



United States
Department of
Agriculture

Forest
Service

July 2003



Environmental Assessment

Snowy Range Cattle #1

**Brush Creek/Hayden Ranger District, Medicine Bow-Routt National Forests
Carbon County, Wyoming**

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Chapter 1: Purpose of and Need for the Proposal

Introduction

This Environmental Assessment (EA) describes the potential effects of a proposal to develop new Allotment Management Plans (AMP's) for three livestock grazing allotments within the Snowy Range Cattle #1 analysis area. The livestock grazing allotments are Lake Creek, Sawmill Creek, and Cedar Creek. As part of the proposal, new Term livestock grazing permits would be issued for the allotments. This EA also describes alternative ways of managing livestock on the allotments and the effects these different management scenarios could have on the environment and the grazing permittees. The alternatives were designed to address issues raised during the Scoping process (40 CFR 1501.7) for this analysis. They were also designed to help achieve the goals and objectives of the Medicine Bow National Forest Land and Resource Management Plan (Forest Plan). Mitigation measures are prescribed as part of each alternative to protect other resource uses and values, and monitoring requirements were prescribed to ensure that the mitigation measures are effective.

Alternative 1, which proposes maintaining existing stocking levels and management systems, may require an amendment to the Forest Plan. The amendment may be necessary due to inconsistencies with Management Area Prescriptions 4B, 5B, and 9A¹. Other alternatives analyzed in the EA are consistent with the management direction set forth in the Forest Plan. Alternatives are described in Chapter II of this EA.

The Forest Plan is being implemented as required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA, P.L. 93-378) and the National Forest Management Act of 1976 (NFMA, P.L. 94-588). The Forest Plan provides the framework for the actions proposed in the EA, and the actions are being undertaken as one step in implementing the Forest Plan.

An EA is not a decision document. It is a document disclosing the environmental effects of implementing a proposed action and alternatives to that action. The decision associated with this EA will be documented in a separate Decision Notice (DN) signed by the Brush Creek/Hayden District Ranger.

