hawley Creek Seeding that took place in the Leadville Allotment in 1965. Approximately 180 acres of the allotment were plowed and drilled with a rangeland drill using 6 pounds of Nordan crested wheatgrass per acre. The second was

the Tex Creek Seeding and involved two allotments; the Tex Creek Allotment and the Carlton's Field pasture of the Powderhorn Allotment and included 2,200 acres. In 1962, the two areas were seeded with crested and Siberian wheatgrass at 5 to 6 pounds per acre. A portion of this seeding involving both allotments was burned by a wildfire in 2000. This has resulted in that portion of the burn reverting back to an almost monoculture of crested wheatgrass.

An additional crested wheatgrass seeding exists on the State Section in the Center Ridge Allotment. The western portions of this seeding are predominately crested wheatgrass mixed with native forbs and few shrubs. The eastern portion of the seeding contains a greater component of sagebrush and native understory species with relatively less crested wheatgrass.

One rangeland restoration project, totaling approximately 990 acres, was conducted within the Leadville Allotment in 2010. This project used the mechanical crushing of shrubs to stimulate restoration of cover and vigor of bluebunch wheatgrass and other native vegetation; a seed mix of bluebunch wheatgrass and native forbs should enhance understory species composition.

The CIAA contains weed infestations that are mostly small, localized, and usually associated with some sort of disturbance. Some weed infestations are found in remote places and were likely transported to these sites by bird droppings at roost sites, etc. Many species of noxious weeds are found in adjacent counties and it is probable that they will eventually be found in the CIAA, most likely by vehicular transport or wind. Weeds within the CIAA are treated with integrated weed management by means of chemical, biological, and mechanical methods. GIS records from 2009 and 2010 show approximately 1,310 acres of the CIAA were treated to address noxious weeds. Previous to 2009, inventory and treatment occurred on an annual basis; similar inventory and treatment will continue in the future.

Since WWII, virtually all forest management activities (timber harvest and hazardous fuel reduction projects) within the CIAA have occurred on federally-owned lands and as prescribed by approved land use plans to meet resource and commodity production objectives. Timber sales on SCNF and public lands managed by the BLM have harvested approximately 1,500 acres of timber since 1962, less than 2% of the forested land base within the CIAA. Silvicultural systems have included selection, shelterwood, and clear-cut prescriptions. Post-sale treatments have included slash burning, and planting of sites that were clearcut. The most recent forest treatments within the CIAA are related to hazardous fuel reduction objectives around the historic town site of Gilmore, an identified 'Community-at-Risk', and a relatively new subdivision located at the mouth of Silver Moon Gulch approximately one mile due south of Gilmore. The *Gilmore Hazardous Fuel Reduction* project was initiated in 2008 and involved 292 acres of mechanical thinning.

### *Wildland Fire*

Since the late-1800's, wildland fire has effectively been excluded from the CIAA due to aggressive fire suppression policies, domestic livestock grazing (removal of fine fuels), and land-use practices.

SCNF, BLM, and State fire occurrence records for the CIAA indicate that between 1977 and 2007, wildland fires accounted for approximately 2,652 acres burned during 44 fires. Seventy-five percent of these fires were 1 acre or less in size. Three fires accounted for nearly 97% of the burned acres. These relatively large fires burned in the lower Texas Creek (1,926 acres in 2000); Hawley Creek (475 acres in 1988); and Canyon Creek (165 acres in 1981) drainages. Large-fire acres that burned in the Texas Creek drainage consisted of semi-desert shrub & grassland cover types, while acres burned in the Hawley and Canyon Creek drainages consisted of a mix of semi-desert shrub & grassland cover types, and forest and woodland cover types.

#### *Land Use Conversion*

Private land is located primarily on the valley floor near the town of Leadore. To date, approximately 41,057 acres or about 13% of the CIAA are privately owned. Approximately 26% of this land has been developed for irrigated agriculture and home sites or otherwise cleared of native vegetation. The rest is mostly native vegetation, though some has been inter-seeded with crested wheatgrass. Within the CIAA, 4 mineral pits (28 acres) have been excavated, primarily for road maintenance.

#### *Infrastructural Development*

Infrastructural development in the CIAA has increased over time, although the majority remains undeveloped. Most of the development has occurred along the valley bottom where private lands have been manipulated to accommodate farming and ranching activities.

An extensive road network has been developed in the CIAA which accommodates a wide variety of motorized travel. The route network has gone from an ‘open’ designation to a ‘limited to existing roads and trails’ designation within the last 10 years. On SCNF administered lands within the CIAA, a new travel management decision has been signed, defining a route network for roads as designated open, closed, or open with restrictions.

Infrastructure facilities such as power lines, telephone lines, fiber optic lines, and water diversions are scattered throughout the CIAA, mainly in the valley bottom where private land is concentrated. Approximately 33 miles of power lines of various capacities exist in the CIAA as well as 111 irrigation diversions.

The majority of the infrastructure in the valley has been in place for decades. These types of facilities are generally widespread geographically and have not resulted in a noticeable progression toward a more urban orientation.

#### **Reasonably Foreseeable Actions**

The current level and character of livestock grazing is anticipated to continue into the foreseeable future.

There is no foreseeable future forest management action (timber harvest or hazardous fuel reduction projects) scheduled to be implemented on federal lands within the CIAA.

Aggressive wildland fire suppression on federal lands within the CIAA is anticipated to continue into the foreseeable future.

Weed treatments are expected to continue at current levels throughout the CIAA through chemical, mechanical, and biological treatments.

Land use conversion is anticipated to slowly continue converting agriculture lands to other uses, though there are no known proposals at this time.

A travel management plan will be completed in the reasonably foreseeable future that will designate a route network of designated roads and trails on public lands managed by the BLM. Minor route rehabilitation would occur on some roads that are not designated and minor modifications and maintenance would occur on some roads that are designated.

Over time new infrastructure facilities could continue to occur in the CIAA depending on population fluctuations. The most realistic occurrence in the CIAA would be replacement and upgrading of existing facilities. Most of the current facilities have been in place for many years and with new technology, upgrading and replacement of current infrastructure will be necessary.

**Table 21. Past, Present, and Reasonably Foreseeable Future Actions\***

Type of Activity	Within the CIAA		Within the GSG-CIAA	
	Past and Present	Reasonably foreseeable	Past and Present	Reasonably foreseeable
<b><i>Livestock Grazing</i></b>				
<i>Number of Allotments</i>	Portions of: 18 BLM Allotments 11 USFS Allotments (2 vacant) 18 State Managed Parcels	Portions of: 1 BLM Allotment 11 USFS Allotments (2 vacant) 18 State Managed Parcels	Portions of: 69 BLM Allotments 24 USFS Allotments 49 State Managed Parcels	Portions of: 52 BLM Allotments 24 USFS Allotments 49 State Managed Parcels
<i>Animal unit Months</i>	BLM- 16,319 USFS- 10,482 State- 853 Private - 698	BLM- 50 USFS- 10,482 State- 853 Private - 698	A portion of: BLM - 58,108 USFS - 13,423	A portion of: BLM - 41,824 USFS - 13,423
<i>Range Improvements (all improvements on private lands may not be captured)</i>	Fences-410 miles Water locations-162	No new proposals	Fences-784 Miles Water locations-535	No new proposals
<b><i>Vegetation Management</i></b>				
<i>Seedings</i>	1,047 acres	0 acres	4,521 acres	0 acres

Type of Activity	Within the CIAA		Within the GSG-CIAA	
	Past and Present	Reasonably foreseeable	Past and Present	Reasonably foreseeable
<i>Weed Treatments</i>	1,310 acres	1,310 acres	5,733 acres	5,733 acres
<i>Timber Harvest</i>	1507 acres	0 acres	189 acres	0 acres
<i>Hazardous Fuel Reduction</i>	292 acres	0 acres	NA	0 acres
<b><i>Wildland Fire (1977-2007)</i></b>				
<i>Wildfire</i>	2,587 acres	unknown	11,896 acres	unknown
<i>Prescribed Fire</i>	6,593 acres	0 acres	6,088 acres	0 acres
<b><i>Land Use Conversion</i></b>				
<i>Agricultural Development</i>	8,164 acres	0 acres	42,800 acres	0 acres
<i>Urban &amp; Other Developed Lands</i>	2,407 acres	0 acres	9,720 acres	0 acres
<b><i>Infrastructural Development</i></b>				
<i>Power Lines</i>	33 miles	0 miles	285 miles	0 miles
<i>Roads**</i>	166 miles	0 miles	520 miles	0 miles
<i>Primitive Roads</i>	485 miles	0 miles	940 miles	0 miles
<i>Trails</i>	72 miles	0 miles	65 miles	0 miles
<i>Irrigation Diversions</i>	111	0	429	0

\* Information provided in this table and the associated narrative is derived from the best current datasets. No warranty is made by the BLM. The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

\*\*road = formerly called a two-wheel drive road; primitive road = four-wheel drive road and four-wheel drive technical road; and trail = all-terrain vehicle route.

### **Cumulative Impacts Associated with Past, Present and Reasonably Foreseeable Future Actions**

Each of the past, present, and reasonably foreseeable future actions contribute a specific incremental environmental effect that can be described or accounted for with the same indicators as used in the alternative analysis presented earlier in the document. The accumulated effect of past, present, and reasonably foreseeable future actions on a given resource provides a baseline from which to evaluate the contribution of the alternatives to the collective impact on that resource. The purpose of this section of the document is to provide that baseline. The effects of the various alternatives on the baseline are presented in a subsequent section.

### **Soil Resources**

Soils within the CIAA have been impacted by the past and present actions considered in this analysis. The majority of livestock grazing impacts occur around existing water sources such as springs, troughs, stock ponds, areas providing cover or shade and along fence lines where livestock tend to trail. The soils within and closely surrounding these areas receive heightened use and may exhibit signs of soil compaction, erosion, and reduced productivity. Pipelines, although not typically areas of intensive livestock use, also disturb vegetation and soils as a

consequence of their installation. These areas of decreased vegetation and litter cover are generally more susceptible to soil erosion, increased runoff, and infestation by invasive, non-native plant species.

There are a minimum of 162 watering locations and 410 miles of fence on private, State and Federal lands within the CIAA. Additional range improvements also exist on private lands within the CIAA. Assuming a disturbance of 0.5 acres per water source (e.g., trough and stock ponds) and an 8-foot disturbance width for fences, approximately 479 acres or 0.15% of surface soils within the CIAA have been altered from their natural state by intensive livestock grazing and associated activities.

The duration and intensity of the impact is not equivalent across this acreage, however. The 81 acres of disturbance associated with water sources tends to be relatively intense and long-term, while the 398 acres associated with fences was mostly associated with installation; current disturbance is more likely to be locally intense, but periodic and is associated with trailing along fence lines or congregation of cattle in corners or near gates.

Vegetation management, including seedings, weed treatment, timber harvest and hazardous fuel reduction, has impacted about 4,100 acres or approximately 1% of surface soil within the CIAA. In the short-term, these treatments disturbed soils; however the long-term impact has been an increase in the perennial species occurring on these sites that provide residual cover and litter to protect the soil, or development of vegetation conditions in and adjacent to treatment areas that are resilient and respond more characteristically to natural disturbance agents, leading to overall conservation of the soil resource.

Land use conversion has impacted soils across approximately 10,571 acres of the CIAA. The majority of the impact has been associated with agricultural development that has resulted in the removal of natural vegetation, the disruption of natural soil horizons and the alteration of soil chemistry across approximately 8,164 acres or 3% percent of the CIAA. Another 2,407 acres is classified as “urban or other developed lands” and comprises approximately 1% of lands within the CIAA.

A portion of the land use conversion acreage is due to mining and mineral material development. This type of activity has removed top soil and exposed subsurface soils across approximately 60 acres or about 0.02% percent of the CIAA. Some of these areas no longer contain vegetation to hold soil in place and are susceptible to both wind and water erosion. Some revegetation has occurred at the mine sites limiting the amount of soil erosion, but bare soil still remains in places.

