

**U.S. Department of the Interior
Bureau of Land Management**

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**Missoula Field Office
21 Grazing Lease Renewals**

*Location: Public lands administered by the Missoula Field Office in
Granite, Missoula and Powell counties.*

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CHAPTER 1

INTRODUCTION FOR PURPOSE AND NEED FOR THE PROPOSED ACTION

INTRODUCTION

The Bureau of Land Management (BLM) proposes to renew 21 grazing leases located in Granite, Missoula and Powell counties (see Map 1 and Appendix A for location and legal descriptions). Appendix B contains an option comparison of term grazing leases with terms and conditions under the No Action & Proposed Action Alternatives. Three of the twenty-one grazing allotments operate under an established Allotment Management Plan (AMP).

PURPOSE AND NEED FOR THE PROPOSED ACTION

The current lessees have applied for renewal of the subject grazing leases on lands administered by BLM, including an application for an available allotment and a requested merger of two allotments. These lands remain available for grazing use in accordance with the *Garnet Resource Management Plan (RMP) Environmental Impact Statement (1986)*, as amended. Title 43 Code of Federal Regulations (CFR) 4130.2 states, in part, that grazing leases shall be issued to qualified applicants for public lands designated as available for livestock grazing through land use plans. Title 43 CFR 4110.2-4 states, in part, the authorized officer may combine allotments when necessary for the proper and efficient management of public lands. Current lessees meet all requirements to hold respective grazing leases, as outlined in 43 CFR 4110.1.

This Environmental Assessment (EA) incorporates Range Program Guidance for Resource Condition and Use Objectives as identified in the Garnet RMP (1986):

- 1) Maintain, or where practical, enhance site productivity on all public land available for livestock grazing.
- 2) Provide a level of livestock grazing commensurate with resource objectives.

BLM also must comply with the *United States Fish and Wildlife Service's (Service) Biological Opinion*, issued October 12, 2006 (USFWS, 2006), and formal Section 7 consultation under the *Endangered Species Act of 1973*. The Biological Opinion requires BLM to implement reasonable and prudent measures to minimize adverse effects to grizzly bears within the action area. Therefore, specific terms and conditions are required on all new and revised Missoula Field Office grazing leases issued for lands located north of Interstate 90.

CONFORMANCE WITH BLM LAND USE PLAN(S)

In accordance with 43 CFR 1610.5, the Proposed Action is subject to and conforms with the *Record of Decision for the Garnet Resource Area Resource Management Plan RMP/EIS (1986)*, as amended.

RELATIONSHIPS TO STATUTES, REGULATIONS AND OTHER PLANS

Other applicable decisions, guidance and planning for these lands include: *Taylor Grazing Act of 1934* as amended and supplemented; *Federal Land Policy and Management Act of 1976*; *Public Rangelands Improvement Act of 1978*; *43 CFR Parts 4100, Grazing Administration Exclusive of Alaska*; *Montana/Dakotas Standards for Rangeland Health and Guidelines for Livestock Management (1997)*.

The proposed action fully complies with the BLM Interim Bull Trout Conservation Strategy (IBTCS) (USDI 1995), and the Biological Opinion for the Effects to Bull Trout from Continued Implementation of Land and Resource Management Plans (USDI 1998). The proposed action was determined to have “No Effect” to the threatened bull trout or to designated bull trout critical habitat.

CHAPTER 2 DESCRIPTION OF ALTERNATIVES

INTRODUCTION

Two management alternatives are assessed in this document, the Proposed Action and No Action alternatives. The No Grazing alternative was considered but eliminated from further analysis. The No Action alternative is considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action.

NO ACTION ALTERNATIVE

The No Action alternative would renew ten-year grazing leases for twenty-one (21) grazing allotments with terms and conditions, as listed under the expiring grazing leases. Under this alternative, livestock management would continue as previously authorized. See Appendix B for seasons of use, numbers and types of livestock, Animal Unit Months (AUMs), and allotment-specific terms and conditions under No Action. The majority of these existing grazing leases do not contain terms or conditions governing the protection of rangeland health standards. Some expiring grazing leases do not fully address specific grazing management guidelines, allowable use levels, or other stipulations guiding the operation of the lease.

PROPOSED ACTION ALTERNATIVE

The Proposed Action is to transfer one grazing lease and renew twenty-one (21) ten-year grazing leases with new and/or revised terms and conditions. The Proposed Action would modify two existing Allotment Management Plans (AMPs) for the Stewart Lake and Upper Smart Creek allotments. The Marcum Mountain AMP would be terminated and scheduled under a two pasture rotation grazing system. The Carpenter Creek allotment lease will be renewed and grazing preferences transferred to a qualified applicant. Lower Smart Creek & Smart Creek East allotments will be combined into one allotment and season of use will be adjusted to reflect the change in AUMs. The Spring Gulch allotment season of use will be adjusted by fifteen days. The Starvation allotment season of use and livestock option will remain the same. Detailed

actions for all the allotments are listed below Table 2.1. See Appendix B for seasons of use, numbers and types of livestock, Animal Unit Months (AUMs), and allotment-specific terms and conditions under the Proposed Action alternative. Term and Condition descriptions are listed below Table 2.8 (page 7).

Table 2.1 Terms and Conditions applicable to allotments with the Proposed Action alternative.

Allotment Name	Forest Service AMP	Resource Mgmt.	Administrative	Riparian	Grizzly Bear
BCP		•	•	•	•
Blackfoot City		•	•	•	•
Carpenter Creek		•	•		•
Copper Creek		•	•	•	
Eye Brow		•	•		
King Mountain		•	•	•	•
Lower Smart Creek		•	•	•	
Lower Willow Creek		•	•		
Marcum Mountain		•	•	•	•
Mulkey Gulch		•	•		•
Mullan Road		•	•	•	
Pinegrass		•	•	•	
Ravenna		•	•	•	
Smart Creek East ¹					
Spring Gulch		•	•		•
Starvation		•	•		•
Stewart Lake	•		•		
Sunrise Eleven		•	•	•	
Ten Mile		•	•	•	•
Tigh Creek		•	•		
Upper Smart Creek	•		•		
Wyman		•	•		

¹ Smart Creek East allotment would be consolidated with Lower Smart Creek.

BLM/Forest Service AMPs

Stewart Lake Allotment:

The BLM Stewart Lake allotment (17320) will remain with the Pintler Ranger District’s Stewart-Gold Allotment Management Plan (AMP). The Stewart-Gold AMP operates under a four pasture rest, rotation system. See Table 2.2 for term grazing permit.

Table 2.2 U.S. Forest Service Grazing Term Permit

Term Permit		
Livestock Number & Kind	Season Term	AUMs
200 cattle	06/26 – 09/10	677

Note: An additional 110 cattle are authorized under the Stewart Lake BLM lease. Actual livestock move dates are based on forage utilization levels or criteria listed in the Deerlodge Riparian Mitigation Measures in the identified key areas for each pasture or on other resource conditions as may be listed in the Annual Operating Instructions.

Remain with current Forest Service AMP terms and conditions:

- No salt will be placed along or near any stream or water sources. Salt should be placed in areas of good forage but away from areas where livestock tend to naturally concentrate. Salt should not be placed directly in any grassland but instead be located along the edges. No more than two salt blocks will be placed in any area during the grazing season. Once salt has been used up, another area will be used for salting.
- It is the lessee’s responsibility to ensure cattle are well distributed throughout the pasture or area being used.
- Lessee will assure livestock are kept in appropriate pasture scheduled for use.
- All structural range improvements in each pasture must be properly maintained prior to livestock entering that pasture. During periods of non use lessee will still provide necessary maintenance for the improvements.
- Forage utilization for key forage species in early to mid-summer use will be limited to 45-50%. Utilization of key forage species in late use pastures will be limited 50-55%.

Remain with current BLM grazing lease and season of use to allow flexibility with Forest Service AMP:

Table 2.3 BLM Grazing Lease

Allotment Name & Number	Livestock Number & Kind	Season of Use	Public AUMs
Stewart Lake #17320	110 Cattle	06/01 – 10/15	177

Remain with current BLM terms and conditions as follows:

- Authorized in accordance with the Stewart Lake AMP approved.

Add the following terms and conditions to BLM lease:

- In accordance with Title 43 CFR 4130.3-1(b), “All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of the permit or lease.”
- The authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices do not conform to the provisions of Title 43 CFR 4180.

Upper Smart Creek Allotment:

The BLM Upper Smart Creek allotment (17311) will remain with the Pintler Ranger District’s Ham Gulch AMP. The Ham Gulch AMP operates under a two pasture deferred rotation system. See Table 2.4 for term grazing permit.

Table 2.4 U.S. Forest Service Term Permit

Term Permit		
Livestock Number & Kind	Season Term	AUMs
137 cattle	06/21 – 09/30	615

Note: An additional 11 cattle are authorized under the Upper Smart Creek BLM lease and an additional 3 cattle are authorized under a Term Private Land Grazing Permit with the Forest. Actual livestock move dates are based on forage utilization levels in the identified key areas for each pasture or on other resource conditions as may be listed in the Annual Operating Instructions.