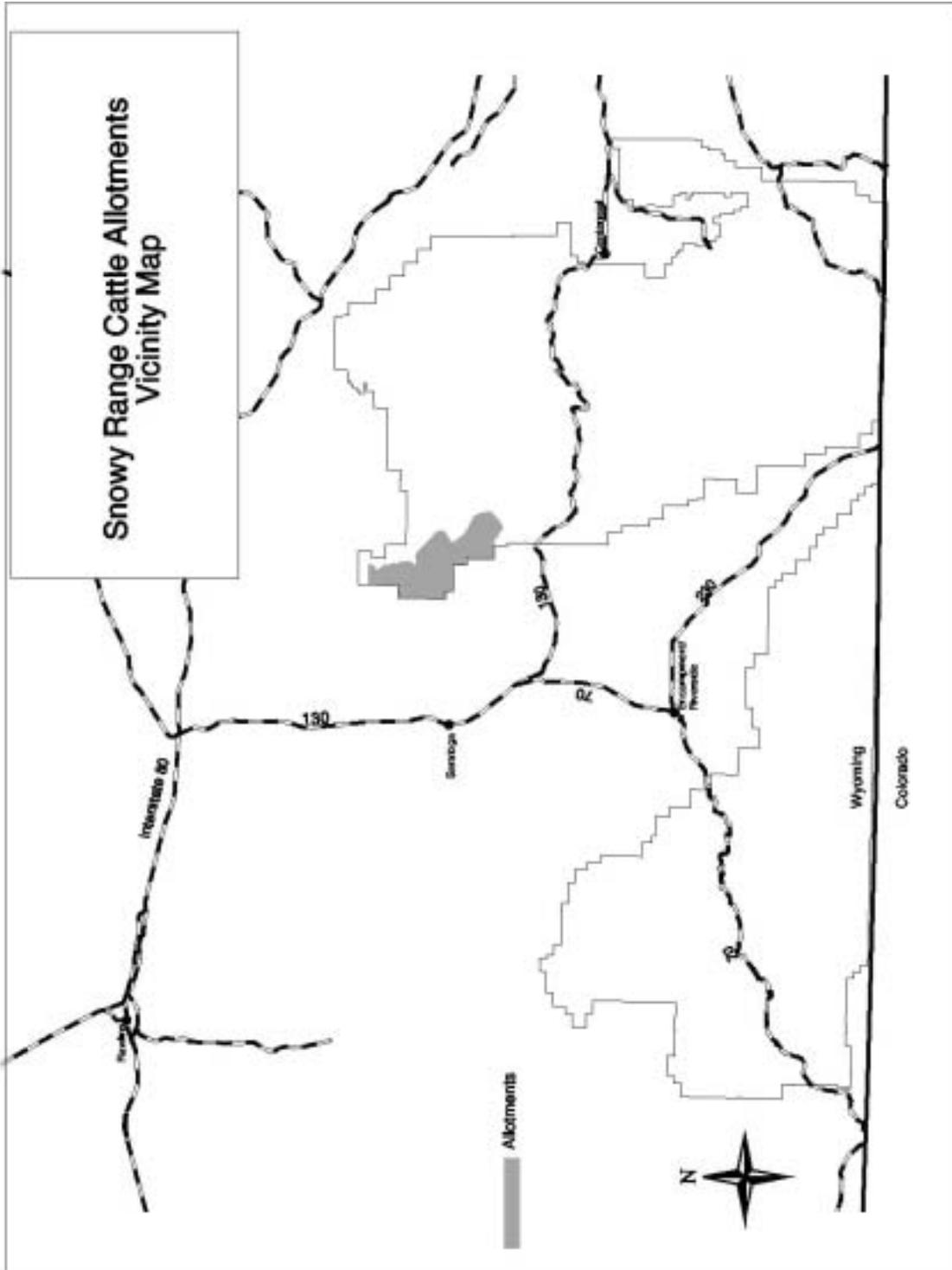
Background

The Snowy Range Cattle #1 analysis area (analysis area) contains approximately 17,625 acres. The analysis area lies on the western flanks of Kennaday Peak and Pennock Mountain (See Map 1) and ranges in elevation from 8,000 to 10,600 feet above sea level. Because of this elevational span, four vegetation life zones are present. There is a small amount of alpine tundra on the top of Kennaday Peak. Below that is the subalpine life zone characterized by spruce/fir coniferous forest. The next lower zone is the montane zone dominated by lodgepole pine, but also including aspen and limber pine. At the lower edges of the analysis area is the foothills or mountain shrub zone dominated by big sagebrush and other shrubs such as bitterbrush, rabbitbrush, and serviceberry.

The topography is rugged, with steep-sided ridges separating the drainages. Because of this ruggedness, only 25 percent (4,242 acres) of the area is considered capable range for cattle. Capable range includes those areas that are accessible to livestock and have suitable types and

¹ Management Area Prescriptions are described on EA page 9.

Map 1. Vicinity Map.



amounts of forage and water available. Capable range can be classed as either primary or secondary range based on grazing use patterns of livestock. Primary range includes that part of the capable range that livestock naturally prefer, or will use first under extensive management. Secondary range is that part of the range which is capable of supporting livestock grazing, but is used very little or not at all because of accessibility, lack of water, management system, or a combination of these. Livestock use of secondary range is normally minimal until the use level on primary range has reached or exceeded appropriate levels.

Livestock from the early 1900s through the 1940s grazed all three allotments heavily. Cedar Creek Allotment was a sheep allotment until 1956, when it was converted to a cattle allotment. The National Forest Boundary was not fenced until 1965, so before that date livestock use levels could not be well regulated. Fencing the boundary allowed more precise control of grazing levels. A three pasture deferred rotation was implemented in 1983 or 1984 but the rotation has not always been successfully achieved. In 1993 the grazing season was changed to one month, with livestock numbers increased to maintain permitted head months.

The Lake Creek Allotment has traditionally been managed under a season-long, continuous use system. It originally included the area that is presently known as Sawmill Creek Allotment. Sawmill Creek was broken out as a separate allotment in 1984. Stocking in the 1940s was 2 ½ times what it is today. The National Forest Boundary was fenced around 1940, after which stocking was incrementally reduced to the present level.