The primary impact to soils from infrastructural development has been disturbance, runoff and off-site sedimentation associated with primitive road construction and use. However, the nature and extent of the impact varies with slope, aspect, the type of road, the extent of use, and the level of maintenance. For example, primitive roads, trails and power line service roads are naturally surfaced and rarely maintained, making them susceptible to potentially severe gullying and rilling, especially on grades. Use of these roads varies, with some used frequently and others used rarely, depending on season, road conditions, alternate route availability, end use purpose and so forth. At 72 miles, trails comprise about 52 acres or 0.01% of the CIAA, assuming a 6

foot disturbance width. Primitive roads are the most common types of roads, comprising approximately 485 miles or about 74% percent of all roads in the CIAA. Assuming a maximum 20-foot width disturbance width, approximately 1 175 acres or about 0.36% of the CIAA is at risk of water erosion and off-site sedimentation as a result of these types of roads. Many trails and primitive roads support vegetation along the centerline, which helps reduce the risk of erosion to a degree.

An additional 166 miles of roads exist across the CIAA. Although the extent of use and level of maintenance varies, these roads typically are used more often and receive a higher level of maintenance than primitive roads and trails. Most of these roads have engineered prisms and appropriately spaced culverts to drain runoff. As a consequence of these factors, these roads are far less likely to erode, though runoff and off-site sedimentation still occur. Assuming a 30-foot disturbance width, approximately 603 acres (0.19% of the CIAA) of natural soil surface has been disturbed by the construction of these road types.

### **Forest Resources**

The cumulative impact of human activities (personal-use gathering, commercial timber harvest and hazardous fuel reduction treatments) to the forest resource within the CIAA is estimated by summing the measurable extent (acres) of past, present and reasonably foreseeable future impacts that have or will directly alter the composition and structure of the affected stands, and then consider the transcendent nature of those impacts within the context of the forest matrix as a whole.

It is estimated that less than 2% of the forested base has been impacted by measurable human activity. The other 98% of the forest matrix stands within the CIAA are overwhelmingly the by-product of forest succession coupled with a relatively successful fire suppression policy implemented during the past 100 years.

Historically, the preponderance of CIAA forest matrix stands established and developed under a functioning mixed-severity fire regime. However, the fine-grained forest mosaic indicative of a functioning mixed-severity fire regime has slowly faded from the landscape as successional processes continue to coalesce and homogenize forest composition and structure over time in the absence of fire.

The cumulative impact of past, present, and reasonably foreseeable future actions summed with the anticipated impact of any of the alternatives, is and would continue to be, marginalized by the extent of successional trends that are at work within the general forest matrix (those trends being primarily due to the institutionalized fire suppression policy on public lands managed by the BLM and SCNF). Therefore, the incremental cumulative impact to the forest resource within the CIAA due to any of the alternatives discussed, are considered to be negligible.

### **Upland Vegetation**

Past livestock grazing has influenced the composition of vegetation due to dietary preference and selectivity of forage by livestock. Livestock grazing can impact plants by removing the leaf area available for photosynthesis, removing of growing points, and reducing the ability of the plant to maintain a favorable shoot to root balance. Where appropriate grazing occurs, plant

communities are not negatively affected, however where inappropriate grazing has occurred, vegetative composition and the ability to meet long-term resource objectives for plant communities can be compromised.

Livestock grazing can mechanically impact vegetation through trampling. This is especially true in areas of livestock congregation (e.g. salt licks, water sources, and trails between foraging and watering areas) that potentially would be devoid of vegetation. The most intensively used areas are associated with 162 watering locations, which have led to the long-term destruction of native vegetation across an estimated 81-acre area, or 0.03% , of the CIAA. Native vegetation has also likely been affected to some degree by trailing along the 410 miles of fencing that exist across the CIAA. The 398 acres of disturbance associated with fences was mostly associated with installation; current disturbance is more likely to be locally intense, but periodic and is associated with trailing along fence lines or congregation of cattle in corners or near gates; this comprises about 0.12% of the CIAA.

Vegetation management, including seeding's, weed treatment, timber harvest and hazardous fuel reduction, has impacted about 4,100 acres or approximately 1% of vegetation within the CIAA. In the short-term, these treatments disturbed vegetation. However, the long-term impact has been an increase in perennial species that provide residual cover and litter. Treatments have promoted site stability and development of vegetative communities that are resilient and respond more characteristically to natural disturbance agents, leading to long-term healthy productive native plant communities.

Land use conversion has impacted vegetation across approximately 10,571 acres of the CIAA. The majority of the impact has been associated with agricultural development that has resulted in the replacement of natural vegetation with agricultural species across approximately 8,164 acres or 3% percent of the CIAA. Another 2,407 acres is classified as “urban or other developed lands” and comprises approximately 1% of lands within the CIAA; native vegetation on these lands has been all but replaced.

A portion of the land use conversion acreage is due to mining and mineral material development. This type of activity has removed vegetation across approximately 60 acres or about 0.02% percent of the CIAA. Some revegetation has occurred at the mine sites limiting the amount of soil erosion, but bare soil still remains in places.

Infrastructural development, in the form of road construction, has resulted in the removal of native vegetation across an estimated 1,753 acres of the CIAA (723 miles and assuming an average 20-foot width between roads, primitive roads, and trails). This comprises approximately 1% of the CIAA.

### **Riparian Areas and Wetlands**

Riparian areas and wetlands provide habitat for aquatic and terrestrial flora and fauna with variable habitat requirements, and the ecological importance of these areas far exceeds the proportion of the landscape they comprise. Activities that have occurred in the past have impacted riparian areas and wetlands primarily through changing the composition and extent of the vegetation. For the purposes of this cumulative effects analysis the Riparian Habitat Area,

which consists of an area 300 feet on either side of a perennial stream and 70 acres per mile, is used. Activities like range improvement construction, off-road recreation (foot and vehicle), and fire suppression have altered or removed vegetation for a small window of time but the vegetation returns to these areas in a fairly short time frame. Other activities like road construction, continued use of pioneered roads, trails along fences, livestock and wildlife congregation areas and water diversions have long-lasting effects on riparian vegetation through compaction of the soils or removal of water leading to a long-term removal of vegetation.

The natural condition of riparian areas and wetlands was probably one of a shifting mosaic of variable seral communities at the CIAA scale which, prior to white-European settlement, was likely enhanced by variable weather patterns and disturbance regimes. The variability of terrain, geology, soil, stream density, and vegetation, combined with the grazing prescriptions has resulted in a spatial variability of grazing effects to streams at the CIAA scale. Heavy grazing occurred in the CIAA between 1869 and 1950 reducing the overall diversity of riparian compositions. During this period, a large portion of accessible streams had woody vegetation removed or eliminated, resulting in widening of stream channels and plant communities shifting to shallow-rooted forbs and grasses. Moderate grazing prescriptions were implemented after the 1950s. This began to reduce the large-scale, high-intensity grazing along streams where cattle were congregating, and it allowed for some woody vegetation along these streams to begin to recover. To further attempt to protect more sensitive riparian communities from intensive grazing, some spring and stream/riparian exclosures have been installed since the early 1990s. However, these exclosures have protected a small portion of streams and springs and have not had an incrementally substantial effect on landscape scale stream/riparian habitat recovery. Additionally, changes in grazing management have resulted in improved riparian conditions.

**Table 22. Cumulative Effects on Riparian Areas and Vegetation**

Resource	Total within CIAA	Total within the CBT Allotments
Perennial Stream Miles	197	49
Acres of Riparian Habitat Area (300-ft buffer of Perennial Streams @70acres/mile)	13,790	2,400
Road Miles Within RHCA (300-ft buffer of Perennial Streams)	23.1	4.8
303(d)/ 305(b) Streams miles	133	26
Miles of Stream Affected by Mining	2	1
Number of Springs (based upon Water Rights)	~300	180
Number of Developed Springs (based upon USFS and BLM Range Improvement GIS Data)	~30	10
Data were compiled from various sources using and at various scales (e.g. watershed scale, allotment scale) GIS. The values given are best estimates derived using this GIS data.		

For riparian-wetlands and stream habitats, the most substantial impacts have been from private irrigation diversions, with livestock grazing negatively impacting these resources, but to a

slightly lesser degree. This practice of diversion has decreased stream flows or completely dewatered stream channels in the CIAA, reducing or eliminating riparian vegetation, stream channel function and fish/wildlife habitat. There are approximately 111 irrigation diversions in the CIAA that partially or fully remove water from stream/riparian areas during the irrigation season. In the CIAA, streams with substantial flow are diverted at various locations onto private lands, consequently reducing flows or completely dewatering these stream channels. The extent of this is not fully known; however, approximately 80 stream miles lose a substantial portion of their flows during the irrigation season, impairing most of the acres of the Riparian Habitat Area within the CIAA. The conversion of lands to agricultural uses has further affected riparian areas and springs located on private lands. Approximately 67 perennial stream/riparian miles (approximately 4,700 acres of the Riparian Habitat Area) or 34% of the total perennial stream/river miles within the CIAA are located within or proximal to cultivated fields/agricultural activities on private lands (Table 22).

The effects to individual stream miles and springs on private land differ based upon individual land owner practices. The private agricultural land within the CIAA is anticipated to remain as such. The cumulative effect at the CIAA scale has been a reduction in the diversity of seral plant communities present within these privately developed areas.

### **Threatened, Endangered and Sensitive Plants**

TES plant species in the CIAA have been, or could be in the future, affected by invasive, non-native species, livestock grazing and dispersed recreation, however not to the degree that they have become federally listed species (e.g., threatened or endangered). Invasive, non-native species are a continuing threat to most native plant species, including sensitive plant populations found within the CIAA. Where native plant communities remain healthy and resistant to invasion, and soils remain intact, the likelihood that invasive species could invade and replace sensitive plant populations is low. In isolated cases, where native plant communities are departed from a reference state and the soil resource is compromised, the chance that invasive species could invade a sensitive plant population would increase.

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

Generally, invasive species have been introduced to the CIAA in crop seed, as ornamentals, or as “hitchhikers” on vehicles or animals. Past actions that are most responsible for the establishment of invasive species in the CIAA are agricultural and infrastructural development, livestock grazing, road construction, OHV use and mining activities. These activities have provided the greatest amount of ground disturbance, thus allowing invasive species to become established. Any activities that remove native vegetation and expose bare soil are likely to create niches where there is a potential for weed invasion. With transport vectors such as vehicles, equipment, livestock and recreationists moving across the CIAA, there is potential for weed propagules to find their way to and establish in the CIAA. Treatment activities are currently ongoing to control or contain existing infestations, and known noxious weed infestations appear to be declining.

There are 200 noxious weed and invasive species locations mapped across ownerships in the CIAA for an approximate total of 6,439 acres. This total comprises approximately 2% of the total acreage within the CIAA.

Cheatgrass infestations continue to be mapped on public lands managed by the BLM within the CIAA. The current inventory indicates that approximately 2,116 acres or 1% of the CIAA is infested to some degree.

### Water Quality

Sources of pollutants found within the CIAA includes, streambank modification/ destabilization, timber harvesting, reforestation, irrigated crop production, livestock grazing, flow regulation/modification, highway/road/bridge construction, pastureland treatment and very small amounts of surface mining/mine tailings. Generally, sedimentation from non-point sources such as irrigated crop production, rangeland, pastureland, streambank modification and roads is the primary pollutant of concern, although nutrients from pastureland and cropland are also of concern (DEQ, 1998). The past and, to some degree, present actions have decreased water quality with respect to nutrients, erosion and elevated water temperatures.

Effects to water quality at the CIAA scale are typically termed as those effects which are carried with the water downstream to the Lemhi River. The pollutants that are delivered downstream are typically phosphorus, nitrogen, pathogens and sediment (DEQ, 1999). In the mountainous watersheds of central Idaho, discharge of streams typically peaks in the spring and is associated with snow melt. During snow melt driven high-flow events, sediment is delivered to the Lemhi River from the mountain tributaries. This sediment flush is a natural occurrence; the amount of sediment occurring above background levels as a result of grazing across the CIAA is not known.

The largest spatial effect to water quality has been through livestock grazing and development of private lands for agriculture in the CIAA. Irrigation diversions and subsequent water withdrawal has been the biggest localized impact to water quality, reducing or eliminating instream flow, increasing water temperatures and sedimentation. In addition, limited mining impacts have occurred in the Texas and Clear Creek drainages. The effects to water quality due to infrastructural development are a result of the development of roads within riparian areas in the CIAA. Roads can create a pathway for sediment delivery into stream channels.

In addition to the prominent agriculture land uses, activities like road construction, continued use of pioneered roads, trails along fences, livestock and wildlife congregation areas and water diversions have effects on water quality through the modification to soils and vegetation that increases temperature and sediment in streams.