Remain with current Forest Service AMP terms and conditions as follows:

- No salt will be placed along or near any stream or water sources. Salt should be placed in areas of good forage but away from areas where livestock tend to naturally concentrate. There will be no salting within ¼ mile of water sources unless approved in the Annual Operating Plan.
- It is the lessee’s responsibility to ensure cattle are well distributed throughout the pasture or area being used.
- All structural range improvements in each pasture must be properly maintained prior to livestock entering that pasture. During periods of non use lessee will still provide necessary maintenance for the improvements.
- Forage utilization for key forage species in early to mid-summer use will be limited to 45-50% by weight. Utilization of key forage species in late use pastures will be limited to 50-55% by weight.

Remain with current BLM grazing lease and season of use to allow flexibility with Forest Service AMP:

Table 2.5 BLM Grazing Lease

Allotment Name & Number	Livestock Number & Kind	Season of Use	Public AUMs
Upper Smart Creek #17311	11 Cattle	06/15 – 10/14	44

Note: Upper Smart Creek allotment is used in conjunction with Forest Service Ham Gulch AMP.

Add the following terms and conditions to BLM lease:

- In accordance with Title 43 CFR 4130.3-1(b), “All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of the permit or lease.”
- The authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices do not conform to the provisions of Title 43 CFR 4180.

BLM AMP

Marcum Mountain Allotment:

- Terminate the Marcum Mountain Allotment Management Plan, revised October 15, 1975.
- Remain with current start/end dates and modify grazing schedule from a 3-pasture deferred rotation system to a 2-pasture deferred rotation.
- Pasture Rotation Schedule as follows in Table 2.6:

Table 2.6 Marcum Mountain Pasture Rotation

Even Years		Odd Years	
Pasture	Season of Use	Pasture	Season of Use
North	06/15 – 08/07	North	08/08 – 09/30
South	08/08 – 09/30	South	06/15 – 08/07

Allotment Base Lease Transfer

Carpenter Creek Allotment:

- Transfer grazing preference to qualified applicant through base property lease agreement.
- The term of this grazing lease will run from 03/01/2012 to 02/28/2015. Provided that current monitoring information indicates that range conditions are in conformance with 43 CFR 4180, the grazing lease may be renewed upon renewal of the base property lease through 02/28/2022.

Allotment Consolidation

Lower Smart Creek / Smart Creek East Allotments:

- Consolidate the Lower Smart Creek and Smart Creek East allotments and reassign base property as listed under the original Lower Smart Creek allotment. Season of use will be adjusted from 06/15 – 10/14 to 06/15 – 10/15. The twenty five AUMs assigned under the Smart Creek East allotment shall be applied to the Lower Smart Creek Grazing lease. See Table 2.7 for adjusted grazing lease.
- Grazing lessee shall enter into a cooperative range improvement agreement for maintenance responsibility for all range improvements currently listed under both allotments.

Table 2.7 Lower Smart Creek Grazing Lease

Livestock Number & Kind	Season of Use	Public AUMs
31 Cattle	06/15 – 10/15	125

Season of Use Adjustment

Spring Gulch Allotment:

- Adjust season of use from June 16th through October 15th to June 1st through September 30th. Active AUMs shall remain at 64 AUMs for the allotment. (Note: In some years, livestock turnout has occurred well before June 16th under the No Action alternative.)
- Grazing lessee shall enter into a cooperative range improvement agreement for maintenance responsibility of two existing barb wire fences located at T11N, R13W, Section 10 (east, west and south boundaries) and Section 22, NE1/4NE1/4.

Starvation Allotment:

- Remain with current season of use and livestock option as analyzed in EA #MT100-2006-0023. Livestock option and season of use is listed in Table 2.8 below:

Table 2.8 Season of Use and Livestock Option

Livestock Number & Kind	Season of Use	Public AUMS
2 Horses	5/15 – 10/30	11
or		
1 cattle	5/15 – 10/30	11

Resource Terms and Conditions:

The following terms and conditions apply to all renewing allotment grazing leases except for Stewart Lake and Upper Smart Creek allotments:

- Browse on woody plants shall not exceed 50% of available annual leader growth.
- Utilization of upland forage shall not exceed 50% by weight on key grass species.
- Lessee shall maintain all range improvements to ensure functionality.
- If one or more grazing use terms are met or exceeded, livestock shall be moved to the next pasture of rotation. If any grazing use term is met or exceeded while in the last pasture of rotation, livestock shall be removed from public land for the remainder of the grazing season.
- The authorized officer may delay livestock spring turn-out because of weather, to prevent compaction of wet soils and to adjust for lack of plant growth or for the protection of other rangeland resources and values, consistent with the objectives of applicable land use plans.
- Salt shall be placed at least ¼ mile from water. Salt shall not be placed on any of the main traveled roads and not within ¼ mile of new harvest areas or new tree plantation areas. Salt will be placed ¼ mile from known populations of Special Status plant species to minimize impacts associated with grazing (i.e., trampling).

Administrative Terms and Conditions:

- Lessees shall provide reasonable administrative access across private and leased lands to the Bureau of Land Management for the orderly management and protection of public lands.
- In accordance with Title 43 CFR 4130.3-1(b), “All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of the permit or lease.”
- The authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices do not conform to the provisions of Title 43 CFR 4180.

Riparian Resource Terms and Conditions:

For those allotments containing aquatic and/or riparian resources (BCP, Blackfoot City, Copper Creek, King Mountain, Lower Smart Creek, Marcum Mountain, Mullan Road, Pinegrass, Ravenna, Ten Mile, Sunrise Eleven, Upper Smart Creek), the following terms and conditions shall also apply:

- Retain a minimum of 4” stubble height on riparian key species (e.g. Carex).
- Stream bank alteration shall be limited to the 25% or less category, as measured by the Multiple Indicator Monitoring method (Burton and others, 2010).

Grizzly Bear Terms and Conditions:

For those allotments located north of Interstate 90 (BCP, Blackfoot City, Carpenter Creek, King Mountain, Marcum Mountain, Mulkey Gulch, Spring Gulch, Starvation, Ten Mile), the

following mandatory terms and conditions shall also apply pursuant to the Service's Biological Opinion issued October 12, 2006:

- The lessee is required to notify the BLM, as soon as is practical, of any grizzly bear depredation on livestock or conflicts between grizzly bears and livestock, even if the conflict does not result in the loss of livestock. The BLM will coordinate with Montana Fish, Wildlife and Parks and United States Department of Agriculture, Animal, Plant Health Inspection Service (USDA APHIS), Wildlife Service's personnel to determine the appropriate action.
- The lessee is required to properly treat or dispose of livestock carcasses to eliminate any potential attractant for bears. The lessee should contact the Missoula Office of Montana Fish, Wildlife and Parks (FWP (406) 542-5500) as needed for carcass disposal assistance.

ALTERNATIVE CONSIDERED AND ELIMINATED

The No Grazing alternative for these public lands was considered but eliminated from further analysis. Closing these areas to grazing would not meet the purpose and need for the proposed action.

The elimination of livestock grazing was not analyzed in detail further because resource conditions on the allotments including upland vegetation, watershed, and wildlife habitat as reflected in land health assessments do not warrant such an alternative. All of the allotments have been assessed for Rangeland Health Standards and eighteen are meeting standards. Of the three not meeting standards, livestock grazing was not a contributing factor for one allotment; subsequent monitoring data indicates a second allotment is making significant progress towards meeting standards; and the Proposed Action alternative in this assessment would address the livestock grazing issue in the third. Additionally, the land ownership pattern in many of these allotments would require extensive fencing to eliminate livestock use from public lands. The extensive fencing would create many new barriers for wildlife movement and contribute to habitat fragmentation.

An alternative that proposes to close these areas to grazing would be inconsistent with the intent of the *Taylor Grazing Act of 1934*, which directs the BLM to provide for livestock use of BLM lands; adequately safeguard grazing privileges; provide for orderly use, improvement, and development of the range; and stabilize the livestock industry dependent upon public range. The *Federal Land Policy and Management Act of 1976* requires that public lands be managed on a "multiple use and sustained yield basis" (FLPMA Section 302(a) and 102(7)) and includes livestock grazing as a principal or major use of these lands. While "multiple use" does not require that all lands be used for livestock grazing, complete removal of livestock grazing on these public lands would be arbitrary and would not meet the principle of multiple use and sustained yield.

The *Record of Decision for the Garnet Resource Area Resource Management Plan RMP/EIS (1986)*, as amended, did consider the "No Grazing" alternative but eliminated it from further detailed study due to technical, legal, and/or other constraints. The Garnet RMP did not identify any issues or conflicts that required complete elimination of grazing within these areas covered

in this EA. Furthermore, livestock grazing is considered to be an appropriate use of these public lands in accordance with 43 CFR 4130.2(a) and to include the Garnet RMP did not close these areas to grazing.