Sawmill Creek Allotment was created in 1984 from a portion of Lake Creek Allotment. It is also managed under a season-long, continuous use grazing system. Much of the grazing capacity on this allotment is on lands owned by the State of Wyoming for which the Forest Service permittee holds the lease. The permit is an ON/OFF permit which allows the permittee to run livestock on both the State and NFS portions without having to fence the State land as a separate unit. Actual stocking appears to have varied in recent years at the discretion of the permittee, although the permitted stocking level has not changed.

None of the three allotments within the analysis area is completely fenced. They are fenced along the Forest Boundary and on the lower elevation areas that are common boundaries between Lake Creek and Sawmill and between Sawmill Creek and Cedar Creek allotments. Fences are generally in satisfactory condition. There are approximately 8 miles of Forest Boundary fence against BLM lands and 2 ½ miles of Forest Boundary against State land.

Water developments include two spring developments on Cedar Creek Allotment that are in satisfactory condition. Opportunities for additional spring developments to improve livestock distribution are limited due to steepness of the terrain.

Purpose of and Need for Action

The Medicine Bow National Forest and Thunder Basin Land and Resource Management Plan (Forest Plan) identifies livestock grazing as an appropriate multiple-use, as long as it meets Forest Plan Direction and Standards and Guidelines. Currently, the Snowy Range Cattle #1 allotments are authorized under Term grazing permits. Although the allotments have AMP's, the plans are over 15 years old. Further, they do not have a current National Environmental Policy Act (NEPA) analysis associated with them. Snowy Range Cattle #1 AMP's were last approved in: 1) Lake Creek: June 19, 1986; Sawmill Creek: June 18, 1986; and Cedar Creek: August, 1987.

The *purpose* of the analysis is to:

- 1) Help achieve the goals, objectives, and desired condition in the Snowy Range Cattle #1 allotments, as identified on Forest Plan pages III-3 and III-11;
- 2) Complete appropriate NEPA analysis on the allotments; and
- 3) Maintain or improve satisfactory rangeland conditions for all resource uses that occur within the analysis area.

The analysis is *needed* to:

- 1) Meet Section 504 of Public Law 104-19 which directs the Forest Service to complete NEPA analyses on existing livestock grazing allotments. Public Law 104-19 was signed into law on July 27, 1995 following the passage of the 1995 Recession Bill;
- 2) Provide direction on how authorized livestock grazing should be managed to meet Forest Plan Direction and Standards and Guidelines (Medicine bow Forest Plan pages III-2 to III-84 and pages III-89 to III-218, respectively); and
- 3) Improve riparian area condition, aquatic habitats, and adjacent uplands that are in unsatisfactory condition due to past and/or present over-utilization and trampling by livestock.

This action responds to the goals and objectives outlined in the Medicine Bow Forest Plan (pages III-3 through III-5), and helps move the project area towards desired conditions described in that plan.

Specific goals include:

- Provide a broad spectrum of dispersed and developed recreation opportunities in accordance with identified needs and use trends.
- Locate historical and archaeological sites; evaluate them for significance; and preserve, protect, and/or interpret for public information a representative sample of sites associated with and typifying the economic and social history of eastern Wyoming.
- Manage fish and wildlife habitats, including plant diversity, to maintain viable populations of all known native vertebrate species and meet population objectives of management indicator species.
- Maintain or restore the inherent biological, physical, and aesthetic values of riparian ecosystems.
- Plan, develop, protect, and manage the range resource to maintain it in satisfactory or better condition.
- Improve or maintain water quality to meet or exceed State of Wyoming water quality standards and increase water quantity where possible.

Forest Plan Management Emphasis

The Forest Plan identifies different management areas in which specific resource activities and values are to be emphasized. Table 1 shows management emphasis areas within the SRC #1 Analysis Area. Map 2 shows the arrangement of the different management prescriptions within the analysis area.

Table 1. Management Emphasis Areas within the SRC #1 Analysis Area.

Management Prescription	Percent of SRC #1 Analysis Area	Description of Management Emphasis
4B	38	Wildlife habitat for management indicator species
4D	16	Aspen management
5	39	Big game winter range*
7E	2	Wood fiber production and utilization
9A	5	Riparian area management

*Though 38 percent of the analysis area is classed as big game winter range in the Forest Plan, very little of this area is true winter range. Deep snow precludes use by elk or deer in all but the mildest winters. Generally this area is used from early spring through fall.