**Table 23. Water Quality-Limited Streams and Water Bodies in the CIAA.**

Stream	Segment	Impairment	Total Length (miles)	BLM Length (miles)
Texas Creek	All	Flow regime alterations; Combined Biota/Habitat; Sedimentation/Siltation; Fecal Coliform	15	2

Stream	Segment	Impairment	Total Length (miles)	BLM Length (miles)
Eighteenmile Creek	Hawley Creek to mouth	Low flow alterations; Temperature-water Added 3/27/2006	2	0
Eighteenmile Creek	Clear Creek to Hawley Creek	Temperature-water; Added 3/27/2006	8	1
Eighteenmile Creek	Divide Creek to Hawley Creek	Fishes; Bioassessments Temperature-water	6	3
Eighteenmile Creek	source to Divide Creek	Combined Biota/Habitat; Bioassessments	30	4
Canyon Creek	source to diversion	Combined Biota/Habitat; Bioassessments	70	11
Hawley Creek	diversion to mouth	Cause Unknown; Nutrients Suspected Impairment	2	5
TOTAL			133	26

Source: (DEQ, 2008)

### **Fisheries including Threatened, Endangered, and Sensitive Fish**

Fisheries resources have been cumulatively impacted by all of the past and present actions considered in this analysis and in a similar fashion to the Riparian-Wetland and Water Quality in the CIAA. The historic distribution of TES fish species in the CIAA has been reduced. Fish access from the Lemhi River to the tributary streams is limited from the historical ranges mostly due to irrigation/diversion practices that started in the 1870's and that continue today. Historic grazing practices reduced the riparian-shrub community substantially causing a decrease in fish habitat, especially bull trout spawning and rearing habitat. These past activities have impacted fisheries primarily through indirect effects from changes to habitat reflected by direct impacts to riparian vegetation and water quality. The largest spatial effect to the fish, through habitat modification, has been the annual removal of forage in riparian areas along occupied streams by livestock and the loss of fisheries habitat through private irrigation practices. Overall, improved grazing management and OHV management in the past twenty years have decreased the cumulative effects to fisheries in the CIAA. Additionally, the road and stream crossing/culvert improvements done by the BLM in the CIAA have decreased sedimentation into stream channels and improved fish habitat and passage conditions.

Given substantial alteration of the water budget within the CIAA (post-European settlement) and uncertainty regarding the extent of occupied fish habitat prior to European settlement, riparian health/recovery rates and instream water quality have become surrogates for determining the potential for effects to listed salmonids and critical habitat.

Modification of the natural water budget (i.e. timing, location, availability, and volume of water) through agricultural development has substantially influenced the distribution and abundance of

salmonids and the relative value of aquatic habitat at the CIAA scale. Effects to listed salmonids from crop irrigation and private land grazing are contributing factors to the current reduced distribution of salmonids and instream habitat quality. Both dewatered stream channels and migration barriers associated with diversions has reduced available habitat. Within the last 15 years, habitat improvement projects (e.g. riparian fencing, conversion to metered irrigation, fish barrier removals, stream reconnects, riparian plantings etc.) implemented via the Upper Salmon Basin Watershed Program and other partnerships have opened up some of these previously isolated habitats and is expected to continue within the CIAA.

### **Wildlife Resources including Threatened, Endangered, and Sensitive Animals and Migratory Birds**

Cumulative effects on wildlife are those impacts that alter or remove a measurable portion of natural processes that individual species have evolved to need during some portion of their life. The BLM recognizes that individuals or portions of populations could move in and out of the CIAAs. The CIAAs used here encompass the majority of the population of specific species that use the habitat influenced by the actions proposed in this document. The CIAA for all species except greater sage-grouse is the same as for the other resources. For greater sage-grouse the CIAA is the Lemhi-Birch ID subpopulation **Invalid source specified.** expanded to include the adjacent mapped key habitat (CSGLWG, 2007). Analysis under this section of cumulative effects will focus on habitat health within the CIAAs described below and how the health of the CIAAs impacts the species that use them.

Past and present actions have had similar impacts to wildlife within the CIAAs as the proposed action. From a landscape scale livestock grazing and the infrastructure to support it has had the biggest impact on wildlife. Smaller scale impacts have occurred through conversion of habitat, vegetative treatments and infrastructure not directly related to livestock grazing management.

The majority of the forest and woodland habitat in the CIAA is on SCNF managed lands. Since less than 2% of the habitat type has been affected by human activity the impacts have been negligible to the wildlife species that rely on that habitat. The larger effect to this habitat has been due to fire suppression which has limited the mosaic habitat pattern across the landscape.

For semi-desert shrubland habitat, past livestock grazing has influenced the composition of vegetation. Historically there were more AUMs authorized on the public lands in the CIAA than there are today. In addition to the removal of forage and cover for wildlife, there has been infrastructure developed to support the utilization of the area by cattle. This infrastructure has removed and altered habitat or made it more difficult for wildlife to move between habitats. The most intensively used areas are associated with 162 watering locations, which have led to the long-term destruction of native vegetation across an estimated 81 acres of the CIAA. Native vegetation has also likely been affected to some degree by trailing along the 391 miles of fencing that exist in the CIAA. Trailing along these fences, which tends to be periodic, has potentially damaged or destroyed vegetation across an estimated 379 acres. These areas of long-term destruction total less than 1% of the sagebrush habitat in the CIAA. The fences can also be a passable movement barrier to wildlife on the landscape, especially on private lands where many fences are constructed of woven wire and near impossible for wildlife to pass. All fences, but especially fences with more than three wires, can entangle wildlife leading to death.

Land use conversion has removed native vegetation across an estimated 10,571 acres of the CIAA. Most of this acreage has been in the semi-desert shrubland but riparian areas have been affected to a small degree. The majority of this type of effect is associated with agricultural development which has resulted in the replacement of native vegetation with domesticates on approximately 8,164 acres of the CIAA. While the agricultural conversion does provide habitat for native wildlife species, the acreage that has been converted to urban or developed lands provides very little habitat for wildlife species, this has occurred on just over 1% of the semi-desert shrubland habitat within the CIAA.

Riparian areas and wetlands provide habitat for wildlife with an ecological importance exceeding the proportion of the landscape they comprise. For riparian-wetlands and stream habitats, the most substantial impacts have been from private irrigation diversions. This practice has decreased stream flows or completely dewatered stream channels on public land in the CBT area, reducing or eliminating riparian vegetation and wildlife habitat. There are approximately 111 irrigation diversions in the CIAA that partially or fully remove water from stream/riparian areas during the irrigation season. The conversion of lands to agricultural uses has further affected riparian areas and springs located on private lands. The private agricultural land within the CIAA is anticipated to remain as such. The irrigation practices have removed riparian vegetation that is important cover and forage for wildlife, especially migratory birds and sensitive species. Some of the habitat has been replaced by riparian vegetation along ditches, but this habitat does not usually have the complexity or width of the natural systems that were lost. With the conversion of ditches to pipelines, this riparian habitat and source of water for wildlife is also decreasing within the CIAA.

#### Greater Sage-Grouse

The greater sage-grouse cumulative impact analysis area (GSGCIAA) is the Lemhi-Birch ID subpopulation **Invalid source specified.** expanded to include the adjacent mapped key habitat (CSGLWG, 2007). While this subpopulation has been described, and we will use it for this analysis, greater sage-grouse have been known to move in and out of this subpopulation from both the north and south. Greater sage-grouse rely primarily on semi-desert shrubland, but riparian habitat can be important for late brood rearing habitat when the vegetation in the semi-desert shrublands dry out. Greater sage-grouse rarely use high montane or sparsely vegetated areas. The GSGCIAA encompasses approximately 558,942 acres and all of the Lemhi-Birch ID subpopulation of greater sage-grouse as identified by Connelly **Invalid source specified.** Within that acreage, approximately 60% are public lands managed by the BLM, 25% are private lands, 11% are National Forest Lands managed by the SCNF and 4% are State of Idaho Lands managed by IDL. Approximately 85,360 acres of the GSGCIAA (15%) overlap the footprint of the alternatives analyzed in this EA.

There are currently 21 active greater sage-grouse leks within the GSGCIAA, 7 of which are directly impacted by the alternatives. In 2010 there were 384 males counted on the leks with an average male attendance per lek of 18. The peak count occurred in 2007 when 461 males were counted and the average male attendance per lek was 22. The maximum male attendance per lek was in 1962 when 118 males were counted on only 2 leks. Over time more leks have been located which has increased our knowledge of the species and the total number of birds on the leks, but with the discovery of smaller leks it has also led to a smaller average number of males per lek.

Within the GSGCIAA approximately 42,800 acres have been converted to agricultural lands, mostly from semi-desert shrublands and riparian areas. Agricultural lands can provide important late brood rearing habitat for greater sage-grouse, though many of the birds in the GSGCIAA move to higher elevations during that time of the year. A large portion of the conversion has occurred by decreasing the riparian habitat along the main Lemhi River, which probably offered little greater sage-grouse habitat before conversion. Where the conversion has affected greater sage-grouse is when it has occurred in nesting and wintering habitat, which agricultural fields would not support, with the exception of some actual breeding during the nesting season. This amounts to approximately 8% of the GSGCIAA.

In addition to the agricultural conversion, approximately 9,720 acres have been converted to urban areas. These acres provide little to no habitat value for greater sage-grouse. Within the GSGCIAA this accounts for approximately 2% of the acreage, granted as with the agricultural development a percentage of these acres did not provide habitat before development either. Other infrastructure associated with urban development within the GSGCIAA includes 285 miles of power lines, 1,525 miles of roads, and 429 irrigation diversions. The power lines and roads tend to be associated and many of those miles are within the urban conversion that was described above. If we assume a 20 foot average width for roads approximately 3,693 acres (0.66%) within the GSGCIAA do not support vegetation due to the roads. The influence of the power lines are harder to calculate since greater sage-grouse may avoid power lines and the poles may provide nesting structures for predators like ravens or hunting perches for birds of prey. The irrigation diversions themselves do not impact greater sage-grouse, but the changes in water on the landscape caused by the diversions can. If the water is being diverted into ditches then the habitat along the ditches can replace some of the habitat lost along the dewatered streams, if the water is placed in a pipe then the succulent plants important to greater sage-grouse during the late brood rearing season will not be available.

Most of the semi-desert shrublands and riparian areas in the GSGCIAA that have not been converted to urban or agricultural lands are grazed at some point during the year. On public lands managed by the BLM within the GSGCIAA there are approximately 2,183 acres (0.39%) excluded from grazing, the other acres are grazed, though some areas may be rested for a year or more at a time. To help manage livestock there are 786 miles of fence in the GSGCIAA, with a minimum of 85 of those miles within 1.25 miles of an active greater sage-grouse lek, and while a sage-grouse strike has not been recorded within the GSGCIAA it could happen, especially near leks. All of the public lands managed by the BLM within the GSGCIAA have been assessed for Idaho Standards for Rangeland Health. Currently, all allotments are meeting or making significant progress towards meeting those standards. Allotments that were not meeting at the time of their assessment and determination have had livestock management changes that have resulted in significant progress towards meeting standards.

### **Range Resources**

The intensity and character of livestock grazing is anticipated to remain consistent into the foreseeable future. Past and present actions have resulted in the level of range resources currently within the CIAA.

## **Economic and Social Values**

The economic and social values in the CIAA have been impacted to some degree and will continue to be impacted by past, present, and future actions in the area. As population numbers fluctuate due to job availability and seasonal populations, so would the economics of the goods and services offered and purchased in the area. Over the years, the need for manual labor to complete agricultural jobs has been reduced as a result of new technology and machinery. This affects the population numbers and job availability as workers need to leave the area to find work.

## **Tribal Treaty Rights and Interests**

The CIAA comprises approximately 323,000 acres, of which 274,550 acres (85%) are federally managed land – both by the BLM and the SCNF – which are considered “unoccupied” land in terms of the Treaty Rights trust responsibilities assumed by the Federal government.

Past and present actions within the CIAA have impacted these Treaty Rights and interests on several fronts. Irrigation pressure, the spread of invasive plants and noxious weeds, and well over a century of cattle and domestic sheep grazing, have affected the distribution and abundance of animal species that are traditionally very important to the Tribes (e.g., salmon, steelhead, greater sage-grouse, bighorn sheep, bison, deer, and elk). Impacts to these and other species have included habitat fragmentation, disturbance, and disease.

