

**BIOLOGICAL ASSESSMENT  
For  
BLM ACTIONS IN THE CANYON TO BIG TIMBER  
WATERSHED ASSESSMENT AREA**



**USDI Bureau of Land Management  
Salmon Field Office  
Salmon, Idaho**

**Prepared by:**  
Jude Trapani  
Fisheries Biologist

Vincent Guyer  
Natural Resource Specialist

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## **INTRODUCTION**

This biological assessment (BA) initiates consultation on federal actions administered by the Bureau of Land Management (BLM) that may affect listed species, designated critical habitat and Essential Fish Habitat in the Canyon Creek to Big Timber Creek Watershed (CBT) Area, a portion of the Lemhi River Section 7 watershed.

## **BACKGROUND**

In September of 2010, the BLM Salmon Field Office concluded an interagency land health assessment process and published a report for the National System of Public Lands administered by the BLM Salmon Field Office; and the National Forest System lands administered by the Salmon-Challis National Forest (SCNF) Leadore Ranger District within the CBT area. The report documents the condition and function of public land and National Forest resources within the CBT area, including an evaluation of the eight Idaho Standards for Rangeland Health (USDI 1997) for seventeen BLM-managed grazing allotments totaling approximately 129,000 acres.

The assessment report also 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, and cultural resources.<sup>1</sup>

Recommendations for BLM-managed public lands within the CBT area have subsequently been prioritized for National Environmental Policy Act (NEPA) planning and implementation by the Salmon Field Office. This BA reflects those priorities by detailing specific proposed actions to meet the identified land management objectives.

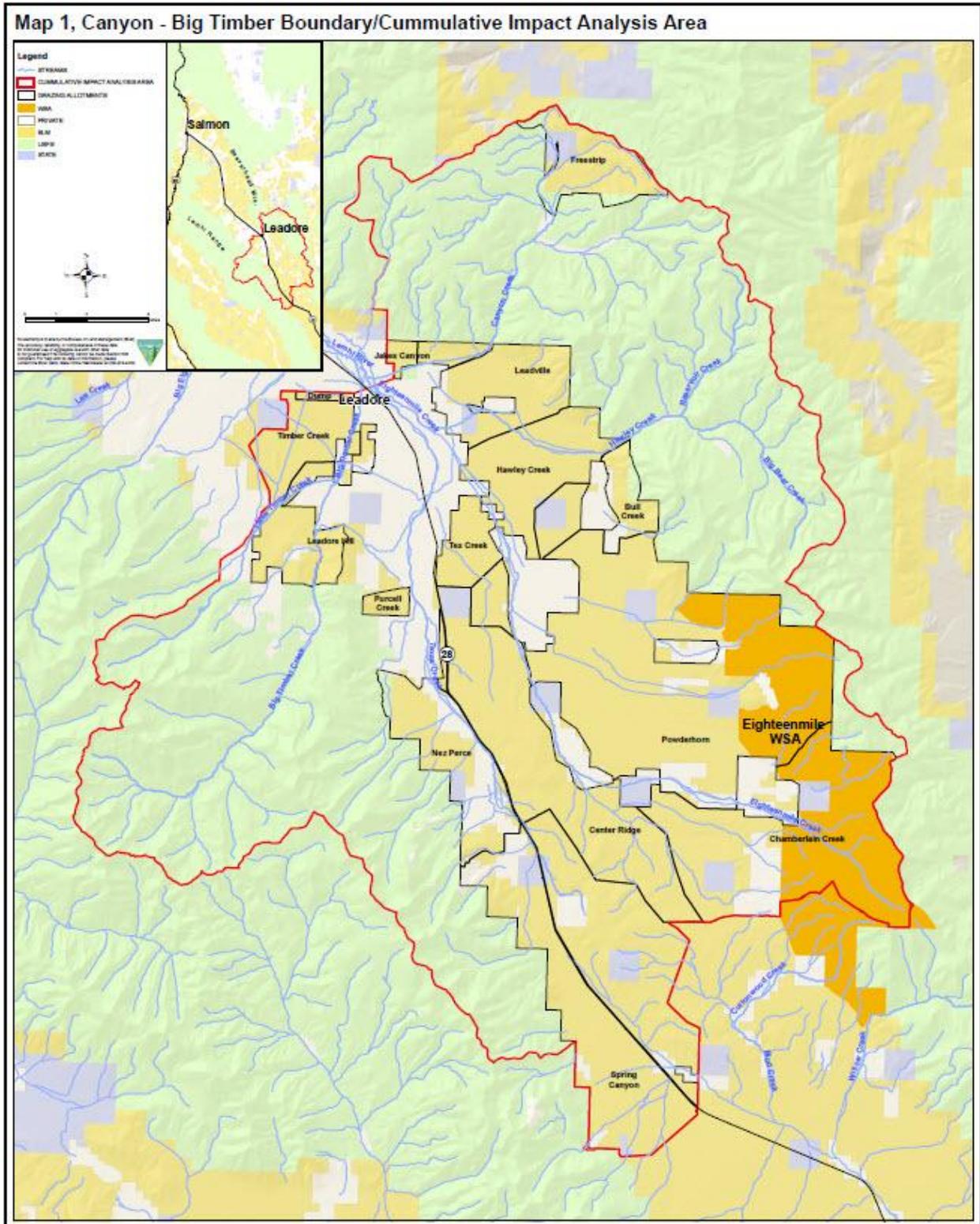
## **ACTION AREA**

An action area is defined by the Services' regulations (50 CFR Part 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." As indicated in Figure 1, the lands administered by BLM in the CBT area are located in the upper portion of the Lemhi River valley. The Lemhi River "watershed" was defined in the original consultation of 1999 to facilitate a watershed-scale assessment and also represent the actual 4<sup>th</sup> Field HUC (by definition) with specific information at the 6<sup>th</sup> Field HUC level. It begins at the confluence of the Lemhi River and the Salmon River and continues upstream to the headwaters of the Lemhi valley. The action area for this analysis is the lands within the 16 allotments managed by the BLM in the CBT area and the upper Lemhi River near Leadore that is influenced by the upstream tributary streams.

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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 <http://www.blm.gov/id/st/en/fo/salmon.html>.

Figure 1. BLM grazing allotments within the CBT area.



## **Land Ownership**

Most of the land in the CBT area (approx. 85%) is federally-managed. The BLM primarily manages the valley bottom and lower elevation foothills, while the SCNF manages the higher elevation uplands. The exception to this is in the Eighteenmile Wilderness Study area where the BLM manages to the Continental Divide. Lands administered by the State of Idaho are generally Sections 16 and 36 within each township. These lands are essentially used in a similar fashion to the public lands, being leased for grazing, timber harvest, and mining activities by the State Department of Lands. The private land is generally found along the Lemhi River and along the numerous watercourses where the flatter, more fertile agricultural land is located.

## **Vegetative Characteristics**

The CBT area includes eight classes of land cover as defined by BLM Idaho Instruction Memorandum No. ID-2009-053. Using the Northwest ReGap (USDI 2009) satellite-based vegetation layer, 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%). This section will not discuss Agriculture, Urban & Other Developed Lands, or Open Water cover types since they are not considered native plant communities.

While most of the assessment area consists of intact native vegetation, a number of invasive, non-native species are present. These include spotted knapweed, cheatgrass, leafy spurge, houndstongue, nodding plumeless (musk) thistle, Canada thistle, 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 assessment area remains relatively weed-free.

## Forest & 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. 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 assessment 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 creeping (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. In particular, the extent and integrity of the aspen cover type within the CBT area has been significantly reduced by wildland fire exclusion.

#### Structure

Forest and woodland acres within the CBT area can generally be described as multi-structured and multi-aged. 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 the forested extent. Elements of this mosaic were small stands dominated by various age structures of seral conifer 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 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 and 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 and 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, and is most conspicuous in the Big Timber Creek and Grizzly Hill areas of the Salmon-Challis National Forest. 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 diameter at breast height (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 will 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).

#### Mesic Shrubland & Grassland

This land cover class includes natural vegetation dominated or characterized by shrub and/or herb species requiring environmental conditions of moderate moisture and temperature or which are only partially protected against desiccation. Riparian and wetland vegetation should also control erosion, stabilize streambanks, provide shading, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase groundwater recharge.

The riparian and wetland habitat in the CBT area is comprised of many different riparian and 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. Of these habitat associations found in the assessment area, the spruce types are the most unstable and susceptible to impacts from disturbance.

Proper functioning condition (PFC) is a qualitative method for assessing the condition of riparian/wetland areas. The PFC assessment is performed by an interdisciplinary team that considers the hydrology, vegetation, and erosion/deposition attributes and processes to qualify riparian/wetland conditions. The on-the-ground condition refers to how well the physical processes are functioning; PFC is a state of resiliency that will allow a riparian/wetland area to hold together during high flows with an elevated degree of reliability. This resiliency allows an area to then produce desired values (i.e. fish and wildlife habitat). Riparian/wetland areas that are not functioning properly cannot sustain these values. Streams are assessed in the Salmon Field Office as either "Proper Functioning Condition (PFC)"; "Functional-At-Risk with an upward trend (FAR-up)", downward trend ("FAR-down"), or static trend ("FAR-static"); "Non-Functional (NF)"; or "Non-Riparian".

#### Semi-desert Shrubland & Grassland

This land cover class includes natural vegetation dominated or characterized by shrub and/or herb species having structural or functional adaptations to prevent water loss by evaporation. The majority of the assessment area (60%) is mapped as this type. This land cover type 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 bluebunch wheatgrass. 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.

In the early 1980's, an Ecological Site Inventory (ESI) was completed in the assessment area. At that time about two-thirds of the semi-desert landscape was in "good" condition and a little 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 1987). Between 2006 and 2009, the Salmon Field Office of the BLM conducted rangeland health assessments (RHAs) on the allotments in the assessment area (see description of site locations under Standard 1). During these assessments, similar to the 1980's inventory, the BLM recorded seventeen indicators of rangeland health and how they departed from the "reference state" as described by the appropriate rangeland ecological site description (Pellant et al. 2005). There are two major differences that should be pointed out between the inventory of the 1980's, and the newer RHA method. First, the rangeland ecological site descriptions have been modified to better reflect the natural variation in a site. In the 1980's, the range sites were compared to the potential plant community only. Since that time, it has been accepted that a site in an early seral state can still be considered in excellent shape even though it is not at potential. For example, a wildfire in a healthy system will leave the site in an early seral condition, however the site will still characteristically move towards the potential plant community over time. Second, for each indicator, the departure from the site description is recorded, but it is not rated using the same method (e.g. good or fair) as in the 1980's inventory.

Of the seventeen indicators, nine are relevant to biotic integrity and thus native plant communities. Across the assessment area the majority of these nine indicators were considered to be a "none to slight" departure from expected, meaning that the sites were very similar to what was expected for those sites. Where departures did occur it was often because of the order of dominance of functional/structural groups on the sites and the annual production. Most sites, and thus most allotments (9), in the assessment area had a "none to slight" departure from expected for biotic integrity; five allotments had a "slight to moderate" departure; and three allotments had a "moderate" departure.

Indicator #12 (Functional /Structural Groups) was determined to be a "moderate" departure on three allotments (Hawley Creek, Jake's Canyon, and Leadville) and a "slight to moderate" departure on six allotments (Bull Creek, Freestrip, 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, Jake's Canyon, and Leadville allotments determined as having a "moderate" departure for this indicator are in the lower elevations of the assessment area on a gravelly loam soil type dominated by a Wyoming big sagebrush overstory and bluebunch wheatgrass understory. The site description for this ecological site (R012XY004ID) 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 upland grass component from deep-rooted grasses to more

shallow-rooted grasses (e.g. Sandberg bluegrass). Some causes for this shift could be improper 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 R012XY004ID ecological site. There were also shifts in composition on these sites, but to a lesser degree than on the allotments that were determined to be a “moderate” departure.

The Freestrip Allotment supports primarily mountain big sagebrush with an Idaho fescue understory on a loamy soil type. The site description for this ecological site (R012XY021ID) describes a site with a composition by weight of 50-70% grasses; 20-30% shrubs; and 10-20% forbs. It was determined 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. As with the Wyoming big sagebrush sites, this shift to a higher composition could be due to things such as improper grazing management and lack of fire as a disturbance on the landscape.

The Powderhorn Allotment site was dominated by low sagebrush and bluebunch wheatgrass on a gravelly loam soil type. The site description for this ecological site (R012XY002ID) 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 determined to be a “moderate” departure on two allotments (Jake’s Canyon, and Leadville) and a “slight to moderate” departure on five allotments (Hawley Creek, Leadore, Powderhorn, Spring Canyon, and Timber Creek). 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. A “moderate” departure was determined if the shift was 40-60% compared to expected, and a “slight to moderate” departure was determined when the shift was 60- 80% compared to expected.

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 (Freestrip, Jake’s 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. Most of the cheatgrass was within the disturbed area. Two allotments (Jake’s 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.

#### 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 assessment area is found on lands managed by the Salmon-Challis National Forest. 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 Salmon-Challis National Forest 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.

### Human Uses

#### Public Land Uses

Based on public demand, the BLM Salmon Field Office processes and authorizes public use permits and rights-of-way. There are 49 rights-of-way authorized within the assessment boundary and uses include roads, power lines, telephone lines, communication sites, ditches and canals, and highways. Existing uses in the CBT area include a major power line which supplies power from Montana, and several road rights-of-way allowing access to private land. There is one land use permit for agricultural use authorized in the assessment area. There are six road easements granted to the BLM for public access across private land and State of Idaho land.

#### Forest Products

Timber has been extracted from the CBT area since before establishment of the Salmon River Forest Reserve in 1906, for wood products such as lumber, fuel wood, house logs, and post and poles. Most harvesting activities prior to WWII were local subsistence operations for personal-use, with one exception being tie-cutting operations connected with the initial construction of the Gilmore and Pittsburg rail line into the Lemhi Valley. The Gilmore and Pittsburg railroad accessed the assessment area via Bannock Pass from Montana and down Canyon Creek to Leadore. At Leadore the line branched, veering south to the mining town of Gilmore, and north down the Lemhi Valley, where it terminated at the growing community of Salmon. Virtually every draw bottom within the CBT area contains evidence in the form of old stumps cut by axes or cross-cut saw as testament to settlers’ needs for forest products. In particular, the area surrounding the historic mining town of Gilmore shows very conspicuous evidence of harvesting activities that supported the booming mining activities of the early 1900’s.

#### Timber and Forest Fuels Management

Since WWII, most timber harvesting activities within the CBT area have occurred on federally-owned lands and as prescribed by approved land use plan to meet resource and commodity production objectives. Timber sales on Forest Service and BLM-administered lands have harvested approximately 1,500 acres of timber since 1957. Silvicultural systems have included selection, shelter wood, and clear-cut prescriptions. Post-sale treatments have included slash burning, thinning, and planting of sites that were clearcut. Additionally, some areas have had pre-commercial thinning. Forests and woodlands in the CBT area have a potential to provide a supply of wood products into the foreseeable future, however existing access is limited and market conditions are currently not favorable.

The most recent forest and woodland treatments within the CBT area are related to hazardous fuels 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 Fuels Reduction project was completed in 2008 and involved 232 acres.

#### Recreational Uses

Dispersed: The majority of lands within the CBT area are used yearlong for a variety of dispersed recreational uses including hunting, fishing, off-highway vehicle use, camping, and mountain biking. The heaviest recreational use of these lands occurs during the big-game hunting seasons, dramatically increasing the intensity of off-highway vehicle use and camping. Off-Highway vehicle use is most prolific in wildland-urban interface (WUI) areas where the communities of Leadore and Gilmore have easy access to public lands close to town. Residents of Idaho Falls are increasingly utilizing public roads within the CBT area, primarily for hunting access. The WUI areas within the CBT also have the highest frequency of pioneered routes, or user-created routes.

Developed: The Smokey Cubs developed recreation site is located within the CBT area. This site receives the majority of its use during the fall when hunters utilize this site as a camping and staging area for big-game hunting. The site also receives minimal use year round for fishing access and camping.

#### Mineral Resources

The CBT area varies greatly in mineral potential. Most of the area has a low potential for locatable minerals, however some sections in the southern part of the assessment area have moderate to high potential for locatable minerals. The past mineral production from the area was moderate, and was mostly lead and silver from the Gilmore District. There was also minor amounts of gold (both lode and placer), and some copper produced from the region. In addition, there has been a variety of other commodities mined over the years including sand and gravel, decorative rock, and gypsum. There are currently no active "Notices" or "Plans of Operation" within the CBT area.

The moderate to high mineral potential areas tend to have a number of abandoned mines, but none located on BLM-administered lands are known to be at high risk for environmental damage.

The entire area has potential for saleable minerals such as gravel and decorative stone; and there is potential for deep molybdenum and tungsten deposits especially in the altered terrain near Gilmore and the Eighteenmile WSA. There are currently two community gravel pits, one located along the Timber Creek road west of Leadore, and the other along Highway 28 between Leadore and Gilmore Summit. There are also numerous other locations throughout the assessment area where mineral materials have been removed, but are not currently active. Some oil and gas potential exists in the southern portion of the assessment area, and there have been limited exploration activities in the form of geophysical surveys and the drilling of two test wells in the upper Birch Creek drainage.

#### Livestock Grazing

There are 31 grazing allotments within the CBT area managed by the Salmon Field Office BLM and the Salmon-Challis National Forest. There are currently 18 operators that have grazing permits for 17 allotments on BLM public lands within the assessment area. BLM-administered public lands provide a large proportion of the late spring, summer and fall forage base in the area. There are 16,336 active animal-unit months (AUMs) of livestock forage allocated on the 17 BLM allotments.

Stocking rate on BLM lands within the CBT area averages approximately 7.5 acres per AUM and varies from 3.3 to 30.5 acres per AUM. The amount of utilization appropriate for a given acre is influenced by soils, vegetation, topography (aspect, elevation, and slope), distance from water, and local weather. Cattle (cow/calf pairs) are the primary type of livestock authorized on the allotments. Several allotments are specifically permitted for, or allow flexibility to graze yearling cattle, sheep, and/or horses.

## HISTORY OF CONSULTATIONS

The Salmon Field Office has been consulting with the National Marine Fisheries Service (NMFS) on the effects of ongoing and proposed activities on listed and proposed fish species since January 1993 (USDI-BLM 1992). The first consultations, documenting the potential effects of ongoing actions on chinook and sockeye salmon, were submitted to NMFS for their concurrence in packages which bundled all activities in a given “Section 7 Watershed”, and were thereafter referred to as “watershed biological assessments (BAs)”. One was prepared for actions in the Lemhi River and one for actions in the Salmon River drainage. NMFS issued concurrence letters on these Not Likely to Adversely Affect (NLAA) actions in 1995. No actions were given a “Likely to Adversely Affect” (LAA) determination by either agency.

Upon listing of the Snake River Basin steelhead and the subsequent listing of the bull trout in 1997 and 1998, the potential effects of all ongoing and proposed activities were reanalyzed. In 1999, Section 7 Watershed BAs of bundled NLAA activities were submitted to NMFS documenting the potential effects of these activities on steelhead, and to the USFWS, for bull trout (USDI-BLM 1999a, 1999b). These watershed BAs were developed through the Streamlining process by the Level 1 Team and all US Forest Service and BLM activities under consultation in a given watershed were presented together. The BLM and USFS subsequently received concurrence letters from NMFS (October 25, 1999) for salmon and steelhead, for all ongoing actions consulted on in these packages. The concurrence letter stated that, “*These actions have the same consultation expiration date of January 15, 2003*”. The issue of how to address the expiring consultations was not resolved until January 12, 2005 when NMFS (Dave Mabe for Robert Lohn) sent a letter to Joe Kraayenbrink, BLM Idaho Falls District Manager (recognizing change in District alignment), eliminating the January 15, 2003 expiration date on the five watershed BAs in question, including the Lemhi River package.

In 1999, the USFWS issued concurrence letters for all BLM watershed packages, except the Lemhi River package for which a biological opinion was issued. The biological opinion addressed the USFS Hawley Creek Allotment, with concurrence given for all remaining NLAA actions.

In April, 2003 the Salmon BLM updated the Lemhi River Watershed BA for effects to all ongoing actions on all listed fish species and submitted it to USFWS for concurrence. This BA went through the Streamlining process and was developed based on input from the Level 1 Team. Concurrence was received in May 2003 from the USFWS on the Lemhi River BA for bull trout.

Consultation for redesignated critical habitat for anadromous fish began on March 8, 2006 when BLM IM No. ID-2006-032 was issued from the Acting State Director on Endangered Species Consultation for Pacific Salmon Critical Habitat. The IM provided a reminder on the need to consult on the redesignated critical habitat and established a process for doing so.

On May 12, 2006, per NMFS direction, Steve Hartmann, BLM Salmon Field Office Manager, sent a letter and supporting documentation to Larry Zuckerman (NMFS) implementing the March 8 IM. In November, 2009, the NOAA Boise office informed BLM that they did not have the letter or documentation on file.

In addition to the 1993, 1999 and 2003 Section 7 watershed consultations, a number of additional project-level consultations have been completed. Since 1999, the BLM has also completed several programmatic consultations for a variety of ongoing activities that occur within the watershed. Table 1 summarizes these consultations and their findings.

**Table 1.** Biological Assessments covering road-stream crossings, weed control, and road and trail maintenance activities in the Salmon River Watershed.

Title of Biological Assessment	Date Completed	Determination(s)
Programmatic Biological Assessment (BA) for stream crossing structure replacement and removal activities (includes culverts)	30-Nov-05	"Likely to adversely affect" critical habitat for spring/summer Chinook salmon, essential fish habitat, bull trout, proposed critical habitat for Jarbidge bull trout, and proposed critical habitat for steelhead.
Salmon and Challis Field Offices Weed Control Program	23-Feb-09	May Affect, Not Likely Adversely Affect Snake River spring/summer Chinook salmon, Snake River sockeye salmon, steelhead trout, bull trout, and any associated designated critical habitat and essential fish habitat.
Road Maintenance On Public Lands Administered by the Salmon-Challis National Forest, & Bureau of Land Management Salmon, Challis & Idaho Falls Field Offices	May 24, 2002 Supplement 5/29/2003	May Affect, Not Likely Adversely Affect Snake River spring/summer Chinook salmon, Snake River sockeye salmon, steelhead trout, bull trout, and any associated designated critical habitat and essential fish habitat.

For the terrestrial wildlife species that are currently listed under the ESA (gray wolf and Canada lynx) the previous determinations for grazing on these allotments have been "No Effect" for Canada lynx and either "No Effect" or "May Affect but Not Likely to Jeopardize" the continued existence for gray wolves. The past calls are described under each allotment description below.

### LISTED SPECIES REVIEW

As of December 13, 2010 the United States Fish and Wildlife Service (USFWS) identified the following Endangered, Threatened, Proposed, and Candidate Species (With Associated Proposed and Critical Habitats) for the BLM Salmon Field Office area (Lemhi County)

(<http://www.fws.gov/idaho/species/IdahoSpeciesList.pdf>):

ESA Status	Species
Threatened	Bull trout ( <i>Salvelinus confluentus</i> )
	Canada lynx ( <i>Lynx canadensis</i> )
Candidate Species	Greater sage-grouse ( <i>Centrocercus urophasianus</i> )
	Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )
	Wolverine ( <i>Gulo gulo</i> )
Designated Critical Habitat	Bull trout ( <i>Salvelinus confluentus</i> )
Experimental Nonessential	Gray wolf ( <i>Canis lupus</i> )

As of July 1, 2009 the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries Service) identified the following Designated Listed, Proposed, and Candidate Species and Proposed Critical Habitat for the BLM Salmon Field Office area

(<http://www.nwr.noaa.gov/ESA-Salmon-Listings/upload/snapshot-7-09.pdf>):

ESA Status	Species
Endangered	Sockeye salmon ( <i>Oncorhynchus nerka</i> )
Threatened	Spring/Summer Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )
	Steelhead Trout ( <i>Oncorhynchus mykiss</i> )
Designated Critical Habitat	Sockeye salmon ( <i>Oncorhynchus nerka</i> )
	Spring/Summer Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )
	Steelhead Trout ( <i>Oncorhynchus mykiss</i> )

Detailed species information for Chinook salmon, steelhead trout and bull trout may be found in three previously submitted biological assessments, the Bureau of Land Management Salmon Biological Evaluation for the Lemhi River, Appendix A (BLM, 1993), the Steelhead and Bull Trout Section 7 Watershed Biological Assessments, Lemhi River Watershed (BLM, 1999), the Biological Assessment for Ongoing Activities in the Lemhi River Watershed Section 7 Watershed (BLM, 2003) and the Biological Assessment For Ongoing Grazing Actions In The Lemhi River Section 7 Watershed (BLM, 2011).

Detailed species information for Canada lynx is described in the Federal Register Final Rule for determining the lynx as Threatened under the ESA (65 FR 16052 (24 March 2000)). Species information on the greater sage-grouse can be found in the March 23, 2010 (75 FR 13909) 12 month finding. Species information on the yellow-billed cuckoo can be found in the July 25, 2001 (66 FR 38611) 12 month finding. Species information on the wolverine can be found in the December 14, 2010 (75 FR 78030) 12 month finding. Species information on the gray wolf can be found in the Northern Rocky Mountain Wolf Recovery Plan (USFWS 1987). Since the greater sage-grouse, yellow-billed cuckoo and wolverine are currently candidate species no more discussion of these species will occur.

### **Critical Habitat**

#### Snake River Spring/Summer Chinook Salmon

Critical habitat has been designated for Snake River spring/summer Chinook salmon and includes “river reaches presently or historically accessible...to Snake River spring/summer Chinook salmon” (Federal Register 58FR68543). Chinook designated critical habitat occurs within the Leadville, Jake’s Canyon, Hawley Creek, Center Ridge, Chamberlain Creek, Tex Creek, Powderhorn, Nez Perce, Leadore, Leadore Hill and Timber Creek Allotments analyzed in this document.

#### Sockeye Salmon

Critical habitat has been designated for Snake River sockeye salmon (Federal Register 58FR68543). The ESA Action Area does not include any waters designated critical habitat. Due to the lack of designated critical habitat or occupied habitat, no more discussion of sockeye will occur.

#### Snake River Basin Steelhead

Critical habitat has been designated for Snake River Basin steelhead (Federal Register 70FR52630). Within the action area, Texas Creek and the Lemhi River have been designated as Designated Critical Habitat for steelhead. This document analyzes DCH within small portions of the Nez Perce Allotment and where the other allotments influence habitat in the Lemhi River.

#### Columbia River Bull Trout

Critical habitat was designated for bull trout on September 26, 2005. This designation did not include any areas within the Lemhi River. On January 13, 2010 the U.S. Fish and Wildlife Service published public notice (Federal Register 75FR2270) proposing to revise the 2005 designated critical habitat. On October 18, 2010, the final designation of critical habitat was published which included several streams within the Lemhi River watershed (Federal Register 75FR63898). Of the streams designated as critical habitat, Big

Timber Creek is the only stream designated within the analysis area. Bull trout designated critical habitat occurs within the Leadore, Leadore Hill and Timber Creek Allotments analyzed in this document.

Within the context of this analysis, the BLM desires to assess the potential impact to the Primary Constituent Elements (PCEs) of designated bull trout critical habitat. These are defined on page 2360 of the referenced Federal register notice. Because these elements are important to areas where bull trout are present, the BLM would like to demonstrate that potential impacts to the PCEs have been assessed and considered under this analysis. Appendix 3 contains a detailed narrative and crosswalk between the PCE's and the indicators in the original Matrix of Pathways and Indicators (MPI), as well as between the PCE's and the indicators analyzed within the Interagency Protocol. In doing so, it has been determined that the effects analysis portions of for the two allotments which contain bull trout critical habitat will include additional analysis for PCEs 1, 2, 4, 7, 8, and 9 beyond the analysis of the IAP indicators, as they are insufficient to fully address the bull trout critical habitat PCE's. These PCE's will be analyzed as Groundwater Connectivity, Migratory Barriers, Habitat Complexity, Flow, Water Quality & Quantity, and Persistence & Genetic Integrity.

## **ENVIRONMENTAL BASELINE**

The Interagency Protocol (IP) requires a general description of the environmental baseline at the 4th field HUC with detailed effects analysis at the allotment level. ESA defines the environmental baseline as the condition of a species or critical habitat at a specified point in time. The baseline does not include effects of the action under review for consultation. It does include the tribal, State, local and private actions already affecting a species or critical habitat or those that will occur while the consultation is in progress. Federal actions, unrelated to the action under consultation that have affected or are affecting the species or critical habitat and have a completed consultation, are also part of the baseline. At the project scale, the IP requires that BLM update the environmental baseline using 5 quantifiable indicators related to livestock grazing and having influences on fish habitat including: Substrate, Greenline Vegetation (ecological status, % hydric vegetation, wetland rating), temperature, greenline-greenline width, and streambank stability.

### **General Description of Listed Fish Populations**

This section provides a general description of the distribution, status and trend of listed fish populations within the ESA Action Area. Detailed species life history information can be found in [Appendix 1](#).

**Table 2. ESA Listed Fish Summary of Canyon-Big Timber Creek Assessment Area**

Stream	Allotment Name	Fish Species/Habitat						Comments
		Chinook Salmon	Chinook DCH	Steelhead	Steelhead DHC	Bull Trout	Bull Trout DCH	
Canyon	Leadville	Unknown – potential Spawning & Rearing	YES	Unknown – potential Spawning & Rearing	NO	Not found from surveys	NO	Canyon Cr
	Freestrip	No intrinsic potential	NO	No intrinsic potential	NO	Not found from surveys	NO	
	Jake’s Canyon	Unknown – potential Spawning & Rearing	YES	Unknown – potential Spawning & Rearing	NO	Not found from surveys	NO	Canyon Cr
Hawley	Hawley Creek	Irrigation Barrier	YES	Barrier	NO	YES	NO	18mile and Hawley Creeks
Eighteenmile	Bull Creek	Non-fish bearing	NO		NO	Non-fish bearing	NO	
	Center Ridge	Irrigation Barrier	YES	Barrier	NO	Not found from surveys	NO	Small segment of 18mile
	Chamberlain Creek	Irrigation Barrier & No intrinsic potential	NO	Barrier	NO	YES	NO	Headwaters of 18mile
	Tex Creek	Irrigation Barrier	YES	Barrier	NO	Not found from surveys	NO	Small segment of 18mile
Clear Cr	Powderhorn	Irrigation Barrier & No intrinsic potential	YES	Barrier	NO	YES	NO	Isolated from 18mile Cr by irrigation withdrawal
Texas	Nez Perce	Irrigation Barrier	YES	Barrier	YES	Not found from surveys	NO	Small segments of Texas Cr
	Purcell Creek	No stream habitat	NO	No stream habitat	NO	No stream habitat	NO	
	Spring Canyon	No stream habitat	NO	No stream habitat	NO	No stream habitat	NO	
Big Timber	Leadore	Irrigation Barrier	YES	Barrier	NO	Not found from surveys	YES	Small segment of Big Timber Cr
	Leadore Hill	Irrigation Barrier	YES	Barrier	NO	Not found from surveys	YES	2 miles of BT Cr / Small segment of Little Timber Cr
	Timber Creek	Irrigation Barrier	YES	Barrier	NO	Not found from surveys	YES	2 miles of BT Cr and segment of Swan Basin Cr
	Two Dot (Leadore Hill East Pasture)	No stream habitat	NO	No stream habitat	NO	No stream habitat	NO	
	Dump	No stream habitat	NO	No stream habitat	NO	No stream habitat	NO	

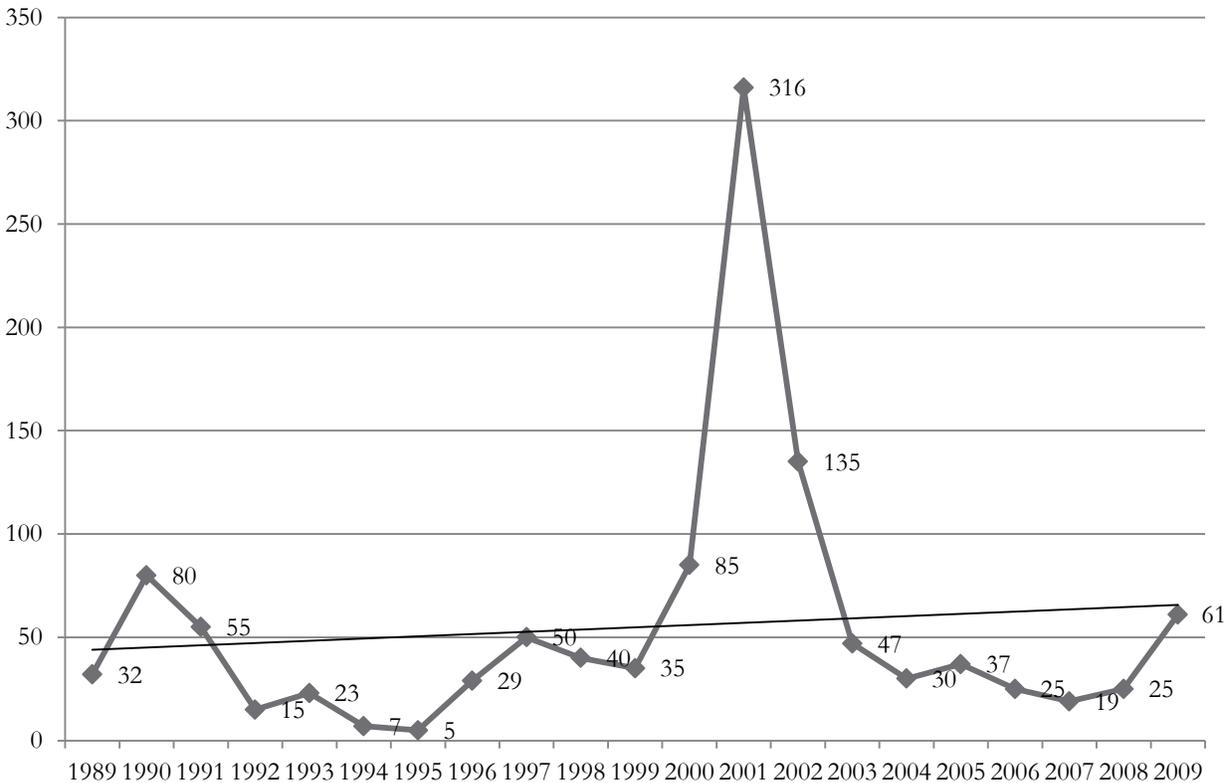
The Lemhi River is a major tributary of the Upper Salmon and historically a major spawning and rearing tributary for the federally-protected Snake River spring/summer-run Chinook and Snake River steelhead.

The Lemhi River and its tributaries also provide important historic and/or current habitat for federally protected resident and migratory bull trout as well as Westslope cutthroat trout.

Snake River Spring/Summer Chinook Salmon

Within the analysis area, Chinook Salmon are only present in the Lemhi River. Spawning surveys are conducted annually by IDFG to document trends and the information is presented in Figures 2 below.

**Figure 2. Lemhi River Chinook aerial redd counts and linear trend line (IDFG).**



Chinook salmon adults enter the upper Lemhi River during the summer and spawn during late August and early September (Bjornn, 1978). September 1 is designated as the end of the growth period for Chinook salmon (Bjornn, 1978). Spawning periodicity data developed by the Upper Salmon Basin Watershed Project Technical Team (Upper Salmon Basin Watershed Project Technical Team, 2005) identify a general initiation date for Chinook salmon spawning activity in the Lemhi River in the fourth week of August. Incubation of eggs can occur through the end of April (Upper Salmon Basin Watershed Project Technical Team, 2005).

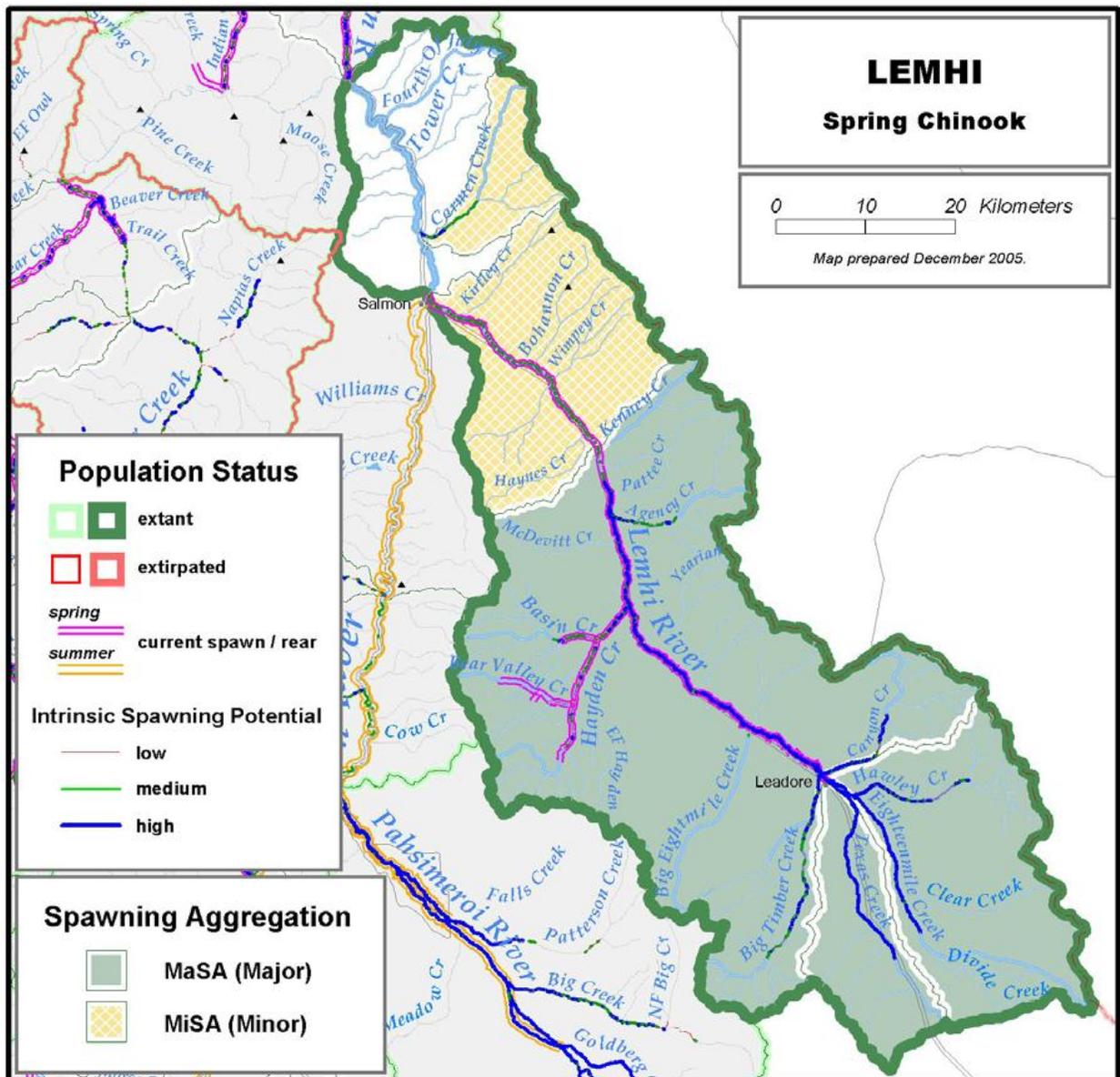
The Lemhi River chinook population is part of the Snake River Spring/Summer Chinook ESU which has five major population groupings including the Upper Salmon River group. The Lemhi River population is a spring run and resides in the Upper Salmon River major population group. There is evidence that the population historically also contained the adult summer run life history strategy, and those fish primarily spawned in the lower mainstem Lemhi River downstream of Hayden Creek.

The Interior Columbia Technical Recovery Team (ICTRT) classified the Lemhi River population as a “very large” population based on historical habitat potential (ICTRT 2005). A chinook population

classified as very large has a mean minimum abundance threshold criteria of 2000 naturally produced spawners with a sufficient intrinsic productivity to achieve a 5% or less risk of extinction over a 100-year timeframe.

The Lemhi River Chinook Population Viability Assessment (PVA) (NOAA 2006) identified three major spawning areas (MaSAs) and two minor spawning areas (MiSAs) within the Lemhi River Spring/Summer Chinook population. Most spawning occurs in the mainstem Lemhi River from the mouth of Hayden Creek upstream to the town of Leadore. The upper two MaSAs (Texas and Eighteenmile Creeks) are not currently occupied; fish are precluded from reaching these areas because of irrigation-related impacts (barriers and flow reductions).

**Figure 3. Lemhi River Chinook major and minor spawning areas (NOAA 2006).**



The PVA determined that the Lemhi River spring/summer Chinook salmon population does not currently meet viability criteria because neither Abundance/Productivity risk nor Spatial Structure/Diversity risk meets the criteria for a viable population. The 20-year delimited recruit per spawner point estimate essentially is at replacement (1.08), and is significantly less than the 1.45 required at minimum threshold abundance. The 10-year geometric mean abundance (80) is only 4% of the minimum threshold abundance. Substantial improvements in abundance/productivity status (reduction of risk level) and spatial structure/diversity status will need to occur before the population can be considered viable.

#### Snake River Basin Steelhead

Multiple streams, including the Lemhi River itself, have been designated within the Lemhi River watershed as Designated Critical Habitat for steelhead. Steelhead have not been documented in the CBT area streams, but it is believed to have been used historically. Resident rainbow trout/redband/juvenile steelhead are found in most streams within the watershed.

Data developed by the Upper Salmon Basin Watershed Project Technical Team (Upper Salmon Basin Watershed Project Technical Team, 2005) identify a general spawning periodicity for steelhead in the CBT watershed ranging from the third week of March through the second week of June, with egg incubation through the first week of July. Grazing occurs in some of the allotments within these time periods.

The Lemhi River steelhead population is part of the Snake River Steelhead DPS which has six major population groupings; the Lemhi River population is an “A” run and resides in the Salmon River major population grouping. The ICTRT classified the Lemhi River population as an “intermediate” population based on historical habitat potential. A steelhead population classified as intermediate has a mean minimum abundance threshold of 1000 naturally produced spawners with sufficient intrinsic productivity to achieve a 5% or less risk of extinction over a 100-year timeframe. Current abundance (number of adults spawning in natural production areas) is unknown for this population.

The Lemhi River Steelhead Population Viability Assessment (PVA) (NOAA 2006) identified three major (MaSA) and two minor (MiSA) spawning areas for the population, and documented a large amount of intrinsic potential habitat available for spawning and rearing. The PVA inferred occupancy of spawning areas from data collected during presence/absence and density monitoring for juvenile steelhead, which are present in the upper and lower halves of all MaSAs.

The PVA identified basin-wide impacts to the population including changes in flow patterns and temperature profiles in the lower Snake River and Columbia River portions of the migratory pathway which have likely reduced the variation in both juvenile migration and adult spawn timing. Additionally, reduced flows and elevated water temperatures in the mainstem migration corridors has resulted in a narrower window for successful smolt outmigration as well as truncation of adult spawn timing. Adult entry into freshwater and arrival on the spawning grounds likely has not changed. However, adult entry into the Snake River and migration through the lower Snake River in late summer and early fall is delayed because of elevated mainstem temperatures. It is hypothesized that adult upstream migration has changed from historic conditions due to temperature effects; magnitude of the change is unknown. The PVA rates the population at *Moderate Risk* for this metric because of the substantial change in adult run timing, likely changes in the mean and variability of juvenile migration and movement patterns through the mainstem migration corridor and juvenile freshwater rearing disruptions in movement patterns and habitat use.



In addition to the basin-wide effects on the overall population, a significant concern in the local population is the affect of past hatchery releases on the population and the recent management practice of releasing unmarked hatchery steelhead smolts and planting eyed eggs to supplement natural production. The Lemhi River steelhead population does not currently meet viability criteria because abundance/productivity risk tentatively has been rated as Moderate Risk. Improvement in abundance/productivity status (reduction of risk level) will need to occur before the population can be considered viable; however the population does meet the criteria for a “maintained” population. Additionally, the disconnection of tributaries from the mainstem Lemhi River affects juvenile movement patterns and habitat use during freshwater rearing.

#### Columbia River Bull Trout

Bull trout occur throughout the Lemhi River watershed in both resident and fluvial populations. Hayden Creek is currently the only tributary with a known fluvial population. Other streams within the Action Area that have known resident bull trout populations on public land include Eighteenmile, Clear and Big Timber Creeks. Bull trout occur in the headwaters of Canyon (Rough Canyon), Hawley (Big Bear) and Texas Creeks (Deer) on National Forest lands but have not been found on public land in the lower portions of these watersheds. The action area for this consultation lies entirely within a portion of the Lemhi River Core Area. Bull trout are distributed in six local populations and three potential local populations. Overall (from all causes) the core area population is rated as at risk of extirpation (USDI-USFWS 2008)

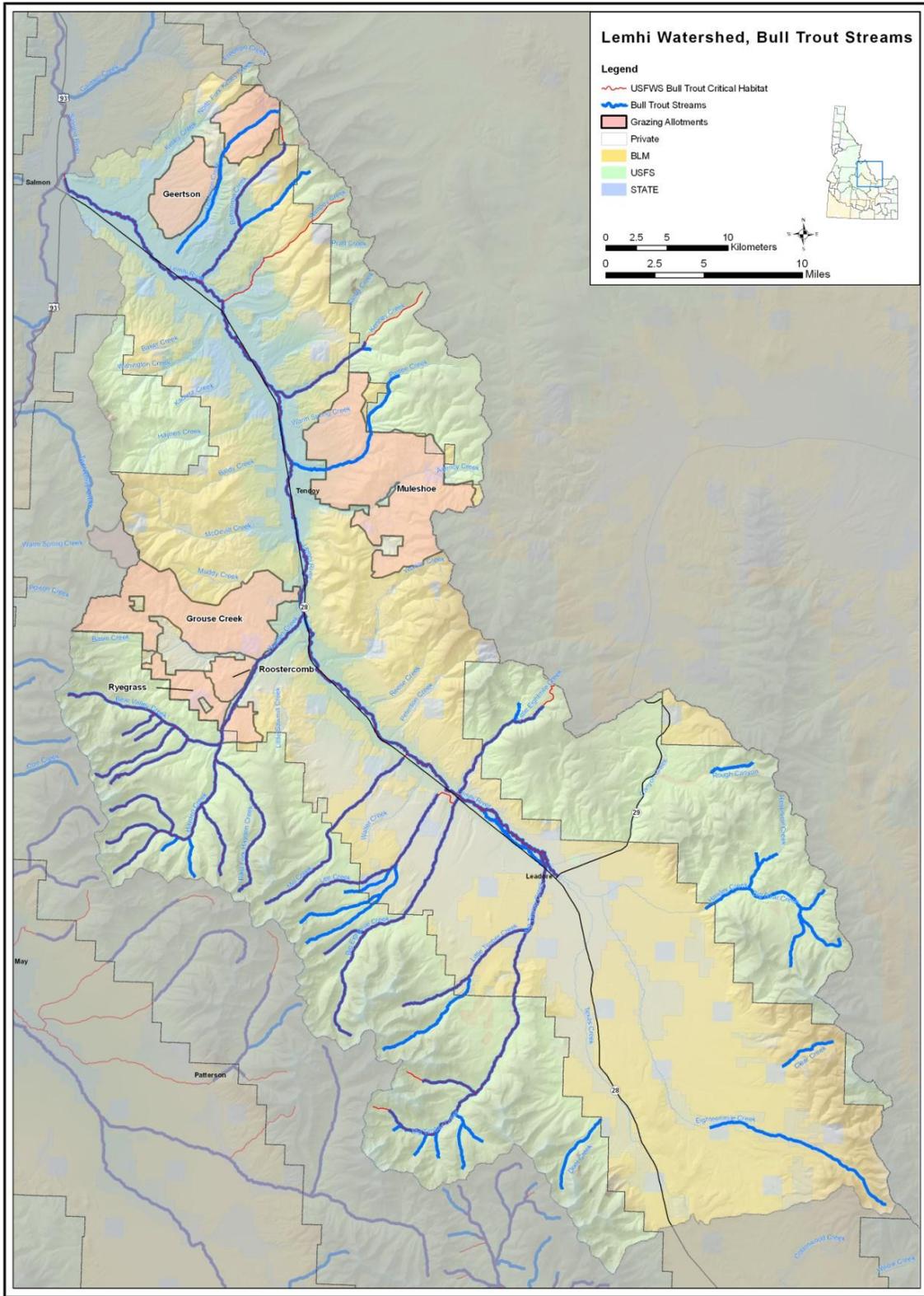
In the draft bull trout recovery plan (USDI-USFWS 2002b), adult bull trout abundance in the Lemhi River Core Area was estimated to be around 1,000 adult fish. This estimate was based on many disparate pieces of information and the professional judgment of fish biologists familiar with bull trout and stream conditions in the core areas (USDI-USFWS 2002b).

In 2005, the IDFG reported population numbers for the Lemhi River Core Area (IDFG 2005, p. 32) based on an extensive modeling effort (IDFG 2005, High et al. 2008). Based on the 2005 modeling exercise and the age and nature of the data from the draft recovery plan, the Service believes it is reasonable to assume that the number of adults in the core area may be as many as five times higher than the recovery plan’s highest estimate of 1,000 individuals.

The USFWS draft bull trout recovery plan (USDI-USFWS 2000), subdivided bull trout distribution in Idaho within seven recovery units including the Salmon River Recovery Unit of which the Lemhi River core area is a subset. Core areas are analogous to metapopulations, since they contain one or more local groups of bull trout that spawn within a particular stream or portion of a drainage system (Lohr et al. 2000). In the Salmon River Recovery Unit, a significant post-1994 increase in abundance has been documented for bull trout as well as other salmonid species (High, et al 2008). Of the streams within the Lemhi River watershed designated as bull trout critical habitat (Federal Register 75FR2270), only Big Timber Creek is within the allotments under analysis in this BA.

The Lemhi River Critical Habitat Subunit (CHSU) has been determined essential to bull trout conservation because it has many individuals, a large amount of habitat, and few threats. This CHSU also occurs in the easternmost extent of the Recovery Unit. This CHSU has fluvial life history forms that are important to the long-term recovery of the species (USDI-USFWS 2009). The stronghold connected and functioning habitats for bull trout in this sub-unit include the mainstem Lemhi River and the Hayden Creek drainage. Currently the Hayden Creek drainage supports the only known fluvial population in the sub-unit.

Figure 5. Bull Trout distribution within the Lemhi River watershed.



Bull trout redd count data is available from National Forest Lands on Big Timber and Hawley Creeks. The Upper Salmon Basin Watershed Project Technical Team work window and fish periodicity document (Upper Salmon Basin Watershed Project Technical Team, 2005) does not identify a general bull trout spawning periodicity for Lemhi River tributary streams with the exception of the Hayden Creek drainage. Spawning in Hayden Creek typically ranges from the third week of August through the second week of October, with egg incubation through the third week of April. In many other streams on BLM, spawning typically has not been observed until water temperatures drop coincident with the first “winter” storm of the season. This generally occurs around mid-September. Clear Creek is the exception due to this being a spring-fed stream with very cold water temperatures. Bull trout have been observed staging to spawn in mid-late August but a spawning window has not been determined.

### **General Habitat Conditions and Major Limiting Factors**

The mainstem Lemhi River and lowermost portions of the tributaries occupied by ESA-listed salmonids have been heavily impacted by water diversions, agricultural practices and channelization during the past 100+ years of development. One of the primary limiting factors in the Lemhi watershed is adequate fish passage conditions between the Lemhi River and tributary habitats. Irrigation withdrawals that dewater stream segments and fish passage barriers (e.g. diversions and road culverts that block fish migration) effectively disconnect tributaries from the mainstem. These factors prevent access to historically available spawning and rearing habitat for anadromous species while isolating resident fish populations. Prior to recent reconnection efforts, Big Springs Creek and Hayden Creek were the only tributaries connected to the Lemhi year-round (Idaho Department of Water Resources 2009). Recently, Kenney Creek, Canyon Creek and Big Timber Creek have been reconnected. Low flows are a primary concern in the Lemhi, but channelization has also caused a loss of floodplain access and lack of habitat diversity in the reach below Hayden Creek. When State Highway 28 was constructed in 1952, approximately 5 miles (8 km) of the Lemhi River channel were altered and/or isolated from the river (Gebhards 1958). An additional 10 miles (16 km) of Lemhi River channel were altered in 1957 in response to significant flooding (Gebhards 1958). Altered riparian habitats are common in the drainage. High water temperatures in the Lemhi River downstream of Agency Creek and in Big Springs Creek impact habitat quality (Northwest Power and Conservation Council 2005).