Decision Framework

Given the purpose and need, the deciding official will review the four proposed alternatives in order to make the following decisions:

- Whether to continue to authorize livestock grazing and, if so, what level of cattle grazing to authorize;
- The type of grazing management system to implement;
- How the allotment boundaries should be arranged;
- The types of rangeland improvements needed; and
- Specific mitigation and monitoring measures to implement.

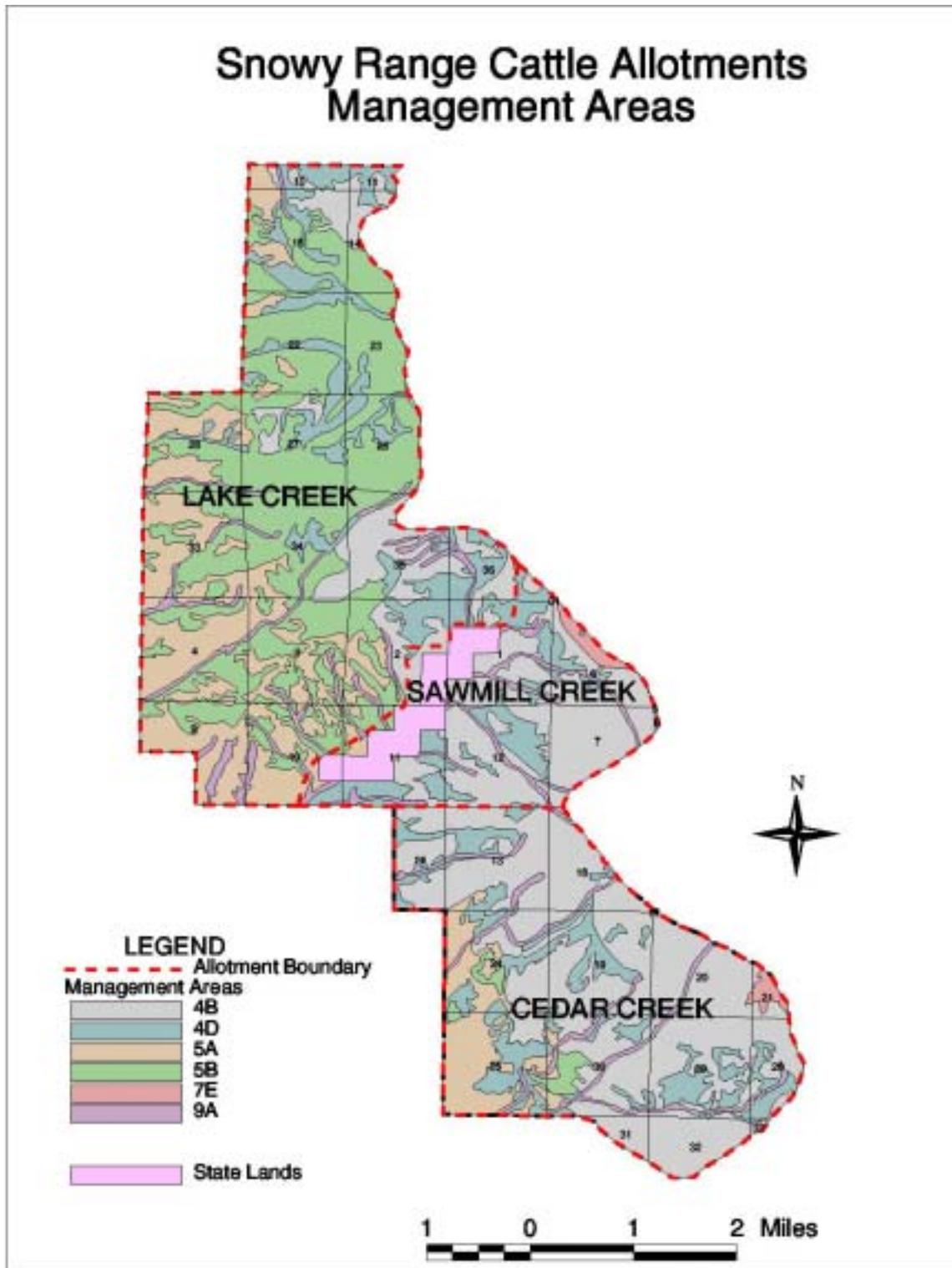
Public Involvement

The proposal was listed in the Schedule of Proposed Actions in 2000 and thereafter. The proposal was also provided to the public and other agencies for comment during scoping which took place on September 1, 2000. From this scoping effort, four letters were received. The letters were reviewed and a list of issues to be addressed during the analysis process was developed.