Livestock grazing, water diversions, residential expansion and the proliferation of road construction (increasing the spread of invasive and noxious weeds) have also directly and indirectly affected important riparian and upland floral resources important to the Tribes.

Finally, an important aspect of the Tribes’ Treaty Rights interests entails access to “unoccupied” federally managed land. In the past, and continuing into the present, transfer and sale of federal land, issuance of land use permits, and private trespass have impacted the Tribes’ ability to access these lands.

## **Wilderness/WSA**

The past, present, or reasonably foreseeable actions described above will not mar or detract from the wilderness values that were present during the original wilderness inventory, nor will they impede the Eighteenmile WSA from wilderness designation in subsequent years. Livestock grazing, hunting, trapping, and wildlife viewing have a long history in the CIAA and the WSA. Much of these historical uses have carried through to present times and continue to be existing uses within the CIAA and the WSA.

The outstanding opportunities for solitude which existed at the time of inventory due to size of the unit, excellent topographic relief, moderate vegetative screening, lack of nearby development, and remoteness of the unit are all still present. The outstanding opportunities for diverse primitive and unconfined recreation which existed at the time of inventory are still present today and in the foreseeable future. The supplemental values identified at the time of inventory included the Continental Divide, and this value is also still present.

## **The Contribution of the Alternatives to the Cumulative Impact**

The objective of this final section of the document is to disclose the differing impacts that each alternative would incrementally add to or subtract from the total effect of past, present, and reasonably foreseeable actions discussed in the prior section. As indicated in Table 24, the implementation of the various alternatives would affect the current condition of the CIAA in different ways.

**Table 24. Contribution of the Alternatives to the Cumulative Impact.**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Soil Resources	<p>Because 6,194 more (76% more) AUMs would be removed compared to the current condition, there would be a moderate negative additive impact to soils within the CIAA from cattle activity, mainly near areas of concentrated use, such as water sources, salting areas, etc. Additive impacts to soils would decrease as the distance from the concentrated use area increases.</p>	<p>Impacts would be the same as those found under the current condition (represented by the last 5 years actual use). Because the actual use alternative would be a continuation of past grazing activities as they have been occurring, there would be no additive impact to soils within the CIAA for implementing this alternative. Its impacts are contained within the subset of past, present and reasonably foreseeable activity impacts. Direct and indirect impacts would still occur at the level they have been occurring.</p>	<p>Because 3,330 more (37% more) AUMs would be removed compared to the current condition, there would be a slight negative additive impact to soils within the CIAA from cattle activity, mainly near areas of concentrated use, such as water sources, salting areas, etc. Additive impacts to soils would decrease as the distance from the concentrated use area increases.</p> <p><u>Fences</u> – there would be 6.58 acres of additive short-term soil disturbance within the CIAA; over time, soils would be revegetated and stabilized.</p> <p><u>Fence Removal</u> – there would be 0.39 acres of additive short-term soil disturbance within the CIAA; over time, these soils would be</p>	<p>The additive impact of removing grazing from all BLM allotments would result in a beneficial impact to the soil resource within the CIAA. An increase in residual above-ground biomass would occur and most plants would complete their life cycle each year; this could result in increased inputs of soil organic matter, which could enhance soil quality and nutrient availability over time. Cattle impacts to soils would not occur and areas that were previously compacted or denuded from grazing would heal and return to a more natural state.</p>	<p>Because 2,919 fewer (32% fewer) AUMs would be removed compared to the current condition, there would be a slight additive beneficial impact to within the CIAA; the additive effect would be difficult to discern. Where pastures or allotments are not authorized for grazing, additive impacts to the CIAA would be similar to Alternative 4.</p> <p>Vegetation Manipulation Projects - minimal additive short-term soil disturbance would occur with the implementation of the forestry projects; longer-term additive soil benefits would occur because productive native plant communities would contribute positively to the soil organic matter pool and to overall soil stability. Overall</p>

			Alternative 3		Alternative 5
			<p>revegetated, which would result in increased soil stability over time.</p> <p><u>Exclosures</u> – 77 acres would be excluded from livestock grazing; The additive impact of removing grazing from all BLM allotments would result in a beneficial impact to the soil resource within the CIAA. An increase in residual above-ground biomass would occur and most plants would complete their life cycle each year; this could result in increased inputs of soil organic matter, which could enhance soil quality and nutrient availability over time. Cattle impacts to soils would not occur and areas that were previously compacted or denuded from grazing would heal and return to a more natural state.</p>		<p>additive benefits within the CIAA would be difficult to discern because they would occur on about 0.5% of the CIAA.</p>

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			<p><u>Pipeline/trough systems</u> – along the pipeline route, 1.52 acres of short-term soil disturbance would occur; over time, soils along the pipeline route would be re-vegetated and stabilized. A total of 2 acres of long-term soil disturbance would occur at trough locations; these locations would receive additive impacts from cattle activity.</p> <p><u>Vegetation Manipulation Projects</u> - minimal additive short-term soil disturbance would occur with the implementation of the forestry and seeding projects; longer-term additive soil benefits would occur because productive native plant communities would contribute positively to the soil organic matter pool and to overall soil stability. Overall additive benefits within the CIAA would be</p>		

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			difficult to discern because they would occur on about 0.5% of the CIAA.		
Forest Resources	None	None	Negligible	None	Negligible
Upland Vegetation	Because 6,194 more (76% more) AUMs would be removed compared to the current condition, there would be an additive impact to upland vegetation from cattle grazing, mainly near areas of concentrated use, such as water sources, salting areas, etc. Additive impacts to upland vegetation would decrease as the distance from the concentrated use area increases.	Impacts would be the same as those found under the current condition (represented by the last 5 years actual use). Because the actual use alternative would be a continuation of past grazing activities as they have been occurring, there would be no additive impact to upland vegetation within the CIAA for implementing this alternative. Its impacts are contained within the subset of past, present and reasonably foreseeable activity impacts. Direct and indirect impacts would still occur at the level they have been occurring.	Because 3,330 more (37% more) AUMs would be removed compared to the current condition, there would be a slight negative additive impact to vegetation within the CIAA from cattle activity, mainly near areas of concentrated use, such as water sources, salting areas, etc. Additive impacts to upland plant communities would decrease as the distance from the concentrated use area increases.  <u>Fences</u> – there would be 6.58 acres of additive short-term vegetative disturbance within the CIAA; over time, vegetation would re-establish and stabilize the site	The additive impact of removing grazing from all BLM allotments would result in a beneficial impact to native plant communities within the CIAA. An increase in residual above-ground biomass would occur and most plants would complete their life cycle each year. Reproductive success would increase. Cattle impacts to native plant communities across the whole of the CIAA would be reduced. Areas previously denuded from grazing would heal and return to a more natural state.	Because 2,919 fewer (32% fewer) AUMs would be removed compared to the current condition, there would be a slight additive beneficial impact to upland vegetation within the CIAA; the additive effect would be difficult to discern. Where pastures or allotments are not authorized for grazing, additive impacts to the CIAA would be similar to Alternative 4.  Vegetation Manipulation Projects - minimal additive short-term vegetative disturbance would occur with the implementation of the forestry projects; longer-term additive benefits would occur because herbaceous

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			<p><u>Fence Removal</u> – there would be 0.39 acres of additive short-term vegetative disturbance within the CIAA; over time, vegetation would re-establish which would result in increased site stability over time.</p> <p><u>Exclosures</u> – 77 acres would be excluded from livestock grazing; The additive impact of removing grazing from all BLM allotments would result in a beneficial impact to the vegetative resource within the CIAA. An increase in residual above-ground biomass would occur and most plants would complete their life cycle each year; this could result in increased reproductive capability. Cattle impacts to vegetation would not occur and areas that were previously compacted or denuded from grazing would</p>		<p>native plant communities would be promoted because of a decrease in competition. Overall additive benefits within the CIAA would be difficult to discern because they would occur on about 0.5% of the CIAA.</p>

			Alternative 3		
			<p>heal and return to a more natural state.</p> <p><u>Pipeline/trough systems</u> – along the pipeline route, 1.52 acres of short-term vegetative disturbance would occur; over time, vegetation along the pipeline route would re-establish and help stabilize the site. A total of 2 acres of long-term vegetative disturbance would occur at trough locations; these locations would receive increased impacts from cattle activity.</p> <p><u>Vegetation Manipulation Projects</u> minimal additive short-term vegetative disturbance would occur with the implementation of the forestry and seeding projects; longer-term additive benefits would occur because herbaceous native plant communities would be</p>		

			Alternative 3		
			promoted because of a decrease in competition and an increase in seed source (in the case of the seeding). Overall additive benefits within the CIAA would be difficult to discern because they would occur on about 0.5% of the CIAA.		

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Riparian Areas and Wetlands	This would be an overall increase in AUMs and grazing impacts as compared to the last 5 years of actual use, thus increasing the negative impacts to Riparian/Wetland resources. This would increase removal of riparian plant species and reduce ecological health of these communities.	This would be similar set of impacts as the last 5 years which would be expected to maintain overall affects to Riparian/Wetland resources. This would keep the current removal of riparian plant species and maintain ecological health of these communities, although many areas are not currently meeting Standards 2 & 3.	This would be an overall decrease in AUMs and grazing impacts as compared to the last 5 years of actual use, thus decreasing the negative impacts to Riparian/Wetland resources. With the range projects and associated management changes which favor riparian/wetland communities, this would decrease removal of riparian plant species as compared to current levels and conditions and increase ecological health of these communities.	With no grazing in the CBT allotments, this would remove the grazing impacts as compared to the last 5 years of actual use and as compared to Alternative 2, 3 & 5. This is expected to remove the negative impacts from livestock to Riparian/Wetland resources in the CBT allotments. The stream reaches that an NF due to dewatering for private irrigation would continue to be NF.	This would be an overall decrease in AUMs and grazing impacts as compared to the last 5 years of actual use and as compared to Alternative 3, thus further decreasing the negative impacts to Riparian/Wetland resources. With the reduced levels of grazing which favor riparian/wetland communities, this would decrease the removal of riparian plant species as compared to current levels and conditions and increase ecological health of these communities.
Threatened, Endangered and Sensitive Plants	Because 6,194 more (76% more) AUMs would be removed compared to the current condition, there would be a slight negative additive impact to sensitive plant communities within the CIAA from cattle activity, mainly	Impacts would be the same as those found under the current condition (last 5 years actual use). Because this alternative would be a continuation of past grazing activities as they have been occurring, there would be no additive	Because 3,330 more (37% more) AUMs would be removed compared to the current condition, there could be a slight negative additive impact to sensitive plant communities within the CIAA from cattle activity, mainly near	The additive impact to overall sensitive plant populations in the CIAA of removing livestock grazing from BLM allotments would be minimal. This is because, in the past, livestock grazing has caused little disturbance to these	Because 2,919 fewer (32% fewer) AUMs would be removed compared to the current condition, there could be a slight additive beneficial impact to within the CIAA; the additive effect would be difficult to discern. Where pastures or

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	near areas of concentrated use, such as water sources, salting areas, etc.	cumulative effect for implementing this alternative. Its effects are contained within the subset of past, present and reasonably foreseeable activities.	areas of concentrated use. Additive impacts to upland plant communities would decrease as the distance from the concentrated use area increases. Surveys for sensitive plant species did not indicate that any sensitive plant populations would be disturbed by projects proposed under this alternative. There would be no additive effect from projects.	communities, so removing grazing will result in very little improvement. Within the CIAA this improvement would be very difficult to detect.	allotments are not authorized for grazing, additive impacts to the CIAA would be similar to Alternative 4. Surveys for sensitive plant species did not indicate that any sensitive plant populations would be disturbed by projects proposed under this alternative. There would be no additive effect from projects.
Invasive/Non-Native Species	Grazing Management - Based on full permit numbers of livestock in the allotments, there may be an unquantifiable increase in the amount of ground disturbance associated with salting, bedding, vegetative removal and loafing areas compared to the current condition. Increased number of animals would increase chances of spreading weed seed	Grazing Management – The level of disturbance and impacts to weeds and invasive species under this alternative would be the same as found under the current condition of the last 5 years of actual use. Because this alternative is a continuation of the grazing activities and no new projects being installed, there is an unquantifiable but present amount of risk	Grazing Management - Based on lower numbers of livestock and better distribution, there may be an unquantifiable decrease in the amount of weed impacts due to less ground disturbance associated with salting, bedding, vegetative removal or loafing areas. A decrease in the number of livestock would decrease chances of spreading weed seed from	Grazing Management – With the removal of grazing from these allotments the result would be a beneficial improvement to the native plant communities thus helping these communities fend off invasion from exotics. In addition, the lack of disturbance from loafing, bedding and spread of weed propagates in hoofs, hair and digestive	Grazing Management- With a 33% decrease in grazing pressure and associated disturbance, there may be a slight to moderate unquantifiable decrease in the risk of weed and invasive species establishment and colonization within the CBT as compared to alternative 1, 2 and 3. Since there are no range projects associated with this alternative, there will