There are 2,950 points of water diversion in the Lemhi watershed and 191 stream alteration permits recorded. Specific habitat issues identified in the Lemhi River Agreement (2002-2003) include maintaining a 35-cubic feet per second (cfs) minimum flow (measured at the L5 gauge); acquiring a minimum 8 cfs of flow in Hayden Creek, and reconnecting priority tributaries. One of the results of the significant irrigation withdrawals is that overbank flow events, important to habitat diversity, have become rare, in part because flow management and irrigation withdrawals prevent high flows and in part because diking and revetments have increased the “bankfull” flow level.

The 1999 Lemhi River TMDL (IDEQ 1999) determined that excessive sedimentation is reducing the quality of spawning and rearing habitat in various places in the basin for resident trout species and anadromous species. Altered flow conditions resulting from diversion of surface waters for irrigation have eliminated migratory components of resident fish species and have elevated risks to isolated fish populations. In IDEQ Lemhi River Integrated Report 2008 showed water quality limitations in Canyon, Eighteenmile and Texas Creeks for sediment, cold water biota and water temperature. Some impaired segments included public lands but the majority of the limitations were identified on private land.

Roads occur on all ownerships throughout the basin, with primary routes typically following the water courses. BLM actively manages the roads within the watershed to reduce sediment impacts to streams with actions that include travel management planning, annual maintenance, relocation and surfacing. Some roads contain culverts which may act as a barrier or partial barrier to fish migration. The BLM conducted an inventory of culverts associated with public lands in 2003/2004 and have replaced all

known barrier culverts on BLM-managed lands. Culverts have been replaced in Eighteenmile and Clear Creeks. Several wet crossings (i.e. fords) exist, but most are on small, non-fish bearing streams.

During average and wet runoff years, the mainstem of the Lemhi River generally provides enough water for year-round upstream and downstream migration of salmon and steelhead. However, in dry years, historically there is not always enough instream flow during the spring runoff and during the irrigation season to provide consistent fish passage. Furthermore, the lower reaches of many of the tributaries run dry, or nearly dry, for much of the summer in low flow years due to a combination of upstream diversions and minimal inflows from headwater areas. Irrigators in the Lemhi subbasin typically use push-up diversion dams to raise water levels and/or direct water into irrigation conveyance canals or “ditches.” Push-up diversion dams are usually constructed out of large rock that is placed, or streambed gravel material that is pushed up in a linear fashion across the stream channel. Water diverted from the river or creek channel is then conveyed via the ditch and distributed to agricultural fields. Without sufficient tributary flows, migrating salmon, steelhead and bull trout are unable to reach spawning habitat along the upper reaches of tributaries. In cases where spawning has successfully occurred along tributaries, low flows may block salmon, steelhead trout and bull trout fry from accessing rearing habitat in the Lemhi River. Water management along the mainstem Lemhi River and its tributaries is complex because the Lemhi River Basin is a semi-arid environment and there is a limited supply of water to satisfy irrigation and environmental needs. Furthermore, the Lemhi River irrigation system is composed of a network of ditches and diversions which often intersect tributaries, tributary diversions or other Lemhi River diversions. The ground water – surface water interplay and the temporal nature of irrigation demands also lend complexity to the Lemhi River system. During high flows in the spring runoff period, irrigators along the main Lemhi and tributary streams open their diversions to fill their canals and soak their fields. Irrigation water causes ground-water levels to rise seasonally. It is widely believed that this shallow ground water storage is slowly released back to the Lemhi River which sustains stream flows later in the irrigation season.

According to the Independent Scientific Advisory Board (ISAB 2007): “Climate records show that the Pacific Northwest has warmed about 1.0 °C since 1900, or about 50% more than the global average warming over the same period. The warming rate for the Pacific Northwest over the next century is projected to be in the range of 0.1-0.6° C/decade.” Most models are predicting slight increases in winter precipitation and decreases in summer precipitation across the Pacific Northwest, but such changes are likely to be indistinguishable from natural variations until the late 21<sup>st</sup> century (ISAB 2007). In fact, global climate change in the Pacific Northwest may be similar to those experienced during past periods of strong El Niño’s and warm phases of the Pacific Decadal Oscillation.

Much of the potential impact of climate change will occur outside the scope and influence of the Action Area, including further increases in mainstem Columbia and Snake River temperatures, further reducing passage survival rates; delayed coastal upwelling coinciding with potentially earlier emigration, reducing ocean survival rates; degradation of estuarine habitats and alteration of the associated marine communities, affecting the growth, production and survival and migration of salmonids (NOAA 2008).

More localized changes may include reduced snowpack, resulting in diminished runoff and lower stream flows; increased air and water temperatures, reducing suitable habitat and expanding the range of other fish species; an increase in the incidents of wildfire within the watershed, increasing the frequency and size of disturbance events (e.g. flooding and debris flows) that may briefly disrupt habitats critical to listed fish species. The intensity of effects will vary from one area to another and for one species versus another. One of the models suggests that temperature increases alone will render 2% to 7% of current trout habitat in the Pacific Northwest unsuitable by 2030, 5%-20% by 2060, and 8% to 33% by 2090. Salmon habitat loss could be most severe in Idaho with potential losses exceeding 40% by 2090 (NOAA 2008, ISAB 2007). The localized impacts of these changes is unknown as during the same time it is

expected that reconnection of currently unavailable habitats will continue. Since the tributary reconnections and other restoration projects are being implemented with the goal of improving current conditions and providing access to the best available habitats, the overall impacts may be much reduced than if such actions were not occurring.

Bull trout require very cold, headwater streams for spawning and early rearing. Warming may disproportionately impact this species. Recent projections of the loss of habitat suitable for local bull trout distributions, resulting from climate warming ranged from 22% to 92% (Rieman et al 2007). Greater losses would be associated with populations located at southerly latitudes and lower elevations where stream temperatures are already near the limits of species tolerance. Within the Salmon River bull trout distributions would likely contract, mainly for the early life stages, to higher elevations within the watershed.

### **Habitat Restoration Actions**

Overall, aquatic habitat in the watershed is improving. Multiple agencies, organizations and individuals have been involved for many years in attempting to improve fish habitat conditions in the Lemhi River and its tributaries, in a focused, prioritized manner. Much of the work has been focused addressing flow and migrations barriers, and reducing impacts of private land activities along critical spawning and rearing habitat. Fish screens have been installed, replaced, modified and consolidated in an ongoing effort to improve the passage of adult and juvenile salmon and steelhead in the Lemhi River. Where possible, reductions in water use have been implemented, either through changes in irrigation practices or via partnerships with willing landowners to purchase permanent water conservation agreements to ensure enough water flows over irrigation diversions so that fish can pass through on their way to spawning areas. When water is not needed to maintain flows, the rancher can still use the water. Most of the critical spawning and rearing areas in the Lemhi have been fenced to exclude or properly manage livestock grazing on the riparian areas.

Since 2003 the State of Idaho has implemented conservation actions to address these issues, and is currently developing and implementing projects under the Lemhi Conservation Program that address other limiting factors throughout the Lemhi sub-basin. Long-term conservation strategies and measures are currently being developed as part of the Lemhi Agreement. The Lemhi Agreement is a habitat-based conservation initiative between private/commercial landowners and tribal, state and federal regulatory agencies that is being developed to conserve fish populations in the Lemhi basin. Interim agreements have been established annually since 2001. In 2006, IDFG assumed the lead technical role in completing this plan to define measures that the State of Idaho and the water users are committed to implementing over a 30-year period. Although the final agreement is still being negotiated, the IDFG is coordinating implementation of those measures, to provide immediate benefits to ESA-listed species.

The Upper Salmon Basin Watershed Program (USBWP) has been actively restoring and enhancing habitats for anadromous and resident fish within the basin since the early 1990's. Projects have included grazing management systems, fencing projects, streambank stabilization, riparian vegetation plantings, and instream structure work. Details of work accomplishments are highlighted at their web site: <http://www.modelwatershed.org/>. Within the Lemhi River watershed, the following table summarizes the numbers of projects completed:

**Table 3.** Conservation actions and benefits achieved within the Lemhi Subbasin between 1994 and 2010 in partnership with the USBWP.

Conservation Actions	Lemhi Sub-Basin (17060204)
Stream Flow Restored (cfs)	46.7
Aquatic Habitat Access Improved (miles)	17.1
Stream Miles Treated (miles)	3.0
Stream Miles Fenced (miles)	31.3
Total Fence Installed (miles)	40.5
Riparian Protection/Enhancement (acres)	1,081.7
Total Projects	63.0

The USBWP staff work with private landowners to develop conservation projects. The main objective of these projects is for direct or indirect benefits for salmon and steelhead recovery, with the underlying theme of achieving a balance between resource use and resource protection. Projects are developed in cooperation with willing landowners and with consideration for the needs of agricultural production and meaningful benefits to fisheries. The successful planning and implementation of these projects involves partnering with local, state and federal agencies including Soil and Water Conservation Districts, Idaho Department of Water Resources, IDFG, Idaho Department of Environmental Quality, Natural Resources Conservation Service, Bureau of Reclamation, Bureau of Land Management, US Forest Service, National Marine Fisheries Service, US Fish and Wildlife Service. Nongovernmental and tribal entities also have a role to play, including: Shoshone Bannock Tribes, Lemhi Regional Land Trust, The Nature Conservancy, and Trout Unlimited. Other government agencies are often partnered with to complete cultural resource surveys, engineering services, and Endangered Species Act and Clean Water Act environmental compliance.

Several tributaries, including Bohannon, Big Springs, Little Springs, Canyon, Kenney, Big Timber and Hayden Creeks have also had numerous restoration activities undertaken on private land including flow improvement, riparian fencing and diversion screening. Although there are still dozens of tributaries of the Lemhi River which are dewatered every year by irrigation diversions with the majority of those diversions unscreened, restoration efforts are being approached in a prioritized manner (SHIPUSS 2005).

Another tool being implemented is the acquisition of conservation easements and fee simple title acquisitions which will provide strong legal protection and restoration opportunities, such as grazing restrictions or commitments to restore degraded river habitat and nonfunctioning tributary habitat. The acquisitions will address the following limiting factors identified in the Federal Columbia River Power System (FCRPS) planning process which include: 1. Stream flow; 2. Migration barriers; 3. Entrainment; 4. Riparian condition, sediment, and temperature. The Upper Lemhi River Acquisition Project (2008-601-00) is designed to acquire key aquatic habitats in the Lemhi Watershed. Properties have been evaluated through the Easements Subcommittee of the Upper Salmon Basin Technical Team. The ultimate goal is to identify and implement projects that protect and restore in-stream and riparian habitat, improve river flow in the Lemhi River, and reconnect tributary streams to the Lemhi River to benefit all life stages of Chinook salmon, steelhead and bull trout.

## **TERRESTRIAL WILDLIFE**

### **Canada lynx**

Canada lynx in the Contiguous United States were declared threatened in 2000 under the ESA. In 2009, the USFWS designated revised critical habitat for the contiguous United States distinct population segment of the Canada lynx under the Endangered Species Act of 1973, as amended. In total, approximately 39,000 square miles fell within the boundaries of the revised critical habitat designation, in five units in the States of Maine, Minnesota, Montana, Wyoming, Idaho, and Washington. None of the designated critical habitat was in area managed by the Salmon Field Office of the BLM.

The 2000 Canada Lynx Conservation Assessment and Strategy required the BLM and USFS to create maps of Canada Lynx Analysis Units (LAU) to be used for evaluating and monitoring the effects of management actions on lynx habitat. In 2002, the USFWS reviewed and acknowledged the lynx analysis units developed by the USFS and BLM in the Salmon area. Since that time the Salmon-Challis National Forest has taken the lead to remap the LAUs in the area, but at this point have not submitted them to the USFWS for acknowledgment. Using new information, the new LAU map does not contain any of the BLM managed lands in the CBT area, due to the lack of timbered habitat and the fact that where there is timbered habitat it is on dryer sites that would not support Canada lynx denning.

Using the maps that have been acknowledged by the USFWS, there is one Lynx Analysis Unit (LAU), the Timber Gilmore Unit, comprising a total of approximately 497 acres of habitat on BLM managed land in the Action Area. The LAU crosses onto adjacent National Forest lands to incorporate enough habitat to meet the requirements of an LAU. Based on the Canada Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et al. 2000), BLM-administered lands within the Action 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 Salmon Field Office has twelve reports of lynx occurring within the Action Area; they are in the Canyon (1955 and 1978), Hawley (1955 and 1979), Eighteenmile (1978), Texas (1970’s and 1994) and Timber (1970’s and 1991) Creek drainages. Most of the records are from riparian corridors and were probably from trapping records as Canada lynx moved along the corridors. The surrounding Salmon-Challis National Forest is currently considered unoccupied for Canada lynx, and they do not consult on projects in relation to the lynx.

### **Gray Wolf**

Wolves in Idaho were declared endangered in 1974 under the ESA. In 1994, the USFWS promulgated special rules under section 10(j) of the Endangered Species Act of 1973, as amended, establishing two nonessential experimental populations, one for the central Idaho area and the other for the Yellowstone area, which provided management flexibility to address the potential negative impacts and concerns regarding wolf reintroduction. In January 2005, the USFWS revised the rules that govern the experimental non-essential population of reintroduced wolves in Idaho south of Interstate 90. One of the changes allowed any public land permittee who is legally using public land under a valid Federal land-use permit to immediately take a gray wolf in the act of attacking his/her livestock on his/her allotment or other area authorized for his/her use without prior written authorization, provided that permittee provides evidence of livestock recently wounded, harassed, molested, or killed by wolves, and the USFWS or their designated agent are able to confirm that the livestock were wounded, harassed, molested, or killed by wolves.

In 2006, the USFWS announced their intention to conduct rulemaking to establish a distinct population segment of the gray wolf in the Northern Rocky Mountains of the United States. They also stated that they intended to conduct a future rulemaking to propose that the gray wolf in the Northern Rocky Mountains wolf Distinct Population Segment be removed from the List of Threatened and Endangered Wildlife under the Endangered Species Act of 1973, as amended.

In 2009, the USFWS remove the gray wolves in the Northern Rocky Mountains wolf Distinct Population Segment from the List of Endangered and Threatened Wildlife, except for the gray wolves in Wyoming. In 2010, the USFWS issued a final rule to comply with a court order that had the effect of reinstating the regulatory protections under the Endangered Species Act of 1973, as amended, for the gray wolf in most of the northern Rocky Mountains as nonessential experimental populations.

In the Action Area the gray wolf is currently an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. The numbers of wolves in the area have increased, and wolves are being reported more often on lands administered by the Salmon Field Office, including within the Action Area. At the end of 2009, the IDFG estimated that there were a minimum of 835 wolves in Idaho. The 2009 IDFG wolf activity map showed that there is one documented pack and one suspected pack in the CBT area. At this time the Salmon Field Office of the BLM does not know of any den or rendezvous sites on land that we manage.

## **GRAZING FOCUS INDICATORS**

In past consultations the BLM has used the Matrix of Pathways to analyze the effects of livestock impacts to fish and designated habitat. Per the 2009 IP, the BLM will update the environmental baseline using 5 quantifiable indicators related to livestock grazing and having influences on fish habitat including: Substrate, Greenline Vegetation (ecological status, % hydric vegetation, wetland rating), temperature, greenline-greenline width, and streambank stability. These are the indicators that the BLM, USFWS and NOAA Fisheries agreed are the most easily monitored, have the most specificity with a long running data set, and most closely reflect the aquatic/riparian baseline pathway and indicator elements considered most likely to be impacted by grazing activities within a watershed.

These indicators characterize the condition of the aquatic habitat conditions in the allotments analyzed in this BA. If quantitative stream specific information is not available, then observational information was used. If one (or several) of the focus indicators showed that a habitat condition was potentially limiting the ability of listed fish species to thrive; a rationale of the most likely causal factor for that limiting condition is given. By identifying those potentially limiting factors, the BLM and the Services can focus their analysis of the proposed action's effects on that habitat component.

These indicators encompass the recently published PCEs for Chinook salmon, steelhead and bull trout critical habitat, and therefore our analysis of these elements will serve as an analysis of impacts to designated critical habitat. A crosswalk of these PCE's and indicators used in this analysis is contained in [Appendix 3](#).

### **Water Temperature**

Removal of canopy cover over small streams can result in detrimental increases in water temperature (Powell et. al. 2000). In a comparison of un-grazed exclosures to areas subject to season-long grazing in the Blue Mountain region of Oregon, Claire and Storch (1983) noted that the grazed section was devoid of shrub cover and daily water temperatures were 12 degrees F higher than water temperatures inside the exclosures. Temperature increases may be attributed to increased stream widths, decreases in stream depth, and reductions in overhanging bank cover, overhanging vegetation, and shaded cover on the heavily grazed stream.

Key Management Objectives for Temperature Maxima in the Lemhi River Watershed.  
Snake River Spring/Summer Chinook:

**Summer rearing juvenile life stage and late summer spawning: 17.8 degrees C (64 degrees F)** as the 7-day average maximum (this compares with PACFISH RMO of 17.8 degrees C and Idaho Water Quality Criteria for cold water biota of 26 degrees C (IDAPA 58.01.02).

**Late Summer Incubation: 15.6 degrees C (60 degrees F)** (this compares with PACFISH RMO of 15.6 degrees C and Idaho Water Quality Criteria for cold water biota of 26 degrees C (IDAPA 58.01.02).

Snake River Steelhead:

**Summer rearing juvenile life stage: 17.8 degrees C (64 degrees F)** as the 7-day average maximum (this compares with PACFISH RMO of 17.8 degrees C and Idaho Water Quality Criteria for cold water biota of 26 degrees C (IDAPA 58.01.02).

Bull Trout:

**Summer rearing juvenile life stage: 12 degrees C (54 degrees F)** as the 7-day average maximum (this compares with INFISH RMO of 15 degrees C and Idaho Water Quality Criteria for bull trout juvenile rearing of 13 degrees C (IDAPA 58.01.02).

Because of the number of streams involved in the analysis area, the status of this indicator across the Action Area will be discussed solely within the **Status and Trend of Environmental Baseline Habitat Indicators** portion of each allotment analyzed in the **Ongoing Actions** section.

### **Streambank Stability**

Streambanks can become unstable, or lacking in ability to resist the erosive effects of high stream flows, as a result of livestock grazing. Bare stream banks, either in erosional or depositional positions of the stream, are considered unstable due to their vulnerability to erosion. The effect of excessive grazing is to alter the streamside vegetation composition resulting in a dominance of plants that are more vulnerable to erosion (Platts 1991, Bauer and Burton 1993). Mass wasting may also result from break-offs, hoof slide, and hoof shear related to the physical disturbances of trampling (Bauer and Burton 1993, Power et. al. 2000). Unstable stream banks can lead to accelerated bank erosion and subsequent channel widening, increased sediment supply, decreased sediment transport capability, and damaged fisheries habitat (Rosgen 1996).

The method currently used to estimate streambank stability is the Multiple Indicator Method (MIM). A technical reference describing this protocol in detail is currently under development and expected to be published later this year (see <http://rmsmim.com>).

Streams representing natural conditions, with little or no human influence, were examined for habitat conditions (Overton et al 1995). Approximately 2400 observations were made in low gradient (c channel types) streams in granitic geologies of central Idaho wilderness and roadless areas. Among these observations, bank stability was above 90% approximately 70 percent of the time. Among the remaining 30 percent of observations, 8 percent were in the 80-90% range, 6 percent in the 70-80% range, 5 percent in the 60-70% range and most of the rest between 40-60% stable streambanks. Given these observations, it is important to assess the natural factors affecting streambank stability before attributing all reductions to livestock grazing. The riparian management objective for streambank stability is 80 to 90% depending upon the channel type and PACFISH priority watershed status. The entire CBT analysis area is within a PACFISH priority watershed, thus the PACFISH standard would be 90% for all allotments considered in this BA.

Because streambank stability describes very site-specific conditions and does not provide a valid portrayal of conditions across a large area, the status of this indicator across the Action Area will be discussed solely within the **Status and Trend of Environmental Baseline Habitat Indicators** portion of each allotment analyzed in the **Ongoing Actions** section.

### **Greenline-Greenline Width**

Greenline-to-greenline width (GGW) is the non-vegetated distance between the greenlines on each side of the stream. It provides an indication of the width of the channel, reflecting disturbance of the banks and vegetation. As stream channel margins are disturbed by trampling or excessive vegetation consumption, streams may erode the banks, causing a lateral accretion of the bank and streamside vegetation. This results in a shifting out, or widening of the distance between greenlines within the non-vegetated channel.

Many stream channels become over-widened as a result of vegetative changes and physical disturbance to stream banks after grazing, trampling, or other disturbing activity. Improper livestock grazing can alter stream habitats by channel widening and/or incision (Burton et. al. *in press*). Under improper grazing, protective vegetation is weakened or removed, and trampling may induce a sloping streambank profile (Burton et. al. *in press*). Subsequent erosion of weakened stream banks during floods results in a wider, shallower stream channel profile. These changes to stream channels can be detrimental to biota. Observations at research sites indicated stream width reductions in over-grazed streams, with improved grazing management of riparian zones. The average amount of narrowing was inversely associated with the level of grazing intensity.

The GGW reflects the vegetative composition and stability of the stream banks. As vegetation shifts from deep-rooted hydric types, to more shallow-rooted mesic and xeric types, stream banks become vulnerable to erosion and lateral migration, allowing the distance between greenline to expand. Likewise, as streams recover from past disturbance, a greater abundance of deep-rooted riparian-wetland vegetation may become established on the streambanks, resisting stream erosion and building more stable stream banks. As banks become stabilized, vegetation may encroach on the channel, particularly on bars in the margins of the stream, allowing the width between greenlines to narrow.

There have been no criteria established for GGW's in the Lemhi River watershed. Criteria for GGW would be based upon the geomorphic potential of a given stream reach. Objectives specific to GGW may be developed from reference sites on the same stream reach when such information is available. GGW is particularly useful for measuring trends over time. With no trend information it is not possible to estimate the desired condition for sites analyzed and there will be minimal discussion in the individual allotment analyses.

### **Greenline Vegetation**

Riparian vegetation is critically important for the stability of streambanks, determining streambank morphology (width, depth and shape), water quality, and aquatic habitat quality (Hansen et al 1988). Livestock grazing, as well as other anthropogenic disturbances, impacts vegetation through reduced vigor, soil compaction, changing species, and physical disturbance of the streambanks (Platts 1991 and Wyman et al 2006). Sampling along the greenline is designed to account for the continuous line of vegetation occurring along most streambanks (Winward 2000). Since streams are dynamic, measuring vegetation along the greenline, which can move in response to annual stream flow levels, is particularly effective for understanding the overall condition and health of the stream reach. Determining the species of plants along the streambanks provides an indication of the condition, based on the health and amount of deep, strong-rooted vegetation, and the trend toward or away from the objectives established for the stream reach.

Multiple indicators are, and have been, used to document the condition and trend of riparian condition. The primary ones discussed in this document include Ecological Status, Site Wetland Rating, Percent Hydric Plants, and Riparian Proper Functioning Condition.

**Ecological Status.** This metric is the average ecological status rating of plants as defined by Winward (2000). Plants are weighted according to their percent composition. This metric is calculated using plant seral status ratings and Winward's Riparian Capability Groups. It is further adjusted where a woody overstory component should be present but currently is not present. In most cases, BLM will be seeking to have streams at late seral or at PNC, however, in some cases where the desired vegetation (e.g. aspen) rate out at mid-seral, the objective might be lower. Ratings are as follows:

Winward Greenline Successional Status (Winward 2000)	
Value	Rating
0-15	Very Early
16-40	Early
41-60	Mid
61-85	Late
86+	PNC

**Site Wetland Rating.** This metric is the average wetland rating of plants as computed using the Site Wetland Rating (Coles-Ritchie 2005). Wetland Indicator Status values for individual species may vary by region.

**Percent Hydric Plants.** This is the proportion of the composition consisting of hydric (or water loving) plants. It is calculated by summing the total percent composition of plants rated as “hydric” divided by the total percent composition of all plants. “Hydric” is defined as those plants classified in the Wetland Indicator Status as Facultative Wet to Obligate. Prior to using the MIM monitoring protocol with its database that assigns numeric values to each species based on their status; the BLM Salmon Field Office used a greenline evaluation process which lumped each “step” into one of several categories. These categories have been weighted to give a “percent hydric” value that more appropriately portrays the percentage of hydric species across the entire greenline reach. Those categories that were indicative of “steps” with more than 75% hydric species were weighted as 100% hydric, the category that documented “steps” with between 25% and 75% hydric species were weighted as 50% hydric. Those categories which documented steps with less than 25% hydric were weighted as 0% hydric. These adjusted numbers are presented in the riparian hydric species table within the Greenline Vegetation analysis for monitoring done prior to 2008.

**Riparian Proper Functioning Condition.** Proper functioning condition (PFC) is a qualitative method for assessing the condition of riparian-wetland areas (USDI BLM 1998). Riparian PFC represents a broad-scale, consistent approach for considering hydrology, vegetation, and erosion/deposition (soils) attributes and processes to assess the condition of riparian-wetland areas. It is an estimation of how well the physical processes are functioning. Because PFC is qualitative, it cannot be used reliably for monitoring, but provides an assessment of relative condition across whole reaches of stream or multiple streams in a basin. Such a broad-scale assessment provides opportunities for prioritizing more detailed assessments at the site scale. More details on the assessment are provided in BLM’s Technical Reference TR-1737-15 available online at: <http://www.blm.gov/nstc/library/techref.htm>

**Substrate Percent Fine Sediment**

Bed material sampling is used to detect impacts of channel disturbance and the effects of management prescriptions and mitigations on the substrate over time. As channels become less stable, bed scour is reduced and deposition increases, resulting in higher levels of fine sediment within the substrate. Channel instability often leads to channel widening, where the energy balance between erosion and deposition shifts toward deposition and therefore fining of the substrate (Powell et al. 2000). Such increases in fines

may degrade aquatic habitat by restricting the living spaces of substrate-dwelling organisms and by limiting the oxygen transfer to incubating eggs (Powell et al. 2000).

Substrate size distributions and fine sediment abundance are related to channel stability indicated by streambank stability and cover, greenline vegetation, greenline-to-greenline width, and bank alteration. Streamside vegetation consumption and bank trampling by livestock can lead to streambank destabilization. This may lead to increased bank erosion, subsequent channel widening, decreased water velocity, and increased deposition.

Using the MIM protocol, adequate substrate samples are collected using a template to reduce observer bias and to characterize the substrate to a precision within 10% of the mean. The MIM Data Analysis Module calculates the percent of particles finer than 6 mm. It computes the percentage of particles that passes, or fits through the smaller slots (the 2, 2.8, 4, and 5.6 mm slots) in the template, as a proportion of the total sample. The PIBO Percent Pool Fines <6mm (PIFn6) substrate evaluation category equates to the same size particles evaluated with the MIM module.

Where core sampling data is available, we assessed depth fines using the numerics identified below. Where core sampling data is unavailable, we utilized habitat survey data to assess surface fines. Analysis of core sampling data correlates measured levels of depth fines in spawning habitats to predicted egg incubation success values determined by Stowell, et al (1983). Results of all depth fines assessments are expressed as percent fines less than ¼ inch in diameter. Analysis of depth fines additionally considers drainage geology. Stream sediment analysis parameters used in this BA is the same as used during previous ESA consultation on steelhead and bull trout Watershed Biological Assessments in the Lemhi.

The following are the evaluation criteria for stream sediment established during prior consultations and used herein without change:

#### Depth Fines

For streams based wholly or primarily in quartzite geology  
<20% depth fines (<1/4" diameter) = Properly Functioning  
21-25% depth fines = Functioning at Risk  
>25% depth fines (<1/4" diameter) = Not Properly Functioning

This includes the south side of Big Timber Creek (upper BLM) and upper portions of Little Timber Creek on FS land. Overall the Big Timber Creek watershed is a mix of quartzite and sedimentary and considered as an average of the two values.

For streams based wholly or primarily in granitic, volcanic or sedimentary geology  
<25% depth fines (<1/4" diameter) = Properly Functioning  
26-29% depth fines = Functioning at Risk  
>30% depth fines (<1/4" diameter) = Not Properly Functioning

This includes most of the CBT watershed area including all of the Canyon Creek, Hawley Creek, and Eighteenmile Creek watersheds and most of the Texas Creek watershed.

#### Surface Fines

Given the broad range of techniques for gathering the data (even PIBO and MIM don't align – pool tail-out versus entire reach), the range of suggested metrics, and the fact that they should be established based on geology and stream type, the Substrate indicator status determination may include use of surface fines data, but it will be in the context of all other data. We use the depth fines data from the FS wherever possible, but if the FS site is upstream of the BLM action, we use professional judgment to discuss how

that baseline value may be affected by downstream actions, and an overall determination will be made based on professional judgment from the combined assemblage of whatever data exists, in our narrative support for the status call made. Surface fines will be evaluated solely as an indicator of general trend in conditions, where such data exists.

Because substrate monitoring describes very site-specific conditions and does not provide a valid portrayal of conditions across a large area and different geology types, the status of this indicator across the Action Area will be discussed solely within the *Status and Trend of Environmental Baseline Habitat Indicators* portion of each allotment analyzed in the *Ongoing Actions* section.

### **Redd Disturbance by Trampling**

The literature suggests that the potential for redd disturbance from livestock wading within the stream could be significant (Ballard et. al. 2005, Gregory et. al. 2009). Factors that affect the probability of redd disturbance include: the number (density) of redds, the number of livestock in the pasture, accessibility to the channel (frequency of cattle entry points as affected by bank height and slope and the density of streamside woody vegetation), the temperature and velocity of the water, the coarseness of the stream's substrate, the timing of spawning coincident with the grazing period, and climatic and herding conditions conducive to livestock concentrating in the riparian area. Given this number of variables, predicting the potential for redd disturbance could be rather complex. Obviously the most important variable is to minimize the exposure of eggs during the incubation period to the presence of livestock trampling. This is usually done by limiting the period of grazing use to times other than the normal window of spawning and incubation activity within the active spawning reaches of the stream.

### **Monitoring and Adaptive Management**

The livestock grazing actions under consultation in this biological assessment are being reissued and some have modifications of objectives and/or activity design including implementation and effectiveness monitoring. Additionally, adaptive management may be used to adjust an action to environmental conditions so as to accomplish an objective (in this case improved or stable fisheries habitats/populations) through the use of sound science based activity planning. Adaptive management is a five step process that includes: Assessment; Development of Resource Objectives; Activity Design and Implementation; Monitoring; and Modification.

The permit renewal process has included a "Watershed Assessment" completed in 2010 as part of the [Rangeland Health Assessments](#) conducted every 10 years. "Activity design" is the development of the permit proposal during the permit renewal NEPA process.

#### **Development of Resource Objectives:**

For each allotment/pasture where livestock have the potential to impact listed fish or aquatic habitat ("may affect"), appropriate riparian management objectives (RMOs) have been identified. Site-specific RMOs have been established for all Designated Monitoring Areas (DMAs) through discussion with an interdisciplinary team. These RMOs are felt to be the most readily quantified and applicable to the individual sites based on existing data and potential conditions. At a minimum, RMOs have been developed for one DMA per stream in each pasture.

#### **Monitoring:**

All allotments and associated pastures currently have established DMAs that have been selected by an interdisciplinary team. Results for the 2011 data at this time are provided in the allotment sections below. These riparian monitoring sites are located within pastures containing a perennial stream and are used to measure progress toward meeting riparian objectives. Many of these sites have been in existence since 1993 when the Field Office first began to make changes to livestock grazing management in an effort to improve stream conditions and address impacts to chinook Designated Critical Habitat. Such sites were

typically designated at locations most accessible and susceptible to livestock grazing impacts, to quickly show the impacts of changes in management, both positive and negative, and thus may not be typical of overall conditions of the stream. However, where they exist, the PIBO Integrator reach evaluations provide a good tool for determining the overall aquatic health of the watershed as impacted by all uses.

DMAs identified by the Salmon Field Office are a blend between a “representative DMA”, and the “critical DMA”. Representative DMAs, as defined in Burton et al (2010) are a monitoring site in a riparian complex that while representative of a larger area, “should be placed in the riparian complex that is the most sensitive to management influences. The premise is that if the DMA is placed in the most sensitive complex and that complex is being monitored and managed to achieve desired conditions, then the other less sensitive complexes will also be managed appropriately”. These are different than Critical DMAs, which “are monitored for highly localized purposes and to address site-specific questions. Extrapolating data from a critical DMA to a larger area may not be appropriate within the complex containing the critical area.” All the Salmon Field Office DMAs are located in areas that are the most sensitive to disturbance, but often these locations are not representative of the larger area. Where this is the case, further explanation of conditions will be required.

As per the IP, appropriate implementation and effectiveness monitoring will be identified in the BA for each grazing action under consultation. The Salmon Field Office uses the [Monitoring Stream Channels and Riparian Vegetation - Multiple Indicators – MIM methodology](#) (Burton et.al. 2010) and riparian Proper Functioning Condition evaluations (USDI-BLM 1993; USDI-BLM, et al 1998) for all riparian monitoring to identify annual impacts and long term riparian trend. MIM protocols will be used for monitoring both grazing use indicators (Implementation Monitoring) and ecological trend of the RMOs (Effectiveness Monitoring).

Both in-season and end-of-season grazing use indicators are presented by DMA in each allotment analysis. These grazing use indicators will be monitored, validated, and adjusted as necessary to ensure the activity design allows for progress towards or achievement of the RMOs. We will monitor these indicators during the grazing season to help ensure the end-of-season indicators are met, and again at the end of the grazing/growing season to evaluate conditions. If in-season use indicators are met or exceeded, livestock grazing will be adjusted to reduce further potential impacts and assure that end-of-season indicators are not exceeded. If end-of-season indicators are not met, we will meet with the permittee and discuss/determine changes that could be made within the permit, as needed.

Very few research and references can be found that correlate annual use indicator levels to ecological health indicators and trend. BLM will collect data to evaluate trends at each DMA and use this to adjust grazing during the permit. For example, consistent results are not available that indicated a 20% bank alteration will maintain 80-90% bank stability. Much variation occurs in site conditions, season of use and soil type, regardless of the fact that the site is meeting or not meeting RMOs. In general for the ESA Action Area, grazing use prior to July 15 has shown that substantial riparian plant recovery occurs, increasing the hydric plant percentage/cover, bank stability rating, and other variables both in-season and over 3-5 year period. Up to this point, visual observations are the only information to support this; however, quantitative data sets are beginning in 2011 and are expected to provide use levels that correlate to trends toward RMOs. The adaptive management process establishes annual use/triggers for each DMA as best we can determine at this time. These can be adjusted as necessary once monitoring datasets are collected and evaluated and future use levels adjusted in coordination with the Level 1 Team in order to meet RMOs.

The purpose of annual use indicators are to ensure grazing effects do not limit attaining the riparian resource objectives. These indicators vary from allotment, pasture and season of use and can be modified via coordination with Level 1 Team and the Adaptive Management Process. Specific in-season and end-

of-the-season monitoring indicators are described in the allotment sections below. In general, when conditions are meeting established RMOs, use can occur to at least maintain conditions through annual bank alteration, residual herbaceous stubble height and woody browse. Where RMOs are below standards, more conservative use levels are prescribed to reduce livestock grazing impacts on stream/riparian habitats.

The Salmon Field Office will conduct effectiveness monitoring every 3 years on sites that currently do not meet RMOs and every 5 years on sites where the indicators are being met. In addition to the monitoring and adaptive management process discussed above, prior to permit renewal, all BLM allotments are required to meet, or show significant progress toward, the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (USDI-BLM 1997). Each allotment undergoes an evaluation prior to issuance of new term grazing permits.

#### Modification:

BLMs grazing administration regulations allow us to make annual changes to management, within the bounds of the permit, without further NEPA analysis or documentation, and no formal annual grazing plan is developed. Any modifications to the grazing system are made in coordination with the permittee based on use levels seen the previous year, changes in the permittees livestock numbers, annual climatic issues, or other resource needs. This coordination typically occurs at an annual meeting and is continued informally throughout the grazing season. If grazing use indicators are not met or effectiveness monitoring shows a negative change in condition, BLM will meet with the permittee to determine what changes need to/can be made within the scope of the permit.

#### Reporting:

Results will be presented by the BLM to the Level 1 team at the end of each grazing season prior to the end of the calendar year where the allotments have not met established grazing use indicators or RMOs to determine why the indicators were not met, and if changes to either the grazing prescription or the management indicators or objectives need to be made. If we are unable to complete the required monitoring due to other workloads or budgetary issues, we will inform the Services of what sites were not evaluated and why. We will transmit a copy of the monitoring summary to the Services following the annual meeting and request a written response documenting that we have met our requirements.

The Idaho BLM is undertaking an effort to develop a statistically valid sub-sampling approach for carrying out grazing implementation monitoring for the Salmon Field Office. No deadline has been set for development of this approach; however, the plan is to have an approach developed and ready for implementation for 2011. BLM will bring results to the Level 1 team for review and comment after each grazing season.

#### Summary:

The proposed monitoring and adaptive management approach, which includes an aggressive, ongoing evaluation of livestock use impacts, will help the BLM ensure that the action is being implemented as intended and not resulting in a level of effects not considered within this BA. As such, the proposed action relies heavily on the adaptive management strategy to integrate both annual and long-term monitoring data into daily, annual, and long-term grazing management decisions. The strategy described above in this BA is consistent with the approach discussed in the IP and complies with Federal grazing regulations. Should monitoring indicate that implementation is not occurring as described, or that RMOs are not being met, use of the adaptive management strategy should ensure that either the grazing permit or the grazing management will be adjusted as necessary to ensure upward progress toward or maintenance of properly functioning RMOs without resulting in a level of effects not analyzed within the scope of this document.

The following bullets summarize the Grazing Monitoring Strategy for the Salmon FO:

- A designated monitoring area (DMA) will be established for each pasture where grazing “may affect” listed fish/critical habitat.
- Riparian Management Objectives (RMOs) will be established for DMAs on streams in each pasture where grazing “may affect” listed fish/critical habitat.
- In-season grazing use indicators (e.g., residual stubble height, woody browse, and/or streambank alteration, as appropriate) and end-of-season grazing use indicators will be established for all DMAs on streams where grazing “may affect” listed fish/critical habitat. Grazing use indicators will be developed in accordance with the MIM protocol.
- Implementation monitoring will be conducted at least once during grazing and at the end of season on all DMAs on streams where grazing “may affect” listed fish/critical habitat.
- In-season grazing use indicators are intended to move livestock before habitat conditions become degraded (i.e., limiting effects to insignificant/discountable levels). In-season use indicators will be used by the BLM/permittees as a tool to help ensure end-of-season use indicators are met. End-of-season use indicators are intended to ensure that grazing does not prevent the attainment of the RMOs.
- If in-season grazing use indicator values are reached or exceeded during the season, livestock grazing will be adjusted as necessary to help ensure end-of-season use indicators are met. If indicators are not met at the end of the season the BLM will first determine why the end-of-season use indicators were not met. Then, BLM will then apply adaptive management as necessary, in coordination with the Level 1 Team where listed fish/critical habitat are potentially affected. If grazing use indicators are not met or effectiveness monitoring shows a negative change in condition, BLM will meet with the permittee to discuss the monitoring results and determine appropriate changes to livestock grazing management.
- A one-time exceedance of an annual use indicator does not automatically mean that adverse effects have occurred. If an exceedance occurs, the BLM will first determine why the indicator was not met, and secondly determine if any effects not previously considered occurred as a result of the exceedance. If such exceedances occur, the BLM will evaluate the need to modify either the resource objectives or the allotment administration through the identified adaptive management process. Allotment modifications would be designed to result in maintenance or achievement of appropriate RMOs. Should exceedances result in effects not considered in this consultation, the BLM will pursue reinitiating consultation.
- PIBO implementation and effectiveness monitoring will be conducted in accordance with regional direction provided by the Deputy Team. In accordance with current direction, effectiveness monitoring will be done every 5 years on DMAs meeting RMOs. In addition, the BLM proposes to conduct effectiveness monitoring every 3 years on DMAs not meeting RMOs.
- Annually, results will be presented by the BLM to the Level 1 team where the allotments have not met established grazing use indicators or RMOs to determine why the indicators were not met, and if changes to either the grazing prescription or the management indicators or RMOs need to be made. If we are unable to complete the required

monitoring due to other workloads or budgetary issues, we will inform the Services of what sites were not evaluated and why. We will transmit a copy of the monitoring summary to the Services following the annual meeting and request a written response documenting that we have met our requirements.

### **Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management**

All BLM allotments are required to meet, or show significant progress toward, the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (USDI-BLM 1997). Each allotment undergoes an evaluation prior to issuance of new term grazing permits. The pertinent Standards that we evaluate related to aquatic habitat, water quality and endangered species include:

**STANDARD 1 (WATERSHEDS)** - Watersheds provide for the proper infiltration, retention, and release of water appropriate to soil type, vegetation, climate, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Indicators may include, but are not limited to, the following:

1. The amount and distribution of ground cover, including litter, for identified ecological site(s) or soil-plant associations are appropriate for site stability.
2. Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface sealing, and compaction layers below the soil surface is minimal for soil type and landform.

**STANDARD 2 (RIPARIAN AREAS AND WETLANDS)** - Riparian-wetland areas are in properly functioning condition appropriate to soil type, climate, geology, and landform to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Indicators may include, but are not limited to, the following:

1. The riparian/wetland vegetation is controlling erosion, stabilizing streambanks, shading water areas to reduce water temperature, stabilizing shorelines, filtering sediment, aiding in floodplain development, dissipating energy, delaying flood water, and increasing recharge of groundwater appropriate to site potential.
2. Riparian/wetland vegetation with deep strong binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.
3. Age class and structural diversity of riparian/wetland vegetation is appropriate for the site.
4. Noxious weeds are not increasing.

### **STANDARD 3 (STREAM CHANNEL/FLOODPLAIN)**

Stream channels and floodplains are properly functioning relative to the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity) and climate to provide for proper nutrient cycling, hydrologic cycling, and energy flow. Indicators may include, but are not limited to, the following:

1. Stream channels and floodplains dissipate energy of high water flows and transport sediment. Soils support appropriate riparian-wetland species, allowing water movement, sediment filtration, and water storage. Stream channels are not entrenching.
2. Stream width/depth ratio, gradient, sinuosity, and pool, riffle and run frequency are appropriate for the valley bottom type, geology, hydrology, and soils.
3. Streams have access to their floodplains and sediment deposition is evident.
4. There is little evidence of excessive soil compaction on the floodplain due to human activities.
5. Streambanks are within an appropriate range of stability according to site potential.
6. Noxious weeds are not increasing.

### **STANDARD 4 (NATIVE PLANT COMMUNITIES)**

Healthy, productive, and diverse native animal habitat and populations of native plants are maintained or promoted as appropriate to soil type, climate and landform to provide nutrient cycling, hydrologic cycling and energy flow. Indicators may include, but are not limited to, the following:

Native plant communities (flora and microbiotic crusts) are maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant species.

The diversity of native species is maintained.

Plant vigor (total plant production, seed and seed stalk production, cover, etc.) is adequate to enable reproduction and recruitment of plants when favorable climatic events occur.

Noxious weeds are not increasing.

Adequate litter and standing dead plant material area present for site protection and for decomposition to replenish soil nutrients relative to site potential.

STANDARD 5 (SEEDINGS) and STANDARD 6 (EXOTIC PLANT COMMUNITIES) are outside the scope of this ESA consultation.

#### STANDARD 7 (WATER QUALITY)

Surface and ground water on public lands comply with the Idaho Water Quality Standards. Indicators may include, but are not limited to, the following:

Physical, chemical, and biologic parameters described in the Idaho Water Quality Standards.

#### STANDARD 8 (THREATENED AND ENDANGERED PLANTS AND ANIMALS)

Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species. Indicators may include, but are not limited to, the following:

1. Parameters described in the Idaho Water Quality Standards.
2. Riparian/wetland vegetation with deep, strong, binding roots is sufficient to stabilize streambanks and shorelines. Invader and shallow rooted species are a minor component of the floodplain.
3. Age class and structural diversity of riparian/wetland vegetation are appropriate for the site.

Each allotment has Designated Monitoring Areas (DMAs) that have been selected by an interdisciplinary team. These riparian monitoring sites are located within pastures containing a perennial stream or appropriate portion of an intermittent stream, to measure progress toward meeting riparian objectives. Many of these sites have been in existence since 1993 when the Field Office first began to make changes to livestock grazing management in an effort to improve stream conditions and address impacts to chinook Designated Critical Habitat.

The Salmon Field Office seeks to manage all grazing allotments avoid excessive grazing of riparian areas that could prevent achieving the desired habitat conditions. BLMs grazing administration regulations allow us to make annual changes to management, within the bounds of the permit, without further NEPA analysis or documentation. Any modifications to the grazing system are made in coordination with the permittee based on use levels seen the previous year, changes in the permittees livestock numbers, annual climatic issues, or other resource needs. Although the MIM monitoring protocol is conducted every 3-5 years to evaluate trend in riparian conditions, annual ocular observations are made on each allotment and used to make changes in annual management. Additionally, the new monitoring protocols will be incorporated into the new grazing permits to include the in-season and end of season objectives and related monitoring process.

**PROPOSED ACTIONS**

The Proposed Action is to issue ten-year term grazing permits on 16 allotments. In addition, the proposed action would include construction of two water developments (pipeline and trough systems), three exclosures, a new fence, and four fence relocations, a bull trout habitat improvement project in Eighteenmile Creek, aeration site preparation and native plant seeding of rangelands, removal of Douglas-fir tree encroachment from mountain big sagebrush communities, and thinning of trees from Douglas-fir stands in the vicinity of a wildland-urban interface.

Details of the Proposed Action are described using the following format:  
 Descriptions of the "Other Terms and Conditions" common to all grazing permits.  
 The Proposed Action by Allotment, including:  
 The grazing permit(s) that would be authorized for the next ten years, including mandatory and other Terms and Conditions (see format below);  
 Range Improvement Projects that would be constructed; and  
 Vegetation Manipulation Projects that would be completed.

Portions of the Proposed Action common to all Allotments:

All permits will be displayed in this document using the following format, which include the mandatory Terms and Conditions described in 43 CFR 4130.3

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	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 number of animals. Other terms and conditions for the allotment may allow the livestock numbers to be increased if the grazing period is decreased and the Active Preference for the allotment is not exceeded. Cattle refers to a bull or a cow and her calf (as long as the calf was under the age of 6 months at the time of entering public land)
- Grazing Period: The total time period that cattle can be on the allotment. Other Terms and Conditions on the permit may decrease the grazing period but will not increase it.
- % Public Land: The percentage of the allotment that is managed by the BLM. The permittee also has other lands within the fenced allotment that he can utilize for cattle grazing.
- Active Use (AUMs): The AUMs the permittee is utilizing calculated based on the Number/Kind, Grazing Period, and Percent Public Land.
- 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.

- Applicant Status: Permittees that have corresponded to have applicant status are part of the permit renewal process involving ESA consultation are identified in each allotment section below.
- In addition to mandatory Terms and Conditions, other Terms and Conditions may be added to permits.
- Other Terms and Conditions which would be added to all grazing permits:
  - As provided in Title 43 of the Code of Federal Regulations (43 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 penalties as described at 43 CFR 4170.1-1(a).
  - Exclosures in the Allotment cannot be grazed by livestock at any time.
  - 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.
  - Project descriptions common to all fences and water developments:
    - Equipment use – Equipment would be allowed to leave existing routes to complete the project work, except within the 18-Mile 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 a 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 additional wire would be needed for the fence to prevent livestock from crossing a barbed wire, it 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 rail 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. 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. See the Effects sections further down in the document under each appropriate allotment for the new water developments.
- Reclamation – areas of project-related soil disturbance would be broadcast seeded with a native seed mix.

## **EFFECTS COMMON TO ALL ALLOTMENTS**

Regarding season of use and general effects of grazing, detailed impacts are found under each allotment below. The effects that are, in general, common to all allotments include the benefits of early season grazing use and resulting impacts on fish habitat.

Early season grazing on the CBT allotments (usually may- early July) has different impacts and results compared with grazing during the “hot-season” (usually July through September). During the early season, spring forage conditions in upland habitats are more desirable during the prescribed grazing window. Livestock preference for upland forage at this time results in limited impacts to action area riparian and stream habitats. Additionally, off-channel water troughs and multiple mineral supplement locations further reduce the need for livestock to congregate in or utilize streamside areas. BLM has seen moderate to dramatic improvements in stream/riparian conditions in the action area over the past ten or more years by moving hot-season grazing to less time or into the early season period.

Season of use greatly influences grazing effects on vegetation. Areas that would be grazed early in the season only (before early to 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 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. This regrowth would function as a filter for instream and flood flows, and would reduce water velocity and permitting 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).

Despite variability in plant community types, Boyd and Svejcar (2004) found that clipped stubble height and time of clipping were strongly associated with end-of-season regrowth performance. The regrowth response of plants to timing of clipping supported the management concept that later clipping (July) produces less regrowth than early clipping (June). Most clipping height by time combinations produced end of season heights sufficient to meet current federal stubble height requirements (4-6 inches). Below ground biomass production is also an important consideration when evaluating plant response to early season grazing. In riparian sedge communities, Boyd and Svejcar (2008) found that root production is resilient to moderate levels of defoliation during the growing season and suggest that grazing to a 10.2 cm (4") stubble height will not substantially reduce below ground production. Root mass was only reduced by the later (hot) season July clipping treatment and not with the early season treatment.

In regards to fisheries, Platts and Nelson (1989) indicate that riparian pasture grazing strategies rate an 8 on a scale of 1 (poorly compatible) to 10 (highly compatible) for compatibility with fishery needs. Categories evaluated were: level to which riparian vegetation is commonly used, control of animal distribution, streambank stability, brushy species condition, seasonal plant regrowth, and stream-riparian rehabilitative potential. Only rest or closure rated a 10 and most (13 of 16) other grazing strategies rated significantly lower than a riparian pasture grazing strategy for compatibility with fisheries needs.

At a minimum, Chaney, Elmore, and Platts (1993) propose that any successful grazing strategy will: 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.

Based on both the literature and professional judgment, we have determined that limiting cattle use to spring grazing allows the greatest amount of time for riparian species to recover and is therefore the preferred management method for riparian pastures. Salmon BLM data and/or personal observations have shown that current timing (spring), intensity (light to moderate), and duration (short-term) have resulted in both maintenance (in those pastures meeting objectives) and an increase in trend (in those pastures not meeting objectives) of desired vegetative and hydrologic conditions.

# CANYON CREEK ALLOTMENTS

## JAKES CANYON ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat. This project’s ESA Action Area is defined as the Jakes Canyon Allotment (Figure 7) downstream to the Lemhi River.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed. ESA Action Area, effects determination and rationale for the Jakes Canyon Allotment is the 0.3 mile segment of Canyon Creek in the riparian pasture and downstream to the Lemhi River. Data and descriptions are presented for the Jakes Canyon Allotment in context of the Canyon Creek sub-watershed to describe the condition and trend of the environmental baseline at that scale. Because Canyon Creek is connected to the Lemhi River, there is the potential for habitat stressors/effects related to potential increases in sediment and water temperature to downstream habitat in Canyon Creek to the Lemhi River during runoff events. At that point, these potential effects are not measurable relative to existing background levels. Additionally, flows from the BLM portion of the stream are diverted seasonally for irrigation purposes.

**Background:** Canyon Creek has a mainstem base flow of 5-10 cfs, and is characterized by stream gradients of 1- 2% on the allotment. The lower 3 miles are C-type channel, while the majority of the stream is a B-type channel further up the drainage. The lowest reach of the stream is in private ownership. Two main irrigation diversions just upstream from the allotment divert the majority of the flows during the irrigation season. Through the work of the USBWP, NRCS and IDFG Screen Program, diversion consolidation projects in the late-1990’s and again in 2010 along with a barrier removal and culvert replacements have allowed flows to reach through the allotment and to the Lemhi River. Canyon Creek is now connected to the Lemhi River with year-round flows (summer minimum of approximately 7.0 cfs). Seasonal velocity migration barriers exist in the lower reaches of Canyon Creek at the County back road crossing, the FS Guard Station crossing and further upstream at the BLM/NF boundary on Highway 29 crossing about 4 miles up from the Lemhi River.

Adult steelhead or Chinook are not currently known to spawn in the lower reaches of Canyon Creek but have the potential. Also, juvenile anadromous fish now have the ability to access and use lower Canyon Creek for rearing habitat. Bull Trout are found in the headwater tributary Rough Canyon Creek on the USFS but have not been found in any instance in lower Canyon Creek.