Issues

The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues were defined as those directly or indirectly caused by implementing the Proposed Action. Non-significant issues were identified as those: 1) outside the scope of the analysis; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence.

Map 2. Management Areas.



The Forest Service identified two significant issues raised during scoping. **Significant issues include:**

1) Poor condition of some riparian and aquatic habitats and adjacent uplands due to over-utilization by livestock resulting from poor livestock distribution and overstocking: Under the existing management systems, cattle have spent too much time in and near riparian areas. This has resulted in trampling of streambanks and over-utilization of vegetation in riparian areas and adjacent uplands. This over-utilization has altered plant communities so that they are less productive and diverse and do not provide adequate protection from natural erosive forces.

Indicators² include:

- Soil erosion and compaction
- Condition of some stream channels and banks
- Condition of some plant communities in riparian areas and adjacent uplands

2) Economic efficiency and operational stability: Operational efficiency for both permittees and the Forest Service is essential in order to produce desired condition of the physical resources on National Forest lands. The Forest Service desires grazing management systems that will provide for good livestock distribution while still being a reasonable investment for the public and permittees. For the permittee's part, if grazing livestock on the National Forest becomes too expensive or does not fit into the rest of their operations, they will be forced to seek summer-fall pastures off National Forest System lands. In some instances, if alternative pasture is too costly or is not available, survival of the ranch may be in danger. Livestock grazing on the National Forest helps sustain dependent individuals and thereby contributes to the viability of the livestock industry and local communities. Secondary effects associated with a healthy ranching-based local economy are various and complex. Since privately owned ranch lands adjacent to National Forest provide critical winter habitat required by big game and other wildlife species as well as scenic and open space values, they directly affect wildlife resources and the quality of life for the non-ranching public in the area. Across the west, private ranches are being turned into subdivisions, which negatively impacts wildlife habitat, scenery, and open space values.

Indicators include:

- Economic Viability/Efficiency for Permittees

Non-significant issues include:

- 1) Some fences dividing state and Forest Service lands do not meet Forest Service guidelines for allowing wildlife movements:** As fences need to be replaced, new fences meeting the guidelines will be constructed.
- 2) Four-wheeler traffic is getting out of control and causing erosion in numerous areas of the allotment:** Off-highway vehicle (OHV) use is currently being analyzed through the Sierra Madre Travel Management Roads Analysis Process. This document will outline opportunities for road and trail closures, as well as increased loop opportunities.
- 3) Loss of aspen throughout the analysis area:** Aspen loss will be addressed through National Fire Planning and the Healthy Forest Initiative.

² Indicators are measurable ways of displaying how issues could be affected by project implementation. Indicators were developed for significant issues used to develop the alternatives.

Chapter II: Description and Comparison of Alternatives:

This chapter describes and compares the alternative management scenarios considered for the Snowy Range Cattle #1 allotments. It includes a description of each alternative and a map of structural improvements common to all of the action alternatives. This section also presents the alternatives in comparative form, sharply defining the differences between each alternative and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative and some of the information is based upon the environmental, social and economic effects of implementing each alternative.