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	<p>from accumulations in hooves, hair, and digestive systems, as well as possible transport of weed propagates from the home ranch to public lands. Increased grazing pressure on vegetative communities may weaken the natural defenses that plant communities have in fighting off weed invasion.</p>	<p>associated with the continuation of present management.</p>	<p>accumulations in hooves, hair, and digestive systems although this may be slight.  <i>Range Improvements</i> – Under this alternative there will be 1.52 acres of ground disturbance associated with the installation of the new pipelines and troughs. There is a risk of weed and invasive species introduction or establishment, either from introduced sources on the equipment installing these projects, or from seed sources already present that become active with the exposure of disturbance. Additionally there will be permanent disturbance around each trough location and to the surrounding vegetative community from increased grazing pressure on previously intact undisturbed plant communities. Fences-</p>	<p>systems would reduce the threat of invasion to the native plant systems from livestock.  <i>Range Improvements</i> – With no new water trough installation and fence construction there will be less chance of weed and invasive species colonization that could occur in both the short term with the placement of these projects as well as the long term effects of new ground disturbance at the water trough sites and along fences for the foreseeable future.</p>	<p>be no additive impacts from ground disturbing projects.</p>

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			there will be approximately 6.5 acres of disturbance associated with fence construction and fence removal. These disturbances may be short term, except perhaps where cattle begin to trail or loiter along fence lines.		
Water Quality	This would be an overall increase in AUMs and grazing impacts as compared to the last 5 years of actual use, thus increasing the negative impacts to Water Quality. This would increase removal of riparian plant species, increase trampling of stream habitat and reduce ecological health of these communities.	This would be similar set of impacts as the last 5 years which would be expected to maintain overall affects to Water Quality. This would keep the current removal of riparian plant species, bank trampling and maintain ecological health of these communities, although many areas are not currently meeting Standards 2, 3 & 7.	This would be an overall increase in AUMs as compared to the last 5 years of actual use; however, this proposal would have an overall decrease of impacts to Water Quality. With the range projects and associated management changes which favor riparian/wetland communities, this would decrease removal of riparian plant species as compared to current levels and increase ecological health of these communities and associated Water Quality conditions.	With no grazing in the CBT allotments, this would remove the grazing impacts as compared to the last 5 years of actual use and as compared to Alternative 2, 3 & 5. This is expected to remove the negative impacts to Water Quality in the CBT allotments, except on those allotments not meeting Standard 7 due to factors other than current BLM livestock management.	This would be an overall decrease in AUMs and grazing impacts as compared to the last 5 years of actual use and as compared to Alternative 3, thus further decreasing the negative impacts to Water Quality. With the reduced levels of grazing which favor riparian/wetland communities, this would substantially decrease the removal of riparian plant species as compared to current levels and conditions and increase ecological health of these communities and associated Water

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
					Quality conditions.
Fisheries including Threatened, Endangered, and Sensitive Fish	This would be an overall increase in AUMs and grazing impacts as compared to the last 5 years of actual use, thus increasing the negative impacts to Fisheries Resources. This would increase removal of riparian plant species, increase trampling of stream habitat and reduce ecological health of these communities.	This would be similar set of impacts as the last 5 years which would be expected to maintain overall affects to Fisheries Resources. This would keep the current removal of riparian plant species, bank trampling and maintain ecological health of these communities, although many areas are not currently meeting Standards 2, 3 & 8.	This would be an overall decrease in AUMs and grazing impacts as compared to the last 5 years of actual use, thus decreasing the negative impacts to Fisheries Resources. With the range projects and associated management changes which favor stream/riparian habitat, this would decrease removal of riparian plants and reductions in stream habitat as compared to current levels and increase ecological health of these communities and associated Fisheries habitat conditions.	With no grazing in the CBT allotments, this would remove the grazing impacts as compared to the last 5 years of actual use and as compared to Alternative 2, 3 & 5. This is expected to remove the negative impacts to Fisheries Resources in the CBT allotments.	This would be an overall decrease in AUMs and grazing impacts as compared to the last 5 years of actual use and as compared to Alternative 3, thus further decreasing the negative impacts to Fisheries Resources. With the reduced levels of grazing which favor stream/riparian habitat, this would substantially decrease the removal of riparian plants and reductions to stream habitat as compared to current levels and conditions and increase ecological health of these communities and associated Fisheries habitat conditions.
Wildlife Resources including Threatened, Endangered, and Sensitive Animals and Migratory Birds	There would be an additive 6,194 more AUMs removed, which would further decrease the amount of forage and cover available for wildlife. <u>Greater Sage-grouse</u>	There would be no additive effects, the effects of the past, present and foreseeable future actions would continue at current levels.  There would be an	Impacts that have occurred in the past and present would decrease with the changes in management on the allotments. All of the allotments not meeting Standards 2,4 and 8 due to current BLM	Impacts that have occurred due to past and present actions would decrease. There would be more grass for wildlife cover and forage. <u>Greater Sage-grouse</u>	Impacts that have occurred due to past and present actions would decrease. There would be more grass for wildlife cover and forage, especially in riparian and nesting greater sage-grouse

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	Impacts to greater sage-grouse would be additive with the increased removal of forage from the allotments decreasing the amount of cover for nesting birds. This would occur on 35% of the nesting habitat in the GSGCIAA.	<p>additional 6 miles of fence for wildlife to have to navigate.</p> <p><u>Greater Sage-grouse</u> There would be no additive effects from this alternative, the effects of the past, present and foreseeable future actions would continue at current levels.</p> <p>There would be an additional 6 miles of fence that greater sage-grouse could collide with</p>	<p>livestock management would meet or make significant progress toward meeting those Standards, providing adequate healthy, functioning habitat for wildlife populations although with less grass for forage and cover than under Alternatives 2, 4 and 5.</p> <p><u>Greater Sage-grouse</u> Under this alternative there would be less cover on 35% of the mapped nesting habitat for greater sage-grouse in the GSGCIAA, but the decreased cover would not be as great as under Alternative 1.</p>	There would be more grass for cover and less chance of displacement by cattle on 23% of the PPH, 45% of the PGH and 22% of the key habitat within the GSGCIAA.	<p>habitat.</p> <p><u>Greater Sage-grouse</u> There would be more grass for cover and less chance of displacement by cattle on 38% of the mapped nesting habitat in the GSGCIAA due to no permitted grazing, and an additional 2% due to deferred grazing.</p>
Range Resources	None	None	<p>Range resources would have beneficial impacts in this alternative with the addition of the proposed rangeland projects.</p> <p>Fences – there would be additive long-term beneficial impacts to range resources to assist in range</p>	With the No Grazing alternative past, present and foreseeable future negative impacts would be great to rangeland resources. Rangeland projects would continue to be present on the landscape but would fall into disrepair from the elements of time and weather. Some	None

			Alternative 3	Alternative 4	
			<p>management and the protection of riparian areas.</p> <p>Fence Removal – there would be 0.39 acres of additive negligible, but beneficial short-term impacts within the CIAA.</p> <p>Exclosures – 77 acres would be excluded from livestock grazing; with these fence exclosures, impacts would be beneficial long/short-term for range resources to assist in range management and the protection of ponds and spring sources.</p> <p>Pipeline/trough systems – with the additive trough locations, beneficial impacts would occur long-term and assist in range management.</p> <p>Vegetation Manipulation Projects, beneficial impacts would occur long-term</p>	<p>other negative impacts would occur due to fire, vandalism, wildlife, or recreation.</p>	

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			in the case of seeding; short-term, impacts would be negligible. Negligible but beneficial impacts, short/long-term, would occur with the implementation of the forestry projects		
Economic and Social Values	The implementation of this alternative would have measurable effects to economic and social values due to the lack of authorized crossing permits and no project development.	The implementation of this alternative would have measurable effects to the economic and social values due to the lack of authorized crossing permits and no project development.	Under this alternative, there would be little change to economic or social values at the county scale.	The implementation of this alternative would have determinate financial impacts on the permittees who graze cattle on the federal lands. These permittees would either have to replace federal AUMs with private AUMs or hay or reduce their herds.	The implementation of this alternative would have measurable effects to the economic and social values of the area due to lack of crossing permits. Implementation of the vegetative treatments would have a beneficial effect on the economics of the area.
Tribal Treaty Rights	An overall increase in AUMs and grazing impacts as compared to the last 5 years of actual use would be expected to reduce the abundance and diversity of floral and faunal treaty rights resources.	A continuation of past grazing activities would be expected to maintain existing effects to treaty rights resources at levels similar to the past 5 years.	An overall reduction of grazing AUMs and impacts would increase the vigor and abundance of floral and faunal treaty rights resources across the CIAA. Because many of the range projects and management changes would focus upon riparian habitats and improved ecological health,	With no grazing on the CIAA, significant increases in abundance and vigor of both faunal and floral treaty rights resources would be expected.	Treaty Rights effects under this reduced grazing alternative would be similar to Alternatives 1 and 2.

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
			treaty rights opportunities there would be expected to benefit.		
Wilderness Study Area	No cumulative effects to naturalness, size, solitude, primitive recreation, or supplemental values.	No cumulative effects to naturalness, size, solitude, primitive recreation, or supplemental values.	No cumulative effects to naturalness, size, solitude, primitive recreation, or supplemental values.	No cumulative effects to naturalness, size, solitude, primitive recreation, or supplemental values.	

## CONSULTATION AND COORDINATION

### Persons and Agencies Consulted:

Multiple efforts were made to consult and coordinate with individuals and organizations during the development of the alternatives analyzed in this document. In May 2009, Idaho State Department of Agriculture, IDL, Committee of High Desert, Idaho Conservation League, Shoshone-Bannock Tribes, Western Watersheds Projects, IDFG and permit holders in the CBT area were notified that the SFO was going to begin assessing the area.

Starting in May 2010, the BLM led multiple scoping trips in the CBT area to discuss issues and objectives and to start forming alternatives to address them. The tours were attended by various permittees and the Natural Resource Conservation Service. In addition, information was received from the IDFG, IDL and the SCNF during the summer of 2010 to help develop alternatives.

On October 20, 2010, the project was uploaded to the BLM E-Planning site. Also in October, the Salmon FO began consulting with the National Oceanic and Atmospheric Administration Fisheries Service and the USFWS.

On December 2, 2010, a public open house was announced which took place on the 16<sup>th</sup> of the same month in Leadore, Idaho. Fifteen individuals signed in at the open house, some just gathering information and others commenting on the proposal as it was developed at the time. Written feedback or requests for more information were received from the IDL, Idaho Conservation League and Western Watersheds Project.

Further information was then placed in the SFO Website on January 12, 2011, again asking for comments by February 11, 2011. Individuals who had already contacted the office were then notified and asked if they needed further information to complete their comments. On January 13, 2011, a letter was sent to individuals and organizations interested in proposed actions within a WSA, this letter also requested feedback by the 11<sup>th</sup> of February. Additional information was then provided to the SFO from Idaho Conservation League and Idaho Department of Parks and Recreation.