CHAPTER 3

AFFECTED ENVIRONMENT/ENVIRONMENTAL IMPACTS

INTRODUCTION AND GENERAL SETTING

Public lands managed by the Missoula Field Office consist of approximately 150,000 surface acres located in Granite, Powell, and Missoula counties. The 21 grazing allotments considered for lease renewal under the Proposed Action contain a variety of landscape components and represent a cross-section of natural resource features typical of lands administered by the Missoula Field Office. These public lands are predominately forested cover types with interspersed clearings caused by mechanical treatments, wildfire, etc. There are also non-forested habitats including wet meadows and montane parks composed of shrub and grassland communities. The presence of the various plant communities is a function of topography, aspect, soil type, soil fertility, natural disturbances and past use. The open areas are generally rolling south and west slopes, from 5-50 percent, used primarily for livestock and wildlife foraging.

Forest types consist of the Ponderosa Pine Series, Douglas-fir Series, or Sub-alpine Fir Series. These sites may also support lodgepole pine, western larch, and Engelmann spruce. Sagebrush/grass communities comprise a very small portion of BLM lands. Meadows or parks are generally composed of bluebunch wheatgrass, Idaho fescue, rough fescue, Columbia needlegrass, prairie Junegrass, and Sandberg bluegrass. Bitterbrush and ceonothus may also be present. Drainage bottoms and wet meadows produce Kentucky bluegrass, sedges, rushes, redtop and tufted hair grass. Also well represented in drainage bottoms are aspen, cottonwood, alder, willow, hawthorn, mountain maple, serviceberry, and dogwood.

Topography varies from steep mountains to gentle sloping terraces and fans, along with somewhat glaciated valleys. Elevations can range from approximately 7,200 feet to 3,000 feet. The climate west of the Continental Divide is considered a modified north pacific coastal climate type. Temperatures and precipitation will vary with topography and elevation.

Critical Elements of the Human Environment and Other Resources Brought Forward for Analysis

The BLM is required to consider certain critical elements in all EAs. Table 3.1 summarizes how each critical element will be addressed in the EA.

Table 3.1 Critical Elements

CRITICAL ELEMENTS		
Determination	Resource	Rationale for Determination
NI	Air Quality	Does Not Affect
NI	Areas of Critical Environmental Concern	Does Not Affect
PI	Cultural Resources	Analysis Follows
NP	Environmental Justice	Not Applicable
NP	Farmlands (Prime or Unique)	Not Applicable
NP	Floodplains	Not Applicable
PI	Invasive, Non-native Species	Analysis Follows
NI	Native American Religious Concerns	Does Not Affect
PI	Threatened, Endangered or Candidate Plant or Animal Species	Analysis Follows
NP	Wastes (hazardous or solid)	Not Applicable
PI	Water Quality (drinking/ground)	Analysis Follows
PI	Wetlands/Riparian Zones	Analysis Follows
NP	Wild and Scenic Rivers	Not Applicable
NP	Wilderness	Not Applicable

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present and may be impacted to some degree. Will be analyzed in affected environment and environmental impacts section. *(NOTE: PI does not mean impacts are likely to be significant in any way).*

Aquatic Habitat and Fisheries

Affected Environment

Table 3.2 Overview of Native Fish Presence on Allotments Proposed for Renewal¹

Allotment	Streams	Native Fish Species		Allotment	Streams	Native Fish Species
BCP	Cramer Ck.	WCT, SC		Pinegrass	Intermittent channels	NFP
Blackfoot City	Ophir Ck, Carpenter Ck.	WCT		Ravenna	Clark Fk. River	WCT, BT
Carpenter Creek	No aquatic habitats	NFP		Spring Gulch	Intermittent channels	NFP
Copper Creek	Copper Ck, Silver Ck	WCT		Starvation	No aquatic habitats	NFP
Eye Brow	No aquatic habitats	NFP		Stewart Lake	Stewart Gulch Brown Gulch	NFP
King Mountain	Edwards Gulch	NFP		Sunrise Eleven	Gaylord Gulch	NFP
Lower Smart Creek	Smart Ck.	WCT		Ten Mile	Tenmile Ck.	NFP
Lower Willow Creek	No aquatic habitats	NFP		Tigh Creek	No aquatic habitats	NFP
Marcum Mountain	Unnamed 1 st and 2 nd order tributaries to Arrastra Ck.	WCT		Upper Smart Creek	Intermittent channels	NFP
Mulkey Gulch	Intermittent channels	NFP		Wyman Ridge	Pickett Gulch	NFP
Mullan Road	Clark Fk. River	WCT, BT, LS				

¹Fish presence information derived from field surveys.

WCT=westslope cutthroat trout; BT=bull trout; SC=sculpin; LS=longnose sucker; NFP=no fish present.

Fish Species and Habitat Conditions in Allotment Streams

The following allotments will not be discussed because they contain no aquatic habitats or have no surface hydrologic connection to fishbearing waters: Carpenter Creek, Eyebrow, King Mountain, Lower Willow Creek, Mulkey Gulch, Pinegrass, Spring Gulch, Starvation, Tenmile, Tigh Creek, Stewart Lake, Sunrise Eleven, Upper Smart Creek and Wyman Ridge.

Allotments containing fishbearing streams where cattle are permanently excluded from stream channels by enclosure fences will also not be discussed in detail because proposed lease renewals would have no effect on the channel or fishes. These are the Lower Smart Creek and Bonita-Clinton-Potomac Allotments.

Blackfoot City Allotment: Carpenter Creek and Ophir Creek

Carpenter Creek is a tributary to the Little Blackfoot River. It has been subjected to substantial historic placer mining. Within the segment flowing through the Blackfoot City allotment,

Carpenter Creek was hydraulically mined and was altered by blasting, tunneling, and dredging (Phillips and Humphry 1987). Within the allotment, the stream supports a small population of westslope cutthroat trout (Lindstrom 2008). Although habitat conditions for fish in the Carpenter Creek channel are severely degraded due to mining, the presence of historic dredge piles have largely armored streambanks and prevented access by livestock. As a result, grazing had little, if any influence, on aquatic habitat and fish in Carpenter Creek. A notable exception is found in Section 29, where a wider valley bottom and absence of dredge tailings permitted livestock access to the stream channel. In this section, substantial evidence of livestock-related hoof-shear and bank destabilization as well as heavy late-season utilization of streamside grasses and sedges exists.

Ophir Creek is a tributary to Carpenter Creek, which empties into the Little Blackfoot River. The segment of Ophir Creek flowing through the Blackfoot City allotment was subjected to historic placer mining and is now severely constricted between tailing piles and miner-built rock walls. Despite the historic mining disturbance, riparian and streamside vegetation is abundant, dominated by willow, dogwood, and cottonwood with a conifer overstory. Deep pools are numerous. Westslope cutthroat trout are found throughout the reach although fish populations are dominated by exotics (brown and brook trout). In the allotment, livestock grazing has not substantially affected riparian or aquatic habitat conditions. The presence of large rock and tailing piles has apparently restricted livestock access and armored streambanks against livestock-related disturbance.

Copper Creek Allotment: Copper Creek and Silver Creek

Copper Creek is a tributary of South Fork Lower Willow Creek, located in the Flint Creek basin. Within the allotment, westslope cutthroat trout are abundant (Lindstrom 2008). Copper Creek is bordered by steep, conifer- and talus-dominated slopes. Aquatic habitats are predominately small lateral, plunge, and dam pools interspersed by steps and short riffles. Large amounts of woody debris add complexity to the channel, retain finer gravels, and create complex dam and plunge pools. The majority of the channel is bordered by steep hillslopes with abundant rock and large woody debris. The steeper topography combined with the abundance of large down wood has largely restricted livestock access to the stream channel in many areas; however, wherever topography permits, livestock utilization of streamside shrubs has reduced woody vegetation, particularly willow and alder. In these areas, there is evidence of hoof-shear and streambank alteration. Areas accessible by livestock represent a small percentage of available habitats and the majority of Copper Creek is characterized by stable banks and abundant streamside vegetation.

Silver Creek is a tributary of South Fork Lower Willow Creek. The stream is bordered by a dense stand of spruce, and substantial quantities of large down woody debris have prevented livestock access to the channel throughout the allotment.

Marcum Mountain Allotment: tributaries to Arrastra Creek

The Marcum Mountain Allotment contains several headwater channels. The largest of these is a second-order tributary to Arrastra Creek (west fork Arrastra Creek) that contains westslope cutthroat trout. Several non-fishbearing first order channels arise on the flanks of Marcum

Mountain and flow through the allotment, including a tributary to west fork Arrastra Creek, two tributaries to Arrastra Creek, and a tributary flowing north into Sawmill Creek.

Livestock access to west fork Arrastra Creek and the aforementioned unnamed channels is limited by steep topography and large quantities of down wood and thick brush. Evidence of sporadic livestock use (browse on streamside shrubs and bank alteration) is limited to isolated areas where roads cross the channels, providing small areas accessible for livestock. These are small, isolated areas and in available habitat for fish has been largely unaffected by livestock.