The Jake’s Canyon Allotment consists of approximately 550 acres of BLM land in two pastures with about 30 acres of other lands fenced with the allotment. Most of the allotment is upland habitat in the North Pasture. The South or Riparian Pasture is a small area with approximately ¼ mile of Canyon Creek flowing through. The allotment has been used in the spring/early summer for at least the past twenty years with less than 40 cattle. The stream habitat is generally in good condition, classifies as PFC condition. The riparian vegetation gets minimal use while cattle are in the allotment and has most of the growing season to recover and fully express itself following livestock removal. Most of the length is covered in willows and deep-rooted herbaceous plants and has been minimally impacted from livestock grazing.

The allotment is meeting Standards 1, 2, 3 and 8, not meeting Standards 4 and 7, and Standards 5 and 6 are not applicable. It has been determined that current livestock management is a significant contributor to failing to meet Standard 4 but not Standard 7. To make significant progress towards meeting Standard 4, the BLM proposes to aerate and seed 225 acres of the allotment which would then be rested for two years. After two years of rest, 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. 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.

**Current Permit:**

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

**Terms and Conditions:**

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

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.

**Proposed Action:**

**Jakes Canyon Grazing Permit 2011-2021:**

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	21 Cattle	5/20-7/15	100%	31	31	31	62

**Other Terms and Conditions:**

- Cattle numbers may be increased up to a total of 40 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.
- Livestock grazing of the South Pasture will be limited to a total of 9 AUMs and will not occur after 7/1.
- In two out of three years, grazing of the North Pasture will not occur before 7/1.
- The allotment will not be grazed for two years following seeding.

**Vegetation Manipulation Projects:**

Jake’s Canyon Vegetation Treatment is located about .75 miles northeast of Leadore, ID. 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 Report.

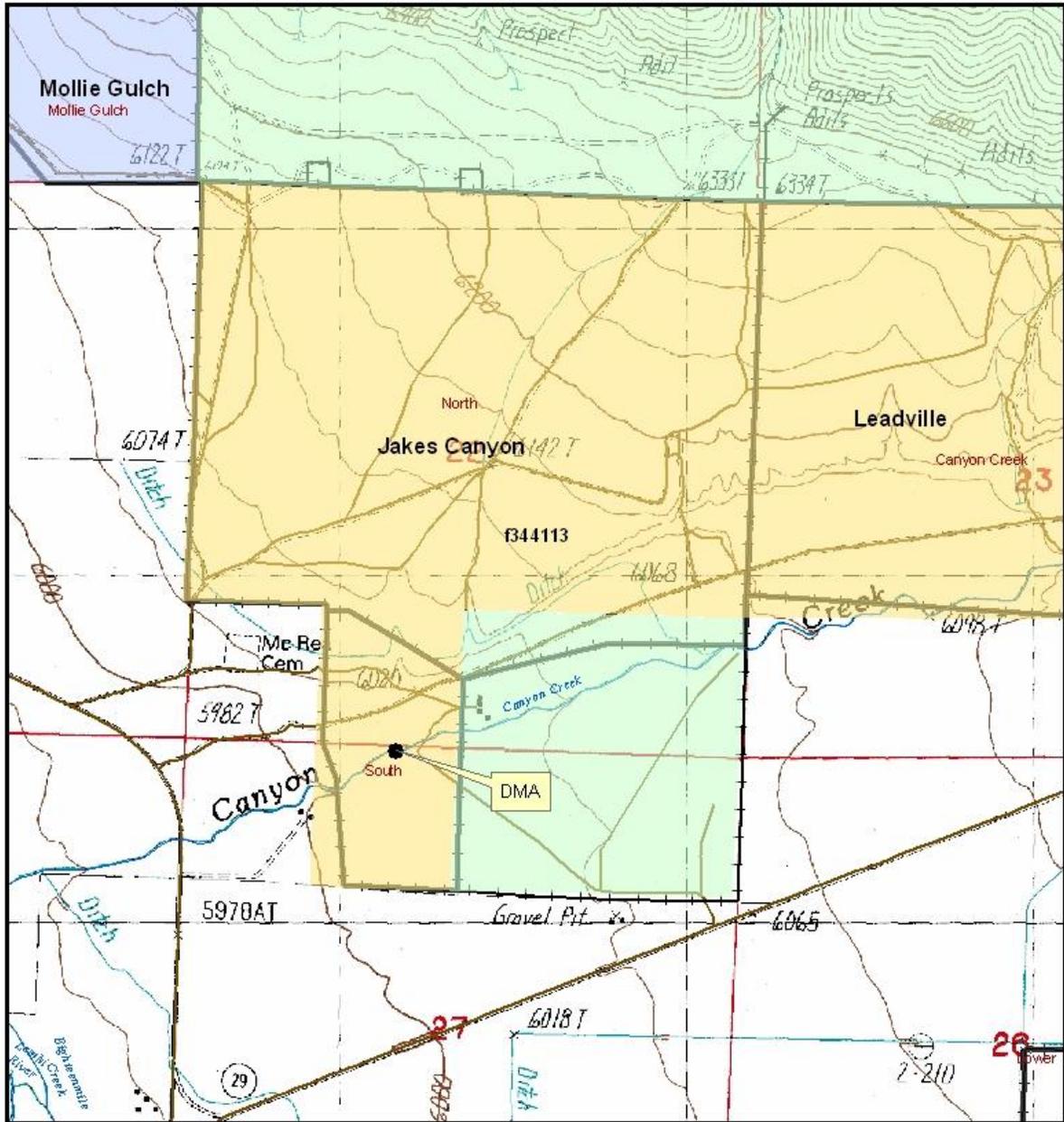
With the implementation of the Jake’s Canyon Seeding, approximately 548 acres making up the Jake’s Canyon Allotment would be rested (removed from livestock grazing) for two years. Mechanical vegetation treatment would be applied on up to 225 upland acres outside of the RHCA and not

influencing the stream habitat. 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 with bluebunch wheatgrass on up to 225 acres. The remaining untreated portions (323 acres) of the allotment would also be rested from livestock grazing use for two years.

**Crossing Permits:** None would be authorized for this Allotment.

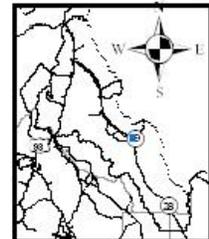
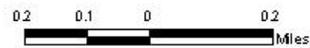
Figure 6. Jakes Canyon Allotment Map.

Map - Canyon Creek, Jakes Canyon Allotment



Legend

- PRIVATE
- BLM
- USFS
- STATE
- GRAZING ALLOTMENTS
- GRAZING PASTURES
- LINE\_FEAT
- FENCE



**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Not Properly Functioning; Static Trend

**Narrative:** Core sampling has been done by the USFS on the middle reach of Canyon Creek since 1993 approximately 5 miles upstream of the allotment. Watershed geology is predominately sedimentary and the previously identified sediment criteria for this parent material apply. The trend at the FS Canyon Creek site (n=16), with a 23.4% fines average, indicates a cyclic trend with depth fines increasing over a few year period then decreasing over the next few years then beginning the cycle again. The FS site meets the criteria for sedimentary geology. About two miles upstream, on the Leadville Allotment, at the Canyon Creek DMA CN-01, MIM substrate monitoring data for 2009 shows 40% surface fines. This value along with professional observations over the past ten years shows a higher surface fine component than expected. No trend data is currently available at the Jake’s Creek Allotment DMA site.

**Greenline Vegetation** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** 2009 Riparian PFC inventories show that Canyon Creek on the Jake’s Canyon Allotment is in Proper Functioning Condition. This segment of stream is densely vegetated with riparian shrubs and trees with no evidence of erosion existing. No greenline vegetation trend data is available.

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** 2009 MIM monitoring at the Leadville Allotment DMA documented a GGW on the segment of Canyon Creek of 3.77 m. The first DMA in the Jakes Canyon Allotment will be established in 2011. Future monitoring will verify the observed trend that Canyon Creek is narrowing and stabilizing since visual monitoring began in the mid-1990s. The stream channel is in similar condition as the Leadville Allotment segment. It is well vegetated with willow and deep-rooted herbaceous plants and shows minimal impacts from grazing.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** The BLM has 16 datasets (1994-2009) for water temperature in Canyon Creek, using continuously recording thermographs. The location of the thermograph exists on the BLM/Private boundary in the Leadville Allotment just upstream. The 7-day average maximum water temperature at the site has averaged 61.6°F for the 17 years sampled. See Table 4 below.

**Streambank Stability** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** Canyon Creek in the Jakes Canyon Allotment is similar to the good conditions upstream in the Leadville Allotment and is heavily armored with willows and other riparian shrubs. Specifically, 2009 MIM monitoring documented 90% stable banks at the Canyon Creek DMA CN-01 approximately two miles upstream on the Leadville Allotment. No quantitative bank stability monitoring has been done on Jakes Canyon Allotment on Canyon Creek to verify observed trends. Grazing prescriptions and habitat conditions are very similar between Jake’s Canyon and Leadville Allotments. Potential impacts by livestock to streambank stability are limited due to the existing stable banks from the heavily wooded stream bank conditions.

Table 4: Canyon Creek at BLM/Private boundary Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
62.7	59.4	62	62.5	64.7	64.4	62.3	60.5	63.1	61.2	59.4	58

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** BLM will establish a DMA on the short segment of Canyon Creek in the allotment in 2011. There is a photo-series and associated PFC assessment from 2009. While cattle are in the pasture, use supervision ensures that the permittees comply with the

permitted season of use. Annual use indicators will be used on this allotment to limit the extent of grazing on bank stability. Past use levels and season of use/duration has resulted in a visually observed improvement in conditions. Continued compliance with seasons of use and the annual use indicators will maintain the existing conditions.

The following tables summarize the DMAs, monitoring objectives, and current year use levels for the Jakes Canyon Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator	
				In-Season	End-of-season
Canyon	Riparian	CN-02	90% bank stability	<15% bank alteration	<15% bank alteration
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble

Stream	Pasture	DMA	2011 Grazing Use Indicator		
			Mid-Use-Season	Post-Grazing	End-of-season
Canyon	Riparian	CN-02	6.5"	7.6"	N/A
			10% bank alteration	11% bank alteration	N/A

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

In general, the substrate conditions on Canyon Creek have a higher fine sediment component than expected. MIM substrate monitoring data for 2009 shows 40% surface fines at the Canyon Creek DMA CN-01 approximately two miles upstream on the Leadville Allotment. 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 above objective but appear to be minimally affected by current livestock grazing practices. This is due to visual observations of robust riparian vegetation, high bank stability levels and prescribed season of use which favors livestock use of uplands rather than riparian areas.

Pre-MIM Greenline studies on the DMA sites within the allotment show stable conditions in greenline vegetation type and condition. No information on appropriate GGW is available. Past (circa 1990s) changes in livestock grazing resulted in riparian vegetation recovery and allowed banks to stabilize. Current management is expected to continue the observed upward trend and protect areas functioning appropriately. As a result, channels should narrow where appropriate allowing the streams to attain proper GGW.

Stream/riparian conditions in the Jakes Canyon Allotment are rated as PFC. The stream is in similar condition and trend as the riparian vegetation at the Canyon Creek CN-01 DMA two miles upstream in the Leadville Allotment. The Leadville Allotment DMA improved from 21.5% Greenline Hydric Riparian Vegetation in 1994 to 64.5% in 2001 and 84% in 2009. Greenline hydric species are dominated by woody vegetation, including many young, early seral willow species, dropping the seral status. The combination of no grazing use during the hot season and annual use indicators/monitoring is expected to further increase the likelihood of upward trend or maintenance of properly functioning conditions.

Although periodic temperature exceedences exist for the streams in the allotment, with the recovery of riparian vegetation, particularly woody species, current livestock grazing does not appear to be contributing to increased water temperatures. Regardless, the BLM's primary mechanism for affecting

water temperature is altering riparian shade, and our monitoring shows that riparian vegetation has been improving under the current grazing strategy. Elevated water temperatures may be affected by other variables, including private lands agricultural practices and historic disturbances.

Streambank stability at CN-01 was 90% in 2009 due the extensive woody vegetation on the greenline. The action area and action are similar for this Allotment and although not measured, bank stability is anticipated to also be similar. Limited access by livestock to Canyon Creek due to the heavily wooded nature of the streambank and the early season of use is expected to result in limited potential for impacts to streambank stability.

The annual indicators are set at 15% bank alteration both in-season and end-of-season to improve bank stability conditions over the next ten years. Use levels are expected to be relatively low with the low numbers of cattle and the early season of use. Stubble height is expected to increase over the summer with cattle off the allotment by July and the remainder of the growing season to recover.

No impacts to fish or stream habitat are expected from the proposed upland vegetation treatments located outside the Canyon Creek RHCA.

### **Redd Disturbance**

No recent use by anadromous fish has been documented in lower Canyon Creek. With the recent reconnection of Canyon Creek to the Lemhi River, it is possible for both spawning and rearing of steelhead to occur in the future on the allotment. Although the NMFS intrinsic potential for Chinook spawning in Canyon Creek is identified, the probability is most likely low due to the small size of the stream. Additionally, livestock would not be present on the allotment when Chinook incubation is occurring. Juvenile Chinook may begin to utilize the habitat now that flows reach the Lemhi River where fish currently exist.

The Jakes Canyon Allotment would allow a small number of cattle to graze along Canyon Creek while steelhead eggs could possibly be present. Although the incubation/grazing overlap is not suspected to be occurring at this time, it is possible to conflict in the future and cannot be considered discountable. Mitigating for this is the current condition of a strong mature willow community along most of the stream bank. This reduces the probability of cattle from having access to the stream channel itself and substantially reduces the probability of trampling during the incubation period. The proposed grazing is expected to increase the number and extent of the riparian shrub community along Canyon Creek, reducing the probability in the future.

Canyon Creek is currently occupied by bull trout only in the headwaters on the USFS. 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. It is unlikely to support bull trout habitat except for migration habitat.

### **Summary**

Changes in management since the early 1990s have been documented by long term ocular observations and recent photographs. This shows that banks have vegetated and stabilized, streams have narrowed, and runoff does not result in measurable sediment input. Grazing in the allotment is limited to a short spring window in a riparian pasture. Due to the PFC conditions on the allotment, the proposed early season use, the in-season/end-of-season indicators, and proposed adaptive management process, impacts are expected to be minimal on habitat and key indicators. Cattle numbers may be increased up to a total of 40 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded. Livestock grazing of the South Pasture will be limited to a total of 9 AUMs and will not occur after 7/1. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-

grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006).

Current grazing management is designed to improve the conditions on this stream by limiting the duration of grazing outside of the hot-season, and implementing adaptive management changes based on compliance with proposed grazing use indicators. Continuation of the grazing on the allotment is expected to allow substantial riparian plant regrowth resulting in continued upward trend in conditions and not adversely affecting listed species or their habitat. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document. There is a possibility that livestock grazing under the proposed action could have a conflict with steelhead spawning in the next ten years. With the heavily wooded stream channel and low numbers of fish, the probability is low but not discountable.

**Interrelated and Interdependent Actions:** There are no known interrelated or interdependent actions related to this grazing permit. The ranch operation is located directly adjacent to the allotment and livestock are either trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration.

**Fish:** The lower portion of Canyon Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

**Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Canyon Creek have been drastically reduced over historic levels and recovery in the Jakes Canyon Allotment is at near-natural rates due to the very limited livestock use. Current management is resulting in a continued upward trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery of these systems. Because Canyon Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. Flows from the BLM portion are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat and small size of the stream, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment. Although the NMFS intrinsic potential for Chinook spawning in Canyon Creek is identified, the probability is most likely low due to the small size of the stream. Additionally, livestock would not be present on the allotment when Chinook incubation is occurring. Juvenile Chinook may begin to utilize the habitat now that flows reach the Lemhi River where fish currently exist. Juvenile ESA-listed fish will experience

minor and infrequent behavioral modifications. Behavioral modifications are not expected to result in take because the action area habitat conditions are functioning appropriately which provides suitable escape cover from the threat individual or small groups of cattle are likely to present to even individual fish.

***Essential Fish Habitat:*** Will Not Adversely Affect Essential Fish Habitat for the same reasons listed for Chinook salmon above. In addition, measures proposed to keep cattle away from stream channels, such as fencing, off-channel salting, and moving cattle out of the pasture further limits potential interactions. Natural inaccessibility of stream channels due to dense riparian vegetation further limits the potential for these effects to occur. For these reasons disturbances related to livestock grazing on the Allotment are insignificant.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment but grazing activities from the action including downstream effects of increases in sediment transport and increased water temperatures could affect DCH in the Lemhi River. At this point of the stream system, the impacts would not increase levels from background levels in the Lemhi River due to a much larger volume of water in the river. These effects are expected to be insignificant in DCH because they would be indistinguishable from background conditions; and, therefore not measurable.

Steelhead have not been documented in lower Canyon Creek, but have the potential to be present. With the springtime seasonal reconnection of Canyon Creek over the past five years on private land downstream, it is possible for both spawning and rearing of steelhead to occur in the future on the allotment. The probability of this occurrence in the next ten years appears to be relatively low due to very few steelhead adults currently found in the Lemhi River upstream of Hayden Creek. Although the incubation/grazing overlap is not occurring at this time, it is possible to conflict in the future and cannot be considered discountable. Mitigating for this is the current condition of a strong mature willow community along most of the stream bank. This precludes the cattle from having access to the stream channel itself and substantially reduces the probability of trampling during the incubation period. The proposed grazing is expected to increase the number and extent of the riparian shrub community along Canyon Creek, reducing the probability in the future.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment and the stream is not occupied by bull trout in the lower reaches, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Canyon Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM, but they are present in the headwaters on the USFS. Very limited grazing occurs on the BLM portion of Canyon Creek and the area continues to show limited ecological impacts and an upward trend in conditions.

***Canada Lynx:*** No Effect – The allotment contains about 44 acres of riparian habitat, mostly on private land fenced in with the BLM. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridor in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Leadore Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	Will Not Adversely Affect
Steelhead Trout	MA-LAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## LEADVILLE ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed. ESA Action Area, effects determination and rationale for the Leadville Allotment is the approximately 2.5 miles segment of Canyon Creek in the riparian pasture and downstream to the Lemhi River. It also includes 1 mile of lower Hawley Creek channel within the allotment and downstream to its confluence with the Lemhi River. Data and descriptions are presented for the Leadville Allotment in context of the Canyon and Hawley Creek sub-watersheds to describe the condition and trend of the environmental baseline at that scale. Additionally, flows from the BLM portions of the steams are diverted seasonally for irrigation purposes.

**Background:** Canyon Creek has a mainstem base flow of 5-10 cfs, and is characterized by stream gradients of 1- 2% on the allotment. The lower 3 miles are C-type channel, while the majority of the stream is a B-type channel further up the drainage. The lowest reach of the stream is in private ownership. Two main irrigation diversions within and downstream of the allotment divert the majority of the flows during the irrigation season. Through the work of the USBWP, NRCS and IDFG Screen Program, diversion consolidation projects in the late-1990’s and again in 2010 along with a barrier removal and culvert replacements have allowed flows to reach through the allotment and to the Lemhi River. Canyon Creek is now connected to the Lemhi River with year-round flows (summer minimum of approximately 7.0 cfs). Seasonal velocity migration barriers exist in the lower reaches of Canyon Creek at the County back road crossing, the FS Guard Station crossing and further upstream at the BLM/NF boundary on Highway 29 crossing about 4 miles up from the Lemhi River.

Adult steelhead or Chinook are not currently known to spawn in the lower reaches of Canyon Creek but have the potential. Also, juvenile anadromous fish now have the ability to access and use lower Canyon Creek for rearing habitat. Bull Trout are found in the headwater tributary Rough Canyon Creek on the USFS but have not been found in any instance in lower Canyon Creek.

A one mile segment of lower Hawley Creek is also contained within the allotment. This segment is part of the channel that has been historically dewatered and lacks riparian vegetation. The channel is comprised entirely of upland species. Water is diverted into two main irrigation ditches for use on adjacent private lands. Fish rarely are able to use this segment of channel except for occasional migratory habitat to upper reaches. There is a complete barrier on lower Hawley Creek downstream of the allotment that precludes any upstream migration of Chinook, steelhead or bull trout. Occasionally, bull trout may migrate downstream through the allotment and further downstream to the Lemhi River.

The Leadville Allotment consists of approximately 6,500 acres of BLM land in three pastures with about 900 acres of a combination of private and State lands fenced with the allotment. These non-BLM lands are upland habitat and contain a one mile segment of lower Hawley Creek channel and a ¼ mile segment of lower Eighteenmile Creek channel. Livestock have access to these areas. The allotment is meeting Standards 1 and 5, not meeting Standards 2, 3, 4 and 7, and Standard 6 is not applicable. The BLM has determined that current livestock management is a significant contributor to failing to meet Standard 4 but not Standards 2, 3 or 7. To make significant progress towards meeting Standard 4, the Lower Pasture was aerated and seeded in the fall of 2010 and will be rested for two years. 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 May 31<sup>st</sup>, as applied for.

**Current Permit and last ESA Determination:**

In 2008, it was determined that since no additional or new impacts to fish or aquatic habitat were expected as a result of the Grazing Permit for the allotment, the May Affect – Not Likely to Adversely Affect determination from 1999 for Chinook/sockeye salmon and steelhead trout and from 2003 for bull trout was still in effect. The grazing permit was also determined to have No Affect on Canada lynx. The grazing permit was determined to May Affect but Not Likely to Jeopardize the continued existence of the gray wolf population.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	500 Cattle	5/10-5/31	100%	362	526	400	926
	500 Cattle	10/1-10/10	100%	164			

**Terms and Conditions:**

Management of the Leadville 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 for Rangeland Health.

Livestock grazing will not occur in the Canyon Creek Pasture from October 1 – October 10. Supplemental feeding 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) mile away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on public land unless a variance is approved by the authorized officer.

As provided in the code of federal regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action(s):**

Leadville Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	500 Cattle	5/1-5/31	100%	510	528	398	926
	16 Cattle	9/1-9/30	100%	16			
	5 Cattle	6/1-9/30	100%	20			

**Other Terms and Conditions:**

- Livestock grazing will only occur in the Canyon Creek Pasture from May 1 to May 31 with a maximum of 115 AUMs.
- The Lower Pasture of the Allotment will not be grazed, except for trailing, until at least 2013 to allow establishment of the Leadville seeding.
- For the purposes of trailing livestock through the allotment between 9/1 and 9/30, cattle numbers may be increased up to a total of 500 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

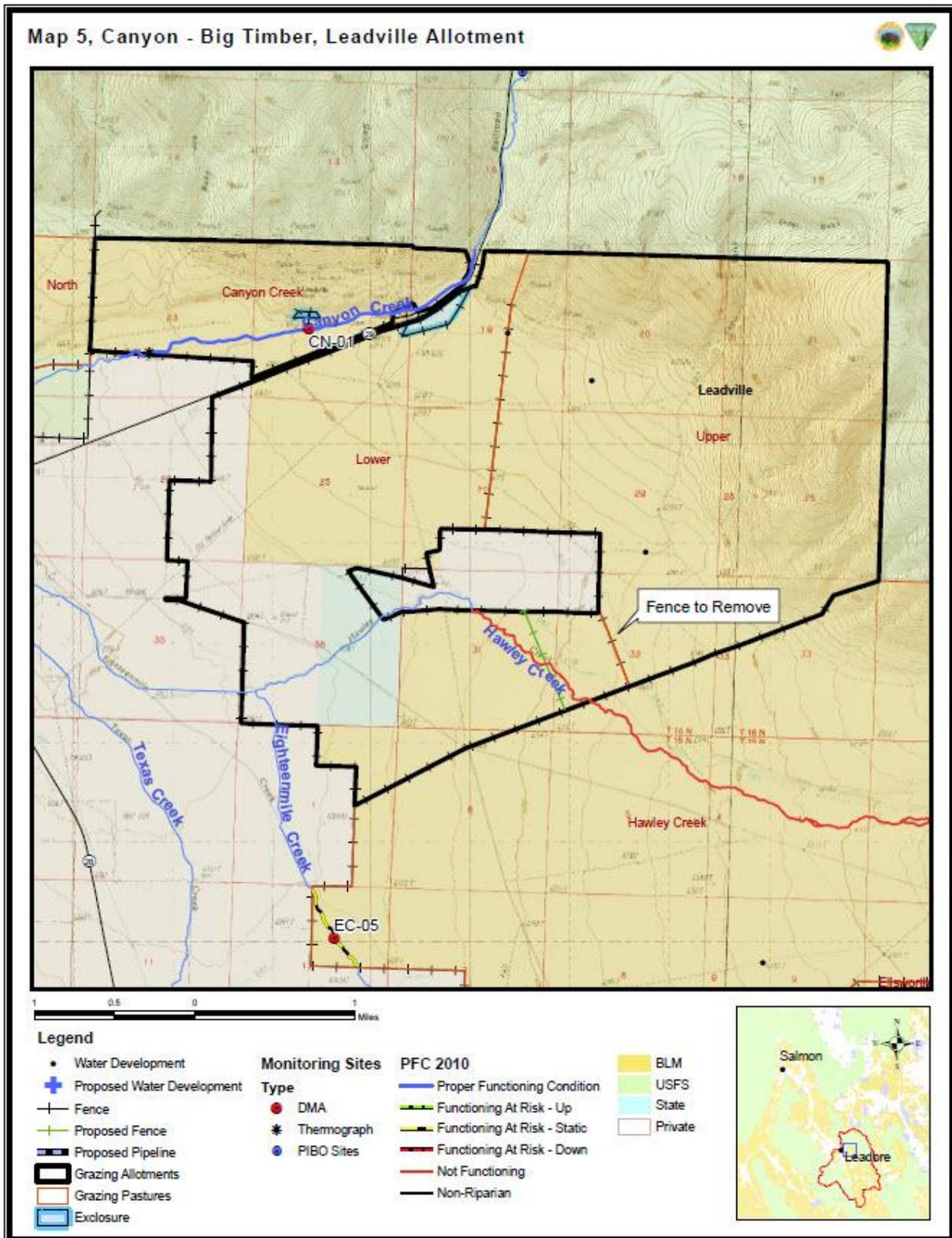
**Crossing Permits:** Crossing permits can be applied for on an annual basis. Crossing permits would be restricted to a maximum of 500 cattle at one time and cattle would not be left on the allotment overnight. A maximum of 2300 cattle would be allowed to cross the allotment in a year. Cattle crossing the Allotment would only use the Lower Pasture.

**Range Improvement Projects:** Rocky Canyon Fence Relocation.

The Rocky Canyon Fence separates the Upper and Lower pastures of the allotment. In order to allow cattle in the southern portion of the Upper Pasture access to water, 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.

The Rocky Canyon Fence separates the Upper and Lower pastures of the allotment. In order to allow cattle in the southern portion of the Upper Pasture access to water, 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.

Figure 7. Leadville Allotment Map.



**Summary of Changes to Permit since Prior Consultation:**

The new permit is designed to limit the use of the Canyon Creek Pasture; stipulations on the new permit include limiting use to 115 AUMs from May 1-31 and no trailing. Over the past ten years, the relatively modest grazing use and the early season has greatly improved the stream/riparian habitat along Canyon Creek. The proposed action seeks to stipulate these activities on the permit.

**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Not Functioning Appropriately; Static Trend

**Narrative:** Core sampling has been done by the USFS on the middle reach of Canyon Creek since 1993 approximately 5 miles upstream of the allotment. Watershed geology is predominately sedimentary and the previously identified sediment criteria for this parent material apply. The trend at the FS Canyon Creek site (n=16), with a 23.4% fines average, indicates a cyclic trend with depth fines increasing over a few year period then decreasing over the next few years then beginning the cycle again. The FS site meets the criteria for sedimentary geology. In the Leadville Allotment, the Canyon Creek DMA CN-01 MIM substrate monitoring data for 2009 shows 40% surface fines. This value along with professional observations over the past ten years shows a higher surface fine component than expected. No trend data is currently available at the site.

Hawley Creek on the allotment is dewatered by irrigation diversions but occasionally has seasonal flow. Higher up in the watershed above diversions, it is a perennial stream that has been historically completely dewatered year-round on the BLM segment. Since about 2002 irrigation diversion changed slightly to allow winter flow and high flow to continue down the historic channel. It is still completely dewatered during the majority of the irrigation season, and has a coble/gravel channel entirely covered with upland vegetation. BLM does not currently have specific substrate data for lower Hawley Creek channel.

**Greenline Vegetation** **Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** 2009 Riparian PFC inventories show that Canyon Creek is in Proper Functioning condition. The stream is densely vegetated along the channel and very limited impacts by cattle can be found. The streambanks provide suitable aquatic habitat. 2009 MIM monitoring documented a Mid Seral Ecological Status at the Canyon Creek DMA. This pasture was historically used most of the summer and in 1990 showed excessive livestock grazing and bank damage. Since changing the management to early use only (off by May 31), channel conditions have improved substantially.

Approximately one mile of Hawley Creek channel exists on BLM managed lands in the allotment (an additional 1.0 miles occur on state and private lands in the Allotment). Hawley Creek is dewatered from an irrigation diversion upstream for most of the growing season and has been for at least the past 50 years. The channel is considered in Non-Functional Condition due to the elimination of riparian vegetation and natural channel function. Irrigation practices have kept this segment dry for many years; however, flows have been restored from November through April for the last 3+ years. Recent winter flows do not show erosion and are favorably influencing riparian vegetation by displacing some of the sagebrush in the channel and allowing young willows to reestablish in several areas. Due to the dewatered and NF condition of the channel, BLM is not proposing to establish a DMA at this time until more flow is re-established to monitor conditions related to livestock grazing.

DMA	Year - % Hydric Riparian Vegetation on Greenline		
Canyon CN01	1994 – 21.5%	2001 – 64.5%	2009* - 84%

\*MIM Hydric vegetation calculated differently in earlier process, but still indicative of general trend in composition.

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** 2009 MIM monitoring documented a GGW on Canyon Creek of 3.77 m. Future monitoring will verify the visually observed trend of streams that are narrowing and stabilizing since photopoint trends

and observations began in the mid-1990s. PIBO, USFS and IDEQ data at 6 sites document width/depth ratios ranging from 18 to 29 between 1993 and 2003, with most recent measurements being the PIBO monitoring upstream on USFS land. Although NMFS (1996) criteria for Proper Functioning are not met, Rosgen (1996) states that the w/d ratio at all B and C channel types generally exceed 12. However, these values are probably still high and are likely the result of historic grazing practices and irrigation water withdrawals. Livestock grazing is no longer likely the main contributing stressor causing stream channel widening due to limited early season of use on the stream. Photos taken at the same photo points in 1999 and 2008 show a clear increase in density and size of woody vegetation along the streambank (Appendix 3). These results indicate that the current grazing strategy in this allotment is allowing riparian condition along Canyon Creek to recover at a near-natural rate, and should ultimately result in a decrease in GGW.

**Temperature**

**Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** The BLM has 16 datasets (1994-2009) for water temperature in Canyon Creek, using continuously recording thermographs. The location of the thermograph exists on the BLM/Private boundary in the Leadville Allotment. The 7-day average maximum water temperature at the site has averaged 61.6°F for the 17 years sampled (Table 5). The upward trend is based on the substantial increase in the riparian herbaceous and shrub cover on the stream banks, providing increased shading and most likely decreasing water temperatures relative to conditions found in the early 1990s.

**Streambank Stability**

**Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Canyon Creek is heavily armored with willows and other riparian shrubs. Potential impacts by livestock to streambank stability are limited. 2009 MIM monitoring documented 90% stable banks at the Canyon Creek DMA. No past bank stability monitoring has been done on Canyon Creek to verify visually observed trends.

Table 5: Canyon Creek at BLM/Private boundary Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
62.7	59.4	62	62.5	64.7	64.4	62.3	60.5	63.1	61.2	59.4	58

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** BLM has one DMA established on Canyon Creek in the allotment. There is also a photo-series and associated PFC assessment from 2009 and previously dating back to the early 1990’s. BLM will continue to monitor for grazing implementation on the allotment via annual use indicators.

The following summarizes the DMA, monitoring objectives and current use for the Leadville Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
Canyon	Riparian	CN-01	90% bank stability	<15% bank alteration	<15% bank alteration	12%

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

In general, the substrate conditions on Canyon Creek have a higher fine sediment component than expected. MIM substrate monitoring data for 2009 shows 40% surface fines at the Canyon Creek DMA CN-01 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 above objective but appear to be minimally affected by current livestock grazing practices as inferred from high bank stability and observed improvements in vegetative cover since early 1990s.

Pre-MIM Greenline studies on the DMA sites within the allotment show conditions in greenline vegetation type and condition to be upward. Stream/riparian conditions in the Canyon Creek Pasture are rated as PFC but are below RMOs for greenline vegetation, sediment, and temperature. CN-01 is rated at mid-seral with a 21.5% Hydric Riparian Vegetation on Greenline in 1994, 64.5% in 2001 and 84% in 2009. Greenline hydric species are dominated by woody vegetation, including many young, early seral willow species, dropping the seral status. Streambank stability at CN-01 was 90% in 2009 due the extensive woody vegetation on the greenline. Limited access by livestock to Canyon Creek due to the heavily wooded nature of the streambank results in limited potential for impacts to streambank stability. Past changes in livestock grazing resulted in riparian vegetation recovery and allowed stream banks to stabilize. The early season grazing in the past ten years has shown a strong regrowth response on riparian vegetation and recovery from bank alteration. Continuing the existing grazing management with the addition of in-season and end-of-season indicators and associated adaptive management strategy should result in continuation of this trend and result in the desired vegetation.

Although periodic temperature exceedences exist for the streams in the allotment, with the recovery of riparian vegetation, particularly woody species, current livestock grazing does not appear to be contributing to increased water temperatures. Regardless, the BLM's primary mechanism for affecting water temperature is altering riparian shade, and our monitoring shows that riparian vegetation has been improving under the current grazing strategy. Elevated water temperatures may be affected by other variables, including private lands agricultural practices and historic disturbances.

The effects of the action on Hawley Creek are limited to livestock grazing the rocky channel with streambanks containing sagebrush and upland grasses. In the past, cattle have been visually observed to spend very little time along the stream channel due to the lack of riparian vegetation and palatable forage similar to the adjacent upland acres of the allotment. Livestock are not expected to change the dewatered conditions of lower Hawley Creek.

### **Redd Disturbance**

No recent use by anadromous fish has been documented in lower Canyon Creek. With the recent reconnection of Canyon Creek to the Lemhi River, it is possible for both spawning and rearing of steelhead to occur in the future on the allotment. The probability of this occurrence in the next ten years appears to be relatively low due to very few steelhead adults currently found in the Lemhi River upstream of Hayden Creek. Although the NMFS intrinsic potential for Chinook spawning in Canyon Creek is identified, the probability is most likely low due to the small size of the stream. Additionally, livestock would not be present on the allotment when Chinook incubation is occurring. Juvenile Chinook may begin to utilize the habitat now that flows reach the Lemhi River where fish currently exist.

The Leadville Allotment would allow cattle to graze along Canyon Creek while steelhead eggs could possibly be present. Although the incubation/grazing overlap is not known to be occurring at this time, it is possible to conflict in the future and cannot be considered discountable. Mitigating for this is the current condition of a strong mature willow community along most of the stream bank. This precludes the cattle from having access to the stream channel itself and substantially reduces the probability of trampling during the incubation period. The proposed grazing is expected to increase the number and extent of the riparian shrub community along Canyon Creek, reducing the probability in the future.

Canyon Creek is currently occupied by bull trout only in the headwaters on the USFS. 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. It is unlikely to support bull trout habitat except for migration habitat.

Anadromous fish and bull trout currently do not have access to Hawley Creek from downstream habitats due to an irrigation headgate barrier. Bull trout do reside further upstream on USFS lands but are not able to use the BLM for spawning habitat because it is almost always completely dewatered from irrigation withdrawal.

### **Summary**

Changes in management since the mid-1990s in the Leadville Allotment have been documented by riparian plant monitoring, long term ocular observations and photographs. This shows that since the early 1990's, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing in the allotment is limited to a short spring window on Canyon Creek. Livestock grazing will only occur in the Canyon Creek Pasture from May 1 to May 31 with a maximum of 115 AUMs. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006).

Due to the PFC conditions on the allotment, the proposed early season use, the in-season/end-of-season indicators, and proposed adaptive management process which would allow riparian plant regrowth, impacts are expected to be minimal on habitat and key indicators. Continuation of the grazing on the allotment will result in continued upward trend in conditions and not adversely affect listed species or their habitat. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

There is a possibility that livestock grazing under the proposed action could have a conflict with steelhead spawning in the next ten years, but with the heavily wooded stream channel and low numbers of fish, the probability is low but not discountable. Hawley Creek is expected to remain dewatered and inaccessible from downstream habitat. Grazing in the allotment has little to no affect on the dry channel which currently supports sagebrush and upland vegetation. The proposed fence is not expected to have impacts to Hawley Creek for the above reasons.

**Interrelated and Interdependent Actions:** The allotment contains about 900 acres of non-Federal land co-fenced with the Federal land. Federally authorized livestock can access the private land which is currently grazed as part of the Lower pasture. Currently no other grazing activities occur on the private land and are not expected to change. This area does contain a ½ mile segment of lower Hawley Creek currently dewatered from irrigation and in a NF dry wash condition. Additionally, it includes about a ¼ mile segment of Eighteenmile Creek in similar condition as Hawley Creek both with a lack of flow and poor ecological condition. The ranch operation is located directly adjacent to the allotment and livestock are either trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** The lower portion of Canyon Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Canyon Creek have been drastically reduced over historic levels and recovery in the Leadville Allotment is at near-natural rates due to the very limited livestock use. Current management is resulting in a continued upward trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery. Because Canyon Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. Hawley Creek is disconnected and has a barrier to preclude migration onto the allotment. Additionally, the channel on BLM is completely dewatered most of the year and does not provide potential habitat at this time. Flows on Canyon Creek are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat and small size Canyon Creek, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment. Juvenile ESA-listed fish will experience minor and infrequent behavioral modifications. Behavioral modifications are not expected to result in take because the action area habitat conditions are functioning appropriately which provides suitable escape cover from the threat individual or small groups of cattle are likely to present to even individual fish. In addition, measures proposed to keep cattle away from stream channels, such as fencing, off-channel salting, and use of riders to herd cattle away from streams further limits potential interactions.

***Essential Fish Habitat:*** Will Not Adversely Affect Essential Fish Habitat for the same reasons listed for Chinook salmon above. Natural inaccessibility of stream channels due to dense riparian vegetation further limits the potential for these effects to occur. For these reasons disturbances related to livestock grazing on the Allotment are insignificant.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment and the streams are not known to be currently occupied by steelhead, precluding direct impacts. Because Canyon Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. Hawley Creek is disconnected from irrigation diversions and the stream/riparian habitats are severely altered from actions outside of the BLM grazing actions. Hawley Creek is also inaccessible to anadromous fish due to an irrigation diversion barrier downstream of the allotment. It is not possible for steelhead to access habitat on the Leadville Allotment in this reach. Any grazing effects on Hawley Creek are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable.

Steelhead have not been documented in lower Canyon Creek, but have the potential to be present. With the springtime seasonal reconnection of Canyon Creek over the past five years on private land downstream, it is possible for both spawning and rearing of steelhead to occur in the future on the allotment. The probability of this occurrence in the next ten years appears to be relatively low due to very few steelhead adults currently found in the Lemhi River upstream of Hayden Creek. Although the incubation/grazing overlap is not occurring at this time, it is possible to conflict in the future and cannot

be considered discountable. Mitigating for this is the current condition of a strong mature willow community along most of the stream bank. This precludes the cattle from having access to the stream channel itself and substantially reduces the probability of trampling during the incubation period. The proposed grazing is expected to increase the number and extent of the riparian shrub community along Canyon Creek, reducing the probability in the future.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment and the stream is not occupied by bull trout in the lower reaches, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Canyon Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM, but they are present in the headwaters on the USFS. Very limited grazing occurs on the BLM portion of Canyon Creek and the area continues to show limited ecological impacts and an upward trend in conditions. Hawley Creek on the allotment is disconnected and not accessible from the Lemhi River.

***Canada Lynx:*** No Effect – The allotment contains about 350 acres of forested and riparian habitat. The forested vegetation is mostly dry Douglas fir and is not growing in conjunction with primary lynx habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Freestrip Allotment would not cause take of a Canada lynx or affect its habitat.

***Gray Wolf:*** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	Will Not Adversely Affect
Steelhead Trout	MA-LAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## FREESTRIP ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat. Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed. ESA Action Area, effects determination and rationale for the Freestrip Allotment include the segments of Canyon, Whiskey Springs and Chippie Creeks. Data and descriptions are presented for the allotment in context of the Canyon Creek sub-watershed to describe the condition and trend of the environmental baseline at that scale. Because Canyon Creek on the Freestrip Allotment is in the mostly intermittent headwaters of the drainage and Chippie Creek is completely intercepted by a pond/impoundment, there is the potential for measureable effects to downstream habitat in Canyon Creek. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable.

Whiskey Springs Creek is an intermittent, non-fish bearing stream that is a tributary to upper Canyon Creek. It has been historically heavily grazed and has made modest improvements in ecological conditions. It is a mix of Functioning at-Risk condition but has had some down-cutting in recent years. It only seasonally reaches Canyon Creek during high run-off periods. Chippie Creek is another small, non-fish bearing tributary to upper Canyon Creek in the Freestrip Pasture. It currently does not connect downstream because it first flows into a man-made pond. It does not influence habitat in Canyon Creek.

**Background:** Canyon Creek has a mainstem base flow of 5-10 cfs, and is characterized by stream gradients of 1- 2% on the allotment. The upper segment on BLM is a C-type channel, while Whiskey Springs and Chippie Creeks are B-type channels. See write-ups for Leadville Allotment for details of Canyon Creek conditions downstream of the Freestrip Allotment.

Adult steelhead or Chinook are not currently known to spawn in Canyon Creek and no intrinsic potential occurs above Cruikshank Creek about three miles downstream from the allotment. Also, 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 where Canyon Creek crosses Highway 29. Bull Trout are found in the headwater tributary Rough Canyon Creek on the USFS but have not been found in any instance in Canyon Creek on the BLM or in the Freestrip Allotment.

The Freestrip Allotment consists of approximately 3,700 acres of BLM land in four pastures with about 1,400 acres of other lands fenced with the allotment. The allotment is meeting, or making progress towards meeting, all applicable Idaho Standards for Rangeland Health. Since the Allotment is meeting, or making progress towards meeting, all the Standards, the BLM proposes to renew the permit with an Active Preference of 481 AUMs, the level of the current permit through a term and condition, 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 applied for by the permittee. Use in the majority of the allotment, Freestrip 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.

**Current Permit and last ESA Determination:** In 2007, it was determined that since no additional or new impacts to fish or aquatic habitat were expected as a result of the Grazing Permit for the allotment, the May Affect – Not Likely to Adversely Affect determination from 1999 for Chinook/sockeye salmon

and steelhead trout and from 2003 for bull trout was still in effect. The grazing permit was also determined to have No Affect on bald eagle and Canada lynx. The grazing permit was determined to May Affect but Not Likely to Jeopardize the continued existence of the gray wolf population.

The permit that has been in effect since that determination is:

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

**Terms and Conditions:**

Management of the Freestrip 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 for Rangeland Health.

Use in the Freestrip Allotment will be limited to a maximum of four weeks, not to exceed 481 AUMs.

Freestrip 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. Freestrip will not be utilized more than three years out of four.

Unless permitted by the authorized officer, the west side of the Freestrip 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.

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action(s):**

**Freestrip Allotment Grazing Permit 2011-2021:**

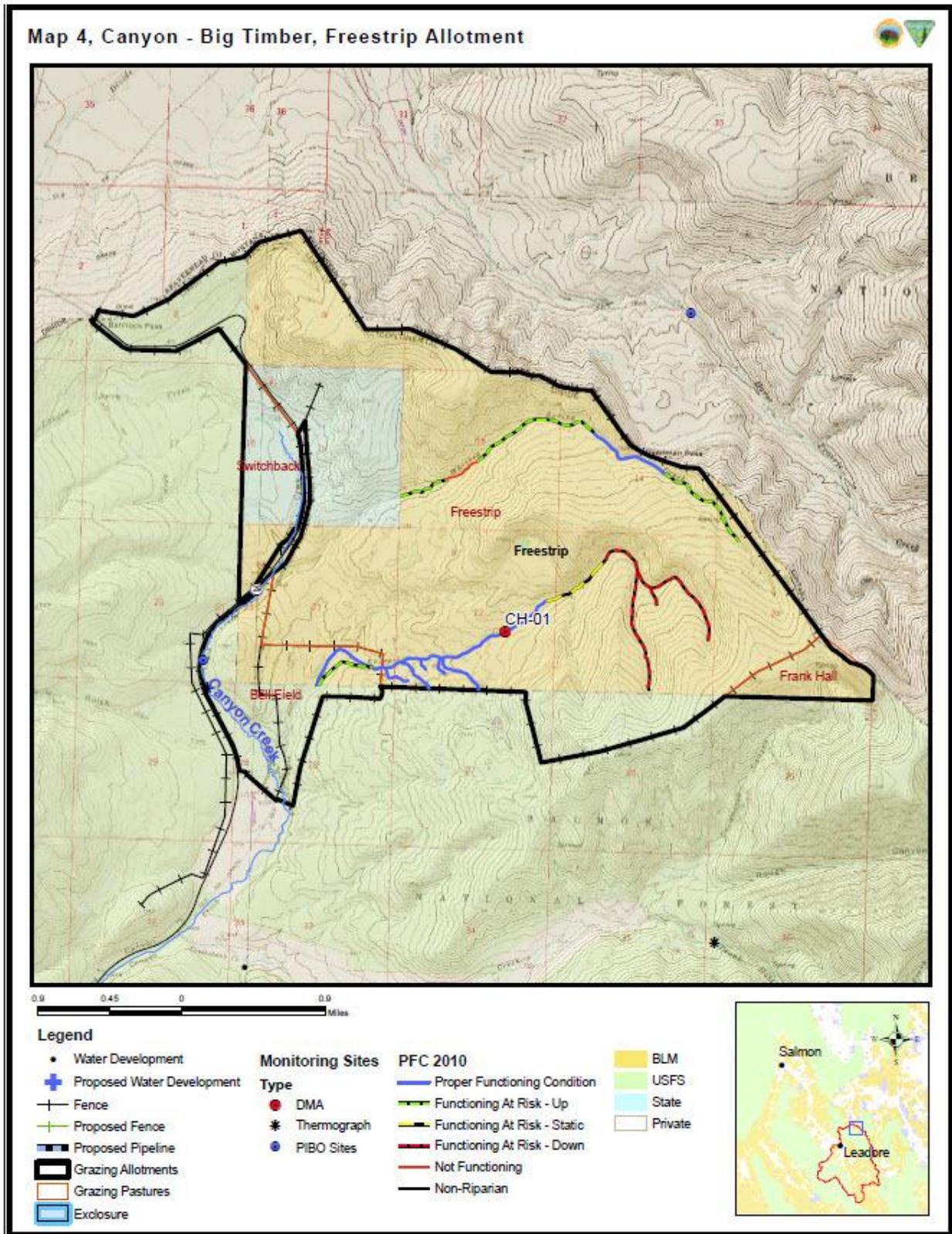
Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	104 Cattle	6/1-10/31	92%	481	481	557	1038

**Other Terms and Conditions:**

- Cattle numbers may be increased up to a total of 550 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.
- The Freestrip Pasture will not be grazed more than three years out of four.
- Use in Freestrip and Bell Field pastures will only occur between 6/1 and 7/15.
- Livestock grazing in the Bell Field Pasture will not exceed 35 AUMs in a grazing period.

**Crossing Permits:** None authorized for this allotment.

Figure 8. Freestrip Allotment Map.



**Summary of Changes to Permit since Prior Consultation:** The new permit has similar effects to habitat and species as the current permit. While, the Active Preference on the permit has been decreased, the permittee was not allowed to use over that amount on the current permit due to the Term and Condition which limited the use to that amount. The main difference is that the proposed action limits use in the Freestrip and Bell Field Pastures to before July 15<sup>th</sup>; use in the Bell Field will also be limited to 35 AUMs. This will allow riparian vegetation in the allotment to re-grow from that date until the end of the growing season.

**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning At Risk; Static Trend  
**Narrative:** Core sampling has not been completed in the upper reaches on the allotment. The USFS site further down on Canyon Creek below Cruikshank Creek has shown a 23.4% fines average. On the Freestrip Allotment MIM substrate monitoring data for 2009 shows 40% surface fines at the Chippie Creek DMA. No quantitative data has been collected on Whiskey Springs Creek so far. See analysis for more details.

**Greenline Vegetation** **Status and Trend:** Functioning At-Risk; Upward Trend  
**Narrative:** 2009 Riparian PFC inventories show that Canyon Creek is in Proper Functioning condition. The stream is densely vegetated along the channel and very limited impacts by cattle can be found. The streambanks provide suitable aquatic habitat. 2009 MIM monitoring documented a Mid Seral Ecological Status at the Chippie Creek DMA which is below the late-seral RMO. This pasture was historically used most of the summer and in the 1990’s showed excessive livestock grazing and bank damage. Since changing the management to early use only (off by July 15) in the mid-1990s, the channel conditions have improved substantially.

Upper Canyon Creek on the allotment is slightly grazed in June and has shown a strong upward trend since the 1990’s with the channel lined with mostly *Carex* stable banks. This reach of stream does not have fish. Whiskey Spring Creek is an intermittent tributary without fish and has a mix of PFC and FAR conditions. Whiskey Springs Creek, which is the area where the largest potential to affect habitat in Canyon Creek exists, has similar conditions as Chippie Creek and thus the use of the DMA on Chippie is expected to have the same inferences as use levels in Whiskey Springs Creek.. The channel has some areas of vegetative improvements and some down-cutting. Because Canyon Creek on the Freestrip Allotment is in the mostly intermittent headwaters of the drainage and Chippie Creek is completely intercepted by a pond/impoundment, there is no potential for measurable effects to downstream habitat in the Lemhi River.

DMA	Year - % Hydric Riparian Vegetation on Greenline
Chippie Cr CH-01	2009 - 92%

**Greenline-Greenline Width** **Status and Trend:** Functioning At-Risk; Upward Trend  
**Narrative:** 2009 MIM monitoring documented a GGW on Chippie Creek of 0.83 m. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since observational monitoring began in the mid-1990s. These results indicate that the current grazing strategy in this allotment is allowing riparian condition along Canyon Creek to recover and should ultimately result in a decrease in GGW. Visual observations show that the stream channel in slightly widened from baseline conditions from past grazing bank alterations and subsequent instability.

**Temperature** **Status and Trend:** Functioning at Risk; Upward Trend  
**Narrative:** BLM has not monitored water temperature on the allotment because of the small stream sizes. This is due to upper Canyon Creek being so small (less than 1 cfs base flow), Whiskey Springs Creek being intermittent and Chippie Creek flowing into a pond and not contributing measurable flow into Canyon Creek that would be affected by grazing.

**Streambank Stability**

**Status and Trend:** Functioning At-Risk; Upward Trend

**Narrative:** Canyon Creek downstream of the allotment in the lower to middle reaches on both BLM (Leadville) and USFS is heavily armored with willows and other riparian shrubs. Potential impacts by livestock to streambank stability in these areas are limited. Canyon Creek conditions in the Freestrip Allotment have been measured in the Bell Field Pasture. The PIBO trend data in the pasture showed an increase in bank stability from 82.5% in 2003 to 100% in 2008 on Canyon Creek in the Bell Field in the allotment. Whiskey Springs Creek and Chippie Creek are in similar condition with a mix of well-vegetated areas and impact areas from livestock grazing. 2009 MIM monitoring documented 42% stable banks at the Chippie Creek DMA.

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** BLM has one DMA established on the Freestrip Pasture on Chippie Creek and the USFS/PIBO has established one on upper Canyon Creek in the Bell Field Pasture (CN-03). There are multiple photo-series and associated PFC assessments in the allotment.

Stream	PIBO data from Canyon Creek in the Bell Field Pasture								
	Year	Grad%	Sinuosity	Residual Pool Depth (m)	Pool Freq# / km	Pool Freq %	W/D Ratio Riffles	Bank Stability	Bank Angle
Canyon (USFS)	2003	1.4	1.4					82.5	120
	2008	1.4	1.4	0.21	64.5	23.5	14.3	100	119

Annual use indicators will be used on this allotment to determine the extent of the limited grazing on bank stability and vegetation condition.