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<b>Section of EA</b>	<b>Specialist</b>
Rangeland Resources/Vegetation types, Communities; Permits and Sales	Mark Bonner/Kyra Povirk/Wendy Hoffman
Farm Lands (prime or unique)/Access/Economic Feasibility of Ag Entry/Existing and Potential Land Uses/Economic and Social Values/Environ. Justice	Gloria Jakovac
Geology/Minerals/Soils	Dennis Krasowski
Cultural Resources/Native American Religious Concerns/Indian Trust Resources/Tribal Treaty Rights/Paleo. Resources	Steven Wright
Recreation/Wilderness/Wild and Scenic Rivers/Visual Resources	Liz Townley
Botany/TES Plants/ACECs	Kyra Povirk/Elias Williams
Forest Resources/Vegetation types, Communities; permits and sales/Air Quality	Bill Baer/Chris Erca
Wastes, Hazardous or Solid/Superfund Sites	Dick Buster/Dennis Krasowski
Invasive, Non-native Species	Chris Tambe/Elias Williams
Fisheries/TES Fisheries/Wetlands-Riparian Zones/Floodplains/Water Quality	Jude Trapani/Tricia Miller
Wildlife/TES Animals/Migratory Birds	Vincent Guyer

\_\_\_\_\_  
(Team Lead)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(NEPA Reviewer)

\_\_\_\_\_  
Date

## APPENDIX A:

# **Executive Summary and Authorized Officer's Determination of Land Health Standards on Public Lands Managed by the BLM within the Canyon-Big Timber Watershed Bureau of Land Management Salmon Field Office Salmon, Idaho**

This document summarizes the findings of the Canyon-Big Timber Watershed (CBT) Assessment completed in 2010. Seventeen BLM allotments within the watershed were assessed and evaluated for conformance with rangeland health standards in the *Canyon-Big Timber Watershed Assessment Report*. These lands encompass approximately 129,000 acres of public lands managed by the BLM which represents approximately 40% of the total land base within the CBT area.

The issue of scale must be kept in mind in evaluating each standard. It is recognized that isolated sites within a landscape may not be meeting the standards. However, considering broader scope and scale, the area may be meeting standards overall. No single indicator provides sufficient information to determine rangeland health; they are used in combination to provide information necessary to determine rangeland health. Alternatively, just because a standard is being met doesn't mean that the conditions on the ground represent desired resource condition or objectives. For example, an upland site with reduced composition of bunchgrasses may meet the upland health standard if it sustains a native plant community, even if it is dominated by low producing, low palatability grasses, shrubs and or forbs. While such a site may have stable soils and allow for proper hydrologic function, it won't provide the livestock forage or wildlife cover that it would if it was dominated by taller, more robust plants.

Table 1 summarizes the determination of rangeland health standards by BLM management unit. As required by 43CFR 4180 this Determination of Standards document also discloses whether existing grazing management practices or levels of grazing use on public lands managed by the BLM are significant contributing factors in failing to achieve the Standards for Rangeland Health and conform with the guidelines for livestock grazing management established for public lands managed by the BLM in Idaho.

The *Canyon-Big Timber Watershed Assessment Report* describes the existing condition of public lands managed by the BLM within the watershed. The report also recommends management objectives for improving resource conditions where needed. Please refer to the *Canyon-Big Timber Watershed Assessment Report* for a complete discussion of resource conditions, concerns and management objectives. The *Canyon-Big Timber Watershed Assessment Report* may be reviewed at the Salmon Field Office, or on the internet at <https://www.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=7903>.

Since the completion of the watershed assessment (USDI-BLM, 2010), the ID-team has reviewed each allotment that was not meeting all of the applicable Rangeland Health Standards and determined what the significant causal factors were for not meeting the Standard. During that review the ID-

calls during the determination process. The data for Leadore Hill Allotment was reviewed and it was concluded that the allotment was meeting Standards 2 and 3 even with the short segment of Little Timber Creek that was dewatered for private irrigation since the majority of stream and riparian habitat in the allotment is in PFC. The Leadville allotment was seeded in the fall of 2010 and has been rested since, leading to the allotment making significant progress towards meeting Standard 4. The data for Nez Perce Allotment was reviewed and it was concluded that even though Deer Creek is dewatered for private irrigation the majority of the stream and riparian habitat on the allotment is PFC, thus the allotment is meeting Standards 2 and 3. In 2010, an enclosure fence was completed in the Spring Canyon Allotment resulting in the allotment making significant progress towards meeting Standards 2 and 3. Like Leadore Hill, the majority of the stream and riparian habitat in the Timber Creek Allotment is in PFC and the short segment of Little Timber Creek that is dewatered for private irrigation did not warrant a conclusion of not meeting for Standards 2, 3 and 8. The following table (Table 1) reflects these changes from the assessment.

**Table 1. Land Health Summary by BLM Management Unit**

Allotment Name	Are Rangeland Health Standards Being Met?								Significant Factors in Failing to Achieve Standards
	1 Watersheds	2 Riparian	3 Stream Channel	4 Native Plants Communities	5 Seedings	6 Exotic Plant Communities	7 Water Quality	8 T&E Plants & Animals	
Bull Creek	Yes	Yes	N/A	Yes	N/A	N/A	N/A	Yes	Meeting all applicable standards.
Center Ridge	Yes	Yes	Yes	Yes	N/A	N/A	No	Yes	Grazing management on state and private lands and roads.
Chamberlain Creek	Yes	No	No	Yes	N/A	N/A	No	No <sup>2</sup>	Existing BLM grazing management for Standards 2, 3 and 8. Grazing management on state and private lands and roads for Standard 7.
Dump	Yes	N/A	N/A	Yes	N/A	N/A	N/A	Yes	Meeting all applicable standards.
Free Strip	Yes	No; progress	No; progress	Yes	N/A	N/A	Yes	Yes	BLM grazing management was changed in 2007 and allotment is now making significant progress toward meeting Standards.
Hawley Creek	Yes	No	No	No; progress	N/A	N/A	No	No <sup>2</sup>	BLM grazing management was changed in 2007 and allotment is now making significant progress toward meeting Standard 4. Private irrigation diversion dewatering stream for Standards 2, 3 and 8. Grazing management on state and private lands, private irrigation practices and roads for Standard 7.
Jakes Canyon	Yes	Yes	Yes	No	N/A	N/A	No	Yes	Historic BLM grazing management for Standard 4. Grazing management on private lands for Standard 7.
Leadore	Yes	No; progress	No; progress	No; progress	N/A	N/A	Yes	No; progress <sup>1,2,3,4</sup>	BLM grazing management was changed in 2008 and allotment is now making significant progress toward

Allotment Name	Are Rangeland Health Standards Being Met?								Significant Factors in Failing to Achieve Standards
	1 Watersheds	2 Riparian	3 Stream Channel	4 Native Plants Communities	5 Seedings	6 Exotic Plant Communities	7 Water Quality	8 T&E Plants & Animals	
									meeting all Standards.
Leadore Hill	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	While reviewing the Standards for determination of causal factors, the ID team concluded that the allotment is meeting all applicable standards. Even with a short segment of Little Timber Creek dewatered from private irrigation practices, the majority of stream/riparian habitat in the allotment is in PFC.
Leadville	Yes	No	No	No; progress	Yes	N/A	No	No <sup>2</sup>	Allotment was seeded in 2010 and is now making significant progress toward meeting Standard 4. Private irrigation diversion dewatering stream for Standards 2, 3 and 8. Grazing management on private lands and private irrigation practices for Standard 7.
Nez Perce	Yes	Yes	Yes	Yes	N/A	N/A	No	No <sup>2</sup>	While reviewing the Standards for determination of causal factors, the ID team concluded that the allotment is meeting Standards 2, 3 and 8 in regards to Steelhead. Grazing management on private lands and private irrigation practices for Standard 7. Private irrigation diversion dewatering Deer Creek for Standard 8 in regards to bull trout.
Powderhorn	Yes	No	No	Yes	Yes	N/A	No	No <sup>2</sup>	Existing BLM grazing management for Standards 2, 3 and 8. Grazing management on private and state lands and roads for Standard 7.
Purcell Creek	Yes	N/A	N/A	Yes	N/A	N/A	N/A	Yes	Meeting all applicable standards.
Spring Canyon	Yes	No; progress	No; progress	Yes	N/A	N/A	No	Yes	Exclosure fence was constructed in 2010 and the Allotment is now making significant progress toward meeting Standards 2 and 3. Grazing management on private lands for Standard 7.

Allotment Name	Are Rangeland Health Standards Being Met?								Significant Factors in Failing to Achieve Standards
	1 Watersheds	2 Riparian	3 Stream Channel	4 Native Plants Communities	5 Seedings	6 Exotic Plant Communities	7 Water Quality	8 T&E Plants & Animals	
Tex Creek	Yes	No	No; progress	Yes	Yes	N/A	No	No; progress <sup>2</sup>	Changes in private irrigation practices have resulted in more water in the stream which has resulted in significant progress toward meeting Standards 3 and 8. Grazing management on private and state lands, private irrigation practices and roads for Standard 7. BLM grazing management for Standard 2.
Timber Creek	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	While reviewing the Standards for determination of causal factors, the ID team concluded that the allotment is meeting all applicable standards. Even with a short segment of Little Timber Creek dewatered from private irrigation practices, the majority of stream/riparian habitat is in PFC.
Two Dot (Leadore E. Past.)	Yes	N/A	N/A	Yes	N/A	N/A	N/A	Yes	Meeting all applicable standards.
N/A – Not applicable <sup>1</sup> Allotment is not meeting Standard 8 for greater sage-grouse. <sup>2</sup> Allotment is not meeting Standard 8 for bull trout. <sup>3</sup> Allotment is not meeting Standard 8 for steelhead. <sup>4</sup> Allotment is not meeting Standard 8 for Chinook salmon. Failing to achieve, or make significant progress towards achieving, Standard and current BLM grazing management is a significant factor.									

### Authorized Officer's Determination:

Based on my review of the *Canyon-Big Timber Watershed Assessment Report*, the interdisciplinary team's recommendations and other relevant data and information, the following allotments **meet, or are making significant progress toward meeting**, all eight Standards for Rangeland Health.

- |               |                  |                                   |
|---------------|------------------|-----------------------------------|
| 1. Bull Creek | 4. Leadore       | 7. Two Dot (Leadore East Pasture) |
| 2. Dump       | 5. Leadore Hill  | 8. Timber Creek                   |
| 3. Free Strip | 6. Purcell Creek |                                   |

In addition, while the following allotments **do not meet** one or more of the Standards for Rangeland Health, I have determined that current BLM authorized activities, including livestock management, are not significant causal factors in failing to meet those standards.

- |                 |                 |                  |
|-----------------|-----------------|------------------|
| 1. Center Ridge | 3. Jakes Canyon | 5. Nez Perce     |
| 2. Hawley Creek | 4. Leadville    | 6. Spring Canyon |

The following allotments **do not meet** one or more of the Standards for Rangeland Health and/or don't conform to the guidelines established for livestock grazing management. I have determined that current livestock management is a significant contributing factor in at least one of these standards not being met.

1. Chamberlain Creek                      2. Powderhorn                      3. Tex Creek

Guidelines that are not being met under current BLM grazing management for these allotments are:

Chamberlain Creek

5. Maintain or promote grazing management practices that provide sufficient residual vegetation to improve, restore, or maintain healthy riparian-wetland functions and structure for energy dissipation, sediment capture, ground water recharge, streambank stability, and wildlife habitat appropriate to site potential.

7. Apply grazing management practices to maintain, promote, or progress toward appropriate stream channel and streambank morphology and functions. Adverse impacts due to livestock grazing will be addressed.

11. Use grazing management practices developed in recovery plans, conservation agreements, and Endangered Species Act, Section 7 consultations to maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.

Powderhorn

5. Maintain or promote grazing management practices that provide sufficient residual vegetation to improve, restore, or maintain healthy riparian-wetland functions and structure for energy dissipation, sediment capture, ground water recharge, streambank stability, and wildlife habitat appropriate to site potential.

7. Apply grazing management practices to maintain, promote, or progress toward appropriate stream channel and streambank morphology and functions. Adverse impacts due to livestock grazing will be addressed.

11. Use grazing management practices developed in recovery plans, conservation agreements, and Endangered Species Act, Section 7 consultations to maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.

Tex Creek

6. The development of springs, seeps, or other projects affecting water and associated resources shall be designed to protect the ecological functions, wildlife habitat, and significant cultural and historical/ archaeological/Paleontological values associated with the water source.

Pursuant to 43 CFR 4180.2(c), the authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on public lands managed by the BLM are significant factors in failing to achieve the standards and conform with the guidelines that are made effective under this section. Appropriate action means implementing actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with the guidelines. Practices and activities subject to standards and guidelines include the development of grazing-related portions of activity plans, establishment of terms and conditions of permits, leases and other grazing authorizations, and range improvement activities such as vegetation manipulation, fence construction and development of water.