Mullan Road and Ravenna Allotments: Clark Fork River

Short segments of the Clark Fork River flow through the Ravenna and Mullan Road allotments. According to Montana Fish Wildlife and Parks, fish species that may be present in the river on the allotment include brown trout, rainbow trout, westslope cutthroat trout, brook trout (rare) and bull trout (extremely rare) (MTFWP 2009).

Surveys in 2008 of aquatic and riparian habitat conditions along the Clark Fork River in these allotments revealed that historic livestock grazing has not affected habitat conditions for fishes in the river. Both allotments are lightly grazed (Mullan Road allotment is used by two horses or one cow while Ravenna is used by three cows). In the Mullan Road allotment, riverbanks are dominated by extensive willow communities and no sign of livestock-related alteration of streambanks is present. In the Ravenna allotment, streamside vegetation along the river is in poor condition due to the historic replacement of the natural streambank with a railroad embankment.

Vegetation on the face of the embankment is dominated by noxious weeds and the presence of the railroad precludes the development of a natural riparian community; however, the rocky surface of the embankment also prevents cattle from accessing the stream channel. The status of native fish populations in the Clark Fork River has been well described elsewhere (Hadley 2003).

Direct, Indirect, and Cumulative Effects of the Proposed Action

The direct, indirect, and cumulative effects of the Proposed Action would be identical to the No Action because no activities are proposed. For allotments with fishbearing streams, no changes are proposed to the seasons of use or numbers of livestock, and no range improvements affecting livestock access to stream channels (e.g., enclosure fences) are proposed.

Direct and Indirect Effects of the No Action

Direct effects are those which contribute to the immediate loss or harm to individual fish or eggs and typically occur when livestock step directly on a fish or trample a redd. Eggs and alevins in the redd are most susceptible to mortality from trampling because they are immobile, and the channel segments that provide habitat for spawning tend to overlap with places where livestock prefer to cross stream channels (i.e. wide, shallow, lower-gradient segments).

Bull trout eggs/alevins would not be affected by livestock trampling. Only the allotments which include the Clark Fork River (Ravenna and Mullan Road Allotments) contain bull trout, but neither allotment contains spawning habitat.

Spawning habitat for westslope cutthroat trout is present on the Blackfoot City, Copper Creek, and Marcum Mountain allotments. The likelihood of direct effects via trampling on the allotments is related to *timing* (whether livestock are on the allotment at the same time fry are in gravels) and *access* (the degree of access livestock have to stream channels and spawning beds).

Timing: Surveys of Grasshopper Creek have documented westslope cutthroat trout spawning in early-to-mid June in the allotment. Spawning surveys have not been conducted on Carpenter Creek (Blackfoot City Allotment) or Copper Creek (Copper Creek Allotment), but for the purposes of this analysis, it is assumed that spawning timing on these streams follows trends commonly observed for westslope cutthroat trout. These fish commonly spawn between March and July, as stream temperatures approach 10 degrees C (Liknes 1984, Shepard *et al.* 1984, Behnke 1992). Spawning surveys on lands managed by the Missoula Field Office on streams similar in elevation to Carpenter and Copper Creek indicate that fish in these areas commonly spawn in early- to mid-June.

The seasons of use proposed for the three Allotments are as follows:

Blackfoot City (Carpenter Creek) 6/15 – 9/30
Copper Creek (Copper Creek) 7/15-10/15
Marcum Mountain 6/15-9/20

All three seasons of use incorporate the likely spawning period although Copper Creek incorporates a turn-out date close to the likely time alevins emerge from redds.

Access: Livestock on Copper Creek have limited access to spawning beds due to steep topography and abundant down trees and boulder fields. As described in the Affected Environment section (above), there are small stream segments where topography permits livestock access, and it is possible that redds may be trampled here. Effects to the fish population are expected to be limited because livestock are not turned out until July 15, after which fry have likely emerged. Additionally, the percentage of channel accessible to livestock represents a very small percentage of available spawning habitat.

Redds and fry in Carpenter Creek (Blackfoot City Allotment) may be subject to trampling because livestock have full access to the meadow reach in Section 29, where a wider valley bottom and absence of dredge tailings permit livestock access to the stream channel. No spawning surveys have been conducted in Carpenter Creek so it is unknown whether trout spawn in this area accessible by livestock.

West fork Arrastra Creek (Marcum Mountain Allotment) is largely protected from livestock access by steep topography, abundant down trees, and thick brush. Livestock have access to very small segments immediately adjacent to culverts and road crossings.

Spawning surveys on west fork Arrastra Creek have not observed redds in these areas. As a result, in west fork Arrastra Creek, direct effects via redd trampling is extremely unlikely.

Indirect effects are effects which occur at a later time, causing loss of specific habitat features (e.g., undercut banks), localized reductions in habitat quality (e.g., sedimentation), and ultimately cause loss or reductions of numbers of fish. The indirect effects of livestock on channels and fish populations are well-summarized elsewhere (Kaufmann and Krueger 1984, Meyers and Swanson 1991, Platts 1991, Li *et. al.* 1994).

Indirect effects are not likely from continued grazing management to fishes and habitat in west fork Arrastra Creek or the unnamed tributaries to Arrastra Creek because topography excludes livestock access these channels.

In Copper Creek and Carpenter Creek, livestock utilization of streamside shrubs has reduced woody vegetation, particularly willow and alder and there is evidence of hoof-shear and streambank alteration. However, this occurs only in areas accessible by livestock. The vast majority of Carpenter Creek is protected from livestock access by dredge tailings. In Copper Creek, topography and down wood limits livestock access to only a small percentage of the channel. As a result, in both streams, the majority of available habitat is inaccessible by livestock, and indirect effects would be minimal.

Cumulative Effects of No Action

The cumulative effects analysis area includes the individual watersheds where the grazing leases are proposed for renewal. The BLM has no other ongoing or future actions planned potentially affecting stream habitat or fish populations in project area watersheds. Activities by non-Federal entities potentially affecting fishes include livestock grazing and recreation. Additionally, extensive road systems exist in most of the project area watersheds.

The effects of non-BLM activities on stream channels and fish habitat cannot be quantified because no formal surveys were completed. Under the No Action Alternative, indirect effects to stream channels from livestock grazing as described above would continue at their existing intensity and scope. As described above effects are limited to areas representing a small percentage of stream channels in watersheds where they are located. As a result, there is no mechanism for these effects to combine with the effects of other actions to create cumulative effects.

Rangeland Vegetation and Health

Affected Environment

Native range vegetation mainly consists of parks and open grasslands. The majority of the parks are dominated by rough and Idaho fescue, more of the open grass lands that have a southern or southwestern aspect support bluebunch wheatgrass/Idaho fescue vegetation types. Forested habitat types may include wet meadows associated with perennial streams. Some wet meadows may contain riparian shrub overstory with carex/tufted hairgrass/bluegrass understories.

Rangeland Health

The following tables reflect rangeland health status as indicated in the most recent Rangeland Health Assessment Evaluation Reports. Status updates are footnoted for those standards that are progressing towards meeting required rangeland health standards, as evidenced by subsequent field evaluations.

Table 3.3 Allotments Meeting or Progressing Towards Meeting Rangeland Health Standards

Allotment	Standard				
	Upland	Riparian/ Wetlands	Water Quality	Air Quality	Habitat/ Biodiversity
BCP	Met	Met	Met	Met	Met
Blackfoot City	Met	Progressing	Met	Met	Met
Carpenter Creek	Met	n/a	n/a	Met	Met
Copper Creek	Met	Met	Met	Met	Met
Lower Willow Creek	Met	n/a	n/a	Met	Met
Marcum Mountain	Met	Met	Met	Met	Met
Mulkey Gulch	Met	n/a	n/a	Met	Met
Mullan Road	Met	Met	Met	Met	Met
Starvation	Met	n/a	n/a	Met	Met
Stewart Lake	Met	n/a	n/a	Met	Met
Sunrise Eleven	Met	Met	n/a	Met	Met
Ten Mile	Met	Progressing	Met	Met	Met
Tigh Creek	Met	n/a	n/a	Met	Met
Wyman	Met	n/a	n/a	Met	Met

Note: Recent direction and MOU with Montana DEQ provide for a “meets” call where BLM management is not contributing to the source of impairment.

n/a = Standard does not apply to the allotment.

Table 3.4 Allotments Not Meeting or Progressing Towards Meeting Rangeland Health Standards

Allotment	Standard				
	Upland	Riparian/ Wetlands	Water Quality	Air Quality	Habitat/ Biodiversity
Eye Brow	Not Met	n/a	n/a	Met	Not Met
King Mountain	Met	Progressing/Met	Met	Met	Met
Lower Smart Creek ¹	Met	Met ¹	Met ¹	Met	Progressing ²
Pinegrass ¹	Met	Met ¹	Met ¹	Met	Met
Upper Smart Creek ¹	Met	Progressing/Met ²	Progressing/Met ²	Met	Met
Ravenna	Not Met	Met ³	Met	Met	Met
Spring Gulch	Not Met	n/a	n/a	Met	Met

¹ Lower Smart Creek, Pinegrass, and Upper Smart Creek allotments are the result of an allotment split within the original Smart Creek Allotment, due to ownership changes in base property. The above range standard rating for these allotments is derived from the original Rangeland Health Assessment conducted on the intact Smart Creek Allotment; therefore, the same ratings are applied to all three allotments. BLM management in Pinegrass, Lower Smart Creek, Upper Smart Creek, and Ravenna is not contributing to the source of impairment of riparian health or water quality. Under current direction and MOU with Montana DEQ, we can deem these standards as “met”. There is a small portion of King Mountain riparian that is not meeting standard as a result of grazing impacts.