The following table summarizes the DMAs, monitoring objectives, and current year use levels for the Freestrip Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
Canyon	Bell Field	CN-03	90% bank stability	<15% bank alteration	<10% bank alteration	31%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	8.1"
Chippie	Freestrip	CH-01	90% bank stability	<15% bank alteration	<10% bank alteration	71%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	4.9"

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

In general, the substrate conditions on Canyon Creek have a higher fine sediment component than expected. MIM substrate monitoring data for 2009 shows 40% surface fines at the Chippie Creek DMA CH-01 in the Freestrip Pasture. Due to past grazing practices 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 in Canyon Creek are not influenced from Chippie Creek (being isolated with a pond just above its confluence with Canyon Creek). Even though Whiskey Springs Creek is intermittent, it does contribute sediment and slight increased temperature conditions to upper Canyon Creek.

MIM Greenline studies on the Chippie Creek DMA show conditions in greenline vegetation type and condition not meeting objectives. Historic grazing on the allotment showed heavy impacts to the stream/riparian conditions. Recent changes in livestock grazing have resulted in riparian vegetation improvements but recovery to RMOs and appropriate habitat conditions have not been reached. Stream/riparian conditions in the Freestrip Allotment are rated as a mix of PFC, FAR and NF. CH-01 is rated at Late Seral with 92% Hydric Riparian Vegetation on Greenline in 2009. Greenline hydric species are dominated by *Carex* and some willows. Continuing the existing grazing management strategy should result in continuation of this trend and result in the desired vegetation. Streambank stability at CH-01 was 42% in 2009. Livestock have access to all stream reaches in the allotment and the historic grazing which eliminated much of the willows and other shrubs allows bank trampling to impact streambank stability. For the segment on Canyon Creek in the Bell Field that is shared with the USFS, the PIBO DMA site shows good condition habitat with 100% stream bank stability and moderate width/depth ratios. This area is heavily vegetated with a mix of willows and sedges and is meeting objectives.

Although periodic temperature exceedences exist for Canyon Creek downstream from the allotment, with the recovery of riparian vegetation, particularly woody species, current livestock grazing does not appear to be contributing to increased water temperatures. Regardless, the BLM's primary mechanism for affecting water temperature is altering riparian shade, and our monitoring shows that riparian vegetation has been showing a slow improvement under the current grazing strategy. Elevated water temperatures may be affected by other variables, including private lands agricultural practices and historic disturbances.

The Freestrip Allotment only contains small stream reaches that are not large enough to qualify for Chinook salmon DCH, do not have steelhead intrinsic potential and do not have bull trout potential. Indirect affects to DCH for all three species and the potential for affects to downstream DCH in Canyon Creek (Chinook salmon) is discountable as flows move downstream and become combined with large volumes in the rest of the drainage. However, influences from Canyon Creek and Whiskey Springs Creek in the allotment are not discountable to downstream habitat in Canyon Creek below Cruikshank Creek.

### **Redd Disturbance**

No use by anadromous fish occurs in the upper reaches of Canyon Creek or its tributaries due to existing downstream barriers. Although the streams small size make the action area streams unlikely habitat for anadromous fish. No intrinsic potential exists for anadromous fish on the allotment confirming the unlikely use of the action area. Canyon Creek is currently occupied by bull trout only in a headwater tributary on the USFS. No fall spawning surveys have been conducted by BLM staff because of the limited numbers of bull trout documented during presence/absence surveys. The stream channels in the allotment are unlikely to support bull trout habitat.

### **Summary**

Changes in management over the years in the Freestrip Allotment have sought to move the grazing from the "hot-season" to earlier (June and early July). Conditions on the allotment have been documented by riparian plant monitoring, long term ocular observations and photographs. This shows that in the last ten

years, improvements have been seen on Canyon Creek in hydric vegetative cover and bank stability. Chippie and Whiskey Springs Creek have also improved but still remain well below RMOs.

Because Canyon Creek on the Freestrip Allotment is in the mostly intermittent headwaters of the drainage and Chippie Creek is completely intercepted by a pond/impoundment, there is no potential for measurable effects to downstream habitat in the Lemhi River, but the action does have the potential to have measurable influence to Canyon Creek downstream of the allotment.

Grazing in the allotment is limited to a shorter season than the past, but conditions are moving upward at a slower rate than without livestock grazing. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006). There is a very low probability that livestock grazing in the proposed action would have measureable impacts to adult spawning, even though steelhead could pioneer up into Canyon Creek in the next ten years. Grazing under the proposed action is expected to result in continued upward trend in conditions and not adversely affect listed species or their habitat. Completion of the implementation monitoring identified above should help ensure movement toward established RMOs and preclude a level of effects not analyzed within this document.

**Interrelated and Interdependent Actions:** There are no known interrelated or interdependent actions related to this grazing permit. The ranch operation has the adjacent USFS Grizzly Hill Allotment and livestock are either trailed on the county road to get to the allotment, or moved directly off the upper parcels of the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** The lower portion of Canyon Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

#### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Canyon Creek have been drastically reduced over historic levels and recovery in the Freestrip Allotment is on an overall upward trend due to the limited livestock use. Because Chippie Creek is captured in a pond and does not contribute surface water to Canyon Creek, Whiskey Springs Creek is intermittent and Canyon Creek on the allotment in the Bell Field Pasture is meeting RMO conditions measured by PIBO monitoring, minimal impacts to the Designated Critical Habitat are expected under the proposed action.

Sediment levels from upstream habitats are still negatively influencing conditions in Canyon Creek. Chinook Designated Critical Habitat does not exist within the allotment. The small tributary streams

found within this allotment are still not functioning appropriately across all habitat indicators, but current management is expected to result in an upward trend. Utilizing the thought process outlined by the Salmon-Challis National Forest (SCNF) during their mapping of potential Chinook salmon critical habitat (CSCH) for their consultation with NOAA Fisheries (USDA-USFS 2010), it has been determined upper Canyon, Whiskey Springs, and Chippie Creeks should not be considered potential CSCH. None of these streams were rated as having intrinsic potential for spawning or rearing (Cooney and Holzer 2006; ICTRT 2005). After SCNF fisheries staff reviewed fish population and stream habitat data from the Salmon River basin, they concluded that Chinook salmon likely do not move more than 0.25 miles up tributaries in watersheds of less than seven square miles if the only reason they are in the stream is to seek refugia. These upper reach sub-watersheds are naturally intermittent, small and non-fish-bearing. All of these streams are within watersheds smaller than seven square miles. However, since upper Canyon Creek is connected to the lower reaches which are currently included as CSCH and have been identified as having intrinsic potential for spawning and rearing, they have the potential to impact downstream CSCH.

Impacts to DCH from the proposed livestock grazing are expected to continue but at a reduced level than the past ten or more years. The allotment is between 2-6 miles upstream of potentially occupied and intrinsically potential habitat. Because of the distance to these habitats and the high quality stream/riparian conditions on the USFS land in the middle reaches, the impacts from the allotment are expected to be minimal and are not expected to have measurable impact on the Lemhi River. Sediment contribution, the most likely downstream impact from the action, could be measurable on spawning and rearing habitat downstream in Canyon Creek. The limitations on hot season grazing, coupled with the establishment of in-season management indicators should allow for making significant progress toward attainment of the bank stability RMOs at a rate that does not contribute to an adverse level of impact to habitat.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no known documentation of steelhead currently using Canyon Creek and there is no intrinsic potential above Cruikshank Creek, which is about one mile downstream from the allotment. Additionally, Whiskey Springs Creek is intermittent and Chippie Creek is not directly connected to Canyon Creek. Effects described above related to stream habitat key indicators further downstream are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat and small size Canyon Creek, the ongoing action would not have direct effects to spawning habitat.

***Snake River Steelhead Designated Critical Habitat:*** No Effect. There is no Designated Critical Habitat present within the allotment and the streams are not occupied by steelhead, precluding direct impacts. Because Chippie Creek is captured in a pond and does not contribute surface water to Canyon Creek, Whiskey Springs Creek is intermittent and Canyon Creek on the allotment is meeting RMO conditions measured by PIBO monitoring, effects from the action will not extend to the Lemhi River (ten miles downstream), the nearest steelhead critical habitat. Thus critical habitat is absent from the action area and will not be affected by the action. .

***Bull Trout and Designated Critical Habitat:*** No Effect. There is no Designated Critical Habitat present within the allotment or the drainage and the stream is not occupied by bull trout except for Rough Canyon Creek on the USFS. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. Because Chippie Creek is captured in a pond and does not contribute surface water to Canyon Creek, Whiskey Springs Creek is intermittent and Canyon Creek on the allotment is meeting RMO conditions measured by PIBO monitoring, minimal impacts to the Designated Critical Habitat are

expected under the proposed action. Livestock grazing impacts are expected to be discountable to DCH and are not expected to preclude recovery.

**Canada Lynx:** No Effect – The allotment contains about 350 acres of forested and riparian habitat. The forested vegetation is mostly dry Douglas fir and is not growing in conjunction with primary lynx habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Freestrip Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	Will Not Adversely Affect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	No Effect
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

# EIGHTEENMILE CREEK ALLOTMENTS

## CENTER RIDGE ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat. Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed.

ESA Action Area, effects determination and rationale for the Center Ridge Allotment include the approximately one mile segment of Eighteenmile Creek in the A Pasture and downstream to its confluence with the Lemhi River. The segment adjacent to the C Pasture has been excluded from livestock since 1997. Data and descriptions are presented for the allotment in context of the Eighteenmile sub-watershed to describe the condition and trend of the environmental baseline at that scale. Because the stream is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Additionally, flows from the BLM portions of the streams are diverted seasonally for irrigation purposes.

**Background:** The Center Ridge Allotment consists of approximately 16,000 acres of BLM land in five pastures with about 850 acres of other lands fenced with the allotment. The majority (96%) of the allotment is semi-desert shrublands. Other cover classes on the allotment are mesic shrublands (2%) and roads (2%). The allotment is meeting all applicable Idaho Standards for Rangeland Health except Standard 7 (see Appendix 3). BLM has determined that current livestock management on the allotment is not a significant contributor to failing to meet Standard 7. Since current grazing is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 2,333 AUMs, the active preference from the Lemhi RMP, leading to stocking rate of 7 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>. However, the BLM recognizes that 2,333 AUMs have not been utilized on the allotment for more than five years. Should more AUMs than the maximum yearly use in the last 5 years (1,274 AUMs) be utilized in a given year, the BLM would monitor the grass canopy cover on the allotment. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at the five year average actual use (1,151 AUMs) for the remainder of the ten-year permit. The allotment contains a small portion of Eighteenmile Creek, less than 1 mile, which is currently in Proper Functioning Condition. To maintain riparian habitat in the allotment the A Pasture 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.

### **Current Permit and last ESA Determination:**

In 2005, it was determined that since no additional or new impacts to fish or aquatic habitat were expected as a result of the Grazing Permit for the allotment, the May Affect – Not Likely to Adversely Affect determination from 1999 for Chinook/sockeye salmon and steelhead trout and from 2003 for bull trout was still in effect. The grazing permit was also determined to have No Effect on bald eagle and

Canada lynx. The grazing permit was determined to not jeopardize the continued existence of the Central Idaho Wolf Population and/or the ability of the available habitat to support wolves.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	1200 Sheep	5/22-6/13	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			

Terms and Conditions:

- BLM management of the Center Ridge Allotment will continue to emphasize maintenance or improvement of riparian communities.
- Salt and/or mineral supplements will be placed in areas agreed upon by the BLM and the permittee.
- To allow flexibility, an earlier turnout date may be applied for annually, and may be approved when range readiness has been determined to be appropriate.
- Active trailing will be permitted for one day between 11/1 and 12/31 for up to 500 head of cattle.
- All range improvements will be maintained prior to livestock turnout, and all water developments and associated pipelines will be drained and winterized.
- As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action(s):**

Center Ridge Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
James Whittaker**	407 Cattle	5/24-11/1	100%	2168	2170	1361	3534

\*\* Permittee has Applicant Status

**Other Terms and Conditions:**

If more than 1,274 AUMs are utilized in a given year, the BLM will monitor the grass canopy cover on the allotment the following year. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at a maximum of 1,151 AUMs for the remainder of the ten-year permit.

**Other Terms and Conditions:**

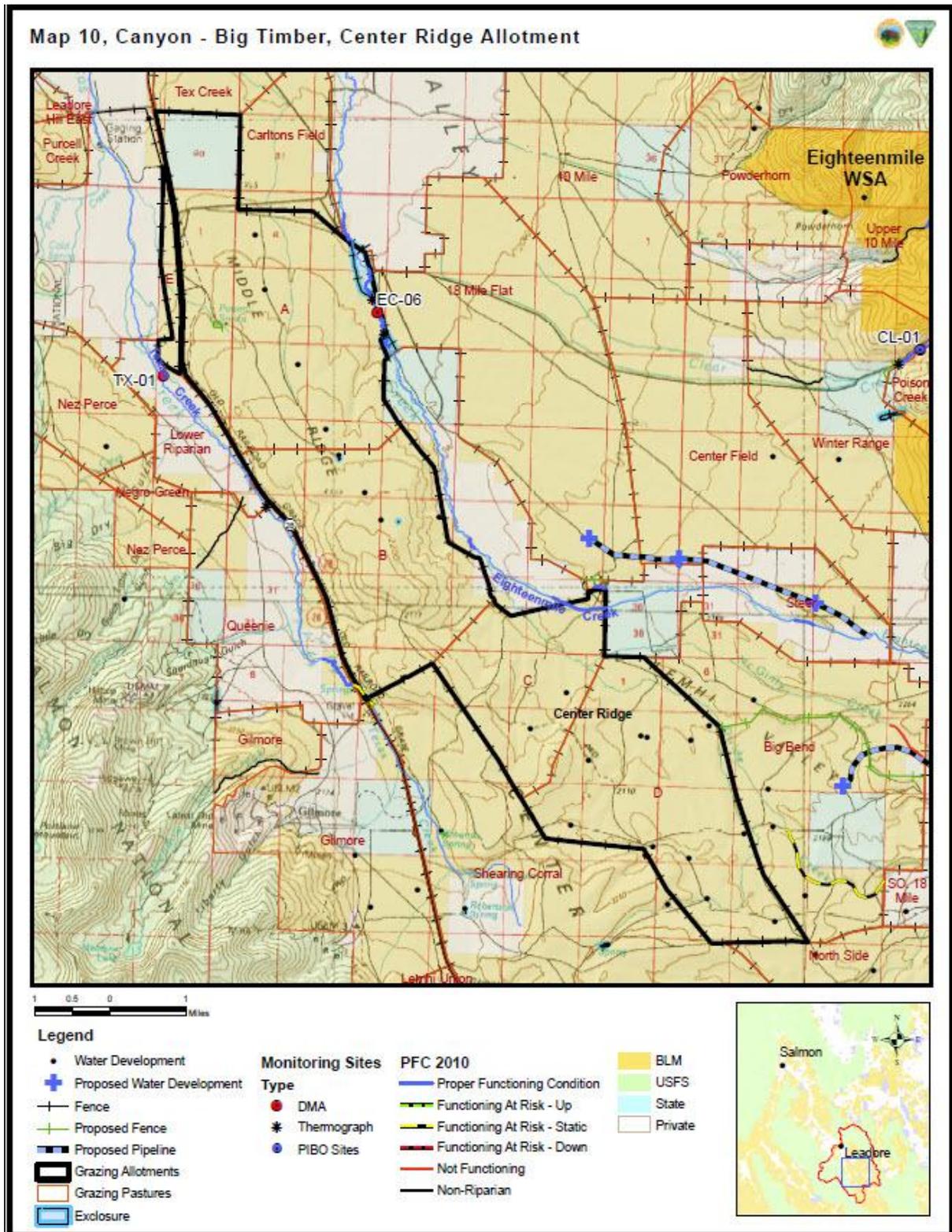
- Cattle numbers may be increased up to a total of 500 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.
- Livestock grazing of the A Pasture will not occur after 7/15.

**Crossing Permits:** None would be authorized for this allotment.

**Range Improvement Projects:** Poison Spring Exclosure, Pipeline and Trough.

The Poison Spring project area is located in a draw east of Hwy. 28, approximately 10 miles south of Leadore, ID; the project area 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 and wood brace panels 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 existing jack and pole fence would be removed from the site.

Figure 9. Center Ridge Allotment Map.



**Summary of Changes to Permit since Prior Determination:** The allotment would be authorized for basically the same level of grazing as under the current permit, the AUMs would be decreased by three to match the 2,333 AUM Active Preference at the time of the Lemhi RMP. The dates that cattle could graze the allotment would be the same as the current permit. Eighteenmile Creek flows through the A Pasture and is currently in Proper Functioning Condition. The proposed action would not allow livestock grazing in the A Pasture after July 15<sup>th</sup>. In addition the BLM proposed to exclude the spring sources at Poison Spring.

**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning at Risk; Upward Trend  
**Narrative:** No core sampling has been done by the USFS or BLM in the watershed. MIM substrate monitoring data for 2010 shows 41% surface fines at the Eighteenmile Creek EC-06 DMA on the Center Ridge Allotment. No trend data is available at the site. Eighteenmile Creek is listed by DEQ as water quality limited for sediment mostly for private agricultural activities. Visual observations of upper Eighteenmile Creek since 1995 have shown most of the stream channel, which is on state and private lands, to be managed with more intensive grazing than the public land. These non-public parcels have a mix of conditions from PFC to Non-Functioning Condition that has produced significant amounts of sediment in the past. Observations of the A Pasture segment in the 1990’s showed large amounts of sediment deposits in this C-channel type. Since then with less intensive grazing on both the BLM and state/private lands upstream, the fine sediment in the substrate has visually decreased dramatically, although conditions would need to improve even more to produce more suitable habitat for ESA listed fish.

**Greenline Vegetation** **Status and Trend:** Functioning Appropriately; Upward Trend  
**Narrative:** 2009 Riparian PFC inventories show that Eighteenmile Creek on the Center Ridge Allotment is in Proper Functioning condition. PFC ratings show an upward trend in the allotment since 1997. The segment of stream on the allotment is very stable with excellent willow recruitment and herbaceous cover. No greenline vegetation trend data is available, although, the 2010 MIM monitoring documented Ecological Status as Potential Natural Community at EC-06.

DMA	Year - % Hydric Riparian Vegetation on Greenline
Eighteenmile EC-06	2010 - 63%

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Upward Trend  
**Narrative:** No MIM Greenline-Greenline Width trend data is available. The 2010 MIM monitoring documented a GGW on Eighteenmile Creek of 2.98 m. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s. Along the accessible portion of the stream, livestock grazing does not appear to be impacting GGW due to the heavily armored and swampy nature of this stream channel along most of its reach.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend  
**Narrative:** The BLM has 26 datasets (1994-2010) for water temperature in Eighteenmile Creek using continuously recording thermographs. These include an upper station in the headwaters at the WSA/private boundary and a mid-stream station within the Powderhorn Allotment riparian enclosure. The 7-day average maximum water temperature at the upper site showed 61.0°F for the 15 years sampled. The lower site averaged 66.1°F for the ten years sampled. As is typical for most systems in the Lemhi, water temperature increases as it moves downstream. The average maximum temperature increase over the approximately 11.2 miles between the upper and the lower site was 5.0°F, an increase of 0.45°F per mile. This reach between the two units is primarily state and private lands with a mixture of heavily vegetated sections, historic beaver complexes, sections nearly devoid of vegetation that are heavily grazed, and significant irrigation withdrawals. The warm water

temperature at the boundary of the WSA is likely the result of the large historic beaver complexes with significant areas of exposed stream reach. No uses occur in the WSA except very limited livestock grazing.

Two segments downstream of the WSA on BLM have been excluded from livestock grazing since the mid 1990's. The first was the watergap for the Center Ridge C Pasture about 1/4 mile in length and the second the watergap of the Powderhorn Allotment 18mile Flat Pasture about 1/3 mile in length

On the Center Ridge A Pasture, the more downstream thermograph unit is just above the pasture boundary. Livestock grazing here does not appear to be contributing to increased water temperatures due to the mostly closed canopy from heavily wooded nature of this stream channel along most of its reach. The BLM's primary mechanism for affecting water temperature is improving riparian shade, and our monitoring shows that riparian vegetation has not been substantially affected under the current grazing strategy.

**Streambank Stability** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Eighteenmile Creek in the A Pasture is almost continuously covered with riparian shrubs and deep-rooted herbaceous plants. The DMA is located in one of the few sites in the segment where the channel is not completely lined with willows and alder. Impacts by livestock to the streambank stability are limited to those areas that were previously flooded by beavers, with subsequent loss of the dams exposing soft, unstable soils. 2010 MIM monitoring documented 83% stable banks at the Eighteenmile Creek EC-06 DMA. No past bank stability monitoring has been done on Eighteenmile Creek to verify observed trends.

Table 6: Eighteenmile Creek at the Center Ridge A Pasture Stream Temperature Data by year.

2001	2002	2003	2008	2009
70.9	73.5	70.5	67.4	66.2

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** There is one monitoring DMA on the allotment, located on Eighteenmile Creek in the A Pasture. Livestock use this pasture earlier in the season and are off by July 15. Stream habitat conditions have maintained and improved under this prescription over the past ten years through visual observation. The DMA and associated MIM data were established in 2010 and provide the first quantitative data set for the segment to document long term trend. Annual use indicators will include: bank alteration and stubble height.

The following table summarizes the DMA, monitoring objectives, and current year use levels for the Center Ridge Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 In-season
18mile	A	EC-06	90% bank stability	<20% bank alteration	<10% bank alteration	12%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	9"

**Analysis of Effects:**

### **Direct and Indirect Effects to Key Indicators**

The Center Ridge Allotment contains a small segment of Eighteenmile Creek in the A Pasture, which is the lowest in elevation and typically gets grazed first. The livestock use the one mile segment of the stream to drink water along with two spring/trough systems in the uplands. During the early part of the grazing season, prior to July 15, livestock spend most of their time in the uplands and spend little time along the stream. Some grazing of the greenline vegetation occurs along with limited bank trampling, but visual observations and the MIM data shows that the stream is maintaining a good quality willow/alder/*Carex* community. This is providing cover and stable habitat situations. The proposed action seeks to formalize the grazing use prior to July 15 instead of an “open-use” permit as in the past. The permittee has not grazed the pasture past mid-July in the last ten years or more. The segment is in Proper Functioning Condition with stable banks.

Stream/riparian conditions in the A Pasture are rated as PFC. Vegetation at EC-06 is at PNC condition with a 63% Hydric Riparian Vegetation on Greenline in 2010. The combination of no grazing use during the hot season and the condition of the habitat has precluded the need for annual use indicators to result in the current trend. Continuing the existing grazing management strategy with the addition of the proposed use indicators and adaptive management strategy should result in continuation of this trend and result in the desired vegetation.

Although periodic temperature exceedences exist for the streams in the allotment, with the recovery of riparian vegetation, particularly woody species, current livestock grazing does not appear to be contributing to increased water temperatures. Regardless, the BLM’s primary mechanism for affecting water temperature is altering riparian shade, and our monitoring shows that riparian vegetation has been improving under the current grazing strategy. Elevated water temperatures may be affected by other variables, including private lands agricultural practices and historic disturbances.

Streambank stability at EC-06 was 83% in 2010. Due to the heavily wooded nature of the channel, livestock have limited potential to impact streambank stability under the proposed action. Nonetheless, application of the proposed bank alteration indicators will serve to limit the amount of alteration occurring and as a result will help maintain and further improve bank stability over the permit term.

No impacts to fish or stream habitat are expected from the proposed upland spring enclosure located outside the Eighteenmile Creek RHCA.

### **Redd Disturbance**

Chinook salmon and steelhead are not currently found in Eighteenmile Creek. There is a partial barrier at the mouth of the stream under State Highway 29 in Leadore and a permanent barrier at the confluence of Hawley Creek about three miles upstream from the Lemhi River and about 8 miles downstream of the allotment. No use by anadromous fish has been documented, nor is it expected to occur due to the perennial disconnection of the stream from the Lemhi River. Chinook do spawn and rear in the Lemhi River starting below the Eighteenmile Creek/Lemhi River confluence.

Additionally, bull trout found in the headwaters of Eighteenmile Creek in the BLM WSA have not been found in any of the downstream reaches. Rainbow, cutthroat and eastern brook trout are scattered throughout the lower and middle reaches in low densities (BLM electrofishing surveys in 2000-2008). No fall spawning surveys have been conducted by BLM staff downstream of the WSA boundary because of the limited numbers of bull trout documented during presence/absence surveys in the lower reaches. It

is unlikely to support bull trout habitat except for migration habitat. The headwaters do have a small resident population of bull trout spawning on BLM.

### **Summary**

Recent irrigation projects have improved flows in lower Eighteenmile Creek along with riparian fencing on two of the lower ranches. Conditions in lower Eighteenmile have dramatically improved in the past ten years with better riparian shrub and *Carex* cover on the banks and more flow in channel in the summer months. However, the channel still lacks good quality vegetation over much of its length, lacks proper sinuosity, lacks instream cover, has a very small percentage of pool habitat, and continues to have much of the flow volume diverted for irrigation use on private land.

The C pasture historically had a watergap 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. Center Ridge A Pasture has improved in the past ten or more years in vegetative conditions, substrate quality and possibly water temperatures. Mild to heavy livestock grazing impacts can be found on the adjacent private and State lands, but the BLM segment is in good condition with the exception of sediment and is expected to remain in a static to upward trend with the proposed grazing management.

Changes in management over the years in the Center Ridge Allotment have been documented by riparian plant monitoring, long term ocular observations and photographs. This shows that since the early 1990's, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing in the allotment is limited to an early-season window on Eighteenmile Creek. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006). There is a very low probability that livestock grazing in the action area would have measureable impacts to adult spawning downstream in the Lemhi River. Due to the PFC conditions on the allotment and the light grazing proposed, impacts are expected to be minimal on habitat and key indicators. Continuation of the grazing on the allotment will result in continued upward trend in conditions and not adversely affect listed species or their habitat. Completion of the implementation monitoring identified above should help ensure achievement and maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

**Interrelated and Interdependent Actions:** There are no known interrelated or interdependent actions related to this grazing permit. The ranch operation is located directly adjacent to the allotment and livestock are either trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Eighteenmile Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently no known proposals to remove the existing fish passage barriers in Eighteenmile Creek.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock

(defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Eighteenmile Creek have been drastically reduced over historic levels and stream/riparian conditions in the Center Ridge Allotment are on an upward trend due to the limited livestock use and early spring grazing season. Current management is resulting in a continued upward trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery. Because Eighteenmile Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Anadromous fish are unable to access Eighteenmile Creek due to a complete barrier at the confluence with Hawley Creek on the lower end. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment and the streams are not occupied by steelhead, precluding direct impacts. Since Eighteenmile Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment and the stream is not occupied by bull trout in the lower reaches, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Eighteenmile Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM downstream of the WSA, but they are present in the headwaters. Limited grazing occurs on the Center Ridge Allotment portion of Eighteenmile Creek and the area continues to show limited ecological impacts and a strong upward trend in conditions.

***Canada Lynx:*** No Effect – The allotment contains about 350 acres of forested and riparian habitat. The forested vegetation is mostly dry Douglas fir and is not growing in conjunction with primary lynx habitat.

The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Freestrip Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## CHAMBERLAIN CREEK ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat. ESA Action Area, effects determination and rationale for the Chamberlain Creek Allotment include the approximately two miles of Pass Creek and four miles of Eighteenmile Creek within the allotment and to a much lesser extent, the downstream reaches of main Eighteenmile Creek. Flows in Eighteenmile Creek are diverted seasonally for irrigation purposes and access for fish onto the Chamberlain Creek Allotment is only available at the highest flows and only within the upper reaches due to barriers and dewatering in downstream reaches of Eighteenmile Creek. Specifically, flows downstream of the allotment are intercepted seasonally from irrigation diversions and there is a pond on the private Oxbow Ranch where sediment is deposited, reducing material transported further downstream. There also is a segment about two miles downstream of the allotment where the stream naturally infiltrates and goes dry most of the year.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed.

Because the stream is occasionally connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Data and descriptions are presented for the allotment in context of the Eighteenmile sub-watershed to describe the condition and trend of the environmental baseline at that scale. ESA Action Area for the Chamberlain Creek Allotment is the 18mile Creek pasture which contains the headwaters of Eighteenmile Creek, and the North 18mile Creek Pasture which contains almost all of Pass Creek, a tributary to upper Eighteenmile Creek.

**Background:** The Chamberlain Creek Allotment consists of approximately 16,000 acres of BLM land in four pastures with about 3,200 acres of other lands fenced with the allotment. The State and private lands within the allotment occur on the naturally intermittent tributaries of Divide and McGinty Creeks that do not measurably impact habitat conditions in Eighteenmile Creek above background levels. The private land parcels on Eighteenmile Creek downstream of the allotment are not managed or authorize as part of the grazing allotment and outside the scope of the proposed action. The Chamberlain Creek Allotment contains the headwaters reach of Eighteenmile Creek in the 18mile Creek Pasture. Livestock use the four mile length of the stream to drink water and graze along for the short time they are in the pasture. The allotment is typically used starting in the lower elevations in June and July and moving toward the 18mile and North 18mile Creek pastures for later July-early September. Historically, few fences existed and the cattle migrated up to the high pastures in early summer and grazed along the streams for most of the summer. This caused a decline in habitat conditions especially with a decrease in riparian shrub vegetation and decrease in bank stability. With reduced grazing via fence/pasture management and reduced herd size in the past twenty years, conditions have improved substantially, especially on upper Eighteenmile Creek.

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 allotments failure to meet standards 2, 3 and 8, but not Standard 7. To make significant progress towards 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 then limit grazing to only the upland pasture, Big Bend, after August 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>. The Eighteenmile Creek Pasture would be limited to a maximum of 35 cattle. 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 350 cattle, as applied for by the permittee, for the same timeframe as the current permit.

**Current Permit and last ESA Determination:**

In 2006, it was determined that since no additional or new impacts to fish or aquatic habitat were expected as a result of the Grazing Permit for the allotment, the May Affect – Not Likely to Adversely Affect determination from 1999 for Chinook/sockeye salmon and steelhead trout and from 2003 for bull trout was still in effect. The grazing permit was also determined to have No Effect on bald eagle and Canada lynx. The grazing permit was determined to May Affect but Not Likely to Jeopardize the continued existence of the Central Idaho Wolf Population and/or the ability of the available habitat to support wolves.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	309 Cattle	6/1-9/30	100%	1239	1239	1331	2570

**Terms and Conditions:**

BLM management of the Chamberlain Allotment will continue to emphasize maintenance or improvement of riparian communities.

Use in the Chamberlain Creek Allotment will be in accordance with the Chamberlain Creek AMP (attached at the end of this document).

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action(s):**

Chamberlain Creek Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	350 Cattle	6/1-9/30	77%	1081	1081	1493	2580

**Other Terms and Conditions:**

- Only the Big Bend Pasture can be grazed after 8/15.
- No more than 35 cattle will be in the Eighteenmile Pasture at one time.
- The McGinty Creek Pasture will not be grazed after 6/30. (This pasture is part of the new proposed action which portions out the segment of the intermittent stream channel in the Big Bend Pasture on the adjacent southern ridge.

**Range Improvement Projects:** McGinty Creek Division Fence.

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 would tie in with the division fence between the Chamberlain Creek and Spring Canyon 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.

**Crossing Permits:** Would not be authorized for this Allotment.

**Range Improvement Projects:** McGinty Creek Division Fence.

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 would tie in with the division fence between the Chamberlain Creek and Spring Canyon 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**

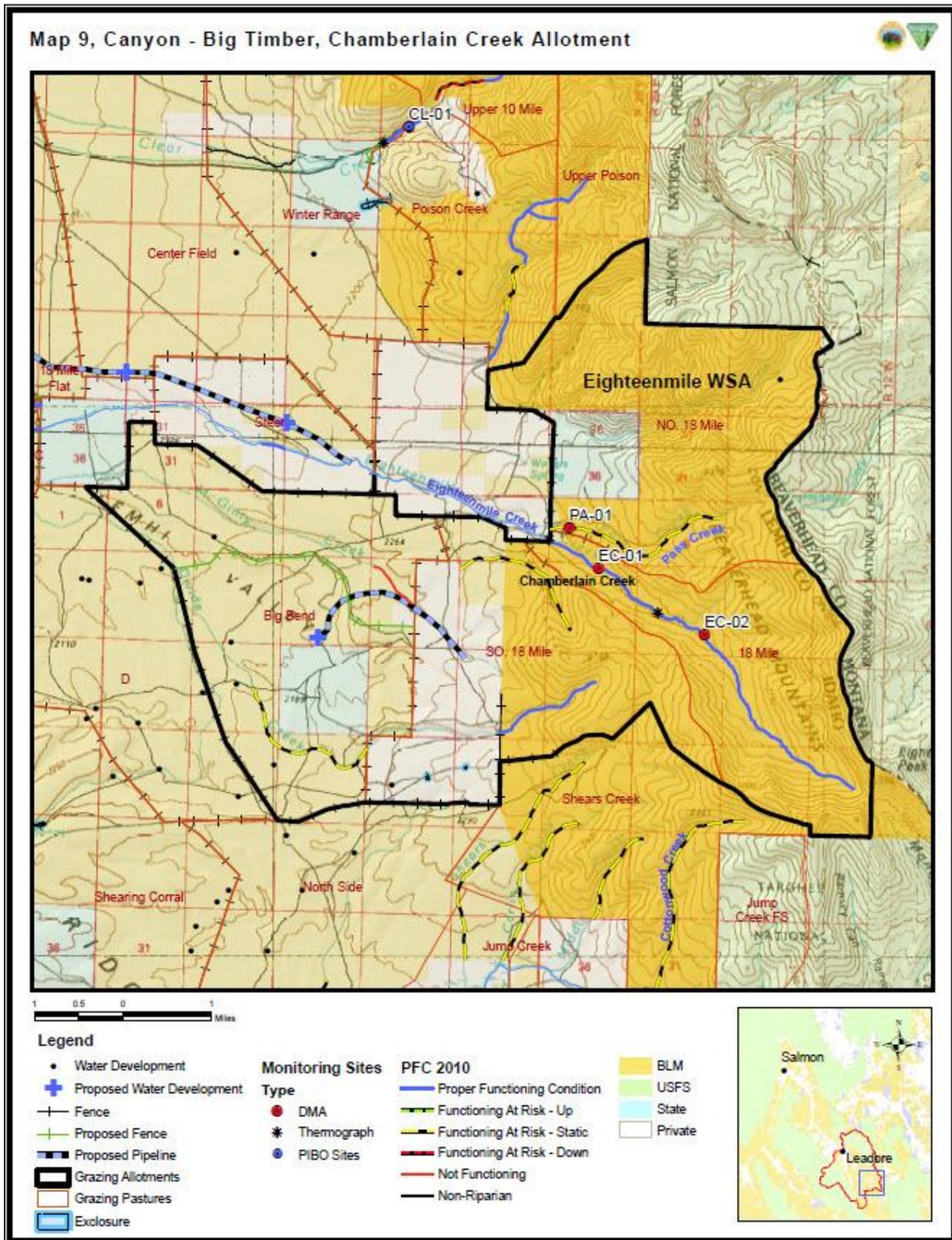
The proposed pipeline would run northwest approximately 1.25 miles, then turn southwest and run another one mile. There would be one trough located at the end of the pipeline. A hydro-screen water collector or headbox would be installed at the point of diversion in McGinty Creek on private land. The 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:** Eighteenmile Creek Habitat Improvement.

The project area is located in the 18 Mile Creek Pasture of the Chamberlain Creek Allotment which is also located in the Eighteenmile Wilderness Study Area (WSA). The portion of Eighteenmile Creek that is in the project area runs from the southeast to the northwest from approximately 9700' to 8000' in elevation. This portion of Eighteenmile Creek is currently lacking in pool habitat, instream cover, and large woody debris. Historic grazing practices reduced the riparian-shrub community substantially causing a decrease in fish habitat, especially bull trout spawning and rearing habitat.

Approximately 100 small to medium-sized standing dead trees along two miles of Eighteenmile Creek would be felled and if necessary maneuvered into the stream for the creation or improvement of fisheries habitat (pools, instream cover, and large woody debris). Trees would be selected for felling and placement based on size and proximity to Eighteenmile Creek; to mimic natural conditions, the trees would not be limbed. Trees would not be felled where habitat is occupied by sensitive plant species. Trees would be felled using a crosscut saw; this method of removal was determined by completing the minimum tool analysis for WSAs.

Figure 10. Chamberlain Creek Allotment Map.



**Summary of Changes to Permit since Prior Consultation:** Under the new permit, the number of AUMs permitted on the BLM will be decreased by 168, but the maximum number of cattle allowed on the allotment will increase to 350. The McGinty Creek Pasture will not be utilized after June 30<sup>th</sup> to allow for improvement of the riparian area along McGinty Creek. The vegetation along the stream will have from the 30<sup>th</sup> of June until the end of the growing season to re-grow after use. After August 15<sup>th</sup>, only the Big Bend Pasture will be utilized. This will allow the riparian vegetation along the streams in the other pastures to have from August 15<sup>th</sup> to the end of the growing season to re-grow after use, while utilizing the Big Bend Pasture where no perennial streams are present.

**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** No core sampling has been done by the USFS or BLM in the watershed. MIM substrate monitoring data on the Chamberlain Creek Allotment for 2009 shows 3% surface fines at the Eighteenmile Creek DMA EC-01 in the WSA and 17% surface fines at the Pass Creek DMA PA-01. No trend data is available at these sites. Visual observations on these headwater reaches since 1995 show very little sediment in the substrate.

**Greenline Vegetation** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** Eighteenmile Creek is the largest stream in the allotment and provides the majority of fish habitat. 2009 Riparian PFC inventories show that Eighteenmile Creek on the Chamberlain Creek Allotment is in Proper Functioning condition. Most of the stream is dominated by woody vegetation and a very rocky channel protecting it from impacts by livestock grazing. The stream provides suitable aquatic habitat.

Pass Creek is a very small stream that is a tributary to upper Eighteenmile Creek. 2009 PFC inventories show that Pass Creek is in Functional At-Risk Condition with a Static Trend. Riparian/wetland areas on Pass Creek are dominated by willows, Carex and Kentucky bluegrass. Approximately half of the channel is covered with willows and inaccessible to livestock. The other half is more open and covered with herbaceous plants. The channel is also controlled with rock/boulders which have kept erosion relatively low. The channel does receive a fair amount of bank trampling from livestock in the open segments.

No greenline vegetation trend data is available in the allotment; although, the 2009 and 2010 MIM monitoring documented Ecological Status of the Eighteenmile Creek DMA EC-01 as Late-Seral, and the Pass Creek DMA PA-01 as Mid-Seral.

DMA	Year - % Hydric Riparian Vegetation on Greenline
Eighteenmile EC-01	2009 - 87%
Pass Creek PA-01	2010 - 43%

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** No MIM Greenline-Greenline Width trend data is available. The 2009 MIM monitoring documented a GGW on Eighteenmile Creek EC-01 of 2.96 m and the 2010 MIM monitoring documented a GGW on Pass Creek PA-01 of 0.81 m. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s. Both the stream channels are controlled by both riparian vegetation and rock.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** The BLM has 26 datasets (1994-2010) for water temperature in Eighteenmile Creek using continuously recording thermographs. These include an upper station in the headwaters at the WSA/private boundary and a mid-stream station within the Powderhorn Allotment riparian enclosure. The

7-day average maximum water temperature at the upper site showed 61.0°F for the 15 years sampled. The lower site averaged 66.1°F for the ten years sampled.

As is typical for most systems in the Lemhi, water temperature increases as it moves downstream. The average maximum temperature increase over the approximately 11.2 miles between the upper and the lower site was 5.0°F, an increase of 0.45°F per mile. This reach is primarily state and private lands with a mixture of heavily vegetated sections, historic beaver complexes, sections nearly devoid of vegetation that are heavily grazed, and significant irrigation withdrawals. The warm water temperature at the boundary of the WSA is likely the result of the large historic beaver complexes with significant areas of exposed stream reach. No uses occur in the WSA except very limited livestock grazing.

Two segments downstream of the WSA on BLM have been excluded from livestock grazing since the mid 1990's. The first was the watergap for the Center Ridge C Pasture about 1/4 mile in length and the second the watergap of the Powderhorn Allotment 18mile Flat Pasture about 1/3 mile in length.

On the Chamberlain Creek Allotment, historic livestock grazing has reduced riparian shrubs which have contributed to increases in summer water temperatures. Since the 1990's, reduced livestock grazing has increased the riparian shrub cover along much of the open segments and most likely has decreased overall summer water temperatures. Currently, livestock grazing does not appear to be contributing to increased water temperatures in the 18mile Creek pasture due to the heavily wooded nature of much of the stream channel. In the North 18mile Creek Pasture on Pass Creek, livestock grazing has caused many of the riparian shrubs to be eliminated and contributing to increases in summer water temperatures. Since Pass Creek flows are so small in the summer months (about 1 cfs), its influence to Eighteenmile Creek are limited. The BLM's primary mechanism for affecting water temperature is improving riparian shade, and our monitoring shows that riparian vegetation has not been substantially affected under the current grazing strategy.

**Streambank Stability** **Status and Trend:** Functioning Appropriately; Static Trend  
**Narrative:** 2009 MIM monitoring documented 90% stable banks at the Eighteenmile Creek DMA EC-01 and 2010 MIM monitoring documented 84% stable banks at the Pass Creek DMA PA-01. No past bank stability monitoring has been done on Eighteenmile Creek or Pass Creek to verify observed trends.

Table 7: Eighteenmile Creek at BLM WSA (headwaters) Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
62.5	60	63.5	62.4	65.1	62.5	61.5	58.5	63.5		60.4	59.5

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** There are two monitoring DMAs on the allotment: one located on Eighteenmile Creek in the 18mile WSA Pasture and one on Pass Creek in the North 18mile Pasture. In the past, livestock have used the 18mile Creek Pasture in a very limited capacity with less than 10% of the herd at any one time but in August-September. Also, Pass Creek was used for three to four weeks in the August-September period. The new proposed action is to use these pastures only until August 15 to preclude any bull trout spawning conflicts and to allow for riparian plant regrowth.

Stream habitat conditions have maintained and improved under this prescription over the past ten years through visual observation. The DMA in the 18mile Creek Pasture and associated MIM data were established in 2010 and provide the first quantitative data set for the segment to document long term trend.

The following table summarizes the DMAs, monitoring objectives, and current year use levels for the Chamberlain Creek Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator	
				In-Season	End-of-season
Eighteenmile	18mile Cr	EC-01	90% bank stability	<15% bank alteration	<10% bank alteration
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble
Pass	North 18mile	PA-01	90% bank stability	<15% bank alteration	<10% bank alteration
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble

An electrofishing sample in 2001 found one adult and one juvenile bull trout in Pass Creek. Even with the limited number of fish on the very small Pass Creek, the BLM proposed to limit grazing impacts to the stream. Monitoring efforts will continue with effectiveness monitoring, annual use indicators at the DMAs and water temperature data.

### Analysis of Effects:

#### **Direct and Indirect Effects to Key Indicators**

Chinook salmon and steelhead are not currently found in Eighteenmile Creek or its tributaries. There is a partial barrier at the mouth of the stream 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. Conditions in lower Eighteenmile have dramatically improved in the past ten years with better riparian shrub and *Carex* cover on the banks and more flow in channel in the summer months. However, the channel still lacks good quality vegetation over much of its length, lacks proper sinuosity, lacks instream cover, has a very small percentage of pool habitat, and continues to have much of the flow volume diverted for irrigation use on private land.

Additionally, bull trout found in the headwaters on the BLM WSA have not been found in any of the downstream reaches. Rainbow, cutthroat and eastern brook trout are scattered throughout the lower and middle reaches in low densities (BLM electrofishing surveys in 2000-2008). The BLM stream segments in the middle reaches have improved in the past ten or more years in vegetative conditions, substrate quality and possibly water temperatures. Mild to heavy livestock grazing impacts can be found on the adjacent private and State lands, but the BLM segment is in good condition and is expected to remain in a static to upward trend with the proposed grazing management.

The Chamberlain Creek Allotment contains the headwaters reach of Eighteenmile Creek in the 18mile Creek Pasture. With reduced grazing via fence/pasture management and reduced herd size in the past twenty years, conditions have improved substantially. The upper reaches of the stream in the allotment are isolated from lower Eighteenmile Creek due to a segment of stream near the McFarland Boulevard crossing where infiltration rates are high and the stream becomes very small for most of the year, a pond/barrier on the Oxbow Ranch, extensive irrigation withdrawal, and the barrier at the Eighteenmile/Hawley Creek confluence. Impacts to the headwaters are insignificant and immeasurable to downstream habitats in lower Eighteenmile Creek and the Lemhi River. Natural mixing of water as Eighteenmile Creek flows downstream about twenty miles to the Lemhi River create a situation where effects in upper Eighteenmile and Pass Creeks on the allotment are not detectible in downstream DCH for all fish species.

Pass Creek, a tributary to upper Eighteenmile Creek is also in the allotment and provides limited habitat for bull trout. Pass Creek base flow is less than one cfs and has immeasurable effects to downstream habitats in lower Eighteenmile Creek and the Lemhi River. The allotment also contains 600 acres of private land in the upper end of McGinty and Divide Creeks. This parcel is in the upper reaches of the intermittent stream habitat that does not connect to Eighteenmile Creek. Although the parcel is in the allotment, it does not affect habitat conditions downstream in Eighteenmile Creek.

During the early part of the grazing season prior to July 15, livestock spend their time in the lower pastures and use the Eighteenmile/Pass Creeks from late-July through September. These areas show some grazing of the greenline vegetation along with limited bank trampling. Visual observations and the MIM data show that Eighteenmile Creek is at PFC and continuing an upward trend in condition with a good quality willow/*Carex* community. This is providing cover and stable habitat situations especially with occupied bull trout habitat in the stream. The proposed action seeks to formalize the grazing use to be limited in the 18mile Creek Pasture and no grazing after August 15 to ensure no conflicts with spawning bull trout. The segment has 90% stable banks. Due to the heavily wooded nature of the channel, livestock have limited potential to impact streambank stability under the proposed action.

Stream/riparian conditions in the North 18mile Creek Pasture on Pass Creek are rated as FAR static trend. PA-01 is rated at Mid-Seral condition with a 43% Hydric Riparian Vegetation on Greenline in 2010. It also showed 84% stable banks at the Pass Creek DMA PA-01.

Although periodic temperature exceedences exist for the streams in the allotment, with the recovery of riparian vegetation, particularly woody species, current livestock grazing does not appear to be contributing to increased water temperatures. Regardless, the BLM's primary mechanism for affecting water temperature is altering riparian shade, and our monitoring shows that riparian vegetation has been improving under the current grazing strategy. Elevated water temperatures may be affected by other variables, including private lands agricultural practices and historic disturbances.

Proposed projects include a fence to create the McGinty Riparian Pasture and an associated pipeline and trough to allow water into the modified upland Big Bend Pasture. The actual trough and pipeline route is in upland habitat and outside any RHCA and therefore does not impact ESA fish or DCH. Additionally, the water which would charge the pipeline originates in the headwater springs on McGinty Creek which is an intermittent tributary that does not naturally connect to Eighteenmile Creek. The stockwater right for the proposed pipeline would be a transfer of a portion of the #74-15907 currently being used by McFarland Livestock totaling 0.04 cfs. The transfer would be for 0.02 cfs to the name of US Government c/o USDI-BLM. The proposal is to transfer 0.02 into the trough system and not add any new water withdrawal from McGinty Creek. Additionally, the system would be floated and use less water than the existing situation and expected to leave more water volume in the stream channel.

This trough would allow for better allotment cattle rotations, reducing grazing time on Eighteenmile and Pass Creeks. Additionally, the Eighteenmile Creek Habitat Improvement proposal is located in the Eighteenmile Creek Pasture of the Chamberlain Creek Allotment in the WSA. This portion of Eighteenmile Creek is currently lacking in pool habitat, instream cover, and large woody debris. Historic grazing practices reduced the riparian shrub community substantially causing a decrease in fish habitat, especially bull trout spawning and rearing habitat. The addition of 100 medium-sized lodgepole pine along the stream is expected to increase LWD and habitat complexity in the bull trout occupied reach. These trees are standing dead and in the process of falling over, but are not ending up in the stream channel. BLM would cut the trees off at ground level and leverage the entire stem into the stream channel with minimal disturbance. Hand-tools would be used and little to no ground disturbance is expected. Negative water quality impacts are not expected.

No impacts to fish or stream habitat are expected from the proposed McGinty Fence which is located outside the Eighteenmile Creek RHCA.

### **Redd Disturbance**

No use by anadromous fish has been currently documented in Eighteenmile Creek. Due to a barrier at the stream's confluence with Hawley Creek downstream about nine miles, it is currently not possible for both spawning and rearing of Chinook or steelhead to occur in the future. Chinook adults are not likely to spawn in middle to upper Eighteenmile Creek due to the small size of the stream.

Eighteenmile and Pass Creeks are currently occupied by bull trout only in the headwaters in the WSA. No fall spawning surveys have been conducted by BLM staff downstream of the WSA boundary because of the limited numbers of bull trout documented during presence/absence surveys in the lower reaches. It is unlikely to support bull trout habitat except for migration habitat. 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 after August 15 and as long as into October. The proposed action seeks to eliminate spawning conflicts and redd disturbance by not allowing grazing after August 15.

### **Summary**

Changes in management over the years in the Chamberlain Creek Allotment have been documented by stream/riparian MIM monitoring, long term ocular observations and photographs. This shows that since the early 1990's, stream banks on Eighteenmile Creek have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing proposed in the allotment is limited in the 18mile Creek pasture and seasonally limited on Pass Creek. There is a very low probability that livestock grazing in the proposed action would have measurable impacts to adult spawning downstream in the Lemhi River. Due to the PFC conditions on Eighteenmile Creek and the light grazing proposed, impacts are expected to be minimal on habitat and key indicators. Continuation of the grazing on the allotment will result in continued upward trend in conditions and not adversely affect listed species or their habitat. Limited grazing on Pass Creek and livestock off by August 15 is expected to improve riparian conditions and eliminate spawning conflicts. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

**Interrelated and Interdependent Actions:** There are no known interrelated or interdependent actions related to this grazing permit. The ranch operation is located directly adjacent to the allotment and livestock are either trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Eighteenmile Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently no known proposals to remove the existing fish passage barriers in Eighteenmile Creek.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon:*** May affect, Not Likely to Adversely Affect. Impacts to Eighteenmile Creek have been drastically reduced over historic levels and recovery in the Chamberlain Creek Allotment has led to PFC and further upward trend due to the limited livestock use. Anadromous fish are unable to access Eighteenmile Creek due to a complete barrier at the confluence with Hawley Creek on the lower end. The allotment is not expected to produce measurable increases in sediment or other declines in conditions affecting fish above background levels when combined with the much larger volume of lower Eighteenmile Creek or the Lemhi River. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat in the action area, the action would not have direct effects to individuals or spawning habitat.

***Snake River Spring/Summer Chinook Salmon Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Currently, anadromous fish are unable to access Eighteenmile Creek due to a complete irrigation barrier at the confluence with Hawley Creek on the lower end. Steelhead could have occupied the upper reaches of Eighteenmile Creek for both spawning and rearing habitat. The allotment is not expected to produce increases in sediment or other declines in conditions affecting fish above background levels when combined with the much larger volume of the Lemhi River. Thus the action's ability to influence downstream critical habitat is considered discountable.

***Essential Fish Habitat:*** No Effect to Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment and the streams are not occupied by steelhead, precluding direct impacts. Since Eighteenmile Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Refer to Chinook salmon DCH discussion above.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the allotment, but the stream is occupied by bull trout on the allotment on both Eighteenmile and Pass Creeks. The proposed action would continue to have very limited and immeasurable direct and indirect effects on the key indicators important to bull trout. There have been no observations of fish on the BLM downstream of the WSA, but they are present in the headwaters. Limited grazing occurs on the Chamberlain Creek Allotment portion of Eighteenmile Creek and the area continues to show limited ecological impacts and a strong upward trend in conditions. The addition of the LWD is expected to improve habitat without negative short or long-term impacts. Grazing would not take place during spawning or incubation periods.