An environmental assessment which will propose and analyze management alternatives necessary to address or correct identified resource concerns will be prepared.

Authorized Officer's Signature:



6/28/12

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Field Manager

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Date

The *Canyon-Big Timber Watershed Assessment Report* recommended the following management objectives for improving resource conditions. During the 2010 field season the Salmon Field Office ID team and partners scoped the objectives and developed the following recommendations:

**Non-native vegetation (none of the objectives below are needed for allotment(s) to move toward meeting Standard(s)):**

- 1) Protect pink agoseris in the Chamberlain Creek Allotment from competition from non-native plants.
  - ◆ The non-native plants will be treated under the Challis-Salmon Integrated Weed Control Program Programmatic Environmental Assessment EA#ID-330-2008-EA-30.
- 2) Eradicate or reduce bulbous bluegrass where it is present along Tenmile Creek in the Powderhorn Allotment.
  - ◆ The bulbous bluegrass will be treated under the Challis-Salmon Integrated Weed Control Program Programmatic Environmental Assessment EA#ID-330-2008-EA-30.
- 3) Eradicate or reduce leafy spurge where it is present in the Canyon Creek drainage. This includes the BLM Jakes Canyon and Leadville allotments and the SCNF Grizzly Hill Allotment.
  - ◆ The leafy spurge on public lands managed by the BLM will be treated under the Challis-Salmon Integrated Weed Control Program Programmatic Environmental Assessment EA#ID-330-2008-EA-30.
- 4) Eradicate or reduce spotted knapweed where it is present in the Gilmore area. This includes the BLM Spring Canyon Allotment and the SCNF Gilmore Allotment.
  - ◆ The spotted knapweed on public lands managed by the BLM will be treated under the Challis-Salmon Integrated Weed Control Program Programmatic Environmental Assessment EA#ID-330-2008-EA-30.

**Forest and Woodland (1 and 2 are needed for allotment(s) to move toward meeting Standard(s)):**

- 1) Reduce conifer encroachment into aspen stands along Clear Creek in the Powderhorn Allotment.
  - ◆ The ID team decided that the conifer encroachment into the aspen stands, while a factor, was not a significant factor in not meeting the Standards. The ID team decided to focus on changes to BLM grazing management which was the significant factor leading to not meeting the Standards.
- 2) Improve regeneration survival in aspen stands in the Chamberlain Creek Allotment.
  - ◆ The ID team suggested grazing management changes which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 3) Reduce the wildfire hazard around private land in the BLM Spring Canyon Allotment and the SCNF Gilmore Allotment.

- ◆ The ID team suggested vegetation manipulation projects for the public lands managed by the BLM which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 4) Reduce conifer encroachment into aspen stands along Big Timber Creek in the Timber Creek Allotment.
  - ◆ The ID team suggested vegetation manipulation projects which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 5) Improve regeneration survival in aspen stands in the SCNF Grizzly Hill Allotment.
  - ◆ The ID team did not scope this project since it was entirely on USFS managed lands.
- 6) Reduce the wildfire hazard and improve forest health in the SCNF Grizzly Hill and Mollie Gulch allotments.
  - ◆ The ID team did not scope this project since it was entirely on USFS managed lands.
- 7) Reduce conifer encroachment into aspen stands in the SCNF Swan Basin Allotment.
  - ◆ The ID team did not scope this project since it was entirely on USFS managed lands.

**Mesic Shrubland and Grassland (Riparian) (1 through 7 are needed for allotment(s) to move toward meeting Standard(s)):**

- 1) Improve riparian habitat along Clear Creek from “Functional-at-Risk (FAR) - downward trend” to at least an upward trend in the Powderhorn Allotment.
  - ◆ The ID team suggested grazing management changes which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 2) Improve riparian habitat along Pass Creek from “FAR-static” to at least an upward trend in the Chamberlain Creek Allotment.
  - ◆ The ID team suggested grazing management changes which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 3) Improve riparian habitat along McGinty Creek from “non-functional (NF)” and “FAR-static” to at least an upward trend in the Chamberlain Creek Allotment.
  - ◆ The ID team suggested grazing management changes which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 4) Improve riparian habitat around the Tex Creek ponds in the Tex Creek Allotment.
  - ◆ The ID team suggested range improvement projects which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 5) Improve riparian habitat along Texas Creek from “FAR-static” trend to at least an upward trend in the Spring Canyon Allotment.
  - ◆ This was partially completed in 2010. The ID team suggested changes to the existing enclosure which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 6) Improve riparian habitat along Whiskey Spring and Chippie creeks from “NF”, “FAR-down”, and “FAR-static” to at least an upward trend in the Free Strip Allotment.

- ◆ The ID team felt that the changes in grazing management that were made in 2007 will result in the riparian habitat trending upwards in functionality.
- 7) Improve riparian habitat at Poison Spring in the Center Ridge Allotment.
  - ◆ The ID team suggested grazing management changes which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.

**Semi-desert Shrubland and Grassland (1 and 2 are needed for allotment(s) to move toward meeting Standard(s)):**

- 1) Increase the cover of bluebunch wheatgrass and the diversity and cover of forbs within the Leadville Allotment, while maintaining Wyoming big sagebrush.
  - ◆ The allotment will be aerated and seeded as described in the Leadville Restoration Project Environmental Assessment EA#ID-340-2009-EA-3571.
- 2) Increase the cover of bluebunch wheatgrass and the diversity and cover of forbs within the Jakes Canyon Allotment, while maintaining Wyoming big sagebrush.
  - ◆ The ID team suggested grazing management changes and/or a range improvement project which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.
- 3) Reduce conifer encroachment into mountain big sagebrush in the BLM Spring Canyon Allotment and the SCNF Gilmore Allotment.
  - ◆ The ID team suggested vegetation manipulation projects for the public lands managed by the BLM which will be analyzed in an Environmental Assessment in compliance with the National Environmental Policy Act.

**Infrastructure (none are needed for allotment(s) to move toward meeting Standard(s)):**

- 1) Prevent water from eroding road in the Chamberlain Creek Allotment.
  - ◆ Since the water causing the erosion is under a private water right the ID team could not develop a solution at this time, but will continue to work with the water right holder as opportunity develops.
- 2) Adjust fences for wildlife needs in the Bull Creek and Hawley Creek allotments.
  - ◆ The ID team agreed that the fences would be modified as needed.
- 3) Adjust private/BLM allotment fences in the Leadore Allotment.
  - ◆ The ID team agreed to remove one fence on the allotment.

**Archeology (none are needed for allotment(s) to move toward meeting Standard(s)):**

- 1) Protect archeological site from disturbance in the Hawley Creek Allotment.
  - ◆ The ID team decided that we would explore money and partners to determine the importance of the site.
- 2) Protect archeological site from disturbance in the Timber Creek Allotment.
  - ◆ The ID team decided that we would explore money and partners to determine the importance of the site.

***Common throughout the area (none are needed for allotment(s) to move toward meeting Standard(s)):***

- 1) Adjust fences so bottom wire is at least 18 inches above the ground in pronghorn antelope habitat.
  - ◆ Fences will be modified as funding becomes available.
- 2) Adjust fences so top wire is less than 38 inches above the ground.
  - ◆ Fences will be modified as funding becomes available
- 3) Develop and implement a “wildland fire for resource benefit” fire management strategy. As part of this strategy, investigate and document potential control lines for wildland fire management following existing roads, which roughly segregates forest and woodlands of the Beaverhead Mountains of the Bitterroot Range and the Lemhi Mountains, from rangelands of the upper Lemhi drainage.
  - ◆ The ID team suggested that the current Salmon Field Office Fire Management Plan be amended to include new information and provide direction for implementation of a “wildland fire for resource benefit” fire management strategy.
- 4) Issue “trailing” permit(s) where appropriate for cattle trailing in the CBT area.
  - ◆ The ID team suggested analyzing crossing permits with an Environmental Assessment in compliance with the National Environmental Policy Act.

**In addition the ID team recommends that the following projects be abandoned and the remaining materials on public lands managed by the BLM be removed. These projects are either non-functional and/or are no longer needed for grazing management.**

- 1) Clear Creek Drift Fence on the Powderhorn Allotment.
- 2) Trouble Pipeline on the Leadville Allotment.
- 3) The fence on the west side of Bell Field in the Free Strip Allotment.
- 4) M-P Division Fence in the Chamberlain Creek Allotment.
- 5) 18 mile Study Exclosure in the Powderhorn Allotment.
- 6) Old Van Sickle Fence, the maintained one will not be abandoned, in the Powderhorn Allotment.
- 7) Chamberlain Pipeline in the Chamberlain Creek Allotment.
- 8) Unnamed Pipeline along McGinty Creek in the Chamberlain Creek Allotment.

## **APPENDIX B:**

# **Design Criteria**

### **Project descriptions common to all fence and water developments:**

Equipment use – Equipment would be allowed to leave existing routes to complete the project work, except within the Eighteenmile Wilderness Study Area (WSA). No new routes would be designated for access after the project is constructed, although permittees could apply for a conditional permit to leave designated routes in order to perform routine project maintenance using a motorized vehicle. Brush mowing, using a brush hog or similar equipment, would be allowed along proposed fence lines to help with fence construction; the disturbance width would be no more than eight feet. Blading with equipment would not occur.

Barbed wire fence – All newly constructed barbed wire fences would be 3-strand wire fences with metal T-posts approximately every 16 feet and wood posts for braces, corners, and gates. The wire placement and types of wire used would follow the stipulations for barbed wire fencing from the Lemhi RMP to allow wildlife passage and migration through the area. The bottom wire would be smooth wire placed at 18” above ground, the second wire would be barbed wire placed 26” above ground, and the top wire would also be barbed wire placed 38” above ground. Wood or wire stays would be used between T-posts and on the barbed wire gates to provide stability and visibility. Most posts would be driven into the ground by hand or by using tractor-driven post-pounder or similar equipment. New fence would be flagged to ensure the fence wire is visible to wildlife for a period of up to two years. Should it be determined that an additional wire was needed for the fence to prevent livestock from crossing, a barbed wire would be added, but the top and bottom wire would remain at the heights described above.

Wood fence – All newly constructed wood fence would use rails approximately 20 feet long with jack or wood post supports every 10 feet. Three poles would be placed on the front of the fence and, if jacks are used one on the back for support. No wire would be added to newly constructed jack and pole fence, except to tie into adjacent fences.

Water Development – All new pipelines would involve installing flexible polyethylene (PE) pipeline, water troughs, and water collectors/headboxes. All excavation would be conducted using a crawler-tractor equipped with a ripper shank, and would be confined to only the pipeline route, water source and trough locations. All pipelines would be installed between 7/15 and 11/15. At each water trough location, troughs holding up to 2000 gallons total would be installed. All troughs would be equipped with a float valve and small animal escape ramps.

Reclamation – areas of project-related soil disturbance would be broadcast seeded with a native seed mix.

### **Criteria common to all vegetation manipulation projects:**

Timing - Projects would not be implemented between May 15<sup>th</sup> and July 15<sup>th</sup> with the exception of pile burning.

Thinning - Within encroachment units, “legacy” trees would be identified by the following: individual Douglas-fir exhibiting characteristics of “old age” such as large diameters, heavy exposed roots, large limbs, and rounded and flattened tops, and that have a general “wolfy” look. These trees are typically larger than 19 inches in dbh but may be as small as 10 inches in dbh. These trees would not be felled or girdled.

Trees 8 inches or greater designated for cutting would be cut so that the resulting stumps are no higher than 12 inches measured from the ground on the uphill side.

Trees less than 8 inches designated for cutting would be severed completely below the lowest live limb and stump heights would be no higher than 6 inches from the ground on the uphill side.

Typically, all trees or merchantable logs would be completely limbed and topped within units prior to being skidded. An exception to this criterion would be if limbs and tops (biomass) become economical to utilize and transport off-site.

Tractor skidding would be restricted to slopes 45% or less on volcanic, granitic, and sedimentary land types. Skidding on quartzite soils would be allowed on slopes up to 60%. One exception to the 45% restriction would be on small areas of convex slopes. Limited skidding activity on slopes up to 60% would be allowed in these areas.

All skidding would be accomplished using unbladed skid trails unless otherwise pre-approved by the BLM.