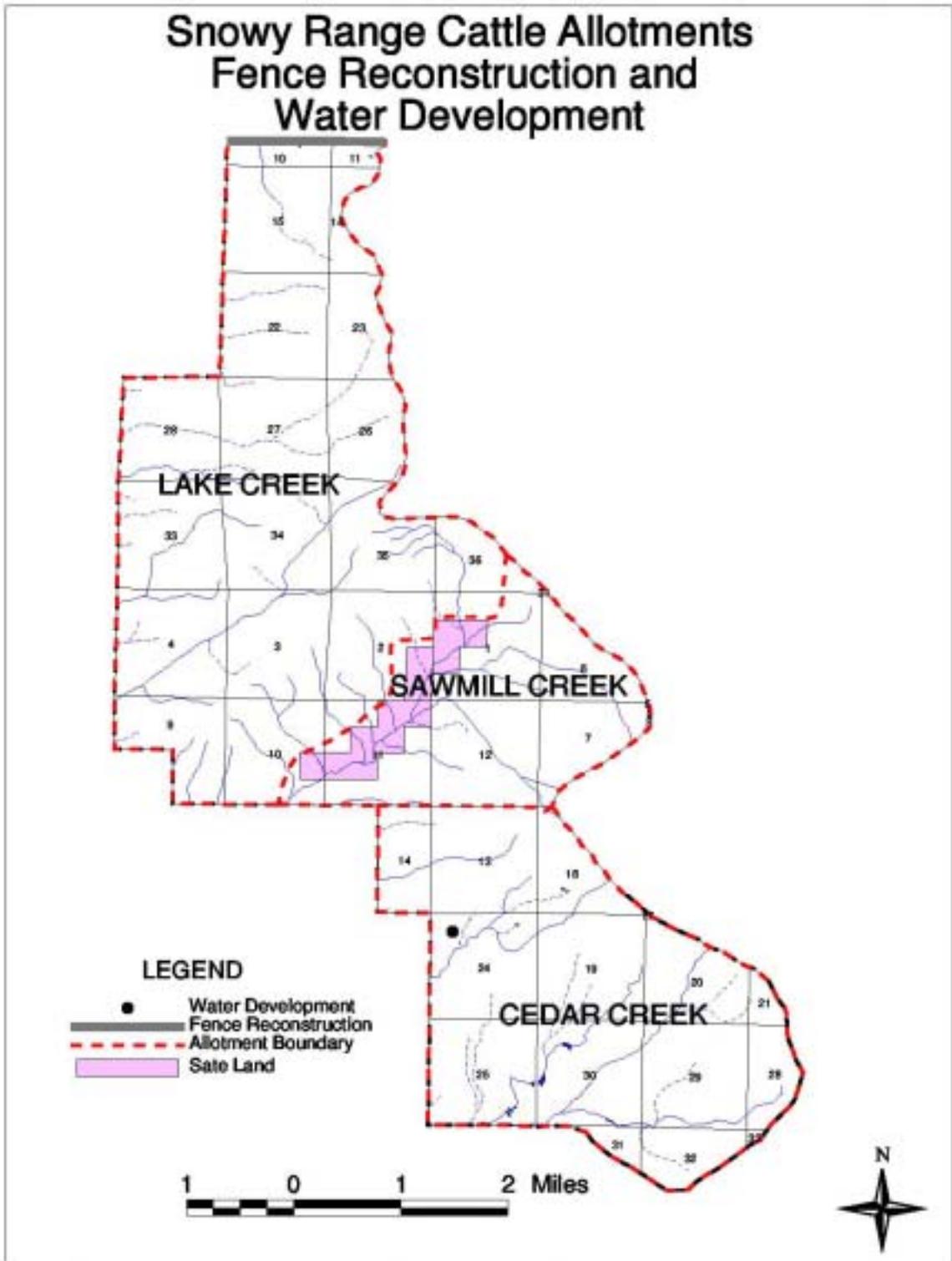
Alternatives Analyzed in Detail

Alternative 1– Proposed Action: Maintain Existing Stocking Levels and Management Systems

This alternative is largely a continuation of present grazing management systems with some small changes. As described in the Issues section (Chapter I) and in the Affected Environment portion (Chapter III) of this document, this management system has not resulted in satisfactory resource conditions on some streams and adjacent uplands. It is included here largely as a baseline for comparison with other alternatives.