**Canada Lynx:** No Effect – The allotment contains about 350 acres of forested and riparian habitat. The forested vegetation is mostly dry Douglas fir and is not growing in conjunction with primary lynx habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Freestrip Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## POWDERHORN ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

ESA Action Area, effects determination and rationale for the Powderhorn Allotment include the approximately three miles of Clear Creek and 1/4 mile of Eighteenmile Creek. Data and descriptions are presented for the allotment in context of the Eighteenmile sub-watershed to describe the condition and trend of the environmental baseline at that scale. Because Eighteenmile Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, are immeasurable. Additionally, flows from the BLM portions of the steams are diverted seasonally for irrigation purposes and access for fish onto the Powderhorn Allotment is only available at the highest flows and only within the upper reaches due to barriers in lower Eighteenmile Creek and dewatering in the middle reaches. The other small streams in the allotment are partially intermittent due to the naturally high infiltration rates in the large alluvial expanses they flow over. They do not connect to DCH or are completely diverted into irrigation systems on private land and do not influence DCH.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed.

**Background:** The Powderhorn Allotment consists of approximately 33,000 acres of BLM land in eight pastures with about 3,500 acres of other lands fenced with 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. It has been determined that current livestock management is a significant contributor to failing to meet Standards 2, 3 and 8 but not Standard 7. To make significant progress towards meeting Standards 2, 3 and 8 the BLM proposes to reduce the Active Preference on the allotment. 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 782 cattle from April 15<sup>th</sup> through December 12<sup>th</sup>.

**Current Permit and last ESA Determination:**

In 2006, the Grazing Permit for this allotment was determined to have “no effect” to Chinook/sockeye salmon, bull trout, steelhead trout, bald eagle, and Canada lynx. The grazing permit was determined to May Affect but Not Likely to Jeopardize the continued existence of the gray wolf population.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active AUMs	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			

**Terms and Conditions:**

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

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

**Proposed Action(s):**

Powderhorn Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	447 Cattle	4/15-12/12	83%	2952	2954	4212	7277
B	69 Cattle	4/15-12/12	100%	549	563	831	1394

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

The Clear Creek Pasture will be grazed for a maximum of 3 weeks and no grazing will occur after 8/15 in the Pasture. The Clear Creek Drainage in the Clear Creek Pasture will not be grazed for more than 7 days. The Clear Creek Pasture consists of the Upper Tenmile and Poison/Upper Poison Creek Pastures.

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

Cattle numbers may be increased up to a total of 782 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

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

Cattle numbers may be increased up to a total of 200 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

**Crossing Permits:** Crossing can be applied for on an annual basis. Crossing permits 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 crossing the Allotment would not use the Clear Creek Pasture.

**Range Improvement Projects:** 18 Mile Pipeline.

The pipeline would run approximately 4 miles to the west from 18 Mile Creek. Three troughs would be placed on the allotment, one in each of the Steer Pasture, the Center Field Pasture, and 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 stockwater right for the proposed pipeline would be a transfer of a portion of the #74-14421 currently being used in an open ditch described in the name of US Government c/o USDI-BLM. The proposal is to transfer 0.02 into the trough system and not add any new water withdrawal from Eighteenmile Creek. Additionally, the system would be floated and use less water than the existing situation and expected to leave more water volume in the stream channel. 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:**

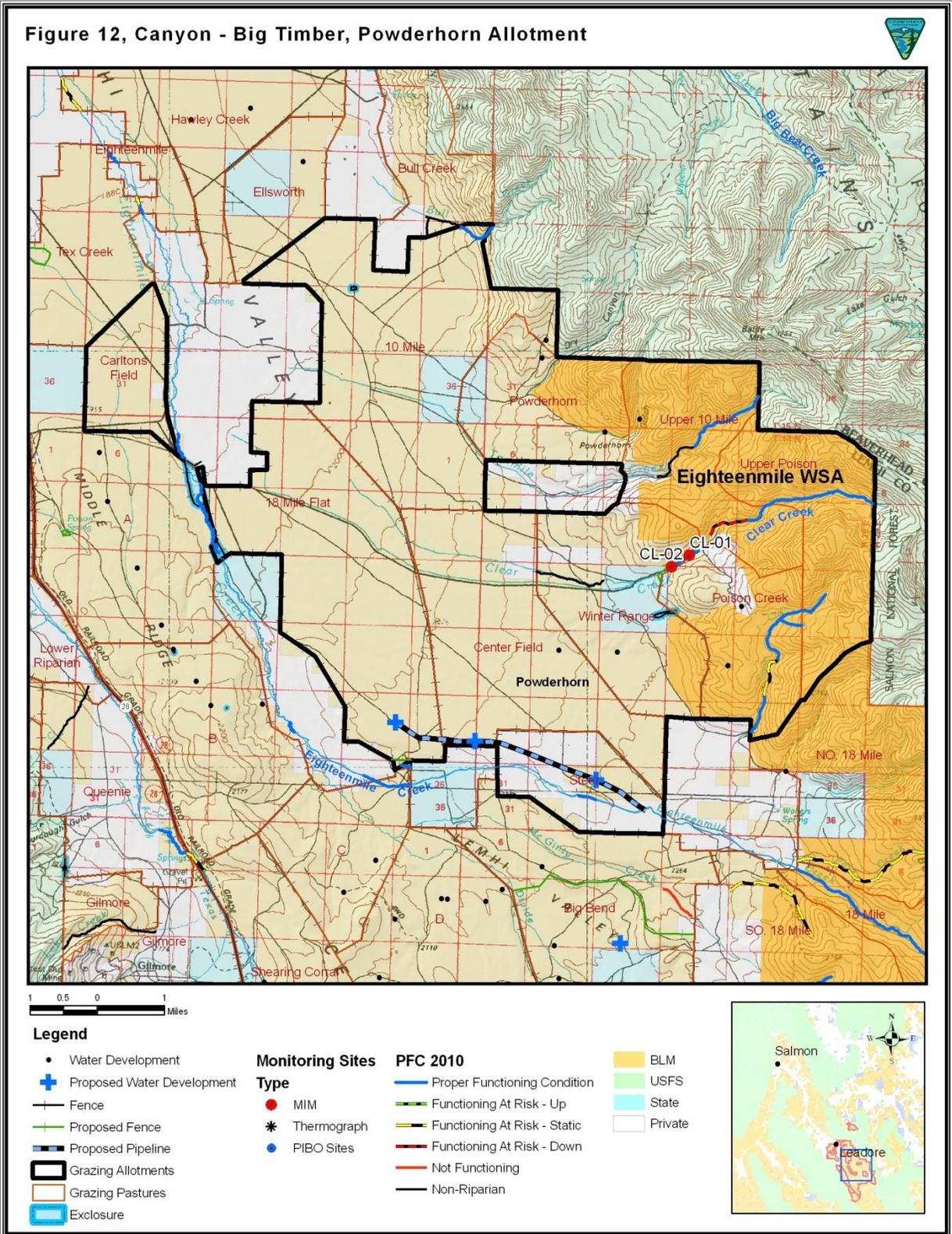
Currently, a watergap giving cattle access to 18 Mile Creek exists in the southernmost portion of the 18 Mile Flat Pasture. With the addition of the trough in the 18 Mile Flat Pasture, as described above, the watergap would become unnecessary. The current fence (approximately 0.30 mile) on the south 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 to where the new fence crosses the existing road.

**Clear Creek Division Fence:**

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 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 steep topography, cattle from the Clear Creek Pasture rarely access the spring complex from other areas, 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.

Figure 11. Powderhorn Allotment Map.



**Summary of Changes to Permit since Prior Consultation:** Since the last determination for this allotment, bull trout were documented in the Clear Creek drainage. Grazing utilization in the Clear Creek pasture is being limited in duration, as well as the end of the use period will be earlier to allow for increase riparian vegetation growth. The relocation of the fence between the Clear Creek and Winter Range Pasture would put all of the bull trout spawning areas in the allotment in the Clear Creek Pasture. The pipeline would allow cattle to still water in the southern portion of the allotment, while allowing a fence to be built to exclude Eighteenmile Creek from cattle use.

**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** No core sampling has been done by the USFS or BLM in the Clear Creek watershed. MIM substrate monitoring data for 2010 shows 22% surface fines at the CL-01 DMA and 14% surface fines at the CL-02 DMA. No trend data is available at this site.

**Greenline Vegetation** **Status and Trend:** Functioning at-Risk, Static trend

**Narrative:** According to 2009 PFC inventories, most of Clear Creek below the private mine parcel is in Proper Functioning Condition and well vegetated. The upper reach of Clear Creek, approximately 3 miles, is a steeper channel with limited natural flows and riparian vegetation. This reach has been destabilized from livestock grazing and is lacking riparian shrub and herbaceous vegetation and is rated as Functional At Risk Condition with a Downward Trend. Just downstream on the PFC reach at the mouth of canyon, Clear Creek is completely diverted for irrigational practices from April - November.

2010 MIM monitoring documented a Late Seral Ecological Status at the upper CL-01 DMA and an Early Seral Ecological Status at the lower CL-02 DMA. Note that the Early Seral rating for CL-02 is mostly based on the % hydric species on the greenline. The data collected was in-part erroneous in that the crew counted the aquatic in-channel plants (watercress) as the greenline composition instead of the complete sedge community adjacent to it. In reality, the % hydric species should be shown as much higher and most likely rate out at late-seral.

The Powderhorn Allotment has an 800 feet long water gap on Eighteenmile Creek for livestock at McFarland Boulevard road crossing. This segment is in FAR static trend and receives moderate livestock impacts. BLM plans to fence off this segment and not have further grazing on the stream from this allotment.

DMA	Year - % Hydric Riparian Vegetation on Greenline
Clear CL-02	2010 - 37%
Clear CL-01	2009 - 94%

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** 2010 MIM monitoring documented a GGW on Clear Creek of 3.05m. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s. Because the short segments of BLM on Eighteenmile Creek receive little to no grazing, detailed MIM data has not been collected.

**Temperature** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** The Powderhorn Allotment has an 800 feet long water gap on Eighteenmile Creek for livestock at McFarland Boulevard road crossing. Two segments downstream of the WSA on BLM have been excluded from livestock grazing since the mid 1990's. The first was the watergap for the Center Ridge C Pasture about 1/4 mile in length and the second the watergap of the Powderhorn Allotment 18mile Flat Pasture about 1/3 mile in length. The areas are in PFC condition.

The BLM has 26 datasets (1994-2010) for water temperature in Eighteenmile Creek using continuously recording thermographs. These include an upper station in the headwaters at the WSA/private boundary and a mid-stream station within the Powderhorn Allotment riparian enclosure. The 7-day average maximum water temperature at the upper site showed 61.0°F for the 15 years sampled. The lower site averaged 66.1°F for the ten years sampled.

As is typical for most systems in the Lemhi, water temperature increases as it moves downstream. The average maximum temperature increase over the approximately 11.2 miles between the upper and the lower site was 5.0°F, an increase of 0.45°F per mile. This reach between the two units is primarily state and private lands with a mixture of heavily vegetated sections, historic beaver complexes, sections nearly devoid of vegetation that are heavily grazed, and significant irrigation withdrawals. The warm water temperature at the boundary of the WSA is likely the result of the large historic beaver complexes with significant areas of exposed stream reach. No uses occur in the WSA except very limited livestock grazing.

Clear Creek has one dataset for water temperature from 2010. The majority of the stream slow comes from large spring complexes just below the mine and at the canyon mouth. The water temperatures are relatively very cold and suitable for bull trout. The 7-day average maximum water temperature showed 51.0°F.

**Streambank Stability**

**Status and Trend:** Functioning At Risk; Static Trend

**Narrative:** 2009 MIM monitoring documented 33% stable banks on Clear Creek at CL-01 and 93% stable banks at CL-02. No past bank stability monitoring has been done on Clear Creek to verify observed trends. Bank alteration was measured in 2009 for CL-01 at 69% and in 2010 for CL-02 at 6%. PIBO data shows 98% bank stability in 2003 and 93% in 2008 at CL-01. Because the short segments of BLM on Eighteenmile Creek receive little to no grazing, detailed MIM data has not been collected.

Table 7: Eighteenmile Creek at the Center Ridge A Pasture Stream Temperature Data by year.

2001	2002	2003	2008	2009
70.9	73.5	70.5	67.4	66.2

**Riparian Management Objectives and Monitoring:** There are two monitoring DMAs on the allotment located on Clear Creek in the “Clear Creek” and “Winter Range” Pastures. Stream habitat conditions have made substantial improvements in the Winter Range under this prescription over the past ten years through visual observation. For the Clear Creek pasture, historic hot-season grazing has negatively impacted habitat conditions on the stream. The DMA and associated MIM data were established in 2010 and provide the first quantitative data set for the segment to document long term trend. Annual use indicators will include: bank alteration and stubble height. Since the new Clear Creek Fence will create a new pasture that contains all of upper Clear Creek from the private diversion upstream and above the private mine site, only one DMA is selected for ESA monitoring.

Tenmile Creek is a perennial stream originating from artesian springs on private land at the mouth of the mouth of the canyon. Its entire flow (base flow about 2-4 cfs with little seasonal fluctuation) is captured in an irrigation ditch year-round and conveyed onto the Oxbow Ranch. The stream does contain resident rainbow/redband trout. The stream channel appears to lose much of its volume as it flows across the sage-steppe flat on BLM. It does not appear to directly influence downstream habitats and therefore not set up to be monitored using the protocols described.

The following table summarizes the DMA and monitoring objectives for the Powderhorn Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator	
				In-Season	End-of-season
Clear	Clear	CL-01*	90% bank stability	<15% bank alteration	<10% bank alteration
			Late seral greenline successional status	6" key hydric species Greenline stubble	6" key hydric species Greenline stubble

\*With the proposed fence change, both CL-01 and CL-02 would be in the same pasture. CL-01 was chosen to capture grazing use more representative for the pasture.

**Photographs:** see Appendix 3 below.

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

Chinook salmon and steelhead are not currently found in Eighteenmile Creek or its tributaries. There is a partial barrier at the mouth of the stream 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 in the next ten years 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, more than ten miles downstream of the action area.

Additionally, bull trout are only found in the headwaters on the BLM on upper Eighteenmile Creek and Clear Creek and have not been found in any of the downstream reaches. Rainbow, cutthroat and eastern brook trout are scattered throughout the lower and middle reaches in low densities (BLM electrofishing surveys in 2000-2008).

The Powderhorn Allotment contains much of Clear Creek including the reach below the mine site on private lands where bull trout are found. It also has a short segment of Eighteenmile Creek in the 18mile Flat Pasture that is used for a limited water gap for livestock. Clear Creek can be broken out into three segments: 1) upper reach on public land above the private mine site, 2) reach in the canyon below the private mine site (encompassed in both the Clear Creek and Winter Range Pastures) and 3) the dewatered reaches below the diversion. Just downstream of the PFC reach at the mouth of the canyon, Clear Creek is completely diverted for irrigational practices from April - November. The Analysis considers the first two reaches described below.

Segment 1: The upper reach of Clear Creek, approximately 3 miles, is a relatively steep channel with limited natural flows and riparian vegetation. Conditions are not meeting standards related to moderate to heavy hot-season livestock grazing in the past. This reach has been destabilized from livestock grazing and is lacking riparian shrub and herbaceous vegetation and is rated as Functional at-Risk Condition with a Downward Trend. Currently, there is not a DMA established with MIM data.

This segment is too small to support fish but influences the occupied habitat downstream. During the early part of the grazing season prior to July 15, livestock spend their time in the lower pastures and then have typically used the Clear Creek Pasture from late-July through September. These areas show moderate to heavy grazing impacts and bank trampling depending upon the yearly rotation (see photos in Appendix 3) above the private mine site. It also has erosive soil characteristics differing from the lower reaches. Currently, cattle use the upper, more impacted reach during the hot season for about one month. The proposed action would reduce this use to one week which is expected to greatly reduce the bank alteration and vegetative removal in the RHCA. This is expected to improve the bank stability rating and improve the hydric species on the greenline.

Segment 2: This segment is below the private mine site and has bull trout spawning and rearing habitat. Visual observations and the MIM data show that Clear Creek in the canyon reach is at PFC and continuing an upward trend in condition with a good quality willow/*Carex* community providing cover and stable habitat situations especially with occupied bull trout habitat in the stream. Both CL-01 and 02 DMAs are located in this segment, but in different pastures. MIM substrate data show these with 22% and 14 % surface fines respectively. Also, bank stability rated at 33% and 93% respectively. Bank Alteration from 2009 showed 69% and 6% respectively. MIM monitoring documented a Late Seral Ecological Status at the upper CL-01 DMA with 94% hydric greenline vegetation. The CL-02 DMA showed an Early Seral Ecological Status with 37% hydric greenline vegetation. The MIM data for CL-02 is misleading due to a large amount of shallow-rooted herbaceous plants the greenline. In reality, the entire site is covered with riparian shrubs and *Carex*, with one side mostly bedrock and is close to PNC.

Clear Creek has one dataset for water temperature from 2010. The majority of the stream flow comes from large spring complexes just below the mine and at the canyon mouth. The water temperatures are relatively very cold and suitable for bull trout. The 7-day average maximum water temperature showed 51.0°F. The BLM has 26 datasets (1994-2010) for water temperature in Eighteenmile Creek using continuously recording thermographs. These include an upper station in the headwaters at the WSA/private boundary and a mid-stream station within the Powderhorn Allotment riparian enclosure. The 7-day average maximum water temperature at the upper site showed 61.0°F for the 15 years sampled. The lower site averaged 66.1°F for the ten years sampled.

The proposed action is to reduce the use in the Clear Creek pasture from about one month to one week. In addition, the proposed fence seeks to eliminate grazing on Clear Creek from the Winter Range Pasture. By reducing the time livestock can graze in upper Clear Creek, impacts to the stream channel and associated vegetation are expected to be dramatically reduced. In other similar areas with short-term grazing on riparian habitat, observations have shown cattle spending a modest amount of time in the RHCA. On Clear Creek, the stream is expected to see an increase in bank stability and hydric species in the greenline composition with only one week of grazing. The proposed action leaves time in August and September for greenline vegetation to regrow and improve conditions. Additionally, the new in/end of season indicators will improve the focus indicators by allowing quantitative measurements to guide use levels on the stream.

#### Clear Creek Division Fence

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 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 steep topography, cattle from the Clear Creek Pasture rarely access the spring complex from other areas, 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.

#### Redd Disturbance

No use by anadromous fish has been currently documented in Eighteenmile Creek. Due to a barrier at the stream's confluence with Hawley Creek downstream about nine miles, it is currently not possible for both spawning and rearing of Chinook or steelhead to occur in the future.

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 IDFG in 2009 showing a small isolated population of bull trout and rainbow trout.

Historically, livestock have grazed along both streams after August 15 and as long as into October. The proposed action seeks change grazing use via a new division fence and a change in use dates for upper Clear Creek. 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 one week 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. The proposed action would also construct a new fence to exclude livestock from accessing Eighteenmile Creek on the allotment.

### **Summary**

Changes in management over the years in the Powderhorn Allotment have been documented by stream/riparian MIM monitoring, long term ocular observations and photographs. One segment of Eighteenmile Creek was excluded by fencing from livestock in the late 1990s and the proposed action would exclude the upper watergap, eliminating livestock impacts to the stream and associated RHCAs. Data and photos show that since the early 1990's, stream banks on Eighteenmile Creek have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input.

Grazing proposed in the allotment on Clear Creek would limit livestock numbers in the upper reaches including none after August 15. Additionally, a new fence would be constructed to exclude livestock in the Winter Range Pasture from the reach upstream of the diversion where bull trout spawn. Due to the PFC conditions on Clear Creek below the private mine site and the light grazing proposed, impacts are expected to be minimal on habitat and key indicators. Grazing on the allotment under the proposed management which includes fencing and reduced time on the stream are expected to result in continued upward trend in conditions and not adversely affect listed species or their habitat. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Eighteenmile Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently no known proposals to remove the existing fish passage barriers in Eighteenmile Creek.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon:*** No Effect. Impacts to Eighteenmile Creek in the Powderhorn Allotment have been drastically reduced over historic levels. Habitat recovery has occurred due to the limited livestock use and conditions are mostly PFC and on an upward trend. Anadromous fish are unable to access Eighteenmile Creek due to a complete barrier at the confluence with Hawley Creek on the lower end. Flows on the stream are partially diverted seasonally for irrigation purposes. The

Powderhorn Allotment has two short segments of Eighteenmile Creek. One has been excluded from livestock since the late 1990s and the upper segment would be excluded by the proposed action. Since livestock impacts are expected to be discountable on Eighteenmile Creek and the tributary streams in the allotment do not influence downstream habitats, the proposed action is determined to have no effect. No impacts are expected to Chinook salmon from Clear Creek.

***Snake River Spring/Summer Chinook Salmon Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Anadromous fish are unable to access Eighteenmile Creek due to a complete irrigation barrier at the confluence with Hawley Creek on the lower end. The proposed fencing and management changes are expected to eliminate livestock impacts to the CSCH and are discountable and are not expected to preclude recovery. CSCH does not exist on the allotment due to the segments of Eighteenmile Creek being excluded from livestock grazing (proposed action for one segment) and Cleat Creek being disconnected from natural infiltration and irrigation withdrawal. Utilizing the thought process outlined by the Salmon-Challis National Forest (SCNF) during their mapping of potential Chinook salmon critical habitat (CSCH) for their consultation with NOAA Fisheries (USDA-USFS 2010), it has been determined upper Clear Creek should not be considered potential CSCH and was rated as not having intrinsic potential for spawning or rearing (Cooney and Holzer 2006; ICTRT 2005). Based SCNF fisheries staff review of fish population and stream habitat data from the Salmon River basin, they concluded that Chinook salmon likely do not move more than 0.25 miles up tributaries in watersheds of less than seven square miles if the only reason they are in the stream is to seek refugia. It is also smaller than seven square miles. Sediment contribution, the most likely downstream impact from the action, would be insignificant and discountable to spawning and rearing habitat downstream in Eighteenmile Creek and the Lemhi River. The limitations on hot season grazing, coupled with the establishment of in-season management indicators should allow for making significant progress toward attainment of the bank stability RMOs at a rate that does not contribute to an adverse level of impact to habitat.

***Essential Fish Habitat:*** No Affect to Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. The Powderhorn Allotment has two short segments of Eighteenmile Creek. One has been excluded from livestock since the late 1990s and the upper segment would be excluded by the proposed action. There is no Designated Critical Habitat present within the allotment and the streams are not occupied by steelhead, precluding direct impacts. Sediment contribution, the most likely downstream impact from the action, would be insignificant and discountable to spawning and rearing habitat downstream in Eighteenmile Creek and the Lemhi River. Refer to Chinook Salmon DCH above.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect for fish. No Effect for DCH. There is no Designated Critical Habitat present within the allotment, but Clear Creek is occupied by bull trout on the allotment. Analysis of impacts includes PCEs related to the grazing action. The proposed action would reduce the impacts to bull trout in the Clear Creek Pasture by reducing the time livestock spend on the stream and having no grazing occur after August 15. It would also fence out livestock access from the Winter Range Pasture. This is expected to have limited and immeasurable direct and indirect effects on the key indicators important to bull trout on Clear Creek. The Powderhorn Allotment has two short segments of Eighteenmile Creek. One has been excluded from livestock since the late 1990s and the upper segment would be excluded by the proposed action. Since livestock impacts are expected to be discountable on Eighteenmile Creek and the tributary streams in the allotment do not influence downstream habitats, the proposed action is determined to have no effect to DCH.

Until the new Clear Creek fence is built, which may not be until the 2012 fall grazing use period, the following describes the 2011 use period: The percentage of bull trout spawning activity in the current Winter Pasture is relatively low from visual observations during the fall of 2009-10. Also, the segment

within the pasture is heavily covered with willows and other riparian shrubs which reduce the potential interactions. With the use during this period on the lower BLM segment of Clear Creek, the permittee riding daily to move cattle to the other parts of the pasture, the cooler weather in late October and early November during the use period which reduces riparian grazing, and the use being one out of ten years, the impacts to bull trout are expected to be discountable and not contribute to impacts resulting in adverse effects.

**Canada Lynx:** No Effect – The allotment contains about 6,300 acres of forested and riparian habitat. This habitat is mostly in the Eighteenmile Wilderness Study Area. The forested vegetation is mostly dry Douglas fir and is not growing in conjunction with primary lynx habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridor of Eighteenmile Creek and the timbered area in the WSA may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the allotment would not cause take of a lynx or effect primary habitat.

**Gray Wolf:** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	No Effect
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	No Effect
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## HAWLEY CREEK ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed.

Data and descriptions are presented for the allotment in context of the Eighteenmile sub-watershed to describe the condition and trend of the environmental baseline at that scale. ESA Action Area, effects determination and rationale for the Hawley Creek Allotment include the approximately one mile segment of Eighteenmile Creek and a 4.3 miles segment of Hawley Creek. About 1.3 miles of Hawley Creek flow from the USFS boundary downstream to an irrigation diversion just below the canyon mouth and is in PFC condition. Below the diversion, water is diverted seasonally, completely dewatering the channel during the summer growing season and causing it to be in Non-Functioning condition.

Because both streams are connected to the Lemhi River hydrologically, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become immeasurable. Additionally, stream flows above and below the allotment are also diverted seasonally for irrigation purposes. Fish are rarely able to use the dewatered segment. There is a complete barrier on lower Hawley Creek downstream of the allotment that precludes any upstream migration of Chinook, steelhead or bull trout. It is possible but unconfirmed that bull trout may occasionally migrate downstream through the allotment and further downstream to the Lemhi River.

**Background:** The Hawley Creek Allotment consists of approximately 7,300 acres of BLM land in two pastures with about 100 acres of other lands fenced with the allotment. The allotment is meeting Standard 1, making progress towards meeting Standard 4, not meeting Standards 2, 3, 7 and 8, and Standards 5 and 6 are not applicable. In the recent RHA evaluation, BLM has determined that ongoing irrigation practices and associated stream dewatering and not current livestock management is a significant contributor to failing to meet Standards 2, 3, 7 or 8. Since current grazing 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 612 cattle, as applied for by the permittees, from May 15<sup>th</sup> through October 31<sup>st</sup>.

**Current Permit and last ESA Determination:** In 2008, it was determined that since no additional or new impacts to fish or aquatic habitat were expected as a result of the Grazing Permit for the allotment, the May Affect – Not Likely to Adversely Affect determination from 1999 for Chinook/sockeye salmon and steelhead trout and from 2003 for bull trout was still in effect. The grazing permit was also determined to have No Effect on Canada lynx. The grazing permit was determined to May Affect but Not Likely to Jeopardize the continued existence of the gray wolf population.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
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	40	602
	193 Cattle	9/15-10/31	100%	298			

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 30 permitted AUMs.
- Management of the Hawley Creek 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 for Rangeland Health.
- As provided in the code of federal regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

Terms and Conditions (B):

- 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. Spring use will be limited to 2 consecutive years. In the third year only fall use will be allowed unless authorized by the authorized officer.
- Management of the Hawley Creek 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 for Rangeland Health.
- Supplemental feeding 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) mile away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on public land unless a variance is approved by the authorized officer.
- As provided in the code of federal regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action(s):**

Hawley Creek Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	7 Cattle	6/1-10/1	100%	28	30	0	30
B	141 Cattle	5/15-6/30	100%	218	438	164	602
	193 Cattle	9/15-10/31	100%	218			

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

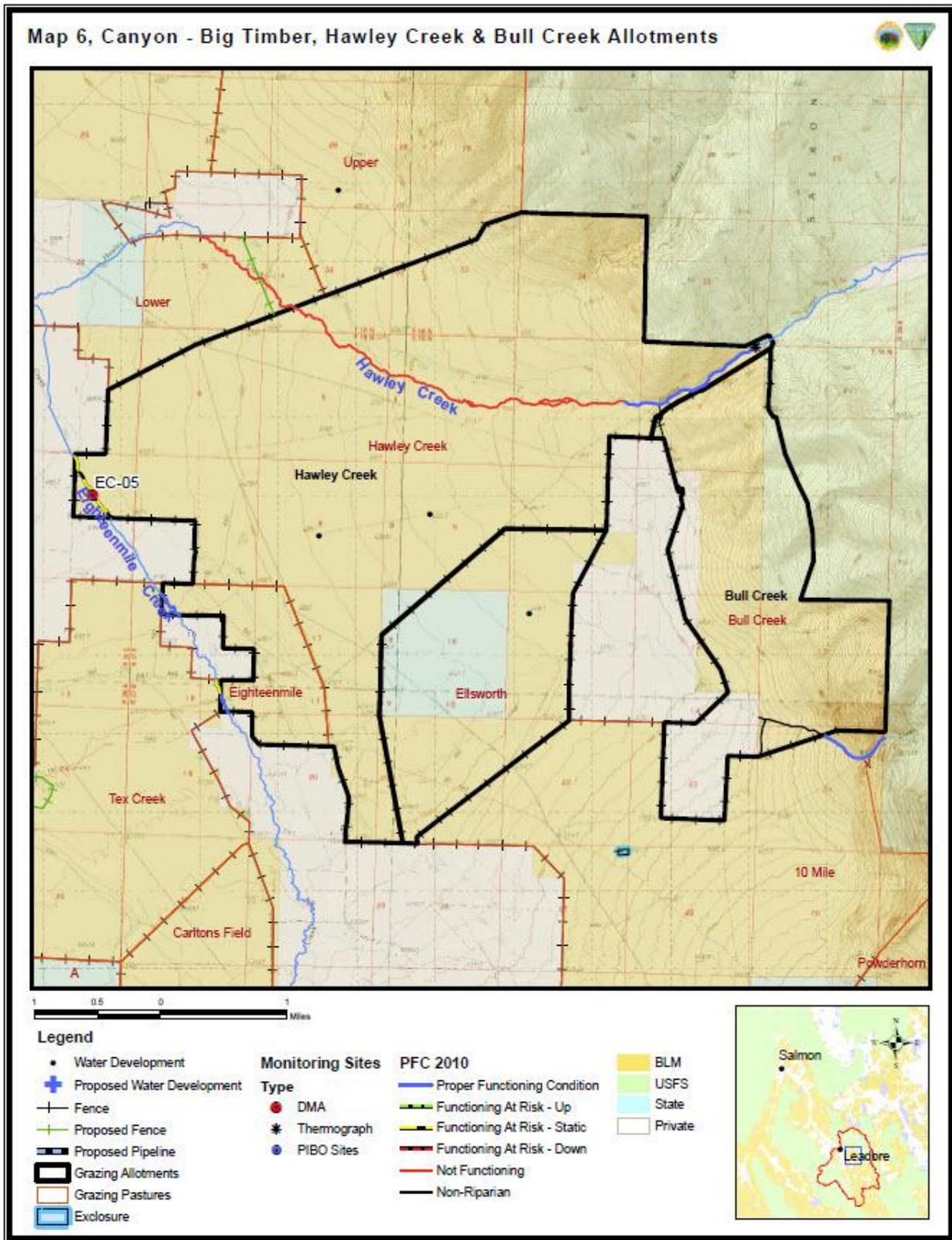
- Cattle numbers may be increased up to a total of 316 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded. Cattle will not be left on the allotment overnight; they will be actively trailed across the allotment.
- Trailing will only occur in the Hawley Creek Pasture.
- The two corrals at the mouth of the Hawley Creek Canyon (located outside of the RHCA and uphill from the Hawley Creek Road) can be used for two days to sort cattle.

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

- Cattle numbers may be increased up to a total of 300 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.
- Livestock grazing in the Eighteenmile Creek Pasture will not occur after 6/30.
- The two corrals at the mouth of the Hawley Creek Canyon can be used for two days to sort cattle.

**Crossing Permits:** Crossing can be applied for on an annual basis. Crossing permits would be restricted to a maximum of 350 cattle (for cattle not associated with the Hawley Creek Allotment) 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 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.

Figure 12. Hawley Creek Allotment Map.



**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** For the Eighteenmile Creek segment, the MIM substrate monitoring data for 2009 shows 14% surface fines at the lower Eighteenmile Creek DMA EC-05 site. No trend data is available at the site.

In the Hawley Creek segment, core sampling has been done by the USFS on upper Hawley Creek above the BLM since 1993. The trend at the USFS Hawley Creek site (n=17), with an 20.9% average fines, appears static to slightly upward, but the data indicates a cyclic trend with depth fines increasing over a few year period then decreasing over the next few years then beginning the cycle again, so it has been given an overall static trend since there is no apparent long term upward trend. No MIM data currently exists on BLM Hawley Creek reaches as they are typically dry during the grazing season.

**Greenline Vegetation** **Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** Eighteenmile Creek in the allotment is rated at PFC, although on the lower end of the scale. 2009 MIM monitoring documented an Early-Seral Ecological Status at the Eighteenmile Creek DMA EC-05. Also, the percent of hydric plants in 2009 was 53% on the Eighteenmile Creek DMA EC-05. No greenline vegetation trend data is available

Limited monitoring information exists for Hawley Creek upstream of the diversions which completely dewater the stream approximately 1.2 miles onto the BLM. This upper BLM reach of stream is in Proper Functioning Condition with dense streambank and overstory cover of trees, shrubs and hydric vegetation. The thick riparian vegetation cover along with rocky stream bed creates stable streambanks and is less susceptible to livestock impact.

Below the irrigation diversion, which dewater the channel for most of the year, Hawley Creek is considered in Not Riparian/Non-Functional Condition due to lack of water. Irrigation practices have kept this segment dry for many years and the channel bed and banks are primarily upland species (i.e. sagebrush and bunchgrasses). However, flows have been restored from November through April for the last 2 years. Recent winter flows do not show erosion and are favorably influencing riparian vegetation by displacing some of the sagebrush in the channel and allowing young willows to reestablish in several areas.

DMA	Year - % Hydric Riparian Vegetation on Greenline
Eighteenmile EC05	2009 - 53%

**Greenline-Greenline Width** **Status and Trend:** Functioning Inappropriately; Static Trend

**Narrative:** No MIM Greenline-Greenline Width trend data is available for the Eighteenmile Creek segment. The 2009 MIM monitoring documented a GGW on Eighteenmile Creek of 2.45 m. Stream widths in the DMA are visibly narrower than private lands immediately upstream and downstream of the BLM segment. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since observations began in the mid-1990s.

Given the rocky channel and dense vegetation on the reach of Hawley Creek on the allotment upstream of the diversion, it appears that the width is appropriate for the upper stream reach. Downstream of the diversion, the channel is not functioning properly.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Eighteenmile Creek Segment: The BLM has 26 datasets (1994-2010) for water temperature in Eighteenmile Creek using continuously recording thermographs. These include an upper station in the headwaters at the WSA/private boundary and a mid-stream station within the Powderhorn Allotment riparian enclosure (five miles upstream of the allotment). The 7-day average maximum water temperature

at the upper site showed 61.0°F for the 15 years sampled. The lower site averaged 66.1°F for the ten years sampled. There is no data from within this allotment. See Center Ridge Allotment for annual data summary table.

As is typical for most systems in the Lemhi, water temperature increases as it moves downstream. The average maximum temperature increase over the approximately 11.2 miles between the upper and the lower site was 5.0°F, an increase of 0.45°F per mile. The reach between the two thermograph locations upstream of the allotment is primarily state and private lands with a mixture of heavily vegetated sections, historic beaver complexes, sections nearly devoid of vegetation that are heavily grazed, and significant irrigation withdrawals. The warm water temperature at the boundary of the WSA is likely the result of the large historic beaver complexes with significant areas of exposed streams. No uses occur in the WSA except very limited livestock grazing. Two segments upstream of the Hawley Creek Allotment on BLM have been excluded from livestock grazing since the mid 1990's. Similar habitat conditions exist between the lower site and the action area and water temperatures there are likely higher than available upstream observations and thus also likely to exceed water temperature RMOs.

Hawley Creek segment:

The 7-day average maximum water temperature at the BLM/USFS boundary site showed 61.1°F, meeting the RMO of <64°F. When water actually passes through the reach downstream of the diversion, the lack of riparian vegetation and reduced discharge increase water temperature quickly.

**Streambank Stability**

**Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** 2009 MIM monitoring on the Eighteenmile Creek segment documented 85% stable banks at the Eighteenmile Creek DMA EC-05, just slightly below the 90% RMO but likely within the measurement error associated with this parameter. No past bank stability monitoring has been done on Eighteenmile Creek or Hawley Creek to verify visually observed improving trends.

Ongoing bank stability monitoring on the FS upstream has shown an upward trend in stability with readings consistently above 90% on Big Bear and Hawley Creeks. No data exists downstream on BLM. Given the rock channel, dense vegetation, and reduced irrigation impacts on the action area's upstream reach of Hawley Creek, it is expected that the stability is at natural levels. No issues were identified during the 2009 PFC inventory for the upper segment. The dewatered segment has mostly upland vegetation, including within the channel itself. This reach has poor bank stability reflecting the long-term irrigation practices/dewatering and does not appear to be influenced by livestock grazing on the allotment.

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** There is one monitoring DMA on the allotment along Eighteenmile Creek established in 2009. Additionally, BLM will establish a new DMA along Hawley Creek located near the USFS boundary and above the main diversion. Stream habitat conditions have made substantial improvements on Eighteenmile Creek over the past ten years through visual observation. This is most likely due to the change in irrigation practices on the adjacent private lands that now leaves much more water flowing in the summer months, whereas in the past, the segments were completely dewatered and had no riparian vegetation. The DMA and associated MIM data were established in 2009 and provide the first quantitative data set for the segment to document long term trend. Annual use indicators will include: bank alteration and stubble height.

The following table summarizes the DMAs, monitoring objectives, and current year use levels for the Hawley Creek Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
18mile	Hawley	EC-05	90% bank stability	<15% bank alteration	<15% bank alteration	12%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	5.4"
18mile	18mile	EC-08	90% bank stability	<20% bank alteration	<10% bank alteration	--
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	--

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

The Hawley Creek Allotment contains three small segments of Eighteenmile Creek totaling about one mile. The upper two segments are in Proper Functioning Condition, although on the lower end of the scale. The lower segment where the DMA is located is in Functioning at-Risk condition. Streambank stability at EC-05 was 85% in 2009 due the *Carex*/woody vegetation on the greenline. EC-05 is rated at Early-Seral Ecological Status with 53% Hydric Riparian Vegetation on Greenline in 2009. Hawley Creek continues to be dewatered and in Non-Functioning Condition on most of the channel in the allotment and not used by anadromous fish.

During the early part of the grazing season, prior to July 1, livestock spend most of their time in the uplands and spend little time along the stream. Some grazing of the greenline vegetation occurs along with limited bank trampling, but visual observations and the MIM data shows that action area streams are maintaining and improving a good quality willow/*Carex* community. This is providing cover and stable habitat situations. The proposed action also includes some limited fall grazing. This is expected to maintain conditions since the cattle tend to spend very little time next to the stream channel in cooler weather in October.

Chinook salmon and steelhead are not currently found in Eighteenmile or Hawley Creeks. There is a partial barrier at the mouth of the stream 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 streams. 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. Conditions in lower Eighteenmile have dramatically improved in the past ten years with better riparian shrub and *Carex* cover on the banks and more flow in channel in the summer months. However, the channel still lacks good quality vegetation over much of its length, lacks proper sinuosity, lacks instream cover, has a very small percentage of pool habitat, and continues to have much of the flow volume diverted for irrigation use on private land.

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). Eighteenmile Creek on the allotment has improved in the past ten or more years in vegetative conditions, substrate quality and possibly water temperatures. Mild to heavy livestock grazing impacts can be found on the adjacent private and State lands, but the BLM segment is in good condition and is expected to remain in PFC - static to upward trend with the proposed grazing management.

Although periodic temperature exceedences exist for the streams in the allotment, with the recovery of riparian vegetation, particularly woody species, current Federal livestock grazing does not appear to be contributing to increased water temperatures. Regardless, the action's primary mechanism for affecting water temperature is altering riparian shade, and our monitoring shows that riparian vegetation has been improving under the current grazing strategy which is nearly identical to the proposed strategy. Thus improvements are likely to also continue. Elevated water temperatures may be affected by other variables, including private land agricultural practices and historic disturbances.

Due to the early season of use and limited fall grazing, the stream channels area expected to experience low utilization levels and have a long recovery time after grazing. This should continue the visually observed upward riparian and streambank stability trends under the proposed action. Further, incorporating the proposed annual use indicator monitoring and adaptive management strategy should assure even less impacts occur than under the previous permit.

### **Redd Disturbance**

No use by anadromous fish has been currently documented in Eighteenmile or Hawley Creeks. Due to a barrier at Eighteenmile Creek's confluence with Hawley Creek downstream about nine miles, it is currently not possible for spawning and rearing of Chinook or steelhead to occur in the action area.

Eighteenmile Creek is currently occupied by bull trout only in the headwaters on the BLM WSA while Hawley Creek is currently occupied by bull trout only in the headwaters on USFS. No fall spawning surveys have been conducted by BLM staff on the allotment because of the limited numbers of bull trout documented during presence/absence surveys in the lower reaches. It is unlikely to support bull trout habitat except for migration habitat on the allotment. No bull trout have been documented inhabiting or spawning in lower Eighteenmile or Hawley Creeks.

### **Summary**

Changes in management over the years in the Hawley Creek Allotment have been documented by riparian plant monitoring, long term ocular observations and photographs. This shows that since the early 1990's, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing in the allotment is limited to an early-season window and a fall use but not during the hot-season. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006).

Because of the improved vegetative conditions on the Eighteenmile segments on the allotment, there is a low probability that livestock grazing from the proposed action would have measurable impacts to adult spawning downstream in the Lemhi River. However, conditions in Eighteenmile Creek downstream from the allotment may have measurable increases in sediment delivery and increased water temperatures. Hawley Creek most likely has negative impacts to habitat and key indicators both downstream in Hawley/lower Eighteenmile Creeks and possible measurable in the Lemhi River. Continuation of the grazing on the allotment is expected to have minimal impacts on stream habitat and key indicators due to

the early/late seasons of use and removal of “hot-season” grazing. However, conditions are expected to remain depressed and not making progress toward reaching RMOs due to irrigation withdrawal, especially in Hawley Creek. Completion of the implementation monitoring identified above should help ensure achievement/maintenance of the established vegetative and bank stability RMOs and preclude a level of effects not analyzed within this document.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Eighteenmile Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently no known proposals to remove the existing fish passage barriers in Eighteenmile Creek.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

#### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Eighteenmile Creek have been drastically reduced over historic levels and habitat recovery in the Hawley Creek Allotment is on an upward trend due to the limited livestock use. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery. Because Eighteenmile Creek is hydrologically connected from the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Anadromous fish are unable to access Eighteenmile Creek due to a complete barrier at the confluence with Hawley Creek on the lower end. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Hawley Creek Allotment and the streams are not occupied by steelhead, precluding direct impacts. Since Eighteenmile Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi

River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Hawley Creek is disconnected and not accessible. These effects are expected to be insignificant because they would be indistinguishable from background conditions and, therefore not measurable.

**Bull Trout and Designated Critical Habitat:** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Hawley Creek Allotment. Eighteenmile and Hawley Creeks in the lower reaches in the allotment are not occupied by bull trout, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. There have been no observations of fish on the BLM downstream of the USFS, but they are present in the headwaters. Limited grazing occurs on the Hawley Creek Allotment portion of Eighteenmile Creek and the area continues to show limited ecological impacts and a strong upward trend in conditions. Hawley Creek on the allotment is disconnected and not accessible from the Lemhi River. It is completely dewatered from irrigation diversions and does not provide bull trout habitat for most of its length on BLM. The segment upstream of the dewatering diversion is at PNC with a thick tree/shrub RHCA and a boulder controlled channel showing little to no impacts from livestock grazing. Because Eighteenmile Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable.

**Canada Lynx:** No Effect – The allotment contains about 154 acres of forested and riparian habitat. The forested vegetation is mostly dry Douglas fir and is not growing in conjunction with primary lynx habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridor in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Hawley Creek Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## TEX CREEK ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed.

Data and descriptions are presented for the allotment in context of the Eighteenmile sub-watershed to describe the condition and trend of the environmental baseline at that scale. An approximately ¼ mile of Eighteenmile Creek, broken up into two segments, is present within the ESA Action Area.

Eighteenmile Creek is connected to the Lemhi River hydrologically and there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Additionally, stream flows above and below the allotment are also diverted seasonally for irrigation purposes. There is a complete barrier on lower Hawley 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. However, the potential is considered very low due to the distance from occupied upstream habitat and the small size of the population present there. Upstream passage from the Lemhi is not possible due to downstream barriers.

**Background:** The Tex Creek Allotment consists of approximately 2,700 acres of BLM land in one pasture with about 30 acres of other lands fenced with 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 has determined that current livestock management is a significant contributor to failing to meet Standard 2 (related to upland habitat not influencing stream habitat) but not Standard 7. To make significant progress towards meeting Standard 2 the BLM proposes to build the Tex Creek Pond Enclosure (45 acres) to improve riparian habitat. 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 261 AUMs leading to stocking rate of 10 acres/AUM. The BLM would authorize a maximum of 175 cattle from May 12<sup>th</sup> through August 30<sup>th</sup>, as applied for.

### **Current Permit and last ESA Determination:**

The permit that has been in effect is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active AUMs	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			

Terms and Conditions:

- As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.
- 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.

**Proposed Action(s):**

Tex Creek Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	105 Cattle	5/12-7/15	100%	224	224	174	398
B	17 Cattle	5/12-7/15	100%	36	37	50	87

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

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

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

Cattle numbers may be increased up to a total of 150 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

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

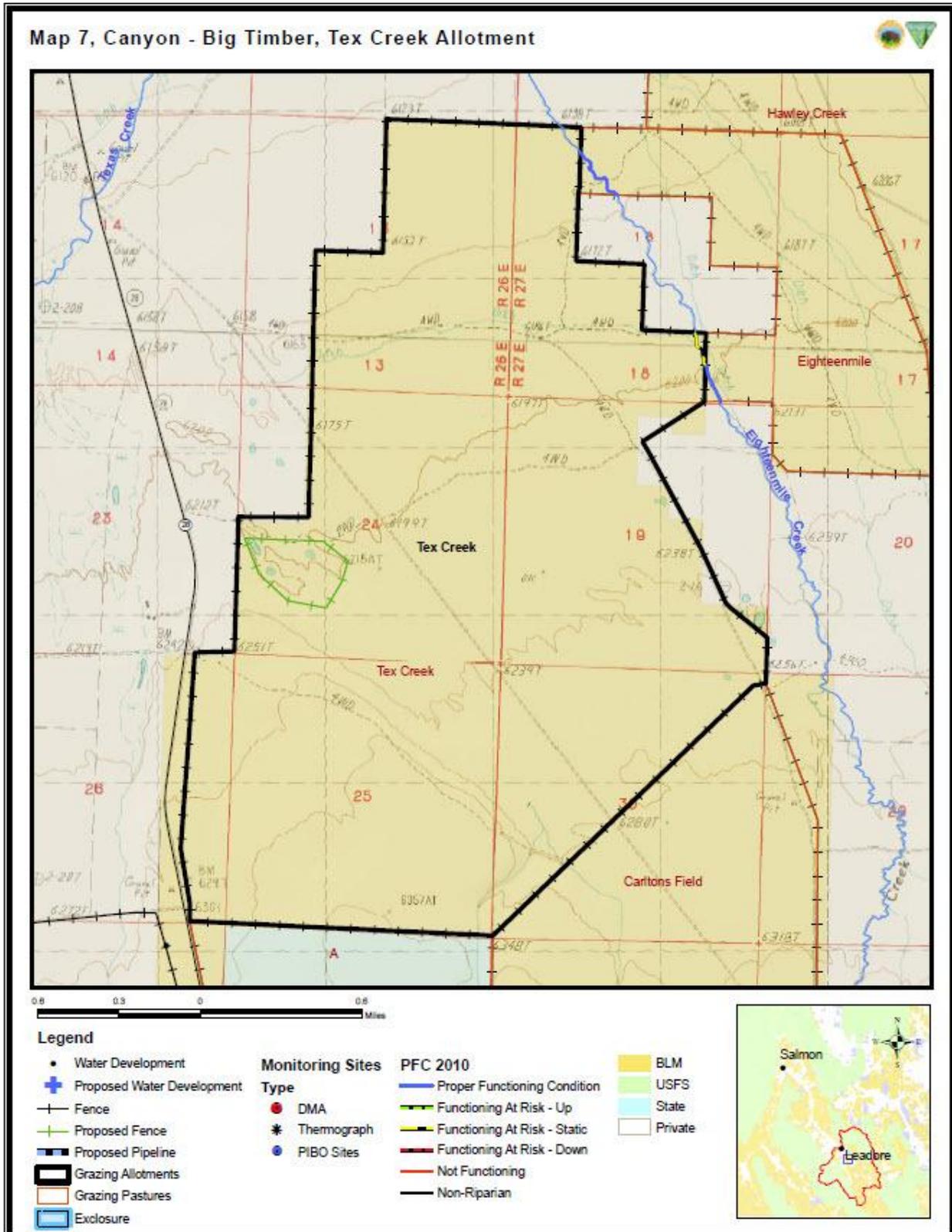
Cattle numbers may be increased up to a total of 25 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

**Range Improvement Projects:** Tex Creek Ponds Enclosure.

Within the Tex Creek Allotment, a natural pond complex of approximately 50 acres in size exists. This pond complex is also sub-irrigated by 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 use and do not meet Standard 2. 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, with the exception of a small watergap 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 watergap would be constructed with jack and pole fence and would extend along either side of the watergap pond for 200 feet before turning to barbed wire fence for the remainder of the enclosure.

**Crossing Permits:** Would not be authorized for this allotment.

Figure 13. Tex Creek Allotment Map.



## **Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** For the Eighteenmile Creek segment on the Hawley Creek Allotment about one mile downstream, the MIM substrate monitoring data for 2009 shows 14% surface fines at the lower Eighteenmile Creek DMA EC-05 site. No trend data is available for the Texas Creek Allotment segments, but will be collected in 2011. Conditions are very similar to the EC-05 DMA.

**Greenline Vegetation** **Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** Two small segments of Eighteenmile Creek (total of ~ ¼ mile) are present on the allotment. They consist of a *Carex*/willow community with a riparian grass and forb understory in Functional At Risk Condition with a Static Trend. No greenline vegetation trend data is available. Visual observations on the allotment have shown a substantial increase in deep-rooted herbaceous plants on the greenline.

**Greenline-Greenline Width** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** No GGW has been documented for Eighteenmile Creek on the allotment. 2009 and 2010 MIM monitoring documented a GGW on Eighteenmile Creek, on the Center Ridge Allotment, of 2.98m, on the Hawley Creek Allotment of 2.45m, and on the Chamberlain Creek Allotment of 2.96. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s. It appears that the changes in irrigation practices that now allow for year-round flow through these segments will produce improved habitat conditions.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Eighteenmile Creek Segment: The BLM has 26 datasets (1994-2010) for water temperature in Eighteenmile Creek using continuously recording thermographs. These include an upper station in the headwaters at the WSA/private boundary and a mid-stream station within the Powderhorn Allotment riparian enclosure (about five miles upstream of the action area). The 7-day average maximum water temperature at the upper site showed 61.0°F for the 15 years sampled. The lower site averaged 66.1°F for the ten years sampled.

As is typical for most systems in the Lemhi, water temperature increases as it moves downstream. The average maximum temperature increase over the approximately 11.2 miles between the upper and the lower site was 5.0°F, an increase of 0.45°F per mile. This reach is primarily state and private lands with a mixture of heavily vegetated sections, historic beaver complexes, sections nearly devoid of vegetation that are heavily grazed, and significant irrigation withdrawals. The warm water temperature at the boundary of the WSA is likely the result of the large historic beaver complexes with significant areas of exposed stream reach. No uses occur in the WSA except very limited livestock grazing.

This lower reach where the Tex Creek Allotment is located is almost exclusively private lands. The channel is a mixture of vegetated and un-vegetated segments with some heavy grazing, significant irrigation withdrawals, and channelization. This lower reach has also improved significantly with riparian vegetation since the Kruckeberg ranch modified their irrigation practices in about 2000 and left much more water in channel. This has allowed willows and *Carex* to establish and increase, whereas in previous years, the channel was completely dewatered from around mid-July through October. Nonetheless, water temperatures in the action area likely exceed the RMO values. See Center Ridge Allotment for annual data summary table.

**Streambank Stability** **Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** No bank stability monitoring has been done on Eighteenmile Creek on the allotment. 2009 MIM monitoring documented 85% stable banks at the Eighteenmile Creek EC-05 DMA on the adjacent Hawley Creek Allotment. No past bank stability monitoring has been done on Eighteenmile Creek to verify observed trends. Because the accessible reaches are designed to be water gaps bank stability is

anticipated to be high. However, the two water gaps total only ¼ mile out of 27 miles of Eighteenmile Creek representing approximately 1% of the fish bearing stream. Visual observations on the allotment have shown a substantial increase in deep-rooted herbaceous plants on the greenline which is expected to increase bank stability within the next ten years.