All skid trails would be cross-drained by construction of water bars upon completion of skidding operations.

All skid trails and other high-use areas that are not anticipated to vegetate naturally within 5 years would be rehabilitated as needed with a native plant seed mix recommended by the staff botanist.

Environmental and Resource Protection - Specified road maintenance, road renovation, thinning or prescribed burning operations would be suspended if sensitive, threatened, or endangered plants or animals protected under the Endangered Species Act of 1973 are subsequently discovered within activity areas. Discontinued operations may be resumed pending consultation with the appropriate regulatory agency and conformity with stipulated mitigation measures.

Specified road maintenance, road renovation, thinning or prescribed burning operations would be suspended if any objects or sites of cultural value such as historic or prehistoric ruins, graves or grave markers, fossils, or artifacts are subsequently discovered within activity areas.

Discontinued operations may be resumed pending consultation with the appropriate regulatory agency and conformity with stipulated mitigation measures.

Activities would be implemented with care. No oil, gasoline, bituminous mixtures or other harmful or foreign materials would be allowed to enter any water courses or contaminate soil. Areas that have become saturated with oil, gasoline, or bituminous products would be excavated to a depth of 12 inches beyond the contaminated material and backfilled with approved material. The process for excavation and disposal of contaminated material would be approved by the BLM staff hazardous materials coordinator.

Seasonal restrictions on project activities would be imposed as necessary to protect soils, roads, watersheds, or wildlife values during critical periods.

Three non-hazardous snags per acre would be left in units for non-game wildlife use. In the absence of sufficient numbers of snags, some live large culls would be substituted.

All vehicles or machinery anticipated to be operated off-road would be pressure washed before working at the project site to minimize noxious weed spread.

All permanent range improvements such as fences, cattle guards, pipelines, water troughs, or other improvements would be protected against damage during project implementation.

All known survey monuments, witness corners, reference monuments, and bearing trees would be protected against damage during project implementation.

Road Use and Maintenance - Existing roads would be used for project implementation with minimum maintenance or renovation approved to permit safe operations. There is no road construction or reconstruction being proposed.

Vehicle travel (including OHV) to and from work sites would observe existing transportation plan rules and occur on established routes when practicable to avoid resource damage.

Signs and other temporary traffic controls would be installed and maintained during project implementation adjacent to or on BLM-controlled roads open to public travel, warning users of hazardous or potentially hazardous conditions.

BLM-controlled roads open to public travel that pass through implementation areas would be kept clear of trees, rock, dirt and other debris so far as is practicable. Roads would not be blocked by operations for more than 30 minutes.

Slash Disposal – Un-merchantable material (biomass) may be utilized and transported off-site if economic conditions change favorably and markets develop. This option would be available for all vegetation manipulation projects except the *Swan Basin Aspen Restoration* project, and in consideration of slope limitations for ground-based machinery and existing road conditions.

All activity-generated slash scheduled for treatment through burning or transportation off-site would occur within twenty-four months of project completion.

Where applicable, un-merchantable material (slash) would be lopped and scattered to within 18 inches of the ground.

Where applicable, masticated material would be distributed such that the average slash residue depth is no greater than 3 inches.

Logging slash windrows would be placed across skid trails as necessary to reduce surface runoff velocities and minimize the sediment transporting capacity of overland flows.

Prescribed Burning - All pile burning of slash would be conducted by BLM personnel when adequate moisture is present and according to an approved burn plan. Burning would be conducted in conformance with the Montana-Idaho Airshed Group Smoke Management Program.

Off-highway vehicles (OHVs) such as motorcycles, 4X4 vehicles, and all-terrain vehicles, would be used during prescribed burning for transportation of personnel, tools, and fuel for ignition. OHVs would occasionally leave maintained roads during project implementation and monitoring. Any crossing of streams or use within Riparian Habitat Conservation Areas would be pre-approved by the staff fisheries biologist.

During prescribed burning, all applicable fire containment operations would conform to guidelines identified in the Programmatic Biological Assessment for Fire Suppression and Prescribed Natural Fire Activities (USDA, USDI 2002b).

All prescribed burned areas that are not anticipated to vegetate naturally within 5 years would be rehabilitated as needed with a native plant seed mix recommended by the staff botanist.

## APPENDIX C:

# **Bighorn Sheep/Domestic Sheep Risk Evaluation for the Center Ridge (06309), Spring Canyon (06310) and Timber Creek (06224) Allotments**

An interdisciplinary team evaluated the risk of contact between bighorn sheep (BHS) and domestic sheep on the three allotments. The evaluation estimates the risk of contact that may result in transmission of disease from domestic sheep to BHS based on currently available information.

Domestic sheep have been implicated in transmitting various *Pasteurella* bacteria that contribute to respiratory diseases that cause mortality in bighorn sheep. Although the exact mechanism of transfer of disease organisms has not been shown in rangeland, empirical evidence has shown that disease transmission occurs when the species come into close contact with one another. Disease outbreaks may result in initial all-age mortality, followed by a number of years of poor lamb recruitment and low level adult sporadic mortality. Once found in BHS populations these diseases appear to spread among interconnected populations over a period of years, resulting in morbidity and mortality of numerous BHS individuals in multiple populations over time. This results in chronically limited numbers and distribution of BHS in areas where the disease occurs, allowing for stochastic events (e.g., weather, etc.) unrelated to disease to extirpate populations or subpopulations that are fragmented or isolated on the landscape.

Disease transmission in free-ranging gregarious species such as BHS is generally considered to be frequency-dependent. In other words, transmission rates are determined by the relative proportions of the populations that are infected, infectious, or susceptible to infection and not by the total population size. Increased rates of transmission of disease within BHS may be density-dependent.

The three allotments are between the North Beaverhead, North Lemhi and South Lemhi Population Management Units (PMU). The Center Ridge Allotment is just over three miles from North Beaverhead PMU, the Spring Canyon Allotment is just over a mile from the South Lemhi PMU and the Timber Creek Allotment is a little over two miles from the North Beaverhead PMU.

The majority of the North Beaverhead PMU is typified by rugged canyons and dry, coniferous forest-grassland habitats with moderate road densities. Bighorn sheep in the area winter in and around the mouths of small canyons between Stroud Gulch and Hawley Creek. The animals migrate to sub-alpine and alpine habitats to the south and east during summer, moving as far south as upper Eighteenmile Creek. Some sheep cross into Montana during summer and autumn (IDFG, 2010).

Bighorn sheep habitat in the South Lemhi PMU is diverse, generally mountainous with bighorn sheep summering mostly at higher elevations on alpine and sub-alpine ranges. Winter ranges are mostly sagebrush-grass or curl-leaf mountain mahogany types where snow accumulation is light. Bighorn sheep have been observed throughout the southern Lemhi Range (IDFG, 2010).

Bighorn sheep in the North Beaverhead PMU were extirpated in the late 1800s to early 1900s. Restoration began with 2 translocation events in the mid-1980s. Little population growth occurred after the translocations. Idaho Department of Fish and Game (IDFG) staff observed a high of 61 bighorns in the PMU, incidental to an elk survey in 2004 (IDFG, 2010). There have been 2 bighorn sheep translocations in the South Lemhi PMU. All of the sheep (41 total) were released in 1983 and 1984. Counts of these sheep have generally been made incidental to aerial surveys for other big game species and, therefore, do not represent complete population surveys or composition trends. Fewer sheep were observed in recent years, but the population appears to have stabilized between 40 and 50 sheep. There is no current population estimate for the PMU, but incidental observations appear to show a decline since 1992 (IDFG, 2010).

Currently, the area occupied by the North Beaverhead population can likely support more bighorn sheep. However, the existence of a domestic sheep allotment in Montana adjacent to or overlapping summer range is a risk factor. For a number of wildlife species, including bighorn sheep, the Beaverhead Range forms a potential travel corridor between the Yellowstone ecosystem and ecosystems farther north and west. If populations increase, bighorns may move along the length of the Beaverhead's and form a more stable meta-population. Conversely, the movement corridor could also provide an avenue for spread of diseases or parasites among sub-populations (IDFG, 2010).

There is also a risk of contact between domestic and wild sheep in parts of the Lemhi Range. Although information about the number of bighorn sheep is poor, the small numbers observed in recent years is a concern (IDFG, 2010).

Because the risk of an all-age die-off in the North Beaverhead PMU is relatively high, IDFG will continue to offer ram harvest even though the population does not exceed 100 individuals. The relatively small amount of occupied habitat and number of sheep somewhat limit management options. Within current distribution, modeled habitat occupies approximately 137 km<sup>2</sup>, which could support approximately 250 bighorn sheep (assuming all habitat is suitable year-round and relatively high densities of 1.9/km<sup>2</sup>). However, there are limitations based on specific habitat needs such as lambing and wintering habitat. Thus, further refinement of habitat models and available habitat will likely reduce the estimate of potential population size. Regardless, recent data indicate the PMU can sustain more bighorn sheep and management direction will be to increase population levels (IDFG, 2010).

Management direction in the South Lemhi PMU will focus efforts on maintaining separation between bighorn sheep and domestic sheep and goats. Within current distribution, modeled habitat occupies approximately 297 km<sup>2</sup>, which could support approximately 550 bighorn sheep (assuming all habitats are suitable year-round and relatively high densities of 1.9/km<sup>2</sup>). However, there are limitations based on specific habitat needs such as lambing and wintering habitat. Thus, further refinement of habitat models and available habitat will likely reduce the estimate of potential population size. Management direction is to maintain populations and increase them in areas of the PMU where separation can be maintained. There have been no bighorn hunts in the South Lemhi PMU and none are planned until the population increases enough to allow hunting.

BHS have not been documented on any of the allotments. Bighorn sheep have been documented making forays outside their normal home ranges on a consistent basis. These forays are generally greatest by male BHS with most foraging males moving less than 16 miles in Rocky Mountain BHS in the Hells Canyon area west of the field office.

While the allotments do not overlap with IDFG mapped BHS distribution, BLM BHS modeled source habitat occurs on both the Spring Canyon (approximately 30 acres) and Timber Creek (approximately 68 acres) Allotments. Source habitat is defined as those characteristics of macro-vegetation that contribute to stationary or positive population growth, which is distinguished from habitats associated with species occurrence since such habitats may or may not contribute to long-term population persistence. Characteristics that describe source habitat include landscape ruggedness, open vegetation communities that permit bighorn sheep to observe predators at a distance, land areas near escape terrain as determined by landscape ruggedness including slope, and areas consisting of 4 acres or more. Ruggedness or rugged terrain is defined as topographically uneven, broken, or rocky and steep and incorporates variability in both aspect and gradient components of slope and contributes to a multivariate representation of topography. BHS source habitat composes less than one percent of either allotment. Figure 1 shows the allotments in relation to the habitat maps.

The Center Ridge Allotment supports one permit authorizing 1200 domestic sheep to graze the allotment from 5/22 to 6/12 and again on 7/13, for a total of 166 AUMs. The Spring Canyon Allotment supports one permit authorizing 1200 domestic sheep to graze the allotment from 6/14 to 10/11, for a total of 786 AUMs. The Timber Creek Allotment supports one permit authorizing 1200 domestic sheep to graze the allotment from 5/1-6/6, for a total of 239 AUMs. The same permittee currently holds all three permits however actual use of AUMs by sheep has not occurred on any of the permits since 1985.

Salmon Field Office Risk Rating:

On a relative ranking of Very High, High, Moderate, Low, and Very Low; the Salmon Field Office rates the risk as High on the Timber Creek and Spring Canyon Allotments and Moderate on the Center Ridge Allotment.

Rational for Recommendation:

There is no overlap between the allotments and IDFG mapped BHS distribution. There is a small percentage of BHS source habitat within the Spring Canyon and Timber Creek Allotments, and none within the Center Ridge Allotment. However, since the allotments are located between three PMUs and with the large BHS foray distances the opportunity for disease transfer exists. The IDFG management plan calls for increasing BHS populations in all three PMUs. The sheep AUMs have not been utilized by any permittee in over 25 years.

Recommendation:

We recommend that the domestic sheep AUMs be analyzed under the NEPA for removal from the allotments.

References:

Idaho Department of Fish and Game (IDFG). 2010. Bighorn sheep management plan 2010. Idaho Department of Fish and Game, Boise, USA.

**Figure 1: Map of CBT Allotments**