² Resource improvement projects were implemented subsequent to the Rangeland Health Assessment Evaluation Report. Recent compliance checks and field observations indicate these standards are now rated as “progressing” towards meeting the rangeland health standard.

³ Causal factor outside BLM control - see Ravenna allotment discussion.

Eye Brow Allotment

The Eye Brow allotment did not meet the Upland and Habitat/Biodiversity standards due to overgrazed micro sites and noxious weed invasion on southern slopes. The vegetative community structure on the northern slope remains intact.

King Mountain Allotment

The King Mountain allotment contains limited lotic riparian systems which are heavily forested and in healthy PFC. One lentic system (< .1 acre) in the allotment did not meet the standard due to excessive livestock trampling. Bear Creek is not a listed stream and conditions on BLM ground are meeting the water quality standard. The riparian standard is not being met in a small portion at the uppermost headwater spring, but is otherwise met.

Lower Smart Creek, Pinegrass, and Upper Smart Creek Allotments

Lower Smart Creek, Pinegrass, and Upper Smart Creek allotments are the result of an allotment split within the original Smart Creek Allotment, due to ownership changes in base property. The above range standard rating for these allotments is derived from the original Rangeland Health Assessment conducted on the intact Smart Creek Allotment; therefore, the same ratings are applied to all three allotments. Resource improvement projects and management actions were implemented subsequent to the Rangeland Health Assessment Evaluation Report, and prior to the allotment split. Recent compliance checks and field observations indicate these allotments are making significant progress towards meeting the standards. In Lower Smart Creek, the fence enclosure placed in 2006 allowed to the conclusion that BLM management is contributing to both riparian and water quality standards as “making significant progress toward” meeting the standards. In Henderson Creek (Pinegrass Allotment) and Flint Creek (Upper Smart Creek Allotment), the Rangeland Health Assessment indicated a “NOT MET” rating for water quality/riparian standards. This rating was given based on DEQ’s report indicating the presence of metals from mining operations. Further analysis indicates that BLM management is not contributing to the source of impairment and, under current direction, a rating that is appropriate that BLM is meeting standards for riparian and water quality.

Ravenna Allotment

The Ravenna allotment did not meet the Upland and Riparian standards. The uplands contain a multitude and variety of grasses, forbs and shrubs overall; however, the diversity of native species is somewhat limited due to non-native species (e.g. timothy, Kentucky bluegrass, smooth brome) dominating the meadows. Noxious weeds (i.e., Dalmatian toadflax, spotted knapweed and houndstongue) are established in the area and affect the native plant community composition and distribution. The riparian standard for BLM lands along the Clark Fork River was not achieved because of the impact of historic railroad embankments which have altered the streambanks and inhibited riparian vegetation development. These are widespread impacts that have occurred for many decades throughout the Clark Fork valley (railway and highway embankments crowding the river and floodplain), with long-term implications for river dynamics and channel adjustment. BLM lands located within the Clark Fork riparian strip in Ravenna were assessed in terms of their *capability* rather than *potential*. Riparian health is as good as can be expected, given the situation (large fill embankments with rip-rap). Restoring the small piece of federal land would not make a significant difference to the river. Based on the circumstances, BLM is issuing a “meets” call in accordance with current management direction.

Spring Gulch Allotment

The majority of the Spring Gulch allotment did meet the Upland standard. However, eighty acres out of the total 1,040 acres did not meet the Upland standard, due to poor range conditions. Livestock management is the most probable cause regarding the condition of rangeland on the 80 acres due to its proximity to private corrals and water trough. Livestock will congregate near water sources and these areas are expected to receive high use.

Environmental Effects

The majority of native range appears to be stable and has retained characteristic native vegetation under current grazing use. Implementation of terms and conditions for grazing management guidelines, allowable use levels and other stipulations should assist in meeting or progress to meeting all rangeland health standards.

Direct and Indirect Effects of the Proposed Action

No adverse impacts should result from the Proposed Action. Implementing grazing management changes will promote health and vigor of vegetation and maintain a stable and desirable plant community. The proposed management actions would improve vegetative conditions while maintaining sustainable use of grazing resources for livestock and wildlife.

Cumulative Effects of the Proposed Action

The Proposed Action may influence livestock grazing patterns to some degree. However, these pattern changes are expected to be minimal and can be manipulated through the common practice of salt placement and riding. The Proposed Action has little, if any, potential to cause adverse effects for grazing resources.

The long-term effects of the Proposed Action would allow grazing allotments to progress towards or continue to meet Rangeland Health Standards. The proposal would not likely result in adverse cumulative effects for livestock operations or rangeland health.

Effects of No Action

Under the No Action alternative, grazing leases would continue to operate under their existing terms and conditions. Native range vegetation would most likely remain stable or improve overtime. The small areas that did not meet rangeland health standards would most likely not improve and remain at risk under current grazing practices.

Invasive, Non-Native Species

Affected Environment

Some of the grazing allotments contain noxious weeds, such as spotted knapweed, Dalmatian toadflax, yellow toadflax and leafy spurge. New invader species (hawkweed complex, whitetop, oxeye-daisy, etc.) are not known to exist within these allotments.

Environmental Effects

The toadflax complex and leafy spurge are high priority weeds for control in the Missoula Field Office resource area. Spotted knapweed, thistle, and houndstongue are widespread weeds and have the potential to spread along roads, in disturbed areas associated with logging activities, and in areas grazed by domestic livestock and wildlife. The Missoula Field Office will continue to inventory and treat noxious weeds accordingly, depending on priority and funding.

Direct and Indirect Effects of the Proposed Action

Noxious weed impacts would be similar to the No Action alternative.

Cumulative Effects of the Proposed Action

The distribution and density of noxious weeds are influenced by several factors. Some of these factors are outside of BLM control, such as neighboring private lands and railroad corridors that contain noxious weeds and provide weed seed sources. Control efforts through early detection and treatment have proven to be effective in lessening the establishment and spread of noxious weeds. The proposed action would not result in the accelerated expansion of weed populations.

Effects of No Action

Noxious weed risks would likely continue at the present level. Weed treatment and cooperative weed treatment efforts with counties would continue to contain or reduce weed populations.

Special Status Species

The Special Status Species designation is used by the BLM to provide conservation actions for species to preclude the need for listing and to improve the status of species to the point where special status recognition is no longer warranted. Collectively, the term “special status species” includes:

- Endangered Species Act designation (species listed as threatened or endangered, or proposed for listing under the ESA)
- BLM Sensitive Species: species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director. Sensitive species are afforded the same protection as that provided for federal candidate species.

Special Status Species: Wildlife

Affected Environment

Terrestrial habitat consists primarily of forest and grassland/shrublands. Habitats are composed of diverse plant communities supporting a wide variety of wildlife. Current habitat conditions are in various structural stages ranging from early-to-mid-to-late plant succession.

Table 3.5 Threatened and Endangered Species Occurrence and Habitat Potentially Affected by the Proposed Action.

Species	Status	Occurrence	Habitat Potentially Affected?
Grizzly Bear (<i>Ursus arctos</i>)	Threatened	Resident north of I-90; Transient south of I-90	Yes, north of I-90 No, south of I-90
Canada Lynx (<i>Lynx Canadensis</i>)	Threatened	Resident north of I-90; Transient south of I-90	Yes, north of I-90 No, south of I-90

Table 3.6 Sensitive Species Occurrence and Habitat Potentially Affected by the Proposed Action.

Species	Occurrence	Habitat Potentially Affected?
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Resident	No
Northern Goshawk (<i>Accipiter gentiles</i>)	Resident	No
Great Gray Owl (<i>Strix nebulosa</i>)	Resident	No
Three-toed Woodpecker (<i>Picoides tridactylus</i>)	Resident	No
Black-backed Woodpecker (<i>Picoides arcticus</i>)	Resident	No
Gray Wolf (<i>Canis lupus</i>)	Resident	No
Long-eared Myotis (<i>Myotis evotis</i>)	Resident	No
Fringed Myotis (<i>Myotis thysanodes</i>)	Resident	No
Fisher (<i>Martes pennati</i>)	Resident	No
Wolverine (<i>Gulo gulo</i>)	Resident	No

Other Wildlife:

Migratory Birds

At least 40 migratory birds inhabit Missoula Field Office lands during the nesting season (May-July). These birds are grouped into one of four nesting guilds shown in Table 3.7.

Table 3.7 Migratory Bird Nesting Guilds for 40 Species and Potential Habitat Affected by the Proposed Action.