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** There is one monitoring DMA on the adjacent Hawley Creek Allotment along Eighteenmile Creek established in 2009. A new DMA will be established on the Tex Creek Allotment segment in 2011.

The following table summarizes the DMA, monitoring objectives, and current year use levels for the Tex Creek Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
18mile	Tex Creek	EC-07	90% bank stability	<20% bank alteration	<15% bank alteration	12%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	5.5"

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

The Tex Creek Allotment contains two small segments of Eighteenmile Creek totaling about ¼ mile. The segment is in FAR Static Condition with a mix of shallow and deep-rooted riparian vegetation. Streambank stability at the adjacent EC-05 DMA on the Hawley Creek Allotment was 85% in 2009. EC-05 is rated at Early-Seral Ecological Status with 89% Hydric Riparian Vegetation on Greenline in 2009. Stream habitat conditions are similar on the two allotments and have made improvements over the past ten years through visual observation. This is most likely due to the change in irrigation practices on the adjacent private lands that now leaves much more water flowing in the summer months, whereas in the past, the segments were completely dewatered and had no riparian vegetation.

Because of good upland grass conditions and water on the south side of the allotment, livestock spend a shorter time along the stream than expected. Even though livestock use the Eighteenmile segments as watering areas, they are long enough to resist bank alteration and grazing to the point that they are expected to improve in condition, though at a slower rate than an ungrazed area. Prior to 2000, Eighteenmile Creek was completely dewatered from irrigation diversions. Some grazing of the greenline vegetation occurs along with limited bank trampling, but visual observations show that the stream is maintaining and improving a good quality willow/*Carex* community on the upper segment and an improving herbaceous community on the lower segment.

Chinook salmon and steelhead are not currently found in Eighteenmile Creek. There is a partial barrier at the mouth of the stream 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. Conditions in lower Eighteenmile have dramatically improved in the past ten years with better riparian shrub and *Carex* cover on the banks and more flow in channel in the summer months. However, the channel still lacks good quality vegetation over much of its length, lacks proper sinuosity, lacks instream cover, has a very small percentage of pool habitat, and continues to have much of the flow volume diverted for irrigation use on private land.

Bull trout are found in the headwaters of Eighteenmile Creek far above the allotment, and 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).

Although periodic temperature exceedences exist for the streams in the allotment, with the recovery of riparian vegetation, particularly woody species, current livestock grazing does not appear to be contributing to increased water temperatures. The accessible segments are designed to be long water gaps where bank stability and woody vegetation are not meeting RMOs. However, the two water gaps total only ¼ mile out of 27 miles of Eighteenmile Creek representing approximately 1% of the fish bearing stream. Elevated water temperatures may be affected by other variables, including private lands agricultural practices and historic disturbances. Due to the limited grazing use on Eighteenmile Creek, the stream channels area expected to continue the static to upward trends and streambank stability under the proposed action. No impacts to fish or stream habitat are expected from the proposed upland spring enclosure located outside the Eighteenmile Creek RHCA.

### **Redd Disturbance**

No use by anadromous fish has been currently documented in Eighteenmile Creek. Due to a barrier at the stream's confluence with Hawley Creek downstream about nine miles, it is currently not possible for both spawning and rearing of Chinook or steelhead to occur in the future. Chinook adults are not likely to spawn in middle to upper Eighteenmile Creek due to the small size of the stream.

Eighteenmile Creek is currently occupied by bull trout only in the headwaters. No fall spawning surveys have been conducted by BLM staff downstream of the BLM WSA because of the absence of bull trout documented during presence/absence surveys in the lower reaches. It is unlikely to support bull trout habitat except for migration habitat on the allotment. No bull trout have been documented inhabiting or spawning in lower Eighteenmile Creek.

### **Summary**

Changes in management over the years in the Tex Creek Allotment have been documented by riparian plant monitoring, long term ocular observations and photographs. This shows that since the early 1990's, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006).

Grazing in the allotment is limited along the stream due to cattle using the remainder of the allotment for most of the season. However, bank alteration and removal of hydric vegetation on the greenline is expected to limit the RMO attainment. There is a very low probability that livestock grazing in the proposed action would have measureable impacts to adult spawning downstream in the Lemhi River due to the increases in flow and natural mixing. Due to the FAR conditions on the allotment and the light grazing proposed, impacts are expected to be minimal on habitat and key indicators. Completion of the implementation monitoring identified above should help ensure movement toward meeting of the established RMOs and preclude a level of effects not analyzed within this document.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Eighteenmile Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently no known proposals to remove the existing fish passage barriers in Eighteenmile Creek.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Eighteenmile Creek have been drastically reduced over historic levels and recovery in the Tex Creek Allotment appears to be on an upward trend due to the limited livestock use. Increased summer-long flow in the Eighteenmile Creek channel on the allotment along with early season grazing use is resulting in a slow upward trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery. Because Eighteenmile Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Anadromous fish are unable to access Eighteenmile Creek due to a complete barrier at the confluence with Hawley Creek on the lower end. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Tex Creek Allotment and the streams are not occupied by steelhead, precluding direct impacts. Since Eighteenmile Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. These effects are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable.

**Bull Trout and Designated Critical Habitat:** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Tex Creek Allotment. Eighteenmile Creek in the lower reach in the allotment are not occupied by bull trout, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Eighteenmile Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM downstream of the BLM WSA, but they are present in the headwaters. Limited grazing occurs on the Texas Creek Allotment portion of Eighteenmile Creek and the area continues to show limited ecological impacts and a static to upward trend in conditions.

**Canada Lynx:** No Effect – The allotment contains about 161 acres of riparian habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridor in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Tex Creek Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## BIG TIMBER CREEK ALLOTMENTS

### LEADORE HILL ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed. Data and descriptions are presented for the allotment in context of the Big Timber Creek sub-watershed to describe the condition and trend of the environmental baseline at that scale. ESA Action Area, effects determination and rationale for the Leadore Hill Allotment include the approximately ½ mile segment of Lower Little Timber Creek within the Lower Pasture. Cattle have limited access to Big Timber Creek in the Upper Pasture shown on the map. The allotment shares this stream segment as the boundary between itself and the BLM Timber Creek Allotment. This segment is in very good condition both for the stream habitat and riparian community ecological health. It receives very little grazing since most of the livestock remain on the uplands on the north side of the pasture outside the RHCA.

See the next section of the “Timber Creek Allotment” for more detailed descriptions of Big Timber Creek. The Big Timber Creek segment on the allotment has a fairly narrow riparian corridor, but it is heavily vegetated with cottonwoods and willow, with a sparser *Carex/Juncus* component, which is typical of this site type. Upper reaches of Big Timber Creek and its tributaries above the allotment on BLM and USFS lands are in good ecological condition.

**Background:** The Leadore Hill Allotment consists of approximately 1,500 acres of BLM land in two pastures with about 75 acres of other lands fenced with the allotment. The allotment is meeting Standards 1, 4, 7 and 8, not meeting Standards 2 and 3, and Standards 5 and 6 are not applicable. It has been determined that current livestock management is not a significant contributor to failing to meet Standards 2 or 3. Since current grazing is not a significant factor in the allotment not meeting 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 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.

**Current Permit and last ESA Determination:**

In 2005, the Grazing Permit for this allotment was determined to have “no effect” to Chinook/sockeye salmon, bull trout, steelhead trout, bald eagle, Canada lynx or gray wolf.

The permit that has been in effect since that determination is:

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

Terms and Conditions:

- 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.
- As provided in the 43 Code of Federal Regulations (43CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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
- BLM Management of the Leadore Hill Allotment will continue to emphasize maintenance or improvement of riparian communities.

**Proposed Action(s):**

Leadore Hill Allotment Grazing Permit(s) 2011-2021:

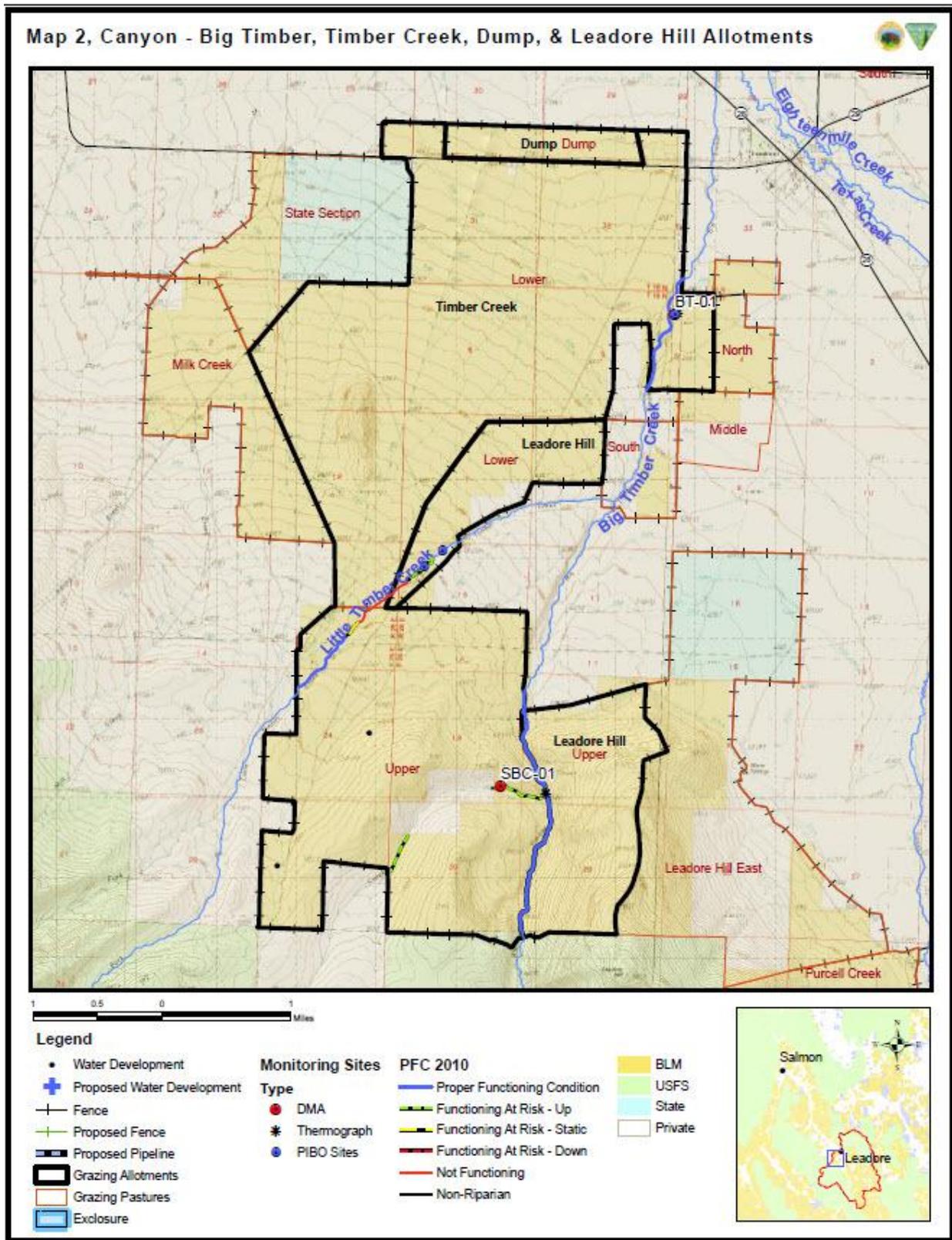
Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	80 Cattle	5/16-6/30	94%	114	114	18	132

**Crossing Permits:** Crossing can be applied for on an annual basis. Crossing permits 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 crossing the Allotment would only use the Upper Pasture (using the bridge at the Carey Act Dam).

**Summary of Changes to Permit since Prior Consultation:**

The new permit increases the Active Use on the allotment by 21 AUMs, or 23 percent. The proposed end date for the allotment would be shortened to June 30<sup>th</sup> instead of the current July 31 to allow the riparian vegetation along Timber Creek an additional time for plant regrowth.

Figure 16. Leadore Hill Allotment Map.



## **Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** On Big Timber Creek, core sampling has been done by the USFS on Big Timber Creek since 1993 at sites about seven miles upstream from the allotment. The trend at the Big Timber Creek site (n=14) appears static to slightly upward with a 22.2% fines average, but the data indicates a cyclic trend with depth fines increasing over a few year period then decreasing over the next few years then beginning the cycle again, so it has been given an overall static trend since there is no apparent long term upward trend. MIM substrate monitoring data for 2010 at the Big Timber DMA BT-01 site approximately two miles downstream on the Timber Creek Allotment shows 24% surface fines. No data is available at the site, but only incidental grazing takes place on the stream.

The Little Timber Creek segment on the allotment is below a diversion which completely dewateres the stream channel for most of the irrigation season. Most of the substrate from visual observation is small gravel to large cobble with very low percentage of fine sediments. See Timber Creek Allotment section for detailed PIBO data on Little Timber Creek.

**Greenline Vegetation** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** Big Timber Creek segment: 2010 Riparian PFC inventories show that Big Timber Creek on the Leadore Hill Allotment is in PFC Condition. The stream is dense with willow, boulder and herbaceous cover. No greenline vegetation trend data is available on the allotment; although, the 2008 MIM monitoring documented a Late-Seral Ecological Status at the Big Timber Creek DMA BT-01 located on the Timber Creek Allotment, meeting the established RMO. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006). A DMA will be established along Big Timber Creek in the upper pasture during the 2011 grazing season.

The allotment also contains a small section, approximately 0.5 mile, of Little Timber Creek. The stream is completely dewatered and dry during much of the irrigation season before it enters the allotment. The dewatered channel is in Non-Functioning Condition due to lack of riparian vegetation and down cutting in some areas. A wet meadow in the lower portion, influenced by natural springs, is adjacent to the dry stream 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 vegetation and this small section is in a Functioning At Risk Condition with an Upward Trend.

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Upward Trend

**Narrative:** Big Timber Creek segment: GGW of 6.25 m was measured separately in 2010 at the DMA approximately 2 miles downstream of the allotment. Future monitoring will verify the visually observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s. PIBO, USFS and IDEQ data at 6 Big Timber Creek sites document width/depth ratios ranging from 18 to 29 on between 1993 and 2003. Although NMFS criteria for Proper Functioning are not met, Rosgen (1996) states that the w/d ratio at all B and C channel types generally exceed 12. However, these values are probably still high. Annual hydrologic alterations due to water withdrawals, private land grazing practices and historic removal of beaver dams with bulldozers may contribute to this value. Livestock grazing does not appear to be contributing due to the heavily armored nature of this stream channel along most of its reach. PIBO data shows a Width: Depth Riffle Ratio of 22.5 (2003) and 17.7 (2008). A DMA will be established along Big Timber Creek in the upper pasture during the 2011 grazing season.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Big Timber Creek segment: The BLM has 14 datasets (1994-2009) for water temperature in Big Timber Creek, using continuously recording thermographs. The location of the thermograph exists

approximately 2.5 miles above the mouth. The 7day average maximum water temperature (AMT) at the site has averaged 64.4°F for the 14 years sampled and often exceeds the RMO of 64 °F. It appears irrigation withdrawal upstream has a significant effect to increase water temperatures above background levels. The BLM also has 13 datasets (1994-2008) for water temperature in Swan Basin Creek. The 7-day average maximum water temperature at the site has averaged 64.0°F for the 13 years sampled.

Little Timber segment: The BLM has 5 datasets (2004-2008) for water temperature in Little Timber Creek located just upstream of the allotment and just above the lowest diversion. The 7-day average maximum water temperature at the site has averaged 65.5°F for the 5 years sampled.

**Streambank Stability**

**Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Big Timber Creek segment: 2008 MIM monitoring documented 84% stable banks at the Big Timber Creek DMA, located downstream on the Timber Creek Allotment. No past bank stability monitoring has been done on Big Timber Creek to verify observed trends. A DMA will be established along Big Timber Creek in the upper pasture during the 2011 grazing season.

The Little Timber Creek segment has stable banks based on visual observations and the PIBO data showing 97.5% in 2003 and 83.3% in 2008. With the perennial flow on this segment disrupted by irrigation withdrawal, bank stability ratings vary. A lack the water in the upper portion due to lack of perennial stream flow to allow for a high density of riparian shrubs and herbaceous plants. At the lower end, spring water provides habitat for a thick and mostly continuous greenline of *Carex/Juncus* plants with stable banks.

Table 9: Big Timber Creek at lower BLM Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
62.6	61.1	66.4	--	--	67	64.8	64.2	66.5	66.8	63.5	62.3

**Status and Trend of Additional Bull Trout Critical Habitat PCEs for Big Timber Creek**

**Groundwater Connectivity**

**Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Upstream of the allotment there are few actions that impact the connectivity of groundwater. Except in limited instances affected by road prisms, floodplains are connected and functional.

**Migratory Barriers**

**Status and Trend:** Functioning at-Risk; Upward Trend

**Narrative:** About 12 irrigation diversions exist on mainstem Big Timber Creek. Much work has been done by the USBWP and IDFG in the past four years to work with irrigators to remove the lower migration barriers and initiate a continuous flow of water to the Lemhi River for habitat maintenance/improvement and migration potential. The first three barriers have been removed (Hwy 28 culvert and 2 diversion structures). Additionally, a minimum of four cfs now flows downstream from diversion BT-2 to the Lemhi River at a new point of diversion. Migrating fish now have a stream that was previously seasonally dewatered that now have access to BT-2. This diversion is planned to be replaced within three years which would allow access further up the drainage. Work is expected to take place in the next ten years to create safe juvenile and adult migration to and from the Lemhi River. Currently, fluvial bull trout have not been documented migrating from the Lemhi River. A strong population of resident bull trout exists in upper Big Timber Creek.

**Habitat Complexity**

**Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Habitat surveys of mainstem Big Timber Creek in the mid-1990s and 2000's by USGS and IDFG documented that it met all standards based on stream channel type and size. It provides suitable off channel habitat and refugia, the width/depth ratio and streambank conditions met standards overall. Habitat protection projects have improved flow conditions in the lower reach of the stream and

reconnected it with the Lemhi River.

**Flow** **Status and Trend:** Functioning at-Risk; Upward Trend  
**Narrative:** see **Migratory Barriers** above.

**Water Quality & Quantity** **Status and Trend:** Functioning at-Risk; Upward Trend  
**Narrative:** Water quantity is reduced due to irrigation withdrawals, but still provides a base flow suitable to maintain all life stages of listed fish species. Water temperature in Big Timber Creek is right at the threshold on most years and mostly meets standards.

**Persistence & Genetic Integrity** **Status and Trend:** Functioning at-Risk; Upward Trend  
**Narrative:** A strong resident bull trout population currently exists in mid to upper Big Timber Creek and its tributaries. A fluvial bull trout population is believed to have historically inhabited the stream but is currently dysfunctional due to upstream migration barriers in the lower reaches. Limited numbers of brook trout are present within the system.

**Riparian Management Objectives and Monitoring:** A new DMA was established on the allotment along Little Timber Creek in 2011, prior to grazing initiation. Since only incidental grazing occurs on Big Timber Creek in the upper pasture, annual indicators are not proposed at this time.

The following table summarizes the DMA, monitoring objectives, and current year use levels for the Leadore Hill Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
Little Timber	Lower	LT-01	90% bank stability	<15% bank alteration	<15% bank alteration	3%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	7.4"

NOTE: DMA will be established along Big Timber Creek in the upper pasture during the 2011 grazing season.

**Photographs:** see Appendix 3 below.

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators:**

The Leadore Hill Allotment contains a two mile segment of Big Timber Creek and a ½ mile segment of lower Little Timber Creek. The BT segment is in PFC with a high quality willow shrub community along the entire length and does not receive grazing as part of the upper pasture. Livestock occasionally drift into the Big Timber Creek drainage from the uplands to the south, but very little evidence of grazing impacts have been observed since the early 1990s. The Little Timber Creek segment is in FAR Static Condition with a mix of shallow and deep-rooted riparian vegetation. No BLM MIM data is available for the newly-established DMA, as it will be collected during low flow, in accordance with the MIM protocol. A DMA was established along Big Timber Creek in the upper pasture during the 2011 grazing season.

During the early part of the grazing season, prior to July 15, livestock spend most of their time in the uplands and spend little time along the stream. Grazing of the lower pasture greenline vegetation has occurred in May/June for the past ten years and the limited utilization along with limited bank trampling (from visual observations), is evidenced in the apparently healthy and intact vegetation along this reach.

Substrate monitoring on the USFS in the watershed shows that Big Timber Creek generally meets standards. The reach within the allotment is a tree/boulder controlled channel with limited suitable spawning substrate. Chinook salmon have not been documented to spawn in Big Timber Creek due to upstream migration barriers near the mouth, but historically used the stream extensively. Sediment input is not a limiting factor to fish production in the action area. Big Timber Creek in the lower reaches has a slightly higher water temperature regime than desired. The multiple irrigation diversion system is most likely causing a slight increase over natural conditions. The riparian communities over much of the watershed show good to excellent riparian cover with thick willows. The segments on the Leadore Hill Allotment are well shaded and are most likely not contributing to temperature increases.

On the allotment, the thick vegetation on the Big Timber Creek greenline, which physically restricts access, limits the potential for impacts by livestock to streambank stability. It is expected that the current livestock grazing permit will result in these conditions remaining static or improving over time. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006).

#### **Redd Disturbance**

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 Hill Allotment. Bull trout have been found by IDFG to spawn about ¼ mile upstream of the allotment boundary. With the early season of use and the fence which allows only incidental use of Big Timber Creek in the upper pasture, conflicts with livestock and spawning bull trout are expected to be minimal to none.

#### **Summary**

Riparian conditions on the allotment continue to maintain and improve from the early grazing season being employed. The minimal impacts that may occur as the result of livestock grazing are limited in scope and scale. Changes in management over the years in the Leadore Hill Allotment have been documented by long term ocular observations and photographs. This shows that since the early 1990's, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing in the allotment is limited along the stream due to cattle using the remainder of the allotment for most of the season. There is a very low probability that livestock grazing in the proposed action would have measureable impacts to adult spawning downstream in the Lemhi River. Due to the mostly PFC conditions on the allotment and the light grazing proposed, impacts are expected to be minimal on habitat and key indicators. A DMA will be established along Big Timber Creek in the upper pasture during the 2011 grazing season. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

**Interrelated and Interdependent Actions:** There are no known interrelated or interdependent actions related to this grazing permit. The ranch operations are located either directly adjacent to the allotment or livestock are trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under

consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Big Timber Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently proposals via the USBWP to improve fish passage in Big Timber Creek, but currently, anadromous fish cannot reach public land from the Lemhi River.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Big Timber Creek have been reduced over historic levels and recovery in the Leadore Hill Allotment is on an upward trend due to the limited livestock use. Current management is resulting in a continued static to upward trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery on the segments. Because Big Timber Creek is hydrologically connected to the Lemhi River there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Anadromous fish are unable to access the stream due to a complete barrier at an irrigation diversion on the lower end, downstream of the allotment. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Leadore Hill Allotment and the stream is not occupied by steelhead, precluding direct impacts. Since Big Timber Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Big Timber Creek is disconnected from a barrier and not accessible. These effects are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is Designated Critical Habitat present within the Leadore Hill Allotment on Big Timber Creek. The stream in the lower reach is not occupied by bull trout, precluding direct impacts. Therefore there will be no

additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Eighteenmile Creek is hydrologically connected to the Lemhi River there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of bull trout on the BLM downstream of the USFS, but they have been observed as close as ¼ mile upstream and in the headwaters. Limited grazing occurs on the Leadore Hill Allotment portions of Big and Little Timber Creeks and the area continues to show limited ecological impacts and a static to upward trend in conditions.

**Canada Lynx:** No Effect – The allotment contains about 480 acres of forested and riparian habitat. The majority of the timbered habitat is dry Douglas fir. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide linkage corridors for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Leadore Hill Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## TIMBER CREEK ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed.

Data and descriptions are presented for the allotment in context of the Big Timber Creek sub-watershed to describe the condition and trend of the environmental baseline at that scale. ESA Action Area, effects determination and rationale for the Timber Creek Allotment include the approximately 1 mile segment of Lower Little Timber Creek within the Upper and Lower Pastures, the one mile segment on Swan Basin Creek and the two mile segment on the Upper Pasture on Big Timber Creek.

Big Timber Creek is connected to the Lemhi River hydrologically and there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. Additionally, stream flows above and below the allotment are also diverted seasonally for irrigation purposes. There is a complete barrier on lower Big Timber Creek downstream of the allotment at the LBT-2 diversion 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, although they were sampled approximately ¼ mile upstream of BLM managed lands and could occupy the action area in Big Timber Creek.

Big Timber Creek segments on the allotment have a heavily vegetated community with cottonwoods, aspen and willow, with a sparser *Carex/Juncus* component, which is typical of the site types. Upper reaches of Big Timber Creek and its tributaries above the allotment on BLM and USFS lands are in good ecological condition.

Big Timber Creek has a mainstem base flow of approximately 45 cfs before diversions begin to affect water quantity. There are 17 known, active diversions on Big Timber Creek and another five on its tributaries. All of the diversion structures are unscreened. During the irrigation season (typically March –November), Big Timber Creek now has a base flow of about 6 cfs that reaches the Lemhi River from flow and habitat improvement projects implemented via the USBWP since 2008. The mean annual flow of Big Timber Creek just upstream of the project area is approximately 38.6 cfs. Stream gradient is generally slight, ranging from 1 to 4% across most of the B channel. Higher up in the watershed, however, stream gradient exceeds 4% for much of the stream length. Both forks of Little Timber are also much higher gradient systems.

**Background:** The Timber Creek Allotment consists of approximately 7,000 acres of BLM land in two pastures with about 340 acres of other lands fenced with 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. It has been determined that current livestock management is not a significant contributor to failing to meet Standards 2, 3 or 8. Since current grazing is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 883 AUMs (239 AUMs for sheep), the active preference from the Lemhi RMP, leading to stocking rate of 8 acres/AUM.

**Current Permit and last ESA Determination:** In 2005, it was determined that since no additional or new impacts to fish or aquatic habitat were expected as a result of the Grazing Permit for the allotment, the May Affect – Not Likely to Adversely Affect determination from 1999 for Chinook/sockeye salmon and steelhead trout and from 2003 for bull trout was still in effect. The grazing permit was also determined to have No Affect on bald eagle, gray wolf and Canada lynx.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active AUMs	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

Terms and Conditions:

- As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.
- BLM management of the allotment will continue to emphasize maintenance or improvement of riparian communities.

**Proposed Action(s):**

Timber Creek Allotment Grazing Permit(s) 2011-2021:

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
Merrill Beyeler**	268 Cattle	5/6-6/15	100%	361	398	163	561
	5 Cattle	8/15-9/30	100%	8			
	5 Horse	5/6-10/31	100%	29			

\*\* Permittee has applicant status

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

If more than 569 AUMs are utilized on the allotment in a given year, the BLM will monitor the grass canopy cover on the allotment the following year. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at a maximum of 522 AUMs for the remainder of the ten-year permit.

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

- Between 8/15 and 9/30 cattle numbers may be increased up to a total of 245 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

- After 6/15 cattle will not be left on the allotment overnight; they will be actively trailed across the allotment.

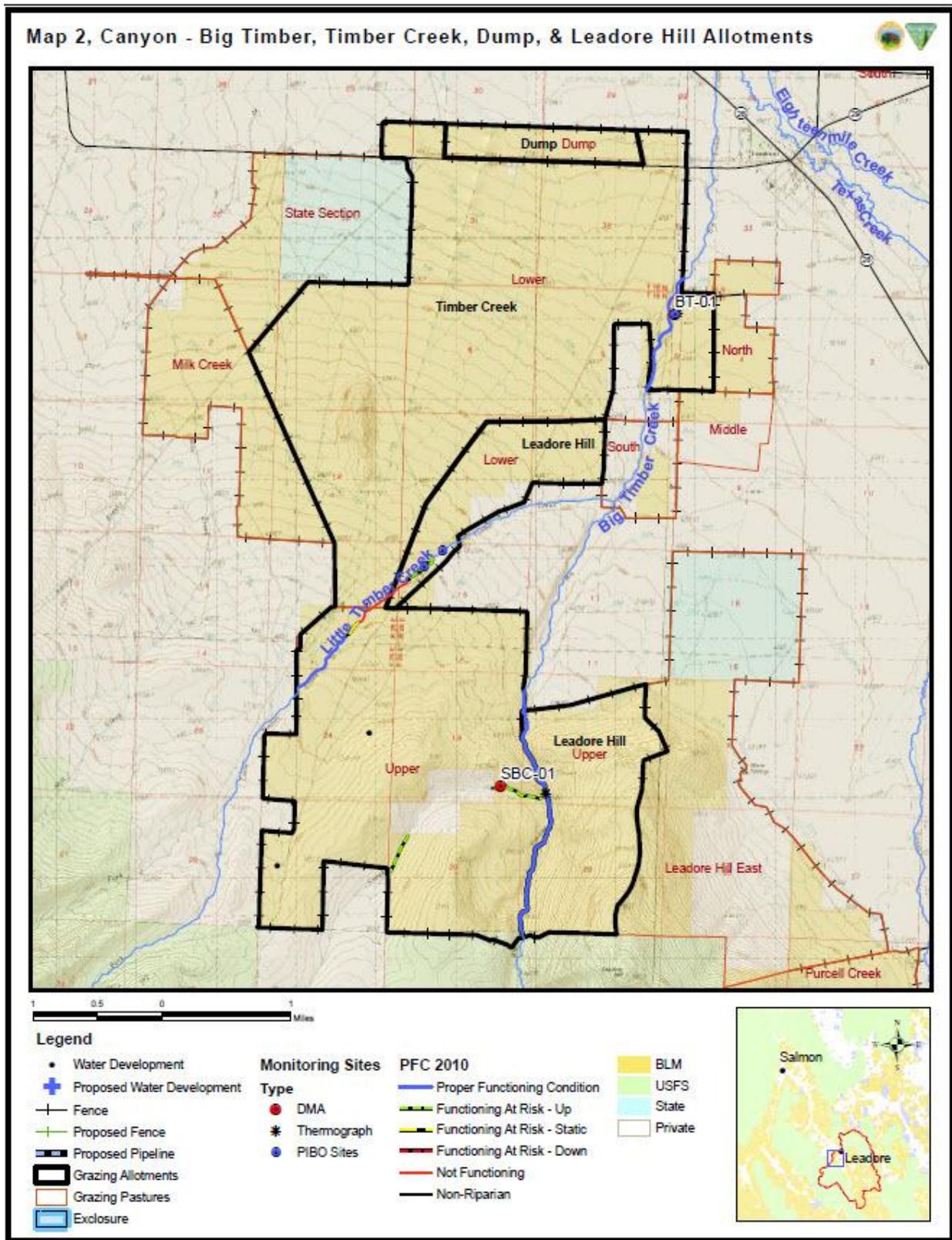
**Vegetation Manipulation Projects:** Swan Basin Douglas-fir in Mountain Big Sagebrush Communities. The action would be the removal of Douglas-fir trees scattered across the south side of Swan Basin Creek in the upper pasture for trees with DBH up to 10 inches (most trees in the project area are 6-8 inches DBH) that are encroaching into mountain big sagebrush communities in the Timber Creek allotment outside of and beyond influencing the RHCA. The work would be conducted by the use of chainsaws, and material loped and scattered, or large tracked machinery which would masticate, or grind Douglas-fir in to small material. Approximately 506 acres would be treated within the unit.

Swan Basin Aspen Restoration includes treatment of existing aspen stands at the confluence of Swan Basin Creek and Timber Creek and within RHCA of both drainages (approximately 8 acres within RHCAs). On the south side of Swan Basin Creek, aspen has been encroached upon and is competing for soil, water and nutrients with Douglas-fir and juniper. Treatment would consist of the removal of juniper and Douglas-fir up to 12" DBH with the use of chainsaws, or large tracked mastication machinery. Slash which was created from these activities would then be piled, or let lay and burned. Total unit acres to be treated would be approximately 160, of which up to 8 would be within the RHCA. No fir/juniper trees would be cut that have the ability to be recruited to the stream channel as woody debris. The work would occur on those that are one tree length from the existing or possible future channel locations so as not to disrupt potential large woody debris recruitment. The material outside of the zone of potential recruitment to the stream channel would be piled into about 10' x 10' stacks and burned during the cooler months. The pile burning activity is not expected to impact the aspen stands.

If machinery is used, two stream crossings on Swan Basin Creek would be needed, one going in and one returning out. This would take place at an existing two-track road which has a low-flow ford across the stream channel. Swan Basin is a relatively small stream (base flow of about 1-2 cfs and approximately 1.5 m wide) with no ESA-listed fish species. The fording would occur sometime after high water flows to reduce sediment impacts. No fuel or other petroleum products would be stored on site. Minimal fuel would be in the vehicles as they cross the stream to minimize a potential spill. Appropriate prevention measures will be employed to insure that any spill of oil or oil products does not enter any waters of the United States. A spill prevention and containment plan will be prepared prior to the transportation of any fuel to the project. Leaks of motor oil and hydraulic fluids from heavy equipment will be monitored and controlled to prevent water contamination. Maintenance activities involving the changing or loss of oil, fuel or other liquids will be conducted in such a manner as to retain the fluids for removal from the project site for recycling or disposal in a licensed depository for those materials. The storage of fuel and petroleum products and the refueling of equipment will take place outside of RHCAs, and more than 300 feet from live fish-bearing streams. These Best Management Practices would be strictly adhered to and BLM personnel would be on site during the equipment crossings.

**Crossing Permits:** Livestock crossing permits can be applied for on an annual basis. Crossing permits 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. Crossing of Big Timber Creek would take place on the Carey Act Dam and not require fording the stream to eliminate potential conflict with habitat impacts or redd trampling. Crossing Little Timber Creek would occur on a two-track road ford that does not have appropriate spawning substrate and does not have bull trout at the site location.

Figure 17. Timber Creek Allotment Map.



**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Core sampling has been done by the USFS on Big Timber Creek (about seven miles) upstream and both the Middle Fork and North Fork of Little Timber Creek (about 2.5 miles) upstream from the allotment since 1993. The trend at the Big Timber Creek site (n=14), with a 22.2% average fines, appears static to slightly upward, but the data indicates a cyclic trend with depth fines increasing over a few year period then decreasing over the next few years then beginning the cycle again, so it has been given an overall static trend since there is no apparent long term upward trend. The trend at the Middle Fork Little Timber site (n=6), with a 22.5% average fines, appears to be upward. In 2004, MFLT data showed 45% fines but from 2008 through 2010 the data was below 20% for all years. The trend at the North Fork Little Timber site (n=6), with a 21.2% average fines, also appears to be cyclic with no apparent long term trend so the trend is considered static. MIM substrate monitoring data for 2010 shows 24% surface fines at the Big Timber Creek DMA site (BT-01), and in 2008 data shows 8% surface fines at the Swan Basin Creek DMA. No trend data is available at either site.

**Greenline Vegetation** **Status and Trend:** Functioning at-Risk; Upward Trend

**Narrative:** 2009 PFC inventories show Big Timber Creek as Proper Functioning Condition. There is a diverse age-class distribution and composition of riparian vegetation. The vegetation that exists maintains high vigor and is comprised of plant communities that have root masses capable of withstanding high stream flows. No greenline vegetation trend data is available, although, the 2008 MIM monitoring documented an Early Seral Ecological Status at the Big Timber Creek DMA, which is well below the late seral RMO.

Most of Little Timber Creek, on the allotment, is in Proper Functioning Condition. The stream maintains a diverse age-class distribution and composition of riparian vegetation. The riparian area is widening and has hit its potential in most places. Approximately 0.4 miles of Little Timber Creek is in Non-Functional Condition due to an irrigation diversion which dewateres the stream. Within this short reach, only a few decadent species of riparian shrubs exist, although some willow recruitment is occurring, most of the vegetation consists of upland shrubs and grasses.

Swan Basin Creek is in Functional At Risk Condition with an Upward Trend. Riparian shrubs and grasses are expanding on the greenline as the stream channel narrows. Upstream of the BLM, a diversion for private irrigation exists on a section of private property. Adjacent to the stream are multiple undeveloped springs that maintain a Proper Functioning Condition within the allotment. These springs have a diverse riparian plant community and also include large aspen stands with good recruitment and age-class diversity. The 2008 MIM monitoring documented a Mid Seral Ecological Status at the Swan Basin Creek DMA. Most of these aspen, Douglas fir and juniper are at least one tree length away from the stream channel.

DMA	Year - % Hydric Riparian Vegetation on Greenline	
Big Timber BT-01	2008* - 88%	
Swan Basin SB-01	1999 - 16%	2009* - 75%

\*MIM Hydric vegetation calculated differently than earlier process, but still indicative of general trend in composition.

**Greenline-Greenline Width** **Status and Trend:** Functioning at-Risk; Upward Trend

**Narrative:** 2010 MIM monitoring documented a GGW on Big Timber Creek of 6.25m and 2008 MIM monitoring documented a GGW on Swan Basin Creek of 1.65m. Future monitoring will verify the visually observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s. PIBO, USFS and IDEQ data at 6 sites document width/depth ratios ranging from 18 to 29 between

1993 and 2003. Although NMFS criteria for Proper Functioning are not met, Rosgen states that the w/d ratio at all B and C channel types generally exceed 12. However, these values are probably still high. Annual hydrologic alterations due to water withdrawals, private land grazing practices and historic removal of beaver dams with bulldozers may contribute to this value. Livestock grazing does not appear to be contributing due to the heavily armored nature of this stream channel along most of its reach. Photos taken at the same photo points in 1999 and 2008 show a clear increase in density and size of woody vegetation along the streambank. These results indicate that the current grazing strategy in this allotment is allowing riparian condition along Timber Creek to recover at a near-natural rate, and will ultimately result in a decrease in greenline-greenline width.

**Temperature**

**Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Big Timber Creek segment: The BLM has 14 datasets (1994-2009) for water temperature in Big Timber Creek, using continuously recording thermographs. The location of the thermograph exists approximately 2.5 miles above the mouth. The 7day average maximum water temperature (AMT) at the site has averaged 64.4°F for the 14 years sampled. The BLM also has 13 datasets (1994-2008) for water temperature in Swan Basin Creek. The 7-day average maximum water temperature at the site has averaged 64.0°F for the 13 years sampled.

Little Timber segment: The BLM has 5 datasets (2004-2008) for water temperature in Little Timber Creek located in the allotment upper pasture and just above the lowest diversion. The 7-day average maximum water temperature at the site has averaged 65.5°F for the 5 years sampled.

**Streambank Stability**

**Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Big Timber Creek is heavily armored with willows and other riparian shrubs. Potential impacts by livestock to streambank stability are limited. USFS data at 3 upstream sites in the watershed exceeds 90% stable. 2008 MIM monitoring documented 84% stable banks at the Big Timber Creek DMA and documented 84% stable banks at the Swan Basin Creek DMA. No past bank stability monitoring has been done on Big Timber Creek or Swan Basin Creek to verify observed trends. The PIBO site on Little Timber Creek fell from 97 % in 2003 to 83% in 2008, but it is located on the dewatered segment and changes most likely are only partially related to livestock grazing.

Table 10: Big Timber Creek at lower BLM Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
62.6	61.1	66.4	--	--	67	64.8	64.2	66.5	66.8	63.5	62.3

Table 11: Swan Basin Creek just above Big Timber Creek Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
63.7	61.5	66.5	--	--	63.9	62.9	61.7	65.4	65.8	64.7	--

**Status and Trend of Additional Bull Trout Critical Habitat PCEs for Big Timber Creek**

**Groundwater Connectivity**

**Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Upstream of the allotment there are few actions that impact the connectivity of groundwater. Except in limited instances affected by road prisms, floodplains are connected and functional.

**Migratory Barriers**

**Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** about 12 irrigation diversions exist on mainstem Big Timber Creek. Much work has been done by the USBWP and IDFG in the past four years to work with irrigators to remove the lower migration barriers and initiate a continuous flow of water to the Lemhi River for habitat maintenance/improvement and migration potential. The first three barriers have been removed (Hwy 28 culvert and 2 diversion structures). Additionally, a minimum of 6.0 cfs now flows downstream from diversion BT-2 to the Lemhi

River at a new point of diversion. Migrating fish now have access to BT-2. Currently, fluvial bull trout have not been documented migrating from the Lemhi River. A strong population of resident bull trout exists in upper Big Timber Creek.

**Habitat Complexity**

**Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** Habitat surveys of mainstem Big Timber Creek in the mid-1990s and 2000's by USGS and IDFG documented that it met all standards based on stream channel type and size. It provides suitable off channel habitat and refugia, the width/depth ratio and streambank conditions met standards overall. Habitat protection projects have improved flow conditions in the lower reach of the stream and reconnected it with the Lemhi River.

**Flow**

**Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** see **Migratory Barriers** above.

**Water Quality & Quantity**

**Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** Water quantity is reduced due to irrigation withdrawals, but still provides a base flow suitable to maintain all life stages of listed fish species. Water temperatures in Big Timber Creek generally have met standards or slightly exceeded them. The increased water temperatures are at least in part related to extensive irrigation withdrawal.

**Persistence & Genetic Integrity**

**Status and Trend:** Functioning at Risk; Upward Trend

**Narrative:** A strong resident bull trout population currently exists in mid to upper Big Timber Creek and its tributaries. A fluvial bull trout population is believed to have historically inhabited the stream but is currently dysfunctional due to upstream migration barriers in the lower reaches. Limited numbers of brook trout are present within the system.

**Riparian Management Objectives and Monitoring:** There are currently two DMAs established on the allotment: 1) Lower Pasture on Big Timber Creek and 2) Swan Basin Creek in the Upper Pasture. Stream habitat conditions have been in good to excellent condition on the upper and lower Big Timber Creek segments of the allotment through visual observation. The DMA and associated MIM data on Swan Basin Creek provide quantitative data sets to document long term trend. Annual use indicators will include bank alteration and stubble height.

The following table summarizes the DMAs, monitoring objectives, and current year use levels for the Timber Creek Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
Big Timber	Lower	BT-01	90% bank stability	<20% bank alteration	<10% bank alteration	5%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	6.3"
Swan Basin	Upper	SBC-01	90% bank stability	<20% bank alteration	<10% bank alteration	14%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	6"

**Photographs:** see Appendix 3 below.

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators:**

The Timber Creek Allotment contains five stream segments:

- Lower Big Timber Creek in the Lower Pasture - one mile segment. Timber Creek Allotment TC-01 DMA downstream. At that site, streambank stability was 84% in 2009. TC-01 is rated at Late-Seral Ecological Status with 88% Hydric Riparian Vegetation on Greenline in 2008.
- Big Timber Creek in the Upper Pasture – two mile segment bordering the Leadore Hill upper pasture and the USFS upstream. 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 Timber Creek Allotment Lower Pasture – 100 feet watergap. 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 – 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.
- Swan Basin Creek (tributary to BT) – one mile of stream in two pieces adjacent to private land. The section within the private land (~0.8 miles) is also within the action area and federally authorized livestock have access to and affect that habitat. Grazing does not take place on this parcel outside of the Timber Creek Allotment use period. 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 lands. These springs have maintained a series of well-vegetated meadows with thick willows/aspen and beaver activity. The DMA has been in place since the mid-1990's. It shows FAR upward trend with MIM data at Mid Seral Ecological Status for 2008. Also, % Hydric Riparian Vegetation on Greenline has changed from 16% in 1999 to 75% in 2009.

During the early part of the grazing season, prior to July 1, livestock spend most of their time in the uplands and spend little time along the stream. With the exception of trailing activities, which prohibits over-nighting, all cattle will be off by June 15. Majority of livestock use in riparian areas is from watering and trailing to new forage areas. Off-site water facilities and mineral placements provide additional livestock distribution across the allotment, further limiting riparian utilization. Some grazing of the greenline vegetation occurs along with limited bank trampling, but visual observations show that the stream is maintaining and improving a good quality willow/*Carex* community on the upper segment and an improving herbaceous community on the lower segment.

Substrate monitoring elsewhere in the watershed shows that Big Timber Creek meets standards. The reaches within the allotment are a mix of willow/tree/boulder controlled channel with limited suitable spawning substrate. Chinook salmon have not been documented to spawn in Big Timber Creek due to upstream migration barriers, but historically used the stream extensively. Sediment input is not a limiting factor to fish production. On the allotment, the thick vegetation on the greenline limits the potential for impacts by livestock to streambank stability. The PIBO site on Little Timber Creek fell from 97 % in 2003 to 83% in 2008, but it is located on the dewatered segment and changes most likely are only partially related to livestock grazing.

Big Timber Creek in the lower reaches has a slightly higher water temperature regime than desired. The multiple irrigation diversion system is most likely causing a slight increase over natural conditions. The riparian communities over much of the watershed show good to excellent riparian cover with thick willows. The segments on the Timber Creek Allotment are well shaded and are most likely not contributing to temperature increases.

Swan Basin Aspen Restoration includes treatment of existing aspen stands at the confluence of Swan Basin Creek and Timber Creek and within RHCA of both drainages (approximately 8 acres within RHCA). Swan Basin Douglas-fir in Mountain Big Sagebrush Communities and Swan Basin Aspen Restoration effects are expected to be limited to the Swan Basin Creek crossing of the heavy equipment, if mastication machinery is used. Treatment would consist of the removal of juniper and Douglas-fir up to 12" DBH with the use of chainsaws, or large tracked mastication machinery. Slash which was created from these activities would then be piled, or let lay and burned. Total unit acres to be treated would be approximately 160, of which up to 8 would be within the RHCA. No fir/juniper trees would be cut that have the ability to be recruited to the stream channel as woody debris. The work would occur on those that are one tree length from the existing or possible future channel locations so as not to disrupt potential large woody debris recruitment. The material outside of the zone of potential recruitment to the stream channel would be piled into about 10' x 10' stacks and burned during the cooler months. The pile burning activity is not expected to impact the aspen stands.

If all work is done with hand crews, there will be no crossing of the stream with equipment. The proposed activity would cause some initial substrate disturbance at the crossing location on the old road. However, this would be very short-lived and dissipate prior to reaching Big Timber Creek, affecting less than 20 feet. ESA-listed fish do not occupy Swan Basin Creek and will not be affected by the crossings. The actual vegetation work would be conducted outside of the RHCA and the influence of ESA-listed fish habitat indicators, designated critical habitat or Essential Fish Habitat.

### **Redd Disturbance**

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 Hill Allotment. Bull trout have been found by IDFG to spawn about ¼ mile upstream of the allotment boundary. With the early season of use which allows only incidental use of Big Timber Creek in the upper pasture, conflicts with livestock and spawning bull trout are expected to be minimal to none. Livestock are off the allotment prior to spawning. The proposed action from the machinery crossings on Swan Basin Creek would not have direct impacts to spawning habitat or redd disturbance since no ESA-listed fish use the stream for spawning habitat. Short-term negative effects from sedimentation and potential water quality impacts are expected to be insignificant to downstream habitat in Big Timber Creek.

### **Summary**

Riparian conditions on Big Timber and Swan Basin Creeks on the allotment continue to maintain and improve from the early grazing season. The minimal impacts that may occur as the result of livestock grazing are limited in scope and scale. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006). Grazing in the allotment is limited along the stream due to cattle using the remainder of the allotment for most of the season. This is due to spring forage conditions in upland habitats being more desirable during the prescribed grazing window. Livestock preference for upland forage at this time results in limited impacts to action area riparian and stream habitats. Additionally, two off-channel water troughs and multiple mineral supplement locations further reduce the need for livestock to congregate in or utilize streamside areas.

Effects resulting from changes in Timber Creek Allotment management over the years have primarily been documented by long term ocular observations and photographs for Big Timber Creek. This information shows that since the early 1990's, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Due to the mostly PFC conditions on the allotment and the light grazing proposed, impacts are expected to be minimal on habitat and key indicators. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

**Interrelated and Interdependent Actions:** There are no known interrelated or interdependent actions related to this grazing permit. The ranch operations are located either directly adjacent to the allotment or livestock are trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Big Timber Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently proposals via the USBWP to improve fish passage in Big Timber Creek, but currently, fish cannot reach public land from the Lemhi River.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

#### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Big Timber Creek have been reduced over historic levels and recovery in the Timber Creek Allotment is on an overall upward trend due to the limited early season livestock use. Current management is resulting in a continued static to upward trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant and are not expected to preclude recovery on the segments. Because Big Timber Creek is hydrologically connected to the Lemhi River there is the potential for insignificant or immeasurable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Anadromous fish are unable to access the stream due to a complete barrier at an irrigation diversion on the lower end downstream of the allotment. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat.

The proposed vegetation projects are not expected to impact water temperature, bank stability or riparian vegetation. The crossing of the machinery would be a very short time window and would be done where there is an existing crossing site. The proposal would not have any long-term affect to fish or habitat conditions in Swan Basin or Big Timber Creeks.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Timber Creek Allotment and the stream is not occupied by steelhead, precluding direct impacts. Since Big Timber Creek is connected to the Lemhi River, there is the potential for insignificant or immeasurable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Big Timber Creek is disconnected from a barrier and not accessible. These effects are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. The vegetation projects proposal is not expected to impact water temperature, bank stability or riparian vegetation. The crossing of the machinery would be a very short time window and would be done where there is an existing crossing site. The proposal would not have any long-term affect to fish or habitat conditions in Swan Basin or Big Timber Creeks.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is Designated Critical Habitat present within the Timber Creek Allotment on Big Timber Creek. The stream in the lower reach is not occupied by bull trout, precluding direct impacts. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Big Timber Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or immeasurable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM downstream of the USFS, but they are present in the headwaters. Limited grazing occurs on the Timber Creek Allotment portions of Big and Little Timber Creeks and the area continues to show limited ecological impacts and a static to upward trend in conditions. The vegetation projects proposal is not expected to impact water temperature, bank stability or riparian vegetation. The crossing of the machinery would be a very short time window and would be done where there is an existing crossing site. The proposal would not have any long-term affect to fish or habitat conditions in Big Timber Creek.

***Canada Lynx:*** No Effect – The allotment contains about 280 acres of forested, mostly dry Douglas fir, and riparian habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide linkage corridors for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Timber Creek Allotment would not cause take of a Canada lynx or affect its habitat.

***Gray Wolf:*** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

# TEXAS CREEK ALLOTMENTS

## NEZ PERCE ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed. Data and descriptions are presented for the allotment in context of the Texas Creek sub-watershed to describe the condition and trend of the environmental baseline at that scale. ESA Action Area, effects determination and rationale for the Nez Perce Allotment include approximately one mile of upper Texas Creek within the Upper and Lower Pastures which occurs in six short segments. The entire allotment, including the private land (occupying the majority of the stream/riparian habitat), contains about 7 miles of Texas Creek.

Texas Creek is seasonally disconnected from the Lemhi River hydrologically, yet there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Additionally, stream flows above and below the allotment are also diverted seasonally for irrigation purposes. There is a complete barrier on lower Texas Creek ten miles 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.

**Background:** The Nez Perce Allotment consists of approximately 4,000 acres of BLM land in six pastures with about 3,500 acres of other lands fenced with 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. It has been determined that current livestock management is not a significant contributor to failing to meet Standards 2, 3, 7 or 8. Since current grazing is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 977 AUMs, the active preference from the Lemhi RMP, leading to stocking rate of 4 acres/AUM.

Current Permit:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active AUMs	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			

Terms and Conditions:

- As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.
- 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.

**Proposed Action:**

The BLM would authorize a maximum of 847 cattle from May 20<sup>th</sup> through October 1<sup>st</sup> as applied for. However, the BLM recognizes that 977 AUMs have not been utilized on the allotment for more than five years. Should more AUMs than the maximum yearly use in the last 5 years (632 AUMs) be utilized in a given year, the BLM would monitor the grass canopy cover on the allotment. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at the five year average actual use (509 AUMs) for the remainder of the ten-year permit.