- **Cedar Creek:** Cedar Creek Allotment would continue with a 30 day grazing season which would be alternated between early, mid and late season between the dates July 1 to September 30. Permitted Animal Unit Months (AUM's) would stay the same as currently permitted (see Table 3, EA page 13). Since livestock would be removed from the allotment when Forest Plan utilization and trampling standards are met, the grazing season may actually be shorter than one month some years. The allotment would be stocked with 371 cow/calf pairs. One new water development would be constructed. No new fence construction would be necessary.
- **Lake Creek:** Continue with the present season-long grazing system and remove livestock from the allotment when Forest Plan utilization and trampling standards are reached. Currently 451 yearling cattle are permitted between June 24 and September 30. Capacity estimates indicate that Forest Plan standards would trigger removal of livestock in mid August most years and will result in a 40 percent reduction in permitted AUM's. Approximately 2 ½ miles of Forest Boundary fence would be reconstructed (see Map 3). The allotment would be rested from livestock use for three years (2002-2004) to allow for recovery of a prescribed burn and to allow both woody and herbaceous plants in unsatisfactory condition areas to improve in vigor.
- **Sawmill Creek:** Continue with present season-long grazing system and remove livestock from the National Forest portion of the allotment when Forest Plan utilization and trampling standards are reached. Currently 39 cow/calf pairs are permitted to graze between June 23 and September 30. Capacity estimates indicate the Forest Plan standards will trigger removal of livestock in July most years and will result in a 78 percent reduction in Permitted AUM's **on the National Forest (ON) portion of the permit.** Since the State and National Forest acres on this allotment are not fenced separately, it is unlikely that the permittee would only remove cattle from the Forest Service portion. The most likely course of action would be to remove livestock from the entire allotment. If

Map 3. Structural Improvements (Water Developments and Fence Reconstruction) Common to All Action Alternatives (Alternatives 1, 2, and 4).



livestock were removed from the entire allotment when grazing use levels reached 35 percent (the prescribed maximum use under a season-long grazing system) the reduction in use on the entire allotment would be 61 percent. No new fence construction would be necessary.

Alternative 2 - Shortened Grazing Season and Adjustments in Livestock Numbers

- **Cedar Creek:** Same as in Alternative 1.
- **Lake Creek:** Change from a season-long grazing system with a 99 day grazing season to a 30 day grazing season. A 15 percent reduction in permitted AUM's would also be made so as to match stocking with estimated capacity. For a one month season this would convert to 875 cattle. The new grazing system would be implemented after a three year rest from livestock grazing. The allotment would be stocked with mature cattle without calves rather than yearlings most years. Approximately 2 ½ miles of Forest Boundary fence would be reconstructed. The allotment would be rested from livestock use for three years (2002-2004) to allow for recovery of a prescribed burn and to allow both woody and herbaceous plants in unsatisfactory condition areas to improve in vigor.
- **Sawmill Creek:** Make the allotment one pasture in a multi-pasture deferred rotation system that incorporates private and BLM lands and adjust livestock numbers to fit estimated capacity on National Forest land (a 43 percent reduction in permitted AUM's). Under this system the allotment would be used no more than 39 days by 92 cow/calf pairs, and the season of use would be varied within the dates July 1 to September 30. No new fence or water developments would be constructed.

Alternative 3 - No Action - No Livestock Grazing

Under this alternative livestock grazing permits would be cancelled and there would be no authorized domestic livestock grazing on the National Forest lands within the allotments. There are approximately 467 acres of land owned by the State of Wyoming within the SRC#1 Analysis Area. These would have to be fenced out from the National Forest lands in order for the grazing lease-holder to continue to run livestock there. The National Forest lands would continue to be grazed by the native wildlife species and might also receive some use from unauthorized livestock entering the area through damaged fences against adjacent private, state or BLM lands or from Forest Service allotments to the south and/or east that are only separated from this analysis area by natural barriers such as steep slopes and dense forest cover. Maintenance of Forest Boundary Fence would no longer be done by a Forest Service permittee and would have to be assumed by adjacent landowners wherever livestock trespass issues would be a concern. Spring developments would be removed; or, if considered valuable for wildlife, they could be maintained by District wildlife personnel.

Alternative 4 - Preferred Alternative: Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers

In response to input from the District hydrology staff, an additional action alternative for Lake Creek and Cedar Creek allotments has been proposed. This alternative includes the same grazing systems and permitted numbers as Alternative 2 (Shortened Grazing Seasons), but calls for seven consecutive years of rest from livestock grazing for Lake Creek Allotment and 3-5 years of rest for Cedar Creek Allotment before the new grazing systems would be implemented. The longer rest period is proposed to address concerns about riparian area conditions in Cumberland Gulch, Troublesome Creek and other drainages on the allotments.