Nesting Guild	Number of Species and Frequency	Habitat Potentially Affected?
Ground	4 (10%)	Yes
Shrub	9 (23%)	Yes
Tree	21 (53%)	No
Snag	6 (14%)	No

Big Game

The big game species shown in Table 3.8 inhabit Missoula Field Office lands during all seasons.

Table 3.8 Big game species and potential habitat affected by the Proposed Action.

Species	Occurrence	Habitat Potentially Affected?
Bighorn Sheep	No	No
Moose	Yes	Yes
Elk	Yes	Yes
Mule Deer	Yes	Yes
White-tailed Deer	Yes	Yes
Mountain Lion	Yes	Yes
Black Bear	Yes	Yes

Environmental Effects

The following effects assessment follows the logic that livestock grazing on Missoula Field Office lands is managed to provide habitat for Special Status Species and other wildlife. Field office lands are managed to provide an array of habitat conditions providing the kind and amount of habitat needed to sustain a diverse and complete wildlife community. Special Status Species, migratory birds, and big game populations on Missoula Field Office lands are generally static or increasing.

Direct and Indirect Effects of the Proposed Action

Special Status Species

Terrestrial Threatened and Endangered Species - The Proposed Action is not likely to adversely affect the grizzly bear, Canada lynx, or Canada lynx critical habitat. The U. S. Fish and Wildlife Service reviewed the MiFO Biological Assessment and concurred with these determinations in May, 2010.

Grizzly Bear: Direct and indirect effects may occur north of, but not south of, Interstate-90. Livestock may directly displace grizzly bears and may directly compete for forage, such as grass and herbaceous vegetation, used by the grizzly. However, forage and habitat conditions for the grizzly bear would be mitigated based on the livestock grazing standards and guides of the Proposed Action. The indirect effects of livestock grazing on grizzly bear habitat may consist of changes in vegetation composition. Only cattle and horse allotments exist; no sheep allotments are present. Half of the livestock grazing allotments are located in occupied grizzly bear habitat, which is north of Interstate 90. Grazing allotments south of Interstate 90 are not considered occupied grizzly bear habitat. Grazing allotments north of Interstate 90 follow the terms and conditions of the Backlog Consultation Biological Opinion (USFWS, 2006), which state:

- 1) *BLM will include a clause in all new and revised grazing permits [leases] for the area north of Interstate 90, requiring the permittee to notify the BLM as soon as is practical of any grizzly bear depredation on livestock or conflicts between grizzly bears and livestock, even if the conflict does not result in the loss of livestock. The BLM shall coordinate with Montana Fish, Wildlife and Parks and USDA APHIS Wildlife Service’s personnel to determine appropriate actions.*

- 2) *BLM will include a clause in all new and revised grazing permits [leases] for the area north of Interstate 90 requiring the permittee to properly treat or dispose of livestock carcasses, so as to eliminate any potential attractant for bears. BLM will include guidance to permittees to contact FWP if they need carcass disposal assistance.*

Canada Lynx: Direct and indirect effects may occur north of, but not south of, Interstate-90. Allotments north of Interstate 90, such as King Mountain, Mulkey Gulch, and Ten Mile, are located in occupied Canada lynx habitat with critical habitat designation. Allotments south of Interstate 90 are considered unoccupied Canada lynx habitat without critical habitat designation. Standards and guidelines for livestock grazing utilization are consistent with the Canada Lynx Conservation Assessment and Strategy (Ruediger et al. 2000). Primary constituent elements, such as snowshoe hare foraging habitat, may be indirectly affected by livestock grazing.

Terrestrial Sensitive Species

Direct and indirect effects to sensitive species may occur. Livestock grazing may impact sensitive species forage habitat. However, the standards and guides of the Proposed Action would mitigate potential sensitive species impacts, which would be below an adverse affect level.

Other Wildlife:

Migratory Birds

Direct and indirect effects may occur to ground and shrub nesting and would not occur for tree and snag nesting birds. Proposed Actions would occur during the nesting season, which typically starts in late May and early June, and ends in late June and early July. Ground and shrub nesting species may potentially be disturbed by livestock grazing, which may lead to direct or indirect mortality of nestlings. Trampling nests may lead to direct mortality of nestlings; and potential abandonment of nests may lead to indirect mortality of nestlings. Terms and conditions of the Proposed Action would reduce indirect impacts to plant communities, but may cause shifts in vegetation compositions and delayed growth rates in shrubs.

Big Game

Direct and indirect effects would not occur for the bighorn sheep, because they are not present on the proposed action allotments. Direct and indirect effects may occur for the moose, elk, mule deer, white-tailed deer, mountain lion and black bear. All species, except for the mountain lion, compete directly with livestock for forage. Indirect effects may occur due to shifts in vegetation composition and delayed growth rates in shrubs. Prey base for the mountain lion may shift, although lion populations are at or above Montana Department of Fish, Wildlife, and Parks (FWP) objectives. Elk and white-tailed deer populations are also typically above FWP objectives. Mule deer and moose populations are at or below FWP objectives. Calving and fawning areas may be compromised due to the presence of livestock in these areas during late May and early June. Livestock typically occupy primary range sites, displacing elk and deer into secondary and tertiary habitat.

Cumulative Effects of Proposed Action

The geographic area considered to assess cumulative effects is the Missoula Field Office lands located in Granite, Missoula, and Powell Counties. Wildlife distribution and the condition of wildlife habitat in this area was influenced by current and past activities including timber harvest, road construction, livestock grazing, wildfire, and residential development. These actions may continue to occur at various levels in the future. Direct and indirect effects for species considered in the analysis would either not occur or would be considered low. The effects of the Proposed Action, when combined with the current and reasonably foreseeable effects of actions on non-federal lands, would not have cumulative adverse effects.

Effects of No Action

The No Action alternative would have greater adverse effects to wildlife and their habitat because most of these grazing leases have limited terms and conditions for standards and guidelines, which make the No Action alternative less effective for meeting wildlife and wildlife habitat management objectives. Some of the grazing leases do not have specific grazing management guidelines, allowable use levels, or other stipulations guiding lease operations.

Special Status Plants

The Keeled bladderpod is designated as “sensitive” by the BLM Montana/Dakotas State Director. It is a regionally endemic species that is found in the southern Garnet range, and is known to occur in the Spring Gulch, Mulkey Gulch, and Ten Mile allotments. The Keeled bladderpod’s habitat is confined to substrates derived from Madison limestone. The affected environment for these plants includes those areas within the allotments that contain suitable habitat for the Keeled bladderpod, and which are also accessible to livestock. In the allotments where Keeled bladderpod populations and habitat occur, the steepness of the terrain limits cattle use to the lower slopes of this species’ habitat. Potential threats to Keeled bladderpod populations and habitat include surface disturbance, injury and mortality to individual plants, and the potential establishment and spread of invasive non-native vegetation.

Several invasive vegetative species (Dalmatian toadflax, Leafy spurge, Spotted knapweed, Cheatgrass) have colonized Keeled bladderpod habitat. Past land use activities, such as grazing, noxious weed control, fire suppression, shrub planting, and limestone quarrying also contributed to the current conditions of keeled bladderpod habitat. Impact thresholds to populations and habitat of this species are unknown.

The presence and distribution of Special Status Plants is determined by field inventories, historic occurrence information, and current distribution information contained in the database maintained by the Montana Natural Heritage Program. Currently, no plants are proposed for listing or listed under the Endangered Species Act.

Environmental Effects Common to All Alternatives

Direct and Indirect Effects of the Proposed Action

Due to the steep terrain of Keeled bladderpod habitat, effects of livestock grazing on this species are expected to be minimal because cattle use is expected to be limited to the lower slopes. In the lower slopes, wherever Keeled bladderpod plants are present, cattle use may cause direct injury and/or mortality to individual plants. However, no adverse effects are anticipated to the population as a whole.

Effects to Keeled bladderpod habitat are from soil disturbance associated with trampling and the movement of cattle. Trampling disturbs the soil surface and creates potential additional opportunity for non-native species to establish. However, native big game wildlife species also utilize the area and create similar surface disturbances. The natural shifting of the habitat and disturbance caused by game species may play a role in plant community structure and seed dispersal (Vanderhorst 1995). Likewise, disturbance caused from cattle use may be similar.

Special Status plant surveys will be conducted in areas that are deemed to be suitable habitat for the Keeled bladderpod. Documented populations of Keeled bladderpod will be monitored for changes in plant distribution.

Cumulative Effects of the Proposed Action

The Keeled bladderpod is only known to occur on the south side of the Garnet range and Sapphire range in Granite County, and in a localized area in Beaverhead County. The geographic scope of the cumulative effects analysis is the extent of suitable habitat in the southern Garnet mountain range, which is a key area for the endemic Keeled bladderpod.

The existing condition of Keeled bladderpod habitat and populations is the combination of the natural conditions and the effects of past land use activities that include: grazing, noxious weed control, forestry practices, fire suppression, shrub planting, and quarrying. The effects of past actions on Keeled bladderpod habitat are unknown, but may have contributed to current habitat conditions. In contrast, past actions such as noxious weed control and grazing also had countervailing effects to harmful past actions that affect habitat quality.