**Nez Perce Allotment Grazing Permit(s) 2011-2021:**

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
Carl Ellsworth(lease)	125 Cattle	5/20-10/1	26%	144	144	119	263
Carl Ellsworth**	722 Cattle	5/20-10/1	26%	833	833	687	1520

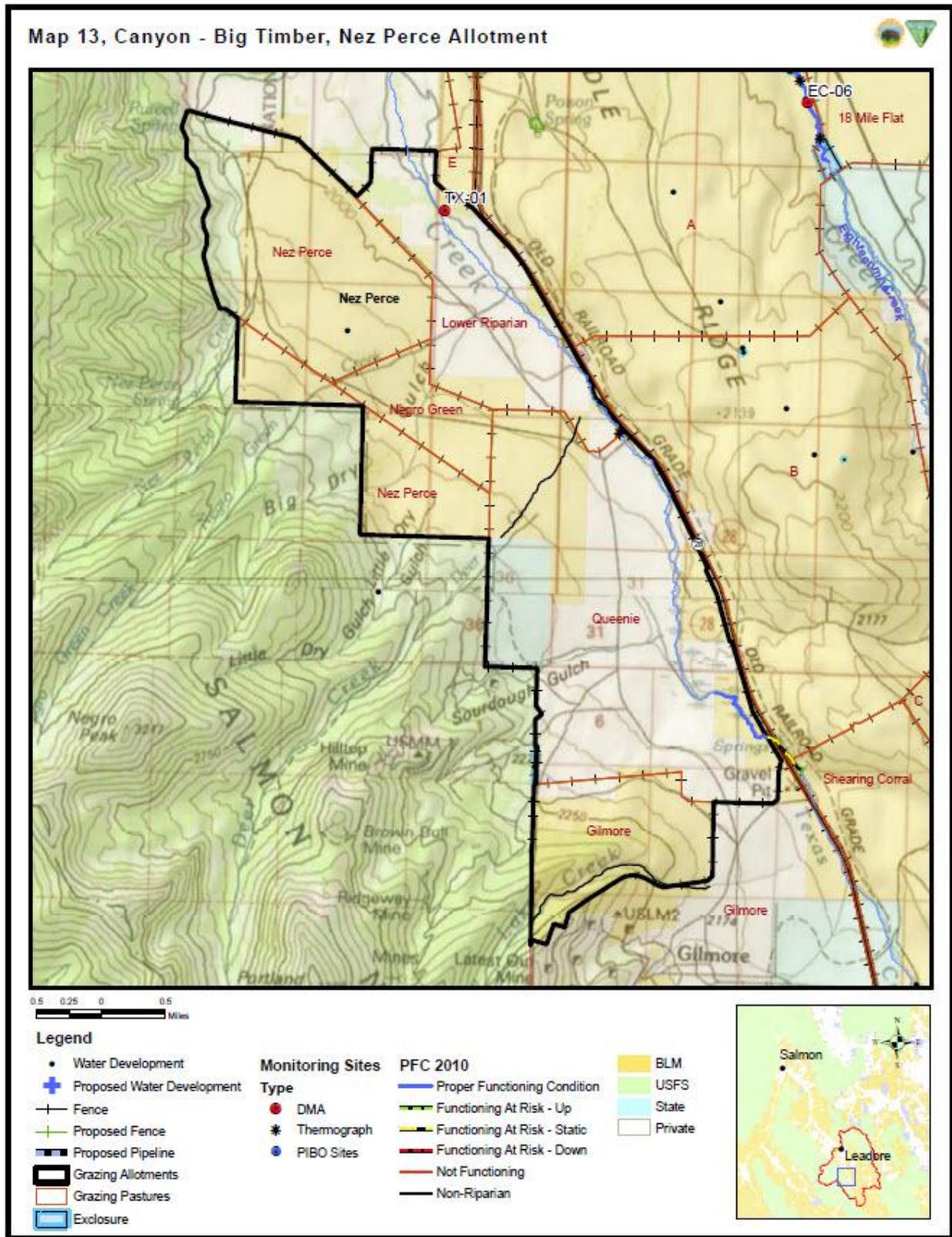
\*\* Permittee has applicant status

**Other Terms and Conditions:**

If more than 632 AUMs are utilized on the allotment in a given year, the BLM will monitor the grass canopy cover on the allotment the following year. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at a maximum of 509 AUMs for the remainder of the ten-year permit.

**Crossing Permits:** Would not be authorized for this allotment.

Figure 18. Nez Perce Allotment Map.



### **Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** No core sampling has been done by the USFS or BLM in the watershed. MIM substrate monitoring data for 2010 shows 12% surface fines at the Texas Creek DMA. No trend data is available at this site.

**Greenline Vegetation** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** Most of Texas Creek (6 out of 7 miles) exists on private lands within the action area, with only around one mile on public land which is split into six small parcels. According to 2008 PFC inventories, 0.5 mile is in Proper Functioning Condition and the other 0.5 mile, which is broken up on three private/BLM boundary corners, is in Functional At Risk with a Static Trend. The respective ratings are believed to generally infer conditions on adjacent private lands as well but no data is available for those areas. These corner parcels are not fenced and livestock on private property are free to graze the BLM. All riparian vegetation components do exist on these sections, although, the older age-class is lacking along portions of the stream channel. The upper segment is the largest parcel and contains a very small spring-fed stream of less than one cfs. It is completely covered in *Carex* and other deep-rooted herbaceous plants. BLM established a DMA on one of the lower segments in 2010 (see map). MIM monitoring documented a Mid-Seral Ecological Status at the Texas Creek DMA. Overall, the vegetation is in good condition with deep-rooted hydric species dominating the greenline. It appears that the riparian community is in an upward trend with many new willows coming in on the lower pasture but the data is lacking to show this quantitatively.

Deer Creek has a historic channel at the lowest reach that crosses public land; however, the water is completely diverted into an ancillary ditch and dewatered by a private irrigation system. No riparian vegetation currently grows along the lower Deer Creek channel on public land and it is rated as non-functioning due to irrigation withdrawal.

Negro Green Creek is a small non-fish-bearing stream that flows all of its water either subsurface naturally or captured into an irrigation ditch. It is not likely that the stream ever reached Texas Creek except in the highest flood event. The stream channel is dry on public land below the irrigation diversion and contains only upland vegetation and is considered Non-Riparian.

DMA	Year - % Hydric Riparian Vegetation on Greenline
Texas TX01	2010 - 55%

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Static Trend

**Narrative:** 2010 MIM monitoring documented a GGW on Texas Creek of 4.38m. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend

**Narrative:** The BLM has 4 datasets (1997-2009) for water temperature in Texas Creek, using continuously recording thermographs. The location of the thermograph exists on private land approximately half-way through the allotment. The 7day average maximum water temperature at the site has averaged 62.7°F for the 4 years sampled.

**Streambank Stability** **Status and Trend:** Functioning Appropriately; Unknown Trend

**Narrative:** 2010 MIM monitoring documented 91% stable banks at the Texas Creek DMA. No past bank stability monitoring has been done on Texas Creek to verify observed trends.

Table 12: Texas Creek at lower BLM Stream Temperature Data by year.

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
63.9	--	--	--	--	--	--	66.4	--	62.7

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** There is currently one DMA established on the allotment in the Lower Riparian Pasture on Texas Creek. BLM will establish a DMA in the Queenie (upper riparian pasture) before livestock turnout in 2011. The DMA in the Lower Riparian Pasture has a MIM data set from 2010. BLM will monitor annual use indicators including bank alteration and stubble height. BLM administers the public land portions of the allotment but does not have the ability to require standards on private land based on the current or the proposed permit/authorization.

The following table summarizes the DMAs, monitoring objectives, and current year use levels for the Nez Perce Allotment:

Stream	Pasture	DMA	RMO	Grazing Use Indicator		
				In-Season	End-of-season	2011 in-season
Texas	Lower	TX-01	90% bank stability	<15% bank alteration	<15% bank alteration	2%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	6.1"
Texas	Queenie (Upper)	TX-02	90% bank stability	<15% bank alteration	<15% bank alteration	9%
			Late seral greenline successional status	4" key hydric species Greenline stubble	6" key hydric species Greenline stubble	8.7"

**Photographs:** see Appendix 3 below.

**Analysis of Effects:**

**Direct and Indirect Effects to Key Indicators**

Texas Creek is the only stream within the CBT assessment area that contains steelhead DCH. Steelhead are not currently found in this tributary. Texas Creek has an irrigation barrier about 1.5 miles upstream from its confluence with the Lemhi River that precludes upstream migration onto the allotment.

Nez Perce Allotment is mostly on private land but contains seven short stream segments on public land:

- Texas Creek in the Lower Pasture has five small corners of public land that include stream habitat totaling about ½ mile. TX-01 DMA in the Lower Riparian Pasture showed streambank stability was 91% in 2010. Riparian vegetation at TX-01 is at PFC and rated at Mid-Seral Ecological Status, slightly below the RMO of late-seral, with 55% Hydric Riparian Vegetation on Greenline in 2010.
- Texas Creek in the Queenie Pasture – Two short segments totaling 1500 feet of steam habitat and ¾ mile segment upstream of suitable size stream for fish bordering private land. These areas are in PFC with a high quality Carex/willow shrub community with limited livestock impacts.

- Lower Deer Creek in the Queenie Pasture – One mile of dewatered channel downstream of an irrigation diversion on public land. This is just below the lowest diversion which completely dewateres the stream, consequently causing a complete loss of riparian shrubs. The segment is in Non-Functioning Static Condition with a mix of shallow-rooted riparian vegetation and rock. Conditions are less than desired due to private irrigation water withdrawal.

Texas Creek is a relatively large, meadow complex that receives moderate grazing over most of the “non-sagebrush, upland type” habitat. It is unique in that the public land portions are “incidental” corners fenced in with the patented ground. The reaches within the allotment are a meadow complex with a mix of herbaceous/willow/rock controlled channel with good habitat components. Most of the grazing season is spent on this meadow habitat where one of two riparian pastures is grazed first, then the other, then the sage-steppe uplands, then back to the first pasture for a short time and then down to adjacent private land. The riparian pastures are rotated in this plan as to which is the first pasture. Since so much of the meadow is irrigated or “sub-irrigated”, the cattle graze the stream-side greenline less than other allotments where the greenline is limited to a narrow band directly adjacent to the stream. Because of this, the actual stream greenline receives modest grazing impacts, even though the cattle spend the majority of the summer in the riparian pastures of the allotment.

Chinook salmon 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 has a slightly higher water temperature regime than desired. The multiple irrigation diversion system is most likely causing a slight increase over natural conditions. The riparian communities over much of the watershed show good to excellent riparian cover with thick willows. The BLM segments on the allotment are well shaded and are most likely not contributing to temperature increases. On the allotment, the thick vegetation on the greenline limits the potential for impacts by livestock to streambank stability. It is expected that the current livestock grazing permit will result in these conditions remaining static or improving over time.

### **Redd Disturbance**

No use by anadromous fish has been currently documented in Texas Creek due to irrigation diversion barriers in the lower reaches both above and below the allotment. Bull trout are only found in the higher reaches of the Deer Creek and have not been documented on the allotment. No fall spawning surveys have been conducted by BLM staff downstream of the USFS boundary because of the no bull trout were documented during presence/absence surveys in the lower reaches. It is unlikely to support bull trout habitat on the allotment. No bull trout have been documented inhabiting or spawning in Texas Creek.

### **Summary**

Visual observations show riparian conditions on the allotment are maintaining while employing the rotational grazing system. The effects of management changes over the years in the Nez Perce Allotment have been documented by long term ocular observations and photographs. This shows that since the early 1990’s, stream banks have vegetated and stabilized, the channel has narrowed, and runoff does not result in measurable sediment input. Grazing in the allotment is limited along the stream due to cattle using the remainder of the allotment for most of the season. There is a very low probability that livestock grazing in the proposed action on public land that would have measureable impacts to adult spawning downstream in the Lemhi River. Due to the mostly PFC conditions on the allotment, impacts are expected to be minimal on habitat and key indicators. Completion of the implementation monitoring identified above should help ensure maintenance of the established RMOs and preclude a level of effects not analyzed within this document.

**Interrelated and Interdependent Actions:** Grazing on the adjacent private land in the allotment in conjunction with the BLM parcels is related to this grazing permit. The ranch operations are located

either directly adjacent to the allotment or livestock are trailed on the county road to get to the allotment, or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Texas Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the Lemhi River. These conditions are expected to continue into the future. There are currently no known proposals to remove the existing fish passage barriers in Texas Creek.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

#### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Texas Creek have been reduced over historic levels in the Nez Perce Allotment. Current management is resulting in a continued static trend. Minimal impacts to the Designated Critical Habitat will continue with livestock grazing but they are insignificant due to the small amount of BLM in the allotment. Because Texas Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Anadromous fish are unable to access the stream due to a complete barrier at an irrigation diversion on the lower end of Texas Creek downstream of the allotment. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat. Only Chinook Designated Critical Habitat exists within the allotment.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Texas Creek in the Nez Perce Allotment is Designated Critical Habitat but the stream is not occupied by steelhead, precluding direct impacts. Since Texas Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Texas Creek is disconnected from a barrier and

not accessible. These effects are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable.

**Bull Trout and Designated Critical Habitat:** May affect, Not Likely to Adversely Affect. There is not any Designated Critical Habitat present within the Nez Perce Allotment. Although bull trout occupy Deer Creek on USFS lands upstream, Texas Creek is not occupied by bull trout, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Texas Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM downstream of the USFS, but they are present in the headwaters.

**Canada Lynx:** No Effect – The allotment contains about 280 acres of forested, mostly dry Douglas fir, and riparian habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridors in the allotment may provide linkage corridors for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Timber Creek Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	MA-NLAA
Chinook Salmon Designated Critical Habitat	MA-NLAA
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	MA-NLAA
Steelhead Trout Designated Critical Habitat	MA-NLAA
Bull Trout	MA-NLAA
Bull Trout Designated Critical Habitat	MA-NLAA
Canada Lynx	No Effect
Gray Wolf	MA-NJ

# NO EFFECT ALLOTMENTS

## **BULL CREEK ALLOTMENT**

**Background:** The Bull Creek Allotment consists of approximately 2,700 acres of BLM land in two pastures with about 1,400 acres of other lands fenced with the allotment. The allotment under the current permit is stocked at 18 acres/AUM and is meeting all applicable Idaho Standards for Rangeland Health. Since the allotment is meeting all applicable standards the BLM proposes to renew the permit with an Active Preference of 150 AUMs, the level it is currently permitted at. 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 19<sup>th</sup> based on the permittee’s application. The majority (92%) of the allotment is semi-desert shrublands. Other cover types on the allotment are forest and woodlands (6%), mesic shrublands (1%) and roads (1%). There are no streams on the allotment.

**Current Permit and last ESA Determination:** In 2006, the Grazing Permit for this allotment was determined to have “no effect” to Chinook/sockeye salmon, bull trout, steelhead trout, gray wolf, bald eagle, and Canada lynx.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	150 Cattle	4/20-5/11	69%	75	150	266	416
	150 Cattle	9/15-10/6	69%	75			

Terms and Conditions:

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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

**Proposed Action(s):**

Grazing Permit(s):

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	48 Cattle	5/1-9/15	69%	150	150	0	150

**Other Terms and Conditions:**

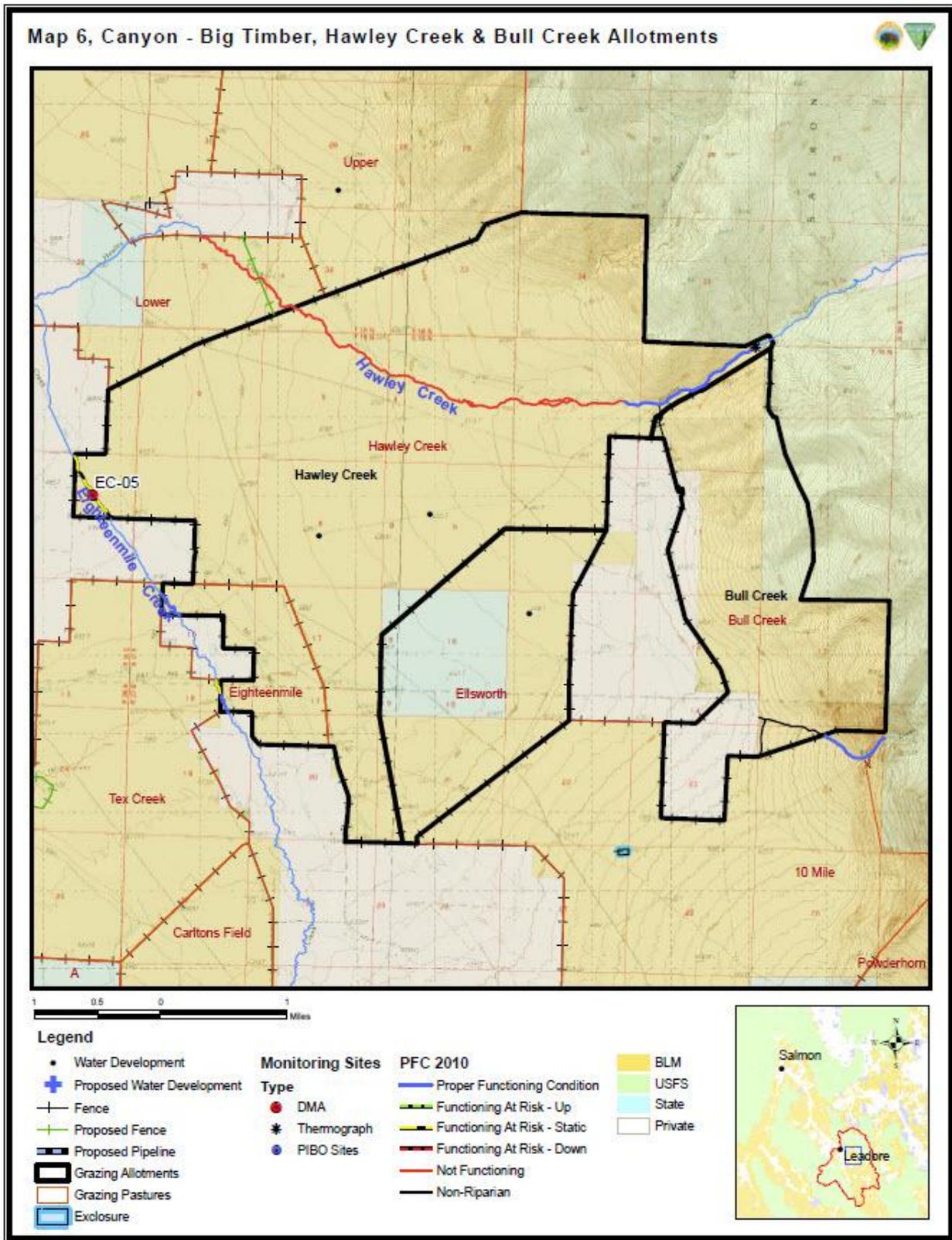
- Cattle numbers may be increased up to a total of 350 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.
- Corral in the northwest corner of the Bull Creek Pasture can be used for two days to sort cattle.

**Crossing Permits:** No crossing permits would be authorized for this allotment.

**Summary of Changes to Permit since Prior Determination:**

The amount of Active Preference on the Allotment will remain at 150 AUMs, no change from the current permit. Instead of grazing the Allotment from 4/20-5/11, the allotment will be grazed from 5/11-9/15. Most of the use would be in May as cattle graze the allotment before moving to either the Chamberlain Creek Allotment or the USFS Hawley Creek Allotment. Cattle would on the allotment in the fall as they return from the USFS allotment. There would be up to 350 cattle on the allotment at one time, this herd is the one that moves to the Chamberlain Creek Allotment.

Figure 19. Bull Creek Allotment Map.



## Analysis of Effects

**ESA listed fish and related habitat:** Bull Creek is a perennial, non-fish bearing stream originating on USFS lands and flowing onto public land. Very close to the upper allotment boundary, Bull Creek is completely diverted into an irrigation ditch year-round and conveyed onto private land. The stream is hydrologically isolated and does not flow into any channel that would connect it to another flowing stream. The stream does not appear to have been hydrologically connected prior to irrigation. It is isolated and is not considered to be DCH for any of the ESA listed fish species.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990's. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

**ESA Cumulative Effects:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

## Effects Determinations and Rationale:

**Snake River Spring/Summer Chinook Salmon: No Effect** – The allotment does not contain designated critical habitat for Chinook salmon. Bull Creek is the only stream in the allotment, does not contain fish and is naturally disconnected from any other stream. It is not DCH and there are no impacts to ESA related stream habitat.

**Essential Fish Habitat: No Effect** – Bull Creek is the only stream in the allotment, does not contain fish and is naturally disconnected from any other stream. It is not DCH and there are no impacts to MSA Chinook salmon stream habitat.

**Snake River Steelhead: No Effect** – The allotment does not contain designated critical habitat for Snake River steelhead. Bull Creek is the only stream in the allotment, does not contain fish and is naturally disconnected from any other stream. It is not DCH and there are no impacts to ESA related stream habitat.

**Bull Trout: No Effect** – The allotment does not contain designated critical habitat for bull trout. Bull Creek is the only stream in the allotment, does not contain fish and is naturally disconnected from any other stream. It is not DCH and there are no impacts to ESA related stream habitat.

**Canada Lynx: No Effect** – The allotment contains about 270 acres of forested and riparian habitat, the majority of which is dry Douglas fir, not primary habitat for Canada lynx. The allotment is not within a Canada lynx analysis unit. The small amount of dry Douglas fir in the allotment is not geographically connected to primary habitat and would not support a Canada lynx.

**Gray Wolf: May Affect-Not likely to Jeopardize** – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack

the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	No Effect
Chinook Salmon Designated Critical Habitat and Essential Fish Habitat	No Adverse Effect
Steelhead Trout	No Effect
Steelhead Trout Designated Critical Habitat	No Effect
Bull Trout	No Effect
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

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## DUMP ALLOTMENT

**Background:** The Dump Allotment consists of approximately 250 acres of BLM land in one pasture with about 5 acres of other lands fenced with the allotment. The allotment under the current permit is stocked at 8 acres/AUM and is meeting all applicable Idaho Standards for Rangeland Health. Since the allotment is meeting all applicable standards the BLM proposes to renew the permit with an Active Preference of 30 AUMs, the level it is currently permitted at. 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 applied for by the permittee.

**Current Permit and last ESA Determination:** In 2007, the Grazing Permit for this allotment was determined to have “no effect” to Chinook/sockeye salmon, bull trout, steelhead trout, bald eagle, and Canada lynx. The allotment was determined to May Affect, but was Not Likely to Jeopardize the continued existence of the population for gray wolf.

The permit that has been in effect since that determination is:

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

### Terms and Conditions:

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.

As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action(s):**

Grazing Permit(s):

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	20 Cattle	6/1-7/15	100%	30	30	0	30

**Other Terms and Conditions:**

Cattle numbers may be increased up to a total of 90 cattle and grazing period can be decreased as long as Active Preference AUMs are not exceeded.

**Crossing Permits:** Would not be authorized for this Allotment.

**Summary of Changes to Permit since Prior Determination:**

The new permit gives the permittee flexibility to use the allotment for a longer period of time. It limits the number of cattle to 90, versus the 460 under the current permit. The number of Active AUMs on the permit is the same as the current permit and impacts to habitat on the allotment would remain similar to what is currently occurring.

**Dump Allotment Map:** See Timber Creek Allotment.

**Analysis of Effects**

**ESA listed fish and related habitat:** No stream habitat exists on the allotment. The proposed action does not have an effect to fish or DCH for any of the ESA listed fish species.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990’s. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

**ESA Cumulative Effects:**

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

**Effects Determinations and Rationale:**

**Snake River Spring/Summer Chinook Salmon: No Effect** – The allotment does not contain designated critical habitat for Chinook salmon. There are no streams on the allotment and no impacts to stream habitat.

**Essential Fish Habitat: No Effect** – There are no streams on the allotment and no impacts to MSA Chinook salmon stream habitat.

**Snake River Steelhead: No Effect** – The allotment does not contain designated critical habitat for steelhead. There are no streams on the allotment and no impacts to stream habitat.

**Bull Trout: No Effect** – The allotment does not contain designated critical habitat for bull trout. There are no streams on the allotment and no impacts to stream habitat.

**Canada Lynx: No Effect** – The allotment contains about 5 acres of riparian habitat along a ditch. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. Grazing on the Allotment will not take a Canada lynx or affect its habitat.

**Gray Wolf: May Affect-Not likely to Jeopardize** – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	No Effect
Chinook Salmon Designated Critical Habitat and Essential Fish Habitat	No Adverse Effect
Steelhead Trout	No Effect
Steelhead Trout Designated Critical Habitat	No Effect
Bull Trout	No Effect
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

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### PURCELL CREEK ALLOTMENT

**Background:** The Purcell Creek Allotment consists of approximately 640 acres of BLM land in one pasture with about 3 acres of other lands fenced with the allotment. The allotment is meeting all applicable Idaho Standards for Rangeland Health. 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 applied for.

The permit that has been in effect is:

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

Terms and Conditions:

- As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.
- 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.

**Proposed Action(s):**

Grazing Permit(s):

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	14 Cattle	5/1-6/30	100%	28	28	0	28

**Other Terms and Conditions:**

Cattle numbers may be increased up to a total of 200 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

**Crossing Permits:** Crossing can be applied for on an annual basis. Crossing permits 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.

**Summary of Changes to Permit since Prior Determination:**

The only change in the allotment is to allow up to 200 cattle on the allotment as opposed to the 21 that are allowed now. The amount of utilization allowed on the allotment would not change, it would remain at 28 Active AUMs.

**Purcell Creek Allotment Map:** See Nez Perce Allotment Map.

**Analysis of Effects**

**ESA listed fish and related habitat:** There is no stream habitat on the allotment and it does not contain any DCH for ESA listed fish species.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990’s. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

**ESA Cumulative Effects:**

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

**Effects Determinations and Rationale:**

**Snake River Spring/Summer Chinook Salmon: No Effect** – The allotment does not contain designated critical habitat for Chinook salmon. There are no streams on the allotment and no impacts to stream habitat.

**Essential Fish Habitat: No Effect** – There are no streams on the allotment and no impacts to MSA Chinook salmon stream habitat.

**Snake River Steelhead: No Effect** – The allotment does not contain designated critical habitat for steelhead. There are no streams on the allotment and no impacts to stream habitat.

**Bull Trout: No Effect** – The allotment does not contain designated critical habitat for bull trout. There are no streams on the allotment and no impacts to stream habitat.

**Canada Lynx: No Effect** – The allotment contains about 32 acres of forested, mostly dry Douglas-fir, habitat. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. Grazing the Purcell Creek Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf: May Affect-Not likely to Jeopardize** – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	No Effect
Chinook Salmon Designated Critical Habitat and Essential Fish Habitat	No Adverse Effect
Steelhead Trout	No Effect
Steelhead Trout Designated Critical Habitat	No Effect
Bull Trout	No Effect
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

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**SPRING CANYON ALLOTMENT**

**Background:** The Spring Canyon Allotment consists of approximately 23,000 acres of BLM land in five pastures with about 3,900 acres of other lands fenced with the allotment. The allotment is meeting, or making progress towards, all applicable Idaho Standards for Rangeland Health except Standard 7. It has

been determined that current livestock management is not a significant contributor to failing to meet Standard 7. Since current grazing is not a significant factor in the allotment not meeting standards, the BLM proposes to renew the permit with an Active Preference of 3,329 AUMs (786 AUMs for sheep), the active preference from the Lemhi RMP, leading to stocking rate of 7 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> and 1200 sheep on the allotment between June 14<sup>th</sup> and October 11<sup>th</sup>. However, the BLM recognizes that 3,329 AUMs have not been utilized on the allotment for more than five years. Should more AUMs than the maximum yearly use in the last 5 years (1,436 AUMs) be utilized in a given year, the BLM would monitor the grass canopy cover on the allotment. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at the five year average actual use (1,400 AUMs) for the remainder of the ten-year permit.

**Current Permit and last ESA Determination:** In 2005, the Grazing Permit for this allotment was determined to have “no effect” to Chinook/sockeye salmon, bull trout, steelhead trout, bald eagle, gray wolf and Canada lynx.

The permit that has been in effect since that determination is:

Permit	Number/Kind	Dates	% Public Land	Active Use (AUM)s	Active AUMs	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			

Terms and Conditions:

- As provided in 43 Code of Federal Regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.
- 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.
- The maximum allowable cattle use in the Spring Canyon Allotment is 2,544 BLM AUMs.
- All range improvements will be maintained prior to turn-out, and all water developments and associated pipelines will be drained and winterized.

**Proposed Action(s):**

Grazing Permit(s):

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	548 Cattle	5/15-10/31	83%	2542	3329	988	4317
	1200 Sheep	6/14-10/11	83%	786			

**Other Terms and Conditions:**

- Cattle numbers may be increased up to a total of 720 cattle and the grazing period can be decreased as long as Active Preference AUMs are not exceeded.

- If more than 1,436 AUMs are utilized in a given year, the BLM will monitor the grass canopy cover on the allotment the following year. If the native, deep-rooted perennial grasses on the allotment fall below 10% canopy cover then the yearly grazing use on the allotment would be held at a maximum of 1,400 AUMs for the remainder of the ten-year permit.

**Crossing Permits:** Would not be authorized for this Allotment.

**Range Improvement Projects:** Highway Spring Exclosure, Pipeline and Troughs.

Currently, Highway Spring is mostly fenced from cattle access by a jack and pole fence. The spring source is still open to livestock. The current fence would be adjusted to include the spring source, but leave two watergaps below the source for cattle access.

**Vegetation Manipulation Projects:** Silver Moon Gulch Hazardous Fuels Reduction.

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 adjacent to private property at the mouth of Silver Moon Gulch.

Approximately 290 acres of dry Douglas-fir forest would be prescribed for “low” thinning (thin from below) to remove trees from lower crown canopy levels (Graham et al. 1999). Where existing roads, topography, and commercial product value permit, thinning and harvesting prescriptions 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 prescriptions 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. Proposed work is scheduled to begin spring or summer of 2011.

**Gilmore Hazardous Fuel Reduction**

Between 2005 and 2007 the Salmon Field Office 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” dbh and subsequent slash disposal through piling and burning. Post-treatment monitoring concluded a need for additional thinning to reduce tree stocking further within areas where previous work was accomplished by hand crews.

This project prescribes thinning on approximately 232 acres of dry Douglas-fir forest adjacent to private property at the Gilmore townsite and the mouth of Silver Moon Gulch, and would be implemented as described above under the *Silver Moon Gulch Hazardous Fuels Reduction* project. Proposed work is scheduled to begin spring or summer of 2011.

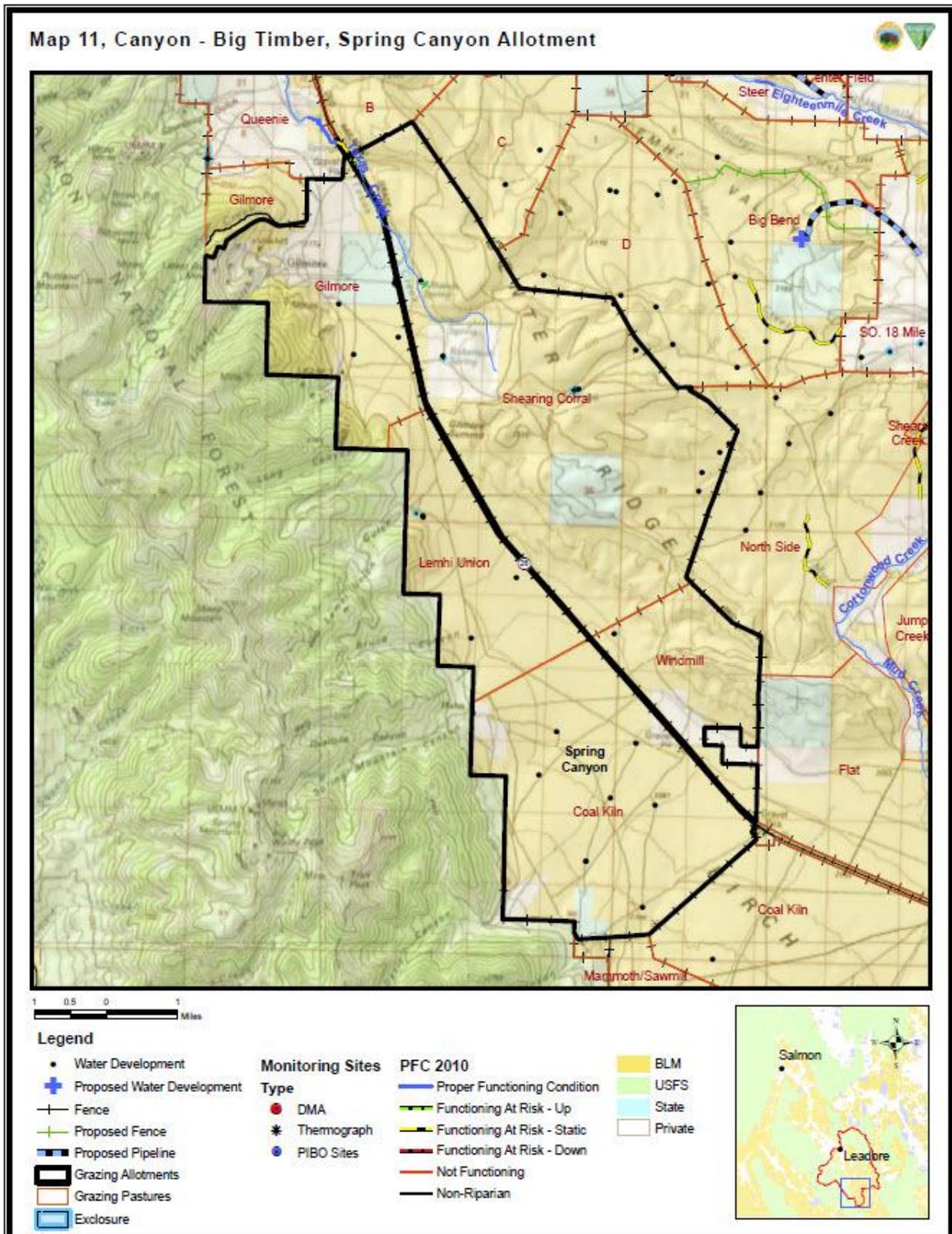
**Gilmore Summit Rangeland Restoration**

This project prescribes pre-commercial thinning of small-diameter trees (<10 inches dbh), and activity-generated slash disposal adjacent to private property at the Gilmore townsite and the mouth of Silver Moon Gulch.

Approximately 645 acres of rangeland are prescribed for free thinning (favor specific trees) (Graham et al. 1999) to protect widely scattered “nurse” trees, combined with low thinning to emphasize and promote rangeland attributes while providing a small number of “recruitment” trees to function as prospective nurse trees in the future. Where adverse slope (>40%) requires thinning by hand (chainsaw), field crews would identify nurse trees and recruitment trees (minimum of three per acre) to be protected; and all remaining trees cut with resultant slash material piled a safe distance from residual trees for subsequent disposal through burning.

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. Proposed work is scheduled to begin spring or summer of 2011.

Figure 20. Spring Canyon Allotment Map.



### **Analysis of Effects:**

**ESA listed fish and related habitat:** There is no stream habitat on the allotment and it does not contain any DCH for ESA listed fish species.

**Gray Wolf:** The gray wolf is an experimental, non-essential population that has resulted from wolves that were reintroduced to the area in the mid-1990s. As the numbers of wolves in the area have increased, wolves are being reported more often on lands administered by the Salmon Field Office. In 2005, the United States Fish and Wildlife Service issued a regulation that allows maximum management of gray wolves for the states of Montana and Idaho. Under this regulation it is now possible for a permittee on public land to take a wolf, if the wolf is attacking their livestock or domestic animals herding and guarding livestock, without prior authorization.

### **ESA Cumulative Effects:**

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

**Snake River Spring/Summer Chinook Salmon: No Effect** – The allotment does not contain designated critical habitat for Chinook salmon. There are no streams on the allotment and no impacts to stream habitat.

**Essential Fish Habitat: No Effect** – There are no streams on the allotment and no impacts to MSA Chinook salmon stream habitat.

**Snake River Steelhead: No Effect** – The allotment does not contain designated critical habitat for steelhead. There are no streams on the allotment and no impacts to stream habitat.

**Bull Trout: No Effect** – The allotment does not contain designated critical habitat for bull trout. There are no streams on the allotment and no impacts to stream habitat.

**Canada Lynx: No Effect** – The allotment contains about 1,000 acres of forested, mostly dry Douglas fir, and riparian habitat. The allotment is within the Timber Gilmore Canada lynx Analysis Unit, though the LAUs are currently being re-mapped and the new maps would remove all of the Spring Canyon Allotment from the LAU. Under the current mapping, about 230 acres of Canada lynx habitat is mapped in the Allotment. In addition, the riparian corridor in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape. The proposed grazing in the Spring Canyon Allotment would not affect the Canada lynx habitat or its prey base. The vegetation projects in the allotment are in dry Douglas fir stands and not within lynx habitat.

**Gray Wolf: May Affect-Not likely to Jeopardize** – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	No Effect
Chinook Salmon Designated Critical Habitat and Essential Fish Habitat	No Adverse Effect
Steelhead Trout	No Effect
Steelhead Trout Designated Critical Habitat	No Effect
Bull Trout	No Effect
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

## LEADORE ALLOTMENT

**Action Area Description:** The ESA action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR§402.02). In other words, this is the area where the action and any interdependent and interrelated actions will result in direct or indirect effects to listed species or designated critical habitat.

Priority Watersheds are those watersheds that have been identified per direction in the 1995 PACFISH Biological Opinion, that require a different management strategy because of their importance to listed fish. Priority Watersheds include the action area. The entire CBT is within a Chinook salmon and steelhead priority watershed. Data and descriptions are presented for the allotment in context of the Big Timber Creek sub-watershed to describe the condition and trend of the environmental baseline at that scale. Only one 500 foot long segment of Lower Big Timber Creek occurs within the ESA Action Area. The pasture containing this reach is a combination of Federal and private land. The proposed action seeks to fence off the RHCA on Big Timber Creek in the South Pasture to eliminate direct impacts on public land. Indirect affects will still be present on the private portions in the pasture.

Big Timber Creek is hydrologically connected to the Lemhi River and there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Additionally, stream flows above and below the allotment are diverted seasonally for irrigation purposes. There is a complete barrier on lower Big Timber Creek downstream of the allotment at the LBT-2 diversion 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.

Big Timber Creek segment on the allotment has a fairly narrow riparian corridor, but it is heavily vegetated with cottonwoods and willow, with a sparser *Carex/Juncus* component, which is typical of this site type. Upper reaches of Big Timber Creek and its tributaries above the allotment on BLM and USFS lands are in good ecological condition. For more details on Big Timber Creek, see the Timber Creek Allotment section below.

**Background:** The Leadore Allotment consists of approximately 420 acres of BLM land in three pastures with about 380 acres of other lands fenced with the allotment. The allotment is meeting Standards 1 and 6, making progress towards meeting Standards 2, 3, 4 and 8, and Standards 5 and 6 are not applicable.

Since the allotment is meeting, or making progress towards meeting, all of the Standards the BLM proposes to renew the permit with an Active Preference of 28 AUMs, the active preference from the Lemhi RMP, leading to stocking rate of 15 acres/AUM. The BLM would authorize a maximum of 48 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 after July 15<sup>th</sup> in the South Pasture to limit impacts to riparian habitat along Timber Creek or in the North Pasture before July 15<sup>th</sup> to continue to improve the upland habitat.

**Current Permit and last ESA Determination:**

In 2008, it was determined that the Grazing Permit for the allotment May Affect, but is Not Likely to Adversely Affect designated critical habitat for spring/summer Chinook salmon. The grazing permit was also determined to have No Affect on spring/summer Chinook salmon, Snake River Basin steelhead, bull trout and Canada lynx. The grazing permit was determined to May Affect but Not Likely to Jeopardize the continued existence of the gray wolf population.

The permit that has been in effect since that determination is:

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

**Terms and Conditions:**

- 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.
- 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.
- Management of the Leadore Allotment will continue to maintain or improve riparian communities found within the allotment, and continue to achieve or make significant progress toward the Idaho Standards for Rangeland Health.
- Supplemental feeding 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) mile away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant populations, playa, or water development located on public land unless a variance is approved by the authorized officer.
- As provided in the code of federal regulations (CFR) 4130.3-2(d), you are hereby required to submit a certified actual 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.

**Proposed Action:**

Leadore Allotment Grazing Permit(s) 2011-2021:

Permit	Number/Kind	Grazing Period	% Public Land	Active Use (AUM)s	Active Preference	Suspended AUMs	Total Preference
A	32 Cattle	6/16-8/5	53%	28	28	22	50

**Other Terms and Conditions:**

The North Pasture will not be grazed before July 15. Livestock grazing in the South Pasture in the Big Timber Creek RHCA will be excluded from grazing.

**Crossing Permits:** Would not be authorized for this allotment.

**Summary of Changes to Permit since Prior Consultation:** None since this allotment was consulted on in 2006.

Figure 21. Leadore Allotment Map.

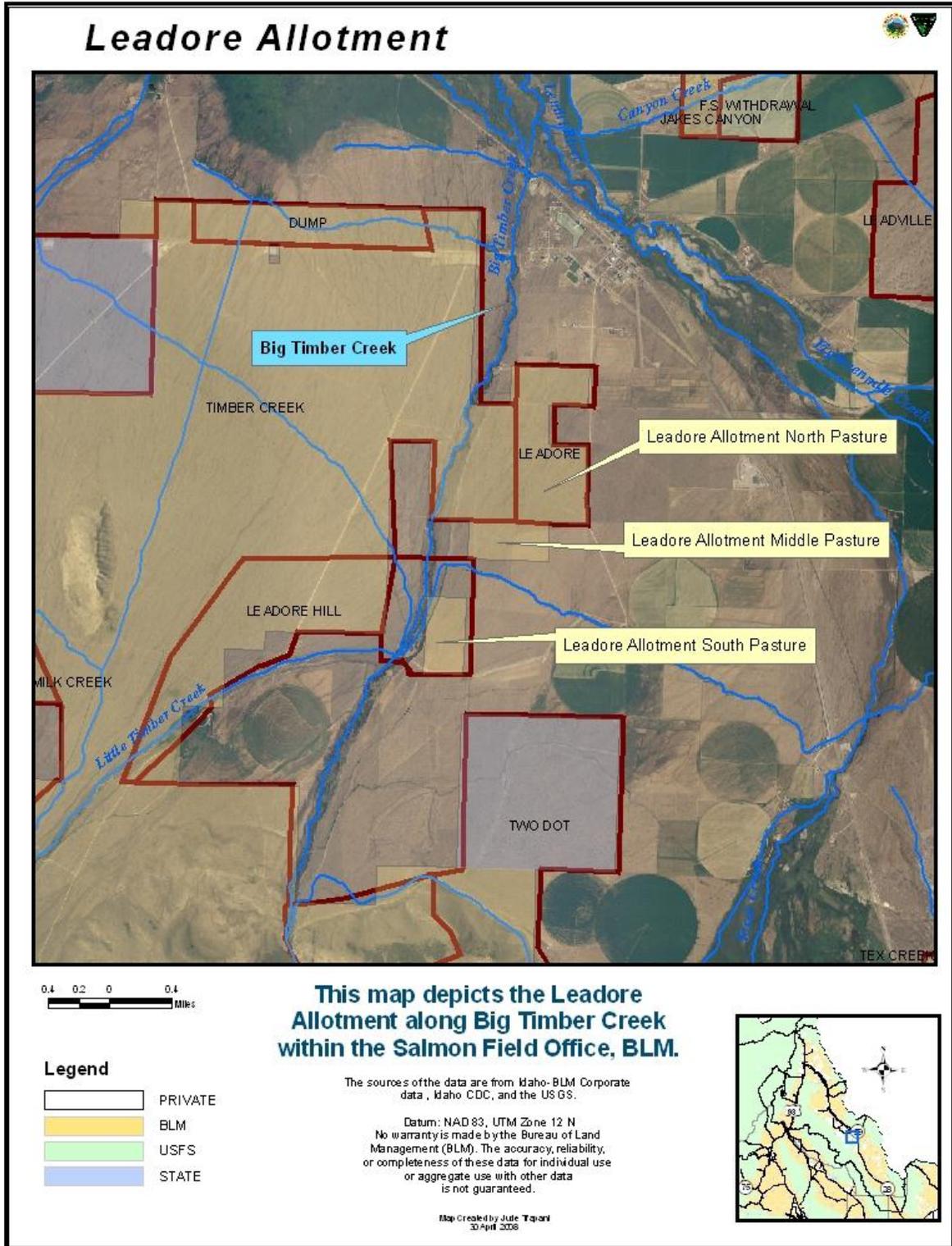
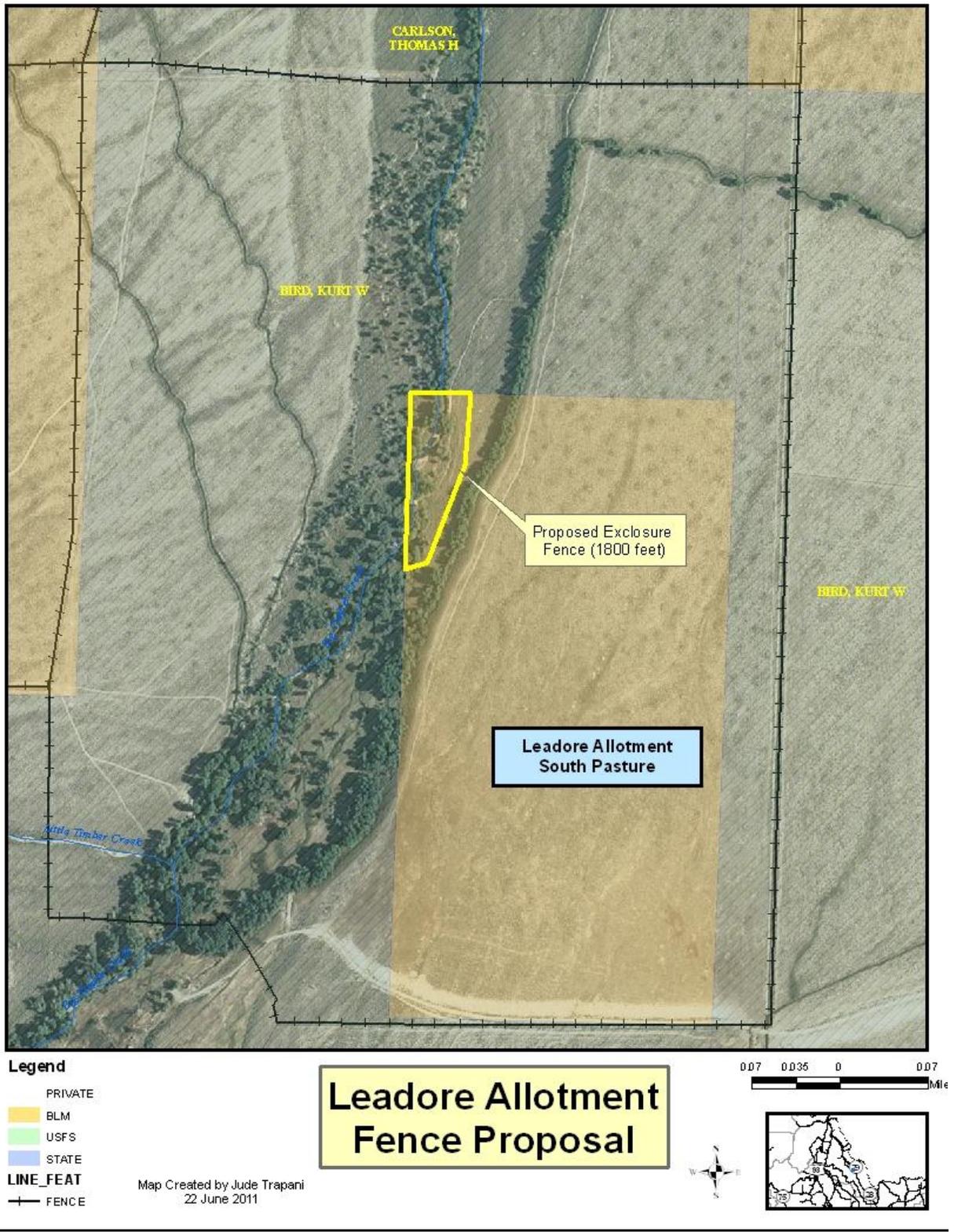


Figure 22. Leadore Allotment – Proposed Fence.



**Status and Trend of Environmental Baseline Habitat Indicators**

**Substrate** **Status and Trend:** Functioning at Risk; Static Trend  
**Narrative:** Core sampling has been completed by the USFS on Big Timber Creek since 1993 at sites about seven miles upstream from the allotment. The trend at the Big Timber Creek site (n=14) appears static to slightly upward with a 22.2% fines average, but the data indicates a cyclic trend with depth fines increasing over a few year period then decreasing over the next few years then beginning the cycle again, so it has been given an overall static trend since there is no apparent long term upward trend. MIM substrate monitoring data for 2010 at the Big Timber DMA BT-01 site approximately one mile downstream on the Timber Creek Allotment shows 24% surface fines. No trend data is available at the site.

**Greenline Vegetation** **Status and Trend:** Functioning Appropriately; Static Trend  
**Narrative:** A small segment of Big Timber Creek approximately 500 feet exists on public land in the South Pasture of the Leadore Allotment. This segment is in FAR static trend condition but does not currently have a MIM DMA. In the past, cattle were grazed season long in the pasture, but for the past 6 years grazing has only occurred in the spring. Grazing prior to the hot season allows vegetation the remainder of the growing season to re-grow and reproduce, and over time, improve condition along the creek (Kolvalchik and Elmore 1991; USDI-BLM 2006).

**Greenline-Greenline Width** **Status and Trend:** Functioning Appropriately; Static Trend  
**Narrative:** 2010 MIM monitoring documented a GGW on Big Timber Creek downstream on the Timber Creek Allotment of 6.25 m. Future monitoring will verify the observed trend of streams that are narrowing and stabilizing since monitoring began in the mid-1990s.

**Temperature** **Status and Trend:** Functioning at Risk; Static Trend  
**Narrative:** The BLM has 14 datasets (1994-2009) for water temperature in Big Timber Creek, using continuously recording thermographs. The thermograph is on the Timber Creek Allotment, approximately 2.5 miles above the stream’s mouth. The 7-day average maximum water temperature at the site has averaged 64.4°F for the 14 years sampled but occasionally exceeds the 64 °F RMO likely due to impacts of irrigation withdrawal.

**Streambank Stability** **Status and Trend:** Functioning at Risk; Static Trend  
**Narrative:** 2008 MIM monitoring documented 84% stable banks at the BT-01 DMA one mile downstream located on the Timber Creek Allotment. Conditions appear similar on the Leadore Allotment but there is no quantitative data. No past bank stability monitoring has been done on Big Timber Creek to verify observed trends.

Table 8: Big Timber Creek at lower BLM Stream Temperature Data by year.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
62.6	61.1	66.4	--	--	67	64.8	64.2	66.5	66.8	63.5	62.3

**Status and Trend of Additional Bull Trout Critical Habitat PCEs for Big Timber Creek**

**Groundwater Connectivity** **Status and Trend:** Functioning Appropriately; Static Trend  
**Narrative:** Upstream of the allotment there are few actions that impact the connectivity of groundwater. Except in limited instances affected by road prisms, floodplains are connected and functional.

**Migratory Barriers** **Status and Trend:** Not Properly Functioning; Upward Trend  
**Narrative:** about 12 irrigation diversions exist on mainstem Big Timber Creek. Much work has been done by the USBWP and IDFG in the past four years to work with irrigators to remove the lower

migration barriers and initiate a continuous flow of water to the Lemhi River for habitat maintenance/improvement and migration potential. The first three barriers have been removed (Hwy 28 culvert and 2 diversion structures). Additionally, a minimum of 6.0 cfs now flows downstream from diversion BT-2 to the Lemhi River at a new point of diversion. Migrating fish now have access to BT-2, approximately 1.5 miles of stream. This diversion is planned to be replaced within three years which would allow access further up the drainage. Work is expected to take place in the next ten years to create safe juvenile and adult migration to and from the Lemhi River. Currently, fluvial bull trout have not been documented migrating from the Lemhi River. A strong population of resident bull trout exists in upper Big Timber Creek. Additionally, fish do not have access above the Carey Act Dam just below the mouth of the canyon reach during most of the irrigation season.

**Habitat Complexity** **Status and Trend:** Functioning Appropriately; Static Trend  
**Narrative:** Habitat surveys of mainstem Big Timber Creek in the mid-1990s and 2000's by USGS and IDFG documented that it met all standards based on stream channel type and size. It provides suitable off channel habitat and refugia, the width/depth ratio and streambank conditions met standards overall. Habitat protection projects have improved flow conditions in the lower reach of the stream and reconnected it with the Lemhi River.

**Flow** **Status and Trend:** Functioning at-Risk; Upward Trend  
**Narrative:** see **Migratory Barriers** above.

**Water Quality & Quantity** **Status and Trend:** Functioning at-Risk; Upward Trend  
**Narrative:** Water quantity is reduced due to irrigation withdrawals, but still provides a base flow suitable to maintain all life stages of listed fish species. Water temperature in Big Timber Creek meets standards.