Countervailing effects from noxious weed control and livestock use include reduced vegetative competition and soil disturbance needed for plant establishment. The effects from livestock use are minimal due to the steep terrain the Keeled bladderpod inhabits. Present and reasonably foreseeable actions include livestock use and noxious weed control. The detrimental and beneficial effects from livestock grazing and noxious weed control would continue as they have under past actions. The thresholds at which Keeled bladderpod habitat and populations are able to be self-sustaining from impacts are unknown. The past, present, and reasonably foreseeable actions should not combine to create cumulative effects because the effects to Keeled bladderpod populations and habitat would be minimal.

Wetlands/Riparian Zones and Water Quality

Affected Environment

The affected environment includes those wetlands and riparian zones occurring within the allotments that are accessible to livestock. Some riparian areas and stream reaches are not accessible to livestock (or rarely visited) due to barriers from terrain or heavy cover and are not subject to being directly affected by livestock. Typical impacts of concern to riparian and wetlands include: (1) loss of vegetation important for cover, bank stability, and temperature; (2) streambank trampling leading to widening and shallowing, sedimentation, and temperature increase; and (3) nutrient loading from cattle waste leading to poor water quality. Current conditions based on Rangeland Health Assessments are described in “Rangeland Vegetation and Health” and “Aquatic Habitat”.

Environmental Effects

Direct and Indirect Effects of the Proposed Action

With the implementation, monitoring, and enforcement of grazing terms and conditions to protect riparian resources, those allotments which are considered “progressing” in Standard #2 (King Mountain and Upper Smart Creek) would likely continue to exhibit an improving trend in riparian condition where such standards had not been implemented before. Those areas already meeting rangeland health standards for riparian resources (BCP, Blackfoot City, Copper Cr, King Mtn, Lower Smart Creek, Marcum, and Mullan Road) would likely continue to do so.

Additionally, those areas deemed “progressing” for rangeland health standard #3 (Upper Smart Creek) would likely continue to exhibit a reduction in the contributing source of impairment and continue to make significant progress toward meeting the standard. Those allotments currently meeting the rangeland health water quality standard #3 would likely continue to do so.

Cumulative Effects of the Proposed Action

No other reasonably foreseeable actions exist at this time which would combine with the Proposed Action to produce cumulative effects. Other range improvement projects, such as fencing or exclosures may be implemented in the future and are typically designed to reduce livestock impacts, including those impacts in riparian areas. The net cumulative effect of these projects is likely to be beneficial to riparian health and water quality.

Effects of No Action

The degree and extent of livestock impacts on riparian and wetlands within affected allotments would continue in the absence of protective standards. Current trends would likely continue (see Tables 3.3. and 3.4). Those areas currently not meeting standards, and not trending toward meeting standards, would likely continue to degrade or remain static. Any water quality problems associated with livestock use, most typically sedimentation, habitat alteration, and nutrient loading, would also likely continue. Likewise, those areas meeting or trending toward

meeting riparian and water quality standards would likely continue to do so, provided grazing use levels remain the same.

Cultural Resources

Affected Environment

The Class I overview of the Butte District prehistory by Sherri and Ken Deaver relates much of the information that is known about the cultural resources of the Missoula Field Office area. Much of the following is taken from their overview. The prehistory of the Missoula Field Office area is more typical of the Pacific climate influenced regions. The prehistoric sites generally consist of lithic scatters and quarries. The ages of the prehistoric sites are largely unknown due to a lack of research beyond the inventory level. Few diagnostics are identified on public land in the area, but the ones that have been found range in age from PaleoIndian (one Agate Basin projectile point) to Late Prehistoric. Based on the existing data, the site density of the area is relatively low with one site per 714 acres. Of the recorded prehistoric sites on public land in the area, Powell and Granite counties have the most, while Missoula County has the least.

Historic period properties in the Missoula Field Office area are quite numerous. However, the number of historic sites is unknown since they have never been studied beyond the inventory level. The majority of historic sites and features are related to historic mining. Currently, 11 recorded Historic Mining Districts exists within the Missoula Field Office area. They include Garnet, Bear Creek Placer, Ophir, Gold Creek/Pioneer, Philipsburg, Clinton, Finn, Top O'Deep, Maxville, Elliston and Lincoln. Of the 11 historic mining districts, 8 were determined to be eligible for listing on the National Register of Historic Places. The Historic Mining Districts range in age from the 1860s through the 1890s era to the 1930s subsistence mining. The historic mining districts, and even areas outside of them, contain sites and features such as abandoned towns (i.e., Garnet, Coloma, Beartown, Copper Cliff, Blackfoot City, Pioneer), abandoned mines, remnants of hydraulic, placer, and hard rock mining (i.e., pits, hand stacked rocks, ditches, tunnels, shafts, adits, waste rock piles, tailings, etc), cabins, and mine buildings. In addition to mining related sites, sites related to ranching, logging, homesteading and railroads are also present in the area.

An examination of existing records on file with the BLM Missoula Field Office and the Montana State Historic Preservation Office's State Antiquities Database provides information on the number of known cultural resource properties and also the amount and level of previous cultural resource inventories that have been conducted within the 21 Grazing Allotments. Sixty-nine previous cultural resource inventories were conducted within the Grazing Allotments. Of the 69 inventories, at least 42 were conducted at a Class III level. The inventories are specifically project compliance related and were conducted primarily in advance of small to large scale projects (i.e., timber sales, right of ways, range improvements, land exchanges, etc).

As a result of the previously conducted field inventories, 66 cultural resource sites have were recorded within the Grazing Allotments (42 in Granite County, 12 in Powell County, and 12 in Missoula County). The previously recorded sites are prehistoric, historic, and multi-component meaning having both a prehistoric and historic component. There are 9 prehistoric sites identified within the grazing allotments which include: lithic scatters (n=7); trails (n=1) and

quarries (n=1). The 53 historic sites identified within the grazing allotments include: mining sites (n=35); mining related ghost towns (n=2); cemeteries/historic burial (n=3); logging sites (n=2); homesteads (n=1); railroads (n=1); historic roads (n=1); and miscellaneous site types (n=8). There are 4 multi-component sites identified within the grazing allotments which include: lithic scatter and historic logging (n=2); lithic scatter and historic mining (n=1); and lithic scatter and historic trash (n=1). In addition to the 66 cultural resource sites, 6 Historic Mining Districts were identified within some of the 21 Grazing Allotments.

Out of the 66 cultural resource sites that were recorded within the Grazing Allotments, 27 were formally evaluated for eligibility to the National Register of Historic Places. Of those 27, 11 sites are eligible for the National Register of Historic Places and 16 are not eligible. The determination of eligibility is unresolved for 10 sites out of the 66. The eligible sites include 1 quarry, 1 multi-component site, 1 trail, 1 railroad, 2 cemeteries, 4 mining sites, and 1 miscellaneous site type. Of the 6 Historic Mining Districts within the Grazing Allotments, 5 were determined to be eligible for the National Register of Historic Places. These include the Ophir Historic Mining District, the Philipsburg Historic Mining District, the Bear Creek Historic Placer Mining District, the Garnet (First Chance) Historic Mining District and the Clinton Historic Mining District.

Environmental Effects

Direct and Indirect Effects of the Proposed Action

Renewal or transfer of grazing leases would not cause surface disturbing activities that could significantly affect historic properties. Renewal or transfer does not, in itself, authorize range improvement projects. As required by Section 106 of the National Historic Preservation Act, a Class III cultural resource inventory will be required prior to the implementation of any proposed range or habitat improvements. Should significant cultural resources be identified, adverse impacts would be mitigated by measures such as physical protection, project redesign or project abandonment. Also, lessees are required to notify personnel from the Bureau of Land Management of the presence and location of any cultural resources should they be encountered by the lessee during the course of grazing operations on public lands.

Cumulative Effects

Before the implementation of ground-disturbing actions, cultural resources are identified and, if needed, mitigation measures are taken. As such, no cumulative effects to cultural resources are anticipated.

Effects of No Action

The effects are the same as the Proposed Action.

CHAPTER 4

PERSONS, GROUPS, AND AGENCIES CONSULTED

During the course of developing and evaluating alternatives for this EA, the BLM Missoula Field Office coordinated with the following:

Table 4.1 List of Persons, Agencies and Organizations Consulted

Name/Agency	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
United States Fish and Wildlife Service	Biological Opinion, issued October 12, 2006, grazing leases located north of Interstate 90 to include mandatory terms and conditions. Informal Consultation on Grizzly/lynx on critical habitat – April 2010	Remain with current mandatory terms and conditions under Biological Opinion. Concurrence received May 7, 2010.
Grazing lease holders	Applications for lease renewal sent to affected lessees.	All applications signed and received.

Table 4.2 lists the names and titles of BLM staff engaged in preparing and/or reviewing specific sections of this EA.

Table 4.2 List of Preparers

Name	Title	Responsible for the Following Section(s)
Steve Bell	RMS	Preparer - Range
John Hill	NRS	Special Status Plants
Jim Sparks	Wildlife Biologist	Special Status Wildlife
Steve Flood	Hydrologist	Soil, Water, Riparian
Maria Craig	Archeologist	Cultural Resources
Jo Christensen	Fishery Biologist	Fisheries
Timothy LaMarr	Supervisory Natural Resource Specialist	Reviewer

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Appendix A
Missoula Field Office 2009 Grazing Lease Renewals

Allotment Name	Allotment Number	Legal Description (applies only to BLM lands within listed sections)	BLM Acres
BCP	07101	T11N, R15W, Section 22; T12N, R15W, Sections 13, 14, 15; T11N, R17W, Section 12; T12N, R15W, Sections 1, 2, 10, 11, 12, 18, 30, 32; T12 N, R16W, Section 17 & 18.	3,793
Blackfoot City	17212	T11N, R7W, Sections 19, 29, 30, 31, 32; T11N, R8W, Section 25.	1,839
Carpenter Creek	07501	T10N, R8W, Section 13.	44
Copper Creek	17307	T9N, R14W, Section 31.	565
Eye Brow	17308	T9N, R13W, Section 17.	160
King Mountain	00983	T11N, R12W, Sections 6 & 7.	720
Lower Smart Creek	03153	T9N, R13W, Sections 31, 32.	514
Lower Willow Creek	17302	T9N, R14W, Section 2.	175
Marcum Mountain*	17213	T14N, R10W, Sections 18 & 20; T14N, R11W, Sections 11, 12, 13, 14, 23, 24, 25 & 26.	5,894
Mulkey Gulch	01556	T11N, R13W, Section 6 & 7.	440
Mullan Road	17107	T11N, R17W, Section 2.	25
Pinegrass	03154	T9N, R14W, Section 36.	282
Ravenna	07103	T11N, R15W, Section 18.	160
Spring Gulch	07115	T11N, R13W, Sections 10, 14, 21 & 22.	1,040
Starvation	17116	T11N, R17W, Section 2.	50
Stewart Lake*	17320	T8N, R13W, Sections 16, 30 & 31; T7N, R13W, Sections 17, 18 & 19; T7N, R14W, Sections 13 & 24.	2,175
Sunrise Eleven	17323	T9N, R13W, Section 31; T9N, R14W, Sections 27, 34, 35 & 36.	454
Ten Mile	07102	T11N, R14W, Section 3; T12N, R14W, Sections 18, 20, 22, 27, 28, 29, 33, 34; T12N, R15W, Sections 13 & 24.	1,320
Tigh Creek	07114	T11N, R13W, Section 22.	240
Upper Smart Creek*	17311	T8N, R13W, Sections 4, 9, & 17; T8N, R14W, Section 24.	522
Wyman	17309	T7N, R13W, Section 6; T8N, R13W, Section 30 & 31; T8N, R14W, Sections 24 & 25.	1,061

*Allotment Management Plan

Appendix B

Option Comparison of Term Grazing Leases under the No Action & Proposed Action Alternatives

Allotment Name & Number	No Action vs Proposed Action	Livestock Number & Kind	Season of Use	AUM	Terms & Conditions
BCP #07101	No Action	369 Cattle	06/01 – 09/30	207	The terms and conditions of this grazing permit may be modified if additional information indicates that revision is necessary to conform with the fundamentals of rangeland health as described in 43 CFR 4180. ¹
	Proposed Action	369 Cattle	06/01 – 09/30	207	Implement all terms and conditions under proposed action. ²
Blackfoot City #17212	No Action	27 Cattle	06/15 – 09/30	96	¹
	Proposed Action	27 Cattle	06/15 – 09/30	96	²
Carpenter Creek #07501	No Action	1 Cattle	03/01 – 02/28	5	¹
	Proposed Action	1 Cattle	03/01 – 02/28	5	Implement all terms and conditions except for riparian resource. ³
Copper Creek #17307	No Action	5 Cattle	07/15 – 10/15	15	¹
	Proposed Action	5 Cattle	07/15 – 10/15	15	Implement all terms and conditions except for USFW Grizzly BO. ⁴
Eye Brow #17308	No Action	28 Cattle	06/01 – 06/30 09/16 – 10/15	56	¹
	Proposed Action	28 Cattle	06/01 – 06/30 09/16 – 10/15	56	Implement all terms and conditions except for riparian resource and USFW Grizzly BO. ⁵
King Mountain #00983	No Action	10 Cattle	06/10 – 10/09	40	¹
	Proposed Action	10 Cattle	06/10 – 10/09	40	²
Lower Smart Creek #03153	No Action	25 Cattle	06/15 – 10/14	100	¹
	Proposed Action	25 Cattle	06/15 – 10/14	100	⁴

Appendix B Continued

Allotment Name & Number	No Action vs Proposed Action	Livestock Number & Kind	Season of Use	AUM	Terms & Conditions
Lower Willow Creek #17302	No Action	5 Cattle	05/15 – 09/15	20	-Limit livestock browsing on woody species, such as willows, to 50% of current year's growth. -Upland forage utilization shall not exceed 50% by weight on key grass species. -Salt shall be placed at least ¼ mile from water. -All range improvements on public lands (fences and spring developments) shall be maintained prior to the beginning of each grazing season.
	Proposed Action	5 Cattle	05/15 – 09/15	20	⁴
Marcum Mountain #17213	No Action	77 Cattle	06/15 – 09/30	280	¹
	Proposed Action	77 Cattle	06/15 – 09/30	280	²
Mulkey Gulch #01556	No Action	12 Cattle	06/16 – 10/15	48	¹
	Proposed Action	12 Cattle	06/16 – 10/15	48	³
Mullan Road #17107	No Action	2 Horses	05/15 – 10/15	10	No allotment Terms & Conditions.
	Proposed Action	2 Horses	05/15 – 10/15	10	⁴
Pinegrass #03154	No Action	12 Cattle	06/15 – 10/14	51	¹
	Proposed Action	12 Cattle	06/15 – 10/14	51	⁴
Ravenna #07103	No Action	3 Cattle	06/01 – 10/01	12	¹
	Proposed Action	3 Cattle	06/01 – 10/01	12	⁴
Spring Gulch #07115	No Action	16 Cattle	06/16 – 10/15	64	¹ (Note: In some years, livestock turnout has occurred well before June 16 th under the No Action alternative.)
	Proposed Action	16 Cattle	06/01 – 09/30	64	³

Appendix B Continued

Allotment Name & Number	No Action vs Proposed Action	Livestock Number & Kind	Season of Use	AUM	Terms & Conditions
Starvation #17116	No Action	2 Horses or 1 Cattle	05/15 – 10/30	11	¹
	Proposed Action	2 Horses or 1 Cattle	05/15 – 10/30	11	³
Stewart Lake #17320	No Action	110 Cattle	06/01 – 10/15	177	Authorized use in accordance with the Stewart Lake AMP approved.
	Proposed Action	110 Cattle	06/01 – 10/15	177	-Authorized use in accordance with the Stewart Lake AMP approved. -In accordance with Title 43 CFR 4130.3-1(b), "All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of the permit or lease. -The authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices do not conform to the provisions of Title 43 CFR 4180.
Sunrise Eleven #17323	No Action	28 Cattle	06/01 – 10/15	126	¹
	Proposed Action	28 Cattle	06/01 – 10/15	126	⁴
Ten Mile #07102	No Action	17 Cattle	06/15 – 10/15	69	¹
	Proposed Action	17 Cattle	06/15 – 10/15	69	²
Tigh Creek #07114	No Action	5 Cattle	05/15 – 09/30	23	¹
	Proposed Action	5 Cattle	05/15 – 09/30	23	⁵

Appendix B Continued

Allotment Name & Number	No Action vs Proposed Action	Livestock Number & Kind	Season of Use	AUM	Terms & Conditions
Upper Smart Creek #17311	No Action	11 Cattle	06/15 – 10/14	44	-The authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices do not conform to the provisions of Title 43 CFR 4180. -Upland forage utilization will not exceed 50% by weight as measured on key forage species, (bluebunch wheatgrass, rough fescue and Idaho fescue). -Salt shall be placed at least a ¼ mile from water. Salt shall not be placed on any of the main traveled roads and not within ¼ mile of new logged areas or new tree plantation areas.
	Proposed Action	11 Cattle	06/15 – 10/14	44	-Authorized use in accordance with the Ham Gulch AMP approved. -In accordance with Title 43 CFR 4130.3-1(b), "All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of the permit or lease." -The authorized officer may modify terms and conditions of the permit or lease when the active use or related management practices do not conform to the provisions of Title 43 CFR 4180.
Wyman #17309	No Action	50 Cattle	06/25 – 09/30	161	¹
	Proposed Action	50 Cattle	06/25 – 09/30	161	⁵

¹ The terms and conditions of this grazing permit may be modified if additional information indicates that revision is necessary to conform with the fundamentals of rangeland health as described in 43 CFR 4180.

² Implement all terms and conditions under proposed action.

³ Implement all terms and conditions except for riparian resource.

⁴ Implement all terms and conditions except for USFW Grizzly BO.

⁵ Implement all terms and conditions except for riparian resource and USFW Grizzly BO.