**Persistence & Genetic Integrity** **Status and Trend:** Not Properly Functioning; Upward Trend  
**Narrative:** A strong resident bull trout population currently exists in mid to upper Big Timber Creek and its tributaries. A fluvial bull trout population is believed to have historically inhabited the stream but is currently dysfunctional due to upstream migration barriers in the lower reaches. Limited numbers of brook trout are present within the system.

**Photographs:** see Appendix 3 below.

**Riparian Management Objectives and Monitoring:** There will not be a need to have a DMA on Big Timber Creek on public land with the fence excluding livestock.

### Analysis of Effects:

#### **Direct and Indirect Effects to Key Indicators**

The Leadore Allotment contains one small segment of Big Timber Creek totaling about 500 feet within a larger private pasture which includes an additional  $\frac{3}{4}$  mile of stream. The segment on BLM is in FAR Static Condition with a mix of shallow and deep-rooted riparian vegetation. It is mostly lined with mature cottonwood trees and alder shrubs. The pasture is expected to be grazed but not on the public land segment of Big Timber Creek. No MIM data is available for the segment but data are available from the Timber Creek Allotment TC-01 DMA one mile downstream. At that site, streambank stability was 84% in 2009. TC-01 is rated at Late-Seral Ecological Status with 88% Hydric Riparian Vegetation on Greenline in 2008. Stream habitat conditions are similar on the two allotments and have made improvements over the past ten years through visual observation. This is most likely due to the change to early season grazing practices that has allowed riparian vegetation to regrow and obtain an upward trend, especially with woody species.

During the early part of the grazing season, prior to July 15, livestock spend most of their time in the uplands and spend little time along the stream. Some grazing of the greenline vegetation occurs along with limited bank trampling, but visual observations show that the stream is maintaining and improving a fair quality tree/shrub community on the public and private lands within the pasture.

Substrate monitoring elsewhere in the watershed shows that Big Timber Creek is not yet meeting standards. The reach within the allotment is a tree/boulder controlled channel with limited suitable spawning substrate. Chinook salmon have not been documented to spawn in Big Timber Creek due to upstream migration barriers, but historically used the stream extensively. Sediment input is not a limiting factor to fish production in Big Timber Creek.

Big Timber Creek in the lower reaches has a slightly higher water temperature regime than desired. Multiple irrigation diversions most likely cause a slight increase over natural conditions. The riparian communities over much of the watershed show good to excellent riparian cover with thick willows and cottonwoods in the lower reaches. The short segment on the Leadore Allotment is well shaded and is most likely not contributing to temperature increases.

On the allotment, the thick vegetation on the greenline limits the potential for impacts by livestock to streambank stability. It is expected that the current livestock grazing permit will result in these conditions remaining static or improving over time.

### **Redd Disturbance**

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 higher 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 USFS boundary because of no bull trout documented during presence/absence surveys in the lower reaches. The allotment is unlikely to support bull trout habitat except for possible downstream migration. No bull trout have been documented inhabiting or spawning in lower Big Timber Creek.

### **Summary**

Riparian conditions on the allotment continue to be maintained in FAR and have improved in the past three years from the early grazing season prescription. Exclusion of Big Timber Creek is expected to preclude livestock impacts on that segment. Indirect impacts to the private segments in the pasture are still expected.

**Interrelated and Interdependent Actions:** Grazing on the adjacent private land in the South Pasture in conjunction with the BLM parcel is related to this grazing permit. The ranch operations are located directly adjacent to the allotment or moved directly off the ranch onto the allotment with no additional impacts to aquatic habitat. Livestock use the Leadore Allotment South Pasture in conjunction with the private pasture and do not return until the following year and do not cross the stream in between grazing periods.

**ESA Cumulative Effects:** Cumulative effects are those effects from future non-Federal actions (tribal, State, local, private and other entities) that are reasonably certain to occur in the action area under consideration. BLM currently does not have knowledge regarding any potential future state or private actions in the Action area different than described.

**Fish:** Much of Big Timber Creek flows through private lands and are used for agricultural purposes, including grazing. Irrigation diversions reduce flow and alter the historic hydrology and connection to the

Lemhi River. These conditions are expected to continue into the future. There are currently proposals via the USBWP to improve fish passage in Big Timber Creek, but currently, fish cannot reach public land.

**Gray Wolf:** The January 6, 2005 Federal Register (70 FR 1286) allows the take of wolves attacking (actually biting, wounding, grasping) or in the act of chasing, molesting, or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment. On private land, wolves can be taken without written take authorization if they are attacking livestock (defined as cattle, sheep, horses, mules, goats, domestic bison, and livestock herding or guarding animals) or dogs. This could lead to a cumulative effect on wolves in the area.

### **Effects Determinations and Rationale:**

***Snake River Spring/Summer Chinook Salmon and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. Impacts to Big Timber Creek have been drastically reduced over historic levels and stream habitat in the Leadore Allotment is on an upward trend due to the limited livestock use. Excluding the public land portion of Big Timber Creek is expected to eliminate grazing impacts on that segment. Impacts to the Designated Critical Habitat will continue on the private portions of Big Timber Creek with livestock grazing but they are insignificant and are not expected to preclude recovery on this short segment. Because Big Timber Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. Anadromous fish are unable to access the stream within the allotment due to a complete barrier at an irrigation diversion 1.5 miles downstream of the allotment. Flows on the stream are partially diverted seasonally for irrigation purposes. Effects described above related to stream habitat key indicators are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore immeasurable. Due to a lack of occupied habitat, the ongoing action would not have direct effects to spawning habitat.

***Essential Fish Habitat:*** May affect, Will Not Adversely Affect Essential Fish Habitat for the same reasons listed above.

***Snake River Steelhead and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is no Designated Critical Habitat present within the Leadore Allotment and the stream is not occupied by steelhead within the Allotment, precluding direct impacts. Since Big Timber Creek is connected to the Lemhi River, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These effects are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. Big Timber Creek is not accessible above the BT-02 diversion barrier for all of the irrigation season. Steelhead are likely present in the lower 1.5 miles of BT Creek where increases in sediment and stream temperatures may minimally influence habitat and fish found there. These effects are expected to be insignificant because they would be indistinguishable from background conditions.

***Bull Trout and Designated Critical Habitat:*** May affect, Not Likely to Adversely Affect. There is Designated Critical Habitat present within the Leadore Allotment on Big Timber Creek. The stream in the lower reach is not occupied by bull trout, precluding direct impacts. Therefore there will be no additional analysis of impacts to PCEs beyond those discussed above. The ongoing action would continue to have very limited and immeasurable indirect effects on the key indicators important to bull trout. Because Big Timber Creek is hydrologically connected to the Lemhi River on a seasonal basis, there is the potential for insignificant or discountable effects to downstream habitat in the Lemhi River during runoff events. These include above background levels of sediment delivery and slight increases in

water temperature, which when combined with the much larger volume of the Lemhi River, become discountable. They are expected to be insignificant because they would be indistinguishable from background conditions; and, therefore not measurable. There have been no observations of fish on the BLM downstream of the Carey Act Dam, but they are present in the headwaters. With Big Timber Creek RHCA on the public land portion of the Leadore Allotment excluded from livestock grazing, the segment is expected to show an upward trend in conditions.

**Canada Lynx:** No Effect – The allotment contains about 44 acres of riparian habitat, mostly on private land fenced in with the BLM. The allotment is not within a Canada lynx analysis unit because of the lack of primary habitat. The riparian corridor in the allotment may provide a linkage corridor for a Canada lynx to move across the landscape, but the allotment would not support a Canada lynx. Grazing the Leadore Allotment would not cause take of a Canada lynx or affect its habitat.

**Gray Wolf:** May Affect-Not likely to Jeopardize – The proposed action would allow livestock on public land near where gray wolf sightings have occurred. While take could occur should a wolf attack the livestock it is not likely to jeopardize the continued existence of the reintroduced, experimental population of wolves.

Listed Species or Habitat	Determination
Sockeye Salmon & Designated Critical Habitat	No Effect
Chinook Salmon	No Effect
Chinook Salmon Designated Critical Habitat	No Effect
Chinook Salmon Essential Fish Habitat	No Adverse Effect
Steelhead Trout	No Effect
Steelhead Trout Designated Critical Habitat	No Effect
Bull Trout	No Effect
Bull Trout Designated Critical Habitat	No Effect
Canada Lynx	No Effect
Gray Wolf	MA-NJ

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## APPENDIX 1: Species Life History Information

### Snake River Spring/Summer Chinook

*Adult migration holding:* Spring Chinook begin returning from the ocean in the early spring, with the run into the Columbia River peaking in mid-May. Spring Chinook enter the Snake River tributaries from April through July. After migration, they hold in freshwater tributaries until spawning occurs in the late summer, peaking in mid to late August.

*Spawning/Incubation:* Juvenile Snake River spring/summer Chinook salmon emerge from spawning gravels from February through June (Perry and Bjornn 1991). Chinook salmon population assessments of productivity (smolts produced per spawning female adult) in the Lemhi River are among the highest of Idaho Rivers (Johnson et al 2008).

*Early Rearing:* Juvenile spring Chinook spend a year in freshwater before migrating to salt water in the spring of their second year of life. Typically, after rearing in their nursery streams for about 1 year, smolts begin migrating seaward in April through May. After reaching the mouth of the Columbia River, spring/summer Chinook salmon probably inhabit near-shore areas before beginning their northeast Pacific Ocean migration, which lasts 2 to 3 years.

*Overwintering:* Juvenile fish rear during winter in natal streams or larger waters downstream of the original area of emergence.

*Other:* Most Snake River spring Chinook return as adults after two or three years in the ocean. Some precocious males, or jacks, return after one winter at sea. A few other males mature sexually in freshwater without migrating to the sea. The run, however, is dominated by four- and five-year-old fish that (have spent two and three years at sea, respectively).

### A run Steelhead

*Adult Migration/Holding:* Adult migration requirements are generally similar to those described for spring chinook. However, adult holding takes place over a much longer period (from fall arrival in the Snake River drainage until spring spawning). Holding generally takes place in streams greater than 100 feet wide, and in channels with gradients less than 1.5 percent. Pools greater than five feet deep are significant features associated with suitable holding habitat.

*Spawning/Incubation:* Cool, clean water is required across all ecologic strata for successful spawning and incubation. Like spring chinook, spawning frequently occurs at pool tail outs. However, these steelhead make more extensive use of smaller lateral spawning areas, generally spawn in streams less than 30 feet wide, and spawn in streams with a variety of gradients including those greater than 4 percent. Factors influencing the success of incubation and emergence are the same as those described for spring chinook. In the Lemhi River, it is generally accepted that steelhead spawning/incubation is completed by July 15 .

*Early Rearing:* Early rearing requirements for A run steelhead are similar to those described for spring chinook, although timing of the habitat use is different.

*Overwintering:* Overwintering requirements for A run steelhead are similar to those described for spring chinook. However, steelhead make more significant use of streams with gradients greater than 4 percent.

*Late Rearing/Outmigration:* Late rearing requirements of steelhead differ significantly from those described for spring chinook. Steelhead generally require two or more summer rearing periods prior to outmigration. Like spring chinook, cool, clean water is required across all ecologic strata for successful late rearing. One+ steelhead juvenile rearing generally takes place in “pocket water” and pool habitats

within all stream sizes and gradients. The most significant cover element appears to be associated with cobble/boulder substrates. Stream side cover is less significant, as is large woody debris except as it affects stream hydraulics and creates late rearing holding pools. Outmigration requirements are similar to those described for spring chinook.

#### Bull Trout

*Introduction:* The general life history of bull trout (*Salvelinus confluentus*) is characteristic of chars. For years, the bull trout and Dolly Varden (*Salvelinus malma* Girard) were combined under one name (*Salvelinus malma* Walbaum). In 1991, they were identified as two distinct species.

*Life History:* Bull trout move into natal tributaries beginning in August and spawn in mid to late September and October (Tom Curet IDFG, pers. comm.). Hatching may occur in winter or early spring, but alevins may stay in the gravel for an extended period after yolk absorption (McPhail and Murray 1979). Growth, maturation, and longevity vary with environment, first spawning is often noted after age four, with individuals living 10 or more years (Rieman and McIntyre 1993). Two distinct life-history forms, migratory and resident, occur throughout the range of bull trout (Pratt 1992; Rieman and McIntyre 1993). Migratory forms rear in natal tributaries before moving to larger rivers (fluvial form) or lakes (adfluvial form) or the ocean (anadromous) to mature. Migratory bull trout may use a wide range of habitats ranging from 2nd to 6th order streams and varying by season and life stage. Seasonal movements may range up to 300 km as migratory fish move from spawning and rearing areas into overwinter habitat in downstream reaches of large basins (Bjornn and Mallet 1964; Elle et al. 1994). The resident form may be restricted to headwater streams throughout life. Both forms are believed to exist together in some areas, but migratory fish may dominate populations where corridors and subadult rearing areas are in good condition (Rieman and McIntyre 1993).

*Habitat Relationships:* Bull trout appear to have more specific habitat requirements than other salmonids (Rieman and McIntyre 1993). Habitat characteristics including water temperature, stream size, substrate composition, cover and hydraulic complexity have been associated with distribution and abundance. Stream temperatures and substrate composition may be particularly important characteristics of suitable habitats. Bull trout have repeatedly been associated with the coldest stream reaches within basins. Temperature also appears to be a critical factor in the spawning and early life history of bull trout. Bull trout are more strongly tied to the stream bottom and substrate than other salmonids. Substrate composition has repeatedly been correlated with the occurrence and abundance of juvenile bull trout (Dambacher et al., in press; Rieman and McIntyre 1993) and spawning site selection by adults (Graham et al. 1981; McPhail and Murray 1979). Fine sediments can influence incubation survival and emergence success (Weaver and White 1985), but might also limit access to substrate interstices that are important cover during rearing and overwintering (Goertz 1994; Jakober 1995).

Patterns of stream flow and the frequency of extreme flow events that influence substrates are anticipated to be important factors in population dynamics (Rieman and McIntyre 1993). With overwinter incubation and a close tie to the substrate, embryos and juveniles may be particularly vulnerable to flooding and channel scour associated with the rain-on-snow events. Populations are likely to be most sensitive to changes that occur in headwater areas encompassing critical spawning and rearing habitat and remnant resident populations.

Isolation and fragmentation are likely to influence the status of bull trout. Historically bull trout populations were well connected throughout the Basin. Habitat available to bull trout has been fragmented, and in many cases populations have been isolated entirely. Irrigation diversions, culverts, and degraded mainstem habitats have eliminated or seriously depressed migratory life histories effectively isolating resident populations in headwater tributaries (Brown 1992; Montana Bull Trout Scientific Committee, in preparation; Ratliff and Howell 1992; Rieman and McIntyre 1993). Introduced species like

brook trout may displace bull trout in lower stream reaches further reducing the habitat available in many remaining headwater areas (Adams 1994; Leary et al. 1993). Loss of suitable habitat through watershed disturbance may also increase the distance between good or refuge habitats and strong populations thus reducing the likelihood of effective dispersal (Frissel et al. 1993).

**APPENDIX 2: Crosswalk of Primary Constituent Elements (PCE's) to Monitoring Indicators**

BLM has addressed the Primary Constituent Elements (PCE's) of designated critical habitat for salmon, steelhead and bull trout using the appropriate monitoring data collected at each allotment. The indicators shown in the tables below address the PCE's for livestock grazing.

**Steelhead**

PCE 1 Criterion – Freshwater spawning	Monitoring Indicator(s)
Water quality	Water temperature (Dunham et.al. 2005)
Substrate	Substrate* (MIM)
PCE 2 Criterion – Freshwater rearing	Monitoring Indicator(s)
Water quality	Water temperature (Dunham et.al. 2005)
Natural cover and riparian vegetation	Water temperature (shade) Greenline to greenline width** (MIM) Streambank Stability (MIM) Greenline Vegetation (MIM)
PCE 3 Criterion – Freshwater migration corridors	Monitoring Indicator(s)
Water quality	Water temperature
Freshwater migration corridors free of excessive predation; and	Water temperature (shade) Substrate (MIM) Greenline to greenline width (MIM)
Natural cover	Streambank Stability (MIM)

\*MIM - Multiple Indicator Monitoring

\*\*National Riparian Service Team has concluded that greenline to greenline width is an appropriate indicator (personal communication with Tim Burton 2009)

## **2010 Bull Trout Critical Habitat Primary Constituent Elements**

Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.

Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.

An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.

Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shade, such as that provided by riparian habitat; and local groundwater influence.

Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount (e.g., less than 12 percent) of fine substrate less than 0.85 mm (0.03 in.) in diameter and minimal embeddedness of these fines in larger substrates are characteristic of these conditions.

A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.

Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass; inbreeding (e.g., brook trout); or competitive (e.g., brown trout) species present.

## **Crosswalk Between Bull Trout Matrix and Bull Trout Critical Habitat Primary Constituent Elements**

The most effective way to evaluate the impact an activity will have on critical habitat is to analyze the effects that the activity will have on the primary constituent elements (PCEs) of the critical habitat. The effects of Idaho BLM activities that have undergone ESA Section 7 consultation were largely evaluated using the Bull Trout Matrix of Pathways and Indicators (matrix). Fortunately, the matrix includes indicators that correspond to the bull trout critical habitat PCEs. The matrix contains 23 indicators, four of which are tied to subpopulation characteristics and 19 which are tied to habitat. Twenty of the twenty three indicators are closely related to one or more of the nine PCEs, and each PCE corresponds to one or more indicators. The *refugia* indicator is relevant to all PCEs because in order for the refugia indicator to be rated “functioning appropriately” most if not all of the PCEs must be present. The following discussion describes the relationship of these indicators to the individual PCEs.

Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.

The *floodplain connectivity* indicator directly addresses how well stream channels are hydrologically connected to off-channel areas. Floodplains are important to maintaining the water table and providing connectivity to the channel for springs, seeps, and groundwater sources which contribute to water quality and quantity. The *sediment and substrate embeddedness* indicators describe the level of fine sediment in the gravel which affects hyporheic flow. Fine sediment fills interstitial spaces making the movement of water through the substrate less efficient. The *chemical contamination/nutrients* indicator evaluates the water quality of groundwater. The *off-channel habitat* indicator assesses how much off-channel habitat is available, and generally off-channels are connected to adjacent channels via subsurface water. The *streambank condition* indicator documents bank stability. If the streambanks are stabilized by vegetation rather than substrate then it is likely that the streambank can act as a sponge that holds water during moist periods and releases that water during dry periods which contributes to water quality and quantity. The *change in peak/base flows* indicator evaluates whether or not peak flow, base flow, and flow timing are comparable to an undisturbed watershed of similar size, geology, and geography. Peak flows, base flows, and flow timing are directly related to subsurface water connectivity. The *increase in drainage network* and *road density and location* indicators assess the influence of the road and trail networks on subsurface water connectivity. If there is an increase in drainage network and roads are located in riparian areas, it is likely that subsurface water is being intercepted before it reaches a stream. If groundwater is being intercepted then it is likely that water quality is being degraded through increased temperatures, fine sediment, and possibly chemical contamination. The *disturbance history* indicator evaluates disturbance across the watershed and provides a picture of how management may be affecting hydrology. The *riparian conservation areas* indicator determines whether riparian areas are intact and providing connectivity. If riparian areas are intact it is much more likely that springs, seeps, and groundwater sources are able to positively affect water quality and quantity.

Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.

The *physical barriers* indicator provides the most direct assessment of this PCE. The indicator documents whether or not man-made barriers within the watershed allow upstream and

downstream passage at all flows. However, some indicators further evaluate physical impediments and others evaluate the biological or water quality impediments that may be present. The *substrate embeddedness* indicator provides a basis for determining if bull trout fry will have difficulty emerging from the gravel to access rearing habitat. The *average wetted width/maximum depth ratio* indicator can help identify situations in which water depth for adult passage may be a problem. A very high average wetted width/maximum depth value may indicate a situation where low flows, when adults migrate, are so spread out that water depth is insufficient to pass adults. The *change in peak/base flows* indicator can help determine if change in base flows have been sufficient to prevent adult passage during the spawning migration. The *persistence and genetic integrity* indicator addresses biological impediments by evaluating interactions with other species. Potential water quality impediments are outlined within the *temperature* and *chemical contamination/nutrients* indicator writeups.

An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

None of the indicators directly address this PCE, but a number of them address it indirectly. The *sediment* and *substrate embeddedness* indicators document the extent to which substrate interstitial spaces are filled with fine sediment. Interstitial spaces provide important habitat for aquatic macroinvertebrates and sculpin which are important food sources for bull trout. The *chemical contamination/nutrients* indicator evaluates the level to which a stream is contaminated by chemicals or has a high level of nutrients. Chemicals and nutrients greatly affect the type and diversity of aquatic invertebrate communities present in a water body. The *large woody debris* indicator documents how much large wood is present within a stream. The presence of large wood indicates that the diversity of macroinvertebrates may be greater because large wood increases habitat complexity. The *off-channel habitat* and *floodplain connectivity* indicators document the presence of off-channels which are generally more productive than main channels. Off channels are important sources of forage, particularly for juveniles. The *streambank condition* and *riparian conservation areas* indicators both shed light on the food base of a stream. Vegetation along streambanks and in riparian areas provide important habitat for individual macroinvertebrates. Vegetation hanging over the stream provides a surface for terrestrial and aquatic insects to perch and ultimately results in insects falling into the stream and becoming bull trout food.

Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.

Several indicators address this PCE directly. The *sediment* and *substrate embeddedness* indicators provide insight into how complex substrates are within a stream by documenting percent fines and embeddedness. As percent fines and embeddedness increase, substrate complexity decreases. The *large woody debris* indicator provides an excellent picture of habitat complexity. The indicator rates the stream based on the amount of in-channel large woody debris. Habitat complexity increases as large wood increases. The *pool frequency and quality* and *large pools* indicators address habitat complexity by rating the stream based on the frequency of pools and their quality. Habitat complexity increases as the number of pools and their quality increase. The *off-channel habitat* indicator directly addresses complexity associated with side channels. The indicator is rated based on the amount of off-channel habitat, cover associated with off-channels, and flow energy levels. The *average wetted width/maximum depth ratio* indicator also corresponds to complexity. Low width to depth ratios indicate that undercut banks may be present. The *streambank condition* and *riparian conservation areas* indicators both shed

light on the complexity of river and stream shorelines. Vegetation along streambanks and in riparian areas provides important habitat complexity and channel roughness. The *floodplain connectivity* indicator addresses complexity added by side channels and the ability of floodwaters to spread across the floodplain to dissipate energy and provide refugia for fish. The *road density and location* indicator addresses complexity by identifying if roads are located in valley bottoms. Roads located in valley bottoms reduce complexity by eliminating vegetation and replacing complex habitats with smooth riprap. The *disturbance regime* indicator documents the frequency, duration, and size of environmental disturbance within the watershed. If scour events, debris torrents, or catastrophic fires are frequent, long in duration, and large, then habitat complexity will be greatly reduced.

Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shade, such as that provided by riparian habitat; and local groundwater influence.

The *temperature* indicator addresses this PCE directly. The indicator rates streams according to how well temperatures meet bull trout requirements. Other matrix indicators address temperature indirectly. The *off-channel habitat* and *floodplain connectivity* indicators address how well stream channels are hydrologically connected to off-channel areas. Floodplains and off-channels are important to maintaining the water table and providing connectivity to the channel for springs, seeps, and groundwater sources which contribute cool water to channels. The *average wetted width/maximum depth ratio* indicator also corresponds to temperature. Low width to depth ratios indicate that channels are narrow and deep with little surface area to absorb heat. The *streambank condition* indicator documents bank stability. If the streambanks are stabilized by vegetation rather than substrate then it is likely that the vegetation provides shade which helps prevent increases in temperature. The *change in peak/base flows* indicator evaluates flows and flow timing characteristics relative to what would be expected in an undisturbed watershed. If base flow has been reduced, it is likely that water temperature during base flow has increased since the amount of water to heat has decreased. The *road density and location* indicator documents where roads are located. If roads are located adjacent to a stream then shade is reduced and temperature is likely increased. The *disturbance history* indicator describes how much of the watershed has been altered by vegetation management and therefore indicates how much shade has been removed. The *riparian conservation areas* indicator addresses stream shade which keeps stream temperatures cool.

Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount (e.g., less than 12 percent) of fine substrate less than 0.85 mm (0.03 in.) in diameter and minimal embeddedness of these fines in larger substrates are characteristic of these conditions.

The *sediment* and *substrate embeddedness* indicators directly address this PCE. These indicators evaluate the percent fines within spawning areas and the percent embeddedness within rearing areas. The *streambank condition* and *riparian conservation areas* indicators indirectly address this PCE by documenting the presence or lack of potential fine sediment sources. If streambanks are stable and riparian conservation areas are intact then there is a low risk of introducing fine sediment from bank erosion. Also, the *floodplain connectivity* indicator indirectly addresses this PCE. If the stream channel is connected to its floodplain, then there is less risk of bank erosion during high flows because stream energy is reduced as water spreads across the floodplain. The *increase in drainage network* and *road density and location* indicators assess the effects of roads

on the channel network and hydrology. If the drainage network has significantly increased as a result of human-caused disturbance or road density is high within a watershed and roads are located adjacent to streams, then it is likely that in-channel fine sediment levels will be elevated above natural levels. The *disturbance regime* indicator documents the nature of environmental disturbance within the watershed. If the disturbance regime includes frequent and unpredictable scour events, debris torrents, and catastrophic fire, then it is likely that fine sediment levels will be elevated above background levels.

A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.

The *change in peak/base flows* indicator addresses this PCE directly by documenting the condition of the watershed hydrograph relative to an undisturbed watershed of similar size, geology, and geography. There are several indicators that address this PCE indirectly. The *streambank condition* indicator documents bank stability. If the streambanks are stabilized by vegetation rather than substrate then it is likely that the streambank can act as a sponge that holds water during moist periods and releases that water during dry periods which contributes to water quality and quantity. The *floodplain connectivity* indicator is relevant to water storage within the floodplain which directly affects base flow. Floodplains are important to maintaining the water table and providing connectivity to the channel for springs, seeps, and groundwater sources which contribute to water quality and quantity. The *increase in drainage network and road density and location* indicators assess the influence of the road and trail networks on hydrology. If there is an increase in drainage network and roads are located in riparian areas, it is likely is being intercepted and quickly routed to a stream which can increase peak flow. The *disturbance history* indicator evaluates disturbance across the watershed and provides a picture of how management may be affecting hydrology. The *riparian conservation areas* indicator determines whether riparian areas are intact and providing connectivity. If riparian areas are intact it is much more likely that springs, seeps, and groundwater sources are able to positively affect water quality and quantity.

Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

The *temperature and chemical contamination/nutrients* indicators directly address water quality by comparing water temperatures to bull trout water temperature requirements, and documenting 303(d) designated stream reaches. Several other indicators indirectly address this PCE by evaluating the risk of fine sediment being introduced that would result in decreased water quality through increased turbidity. The *streambank condition* and *riparian conservation areas* indicators indirectly address this PCE by documenting the presence or lack of potential fine sediment sources. If streambanks are stable and riparian conservation areas are intact then there is a low risk of introducing fine sediment from bank erosion. Also, the *floodplain connectivity* indicator indirectly addresses this PCE. If the stream channel is connected to its floodplain, then there is less risk of bank erosion during high flows because stream energy is reduced as water spreads across the floodplain. The *increase in drainage network and road density and location* indicators assess the effects of roads on the channel network and hydrology. If the drainage network has significantly increased as a result of human-caused disturbance or road density is high within a watershed and roads are located adjacent to streams, then it is likely that suspended fine sediment levels will be elevated above natural levels. The *disturbance regime* indicator documents the nature of environmental disturbance within the watershed. If the disturbance regime includes frequent and unpredictable scour events, debris torrents, and catastrophic fire, then it is likely that turbidity levels will be elevated above background levels.

Few or no nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass; inbreeding (e.g., brook trout); or competitive (e.g., brown trout) species present.

The only indicator that addresses this PCE is the *persistence and genetic integrity* indicator. This indicator addresses the probability of hybridization or displacement of bull trout by competitive species.

## **Crosswalk Between IAP Monitoring Indicators and Bull Trout Critical Habitat Primary Constituent Elements**

The most effective way to evaluate the impact an activity will have on critical habitat is to analyze the effects that the activity will have on the primary constituent elements (PCEs) of the critical habitat. The effects of Idaho BLM livestock grazing activities in the Salmon and Challis field offices will largely be evaluated using the September 30, 2009 Interagency Protocol for Endangered Species Act Section 7 Consultations for Livestock Grazing (IAP). The IAP incorporates five monitoring indicators to address the PCEs for designated critical habitat for salmon and steelhead. The five indicators are water temperature, substrate, greenline to greenline width, streambank stability, and greenline vegetation. These same indicators can be used to address several of the PCEs for designated critical habitat for bull trout.

Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.

This PCE is addressed indirectly by the *water temperature*, *substrate*, *streambank stability*, and *greenline vegetation* indicators. The link between water temperature and this PCE is fairly strong, but overall these indicators do not provide specific information regarding springs, seeps, groundwater sources, and subsurface water connectivity.

Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.

This PCE is addressed indirectly by the *water temperature* and *substrate* indicators. The *water temperature* indicator addresses the water quality aspect of this PCE fairly well, because water temperature is likely the most important aspect of water quality associated with these streams given the lack of development in these areas. The physical and biological aspects of this PCE are not addressed as well. The *substrate* indicator provides a basis for determining if bull trout fry will have difficulty emerging from the gravel to access rearing habitat, but none of the indicators provide information regarding biological impediments.

An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

This PCE is addressed indirectly by the *substrate* and *greenline vegetation* indicators. There is a tight link between substrate and aquatic macroinvertebrates and a tight link between greenline vegetation and terrestrial macroinvertebrates. The *substrate* indicator documents the extent to which substrate interstitial spaces are filled with fine sediment. Interstitial spaces provide important habitat for aquatic macroinvertebrates and sculpin which are important food sources for bull trout. Greenline vegetation provides important habitat for individual macroinvertebrates. Vegetation hanging over the stream provides a surface for terrestrial and aquatic insects to perch and ultimately results in insects falling into the stream and becoming bull trout food.

Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.

Habitat complexity is directly addressed by the *substrate* and *greenline vegetation* indicators, and is indirectly addressed by *greenline to greenline width* and *streambank stability*. The *substrate* indicator provides insight into how complex substrates are within a stream by documenting substrate composition. As percent fines increase, substrate complexity decreases. The *greenline vegetation* indicator sheds light on the complexity of stream shorelines. Vegetation along streambanks provides important habitat complexity and channel roughness. However, complexity from in-channel large wood and side channels is not addressed by any of the indicators.

Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shade, such as that provided by riparian habitat; and local groundwater influence.

The *water temperature* indicator directly addresses this PCE by documenting water temperature throughout the year. The *greenline to greenline width* and *greenline vegetation* indicators indirectly address this PCE by providing information on water surface exposure to solar radiation. Overall, the IAP indicators do an excellent job evaluating this PCE.

Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount (e.g., less than 12 percent) of fine substrate less than 0.85 mm (0.03 in.) in diameter and minimal embeddedness of these fines in larger substrates are characteristic of these conditions.

The *substrate* indicator directly addresses this PCE by documenting the size and composition of the substrate present. The *streambank stability* indicator indirectly addresses this PCE by documenting likely sources of fine sediment associated with stream bank erosion. Overall, these indicators do an excellent job evaluating this PCE.

A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.

None of the IAP indicators directly address this PCE. The *water temperature* and *greenline vegetation* indicators provide information on the sufficiency of base flows. Overall, these indicators do a poor job evaluating this PCE.

Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

The *water temperature* indicator directly addresses the water temperature aspect of water quality. The *greenline vegetation* and *greenline to greenline width* indicators indirectly address water temperature by providing information on water surface exposure to solar radiation. These indicators do an okay job addressing the water quality aspect of this PCE because water temperature is likely the most important aspect of water quality associated with these streams given the lack of development in these areas. However, water quantity is not addressed by the available indicators.

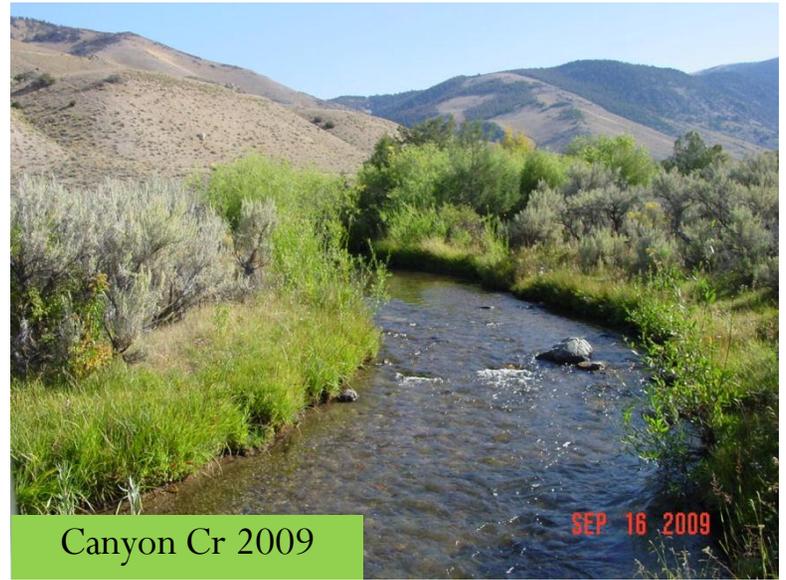
Few or no nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass; inbreeding (e.g., brook trout); or competitive (e.g., brown trout) species present.

## APPENDIX 3: DMA PHOTOGRAPHS

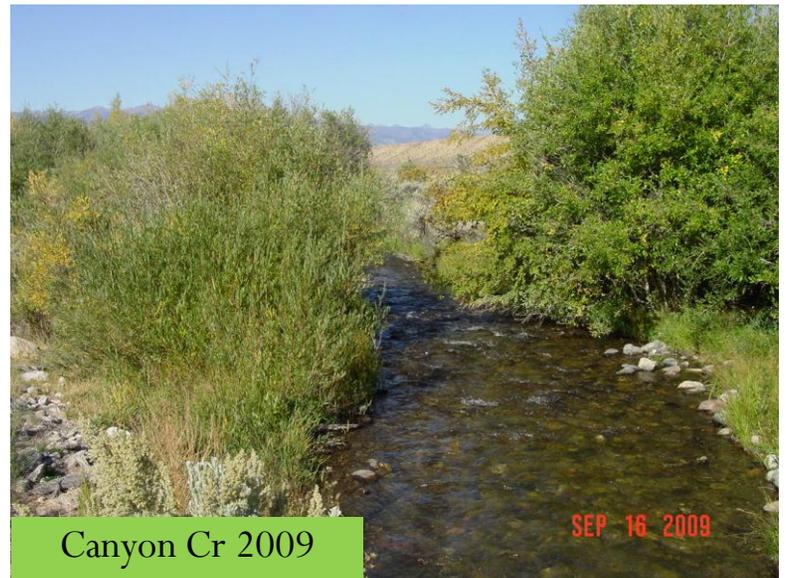
# Leadville Allotment



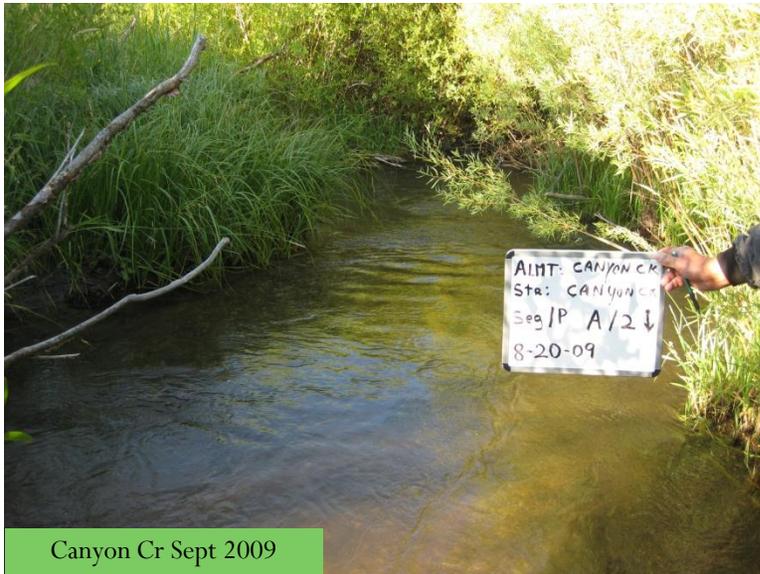
SAME



SAME



# Leadville Allotment

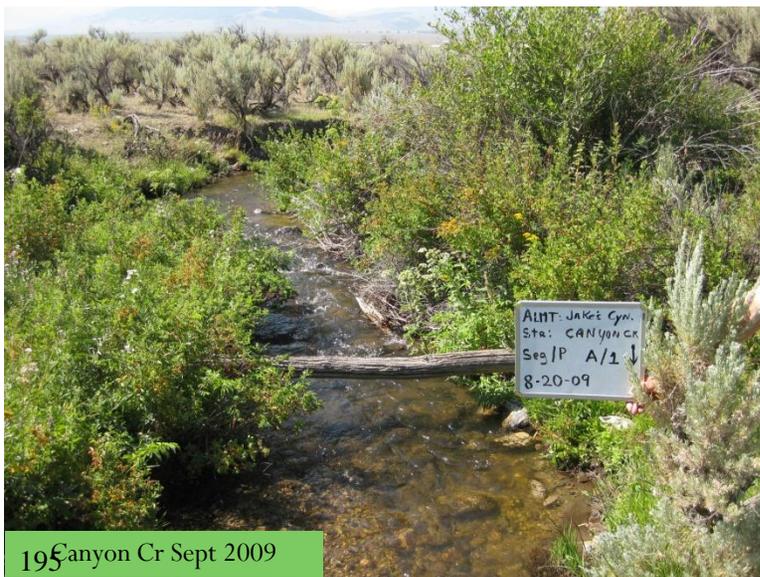


Canyon Cr Sept 2009

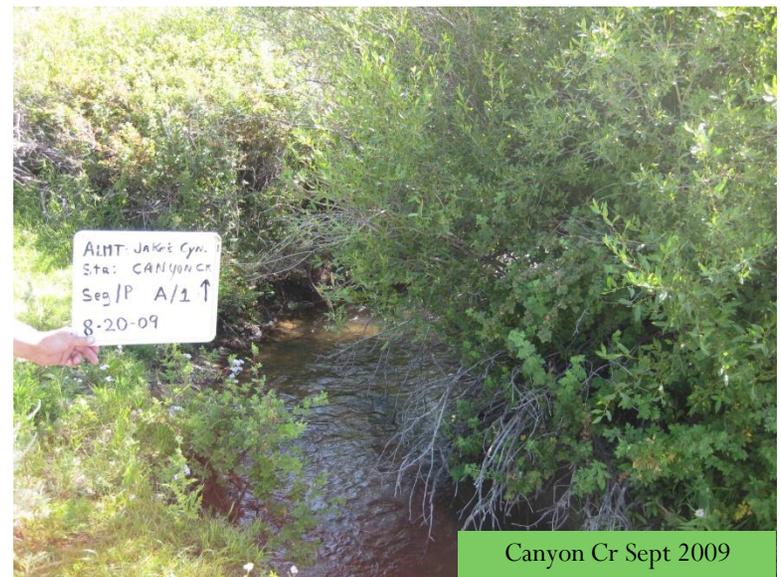


Canyon Cr Sept 2009

# Jakes Canyon Allotment



19 Canyon Cr Sept 2009



Canyon Cr Sept 2009

# Center Ridge Allotment - A Pasture



18mile EC-06  
DMA Oct 2010



18mile EC-06  
DMA Oct 2010



196 18mile Center Ridge A



18mile Center Ridge A

# Hawley Cr Allotment



# Hawley Cr Allotment



18mile Cr Oct 2006



18mile Cr Sept 2009

# Tex Cr Allotment



198 18mile Cr Aug 2009



18mile Cr Aug 2009

# Powderhorn Allotment



Clear Cr  
CL-01  
DMA  
Sept  
2009



Clear Cr  
CL-02  
DMA  
Sept  
2010



# Powderhorn Allotment



Upper  
Clear  
Creek



# Powderhorn Allotment

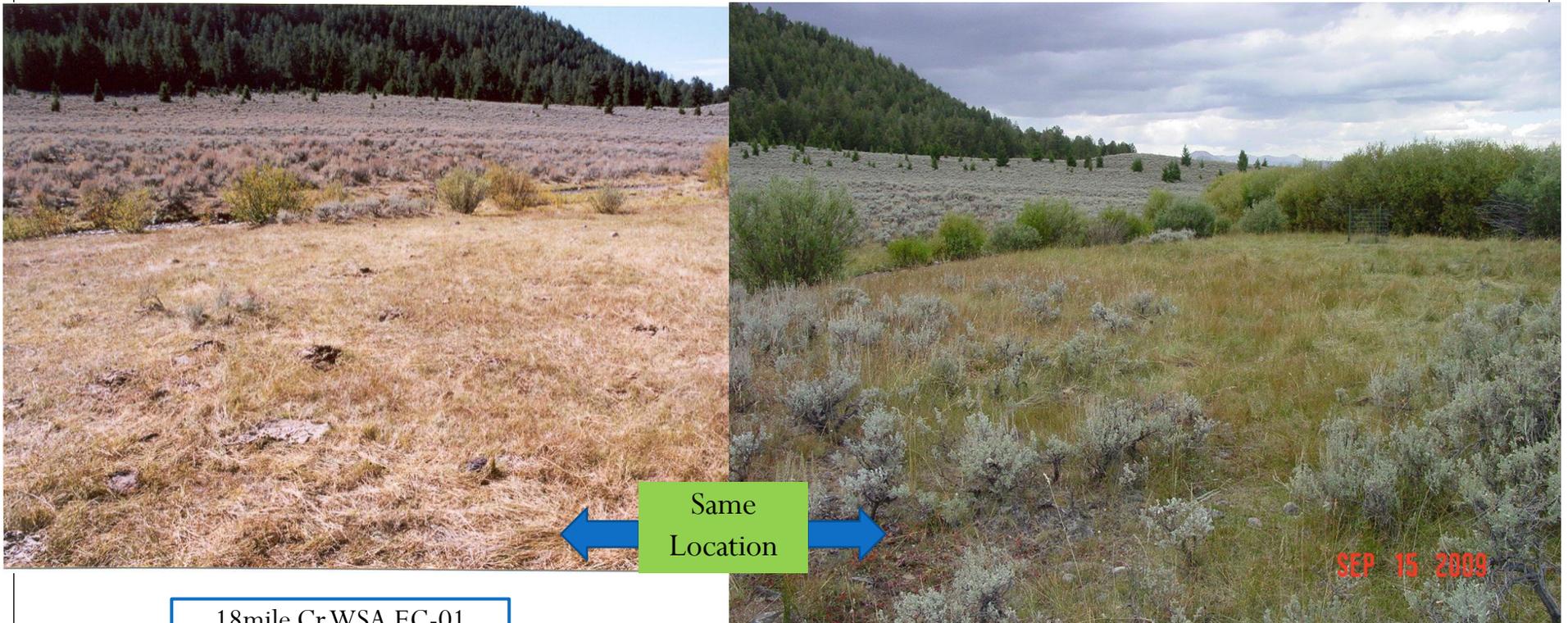


Upper  
Clear  
Creek



201 13 Sept 2006

# Chamberlain Cr Allotment



18mile Cr WSA EC-01  
DMA Sept 2001

18mile Cr WSA EC-01  
DMA Sept 2009

# Chamberlain Cr Allotment



Pass Cr Oct 2006



Pass Cr Sept 2009

SEP 22 2009



Pass Cr DMA Sept 2010



Pass Cr Sept 2009

SEP 22 2009

# Nez Perce Allotment

Above Texas Cr DMA



July 2008 DMA Overview



Upper  
Texas  
Creek

Above Texas Cr DMA



Headwaters Reach of Texas Cr



# Timber Creek Allotment

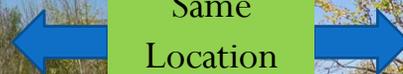


Lower Big Timber Cr  
DMA Oct 2002

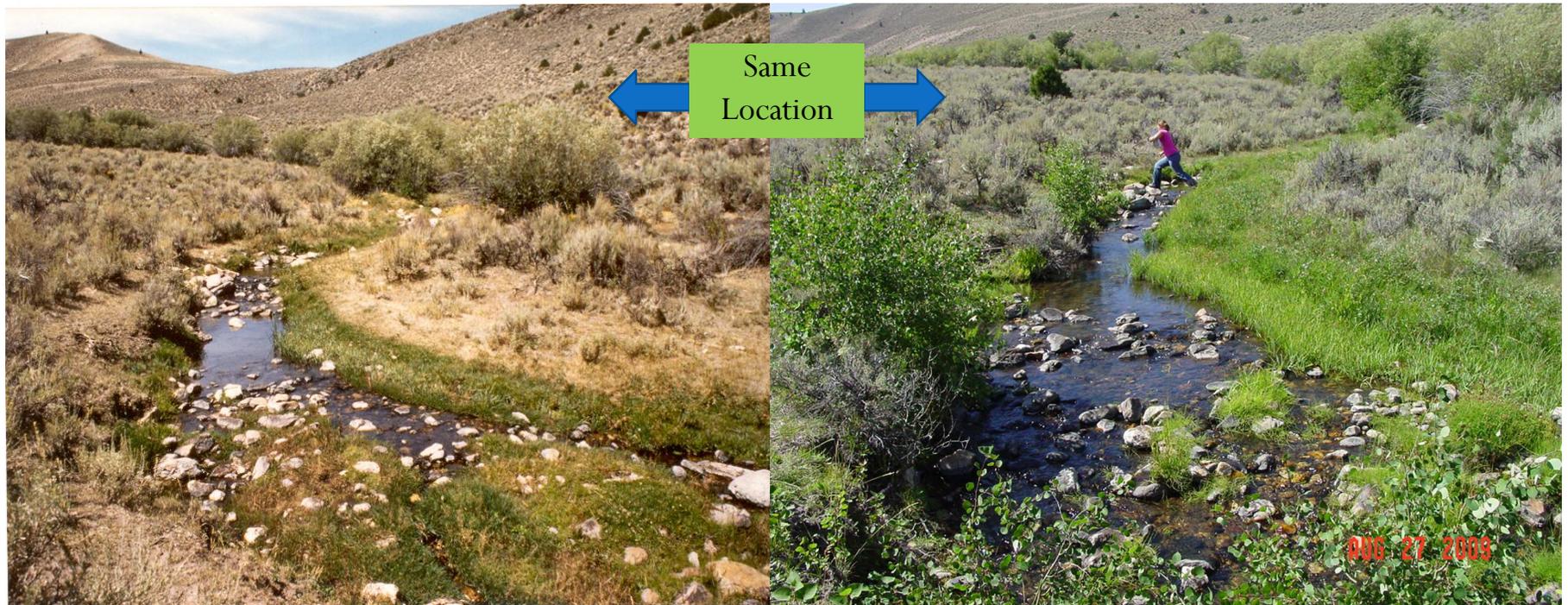


Lower Big Timber Cr  
DMA Oct 2008

Same  
Location



# Timber Creek Allotment



Swan Basin Creek  
DMA Oct 1994

Swan Basin Creek  
DMA Aug 2009

# Leadore Allotment

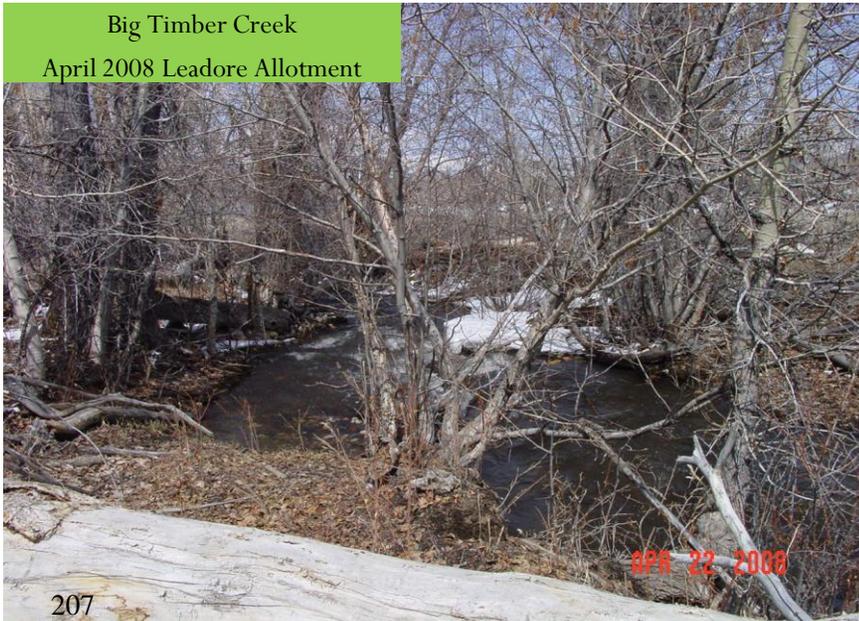
Big Timber Creek  
June 2006 Leadore Allotment



Big Timber Creek  
April 2008 Leadore Allotment



Big Timber Creek  
April 2008 Leadore Allotment



Big Timber Creek  
April 2008 Leadore Allotment



# Timber Creek Allotment



BLM  
Upper  
Big  
Timber  
Cr  
Aug 2009



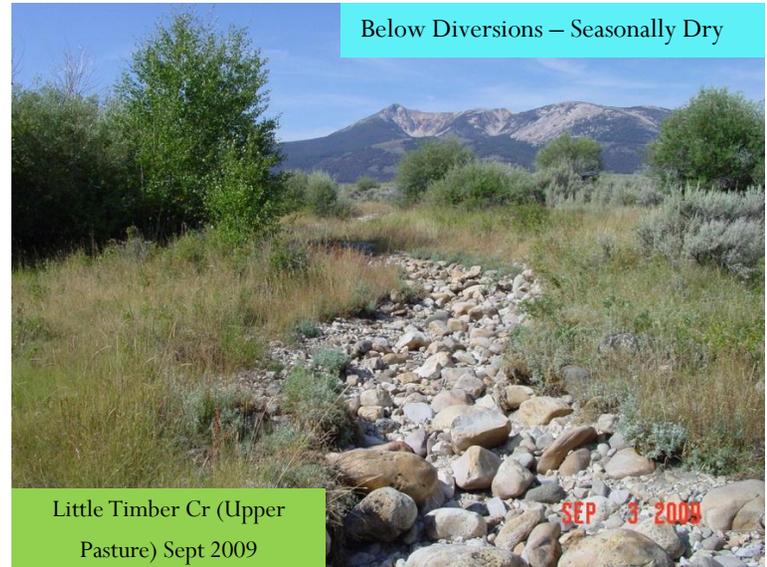
# Timber Creek Allotment

Above Diversion



Little Timber Cr (Upper Pasture) Sept 2009

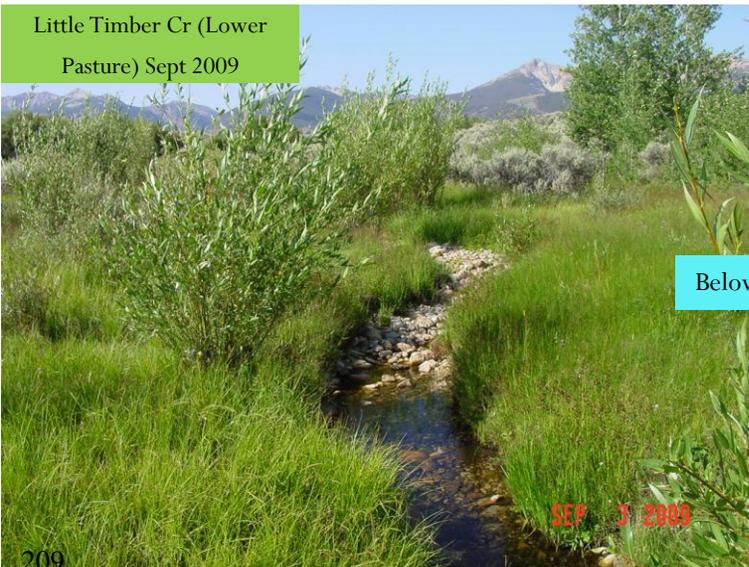
Below Diversions – Seasonally Dry



Little Timber Cr (Upper Pasture) Sept 2009

# Leadore Hill Allotment

Little Timber Cr (Lower Pasture) Sept 2009



Below Diversions – Seasonally Dry

Little Timber Cr (Lower Pasture) Sept 2009