Mitigation Common to All Action Alternatives

In response to public comments on the proposal, mitigation measures were developed to ease some of the potential impacts the various alternatives may cause. The mitigation measures may be applied to any of the action alternatives. Standard best management practices (BMPs) outlined in the Wyoming Nonpoint Source Management Plan (WYDEQ, 2000) and the Watershed Conservation Practices (WCP) Handbook (FSH 2509.25) (USDA Forest Service, 1999) are also recommended for inclusion in the selected alternative.

- 1) Rest Lake Creek Watershed, specifically Cumberland Gulch in (Lake Creek Allotment) from grazing for at least 3 years (preferably longer) to start recovery from 2001 flood event. Evaluate stream conditions at the end of the rest period to ensure stream is recovering to where it is no longer Non-Functioning under the PFC protocol. Exclude livestock for at least three years or until stream is at least Functioning at Risk.
- 2) Use riparian utilization monitoring as the primary trigger for removal of livestock from pastures/allotments.
- 3) Improve the user-created trail up Cumberland Gulch so as to minimize negative impacts to the riparian area and susceptibility to damage by livestock. Involve the special use permit holder who uses the trail in this effort.

Monitoring Common to All Action Alternatives

The National Forest Management Act (NFMA) requires national forests to conduct monitoring tasks. The current 1985 Medicine Bow Forest Plan requires (Amendment #4, page IV-45 Monitoring Item 29), range condition and trend to be monitored. The stated allowable variance is: "No declining trend in range condition is allowed". Monitoring within the past decade has shown that grazing levels have often exceeded Forest Plan maximum allowable use guidelines in some key grazing areas on these allotments.

Table 2 contains monitoring requirements that would be implemented under the action alternatives. Purposes of monitoring include:

1. Verify that livestock management practices are in compliance with the AMP.
2. Track changes in resource conditions brought about by implementing the new management plan.
3. Verify whether resources are moving toward desired condition over the long term.

Table 2. Monitoring Requirements for all Action Alternatives.

Objective	Type	Frequency	Responsibility
Monitor compliance with Forest Plan S&Gs for livestock utilization for both herbaceous and woody species.	Utilization – Ocular estimates or stubble height measurement.	Annually	Forest Service and/or permittee

Table 2. (Cont'd)

Objective	Type	Frequency	Responsibility
Long-term trend monitoring of plant communities in representative riparian and upland plant communities presently in unsatisfactory condition due to effects of livestock.	Photo Points in representative key areas. Establish Cover Frequency Transects, at least one per allotment in riparian areas.	Every 5-10 years depending on perceived rate of change in livestock effects or plant community changes. Re-read Cover Frequency Transects every 10 years	Forest Service
Monitor streambank conditions relative to livestock trailing/trampling and effects of streambank condition on stream channel characteristics. Monitor a minimum of one reach per allotment.	Photo points, survey cross-sections, bank trampling surveys, and pebble counts.	Every 1 - 2 for first five years of grazing under the new AMP's; every 5 th year thereafter.	Forest Service and/or permittee
Establish/validate baseline data for existing trout habitat and populations in streams of concern and monitor these populations.	Electro fishing, visual determinations of presence/absence, ocular evaluations of habitat quality/quantity and fish passage.	One season to establish baseline. 1 to 3 year intervals for trend monitoring.	Forest Service

**If a change in stocking level is made for any allotment, annual monitoring for three years after the change will include the following: stubble height measurements, utilization on browse species, and photo points in key areas. If this monitoring proves the change to be consistent with Forest Plan Standards and Guidelines, the allotment will return to the monitoring schedule above. If not, another adjustment will be made and the three years of monitoring will begin again.

Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Table 3 displays important components of the Proposed Action and each alternative, and Table 4 displays how the issues would be addressed by implementation of the various alternatives.

Alternative 1: Proposed Action - Maintain Existing Stocking Levels and Grazing Systems

Alternative 2: Shortened Grazing Season and Adjustments in Livestock Numbers

Alternative 3: No Action – No Livestock Grazing

Alternative 4: Preferred Alternative - Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers

Table 3. Important Components of the Proposed Action and Each Alternative.

Alternative Component	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Cattle Numbers - Cedar Creek - Lake Creek - Sawmill Creek	371 Cow/calf pairs 451 yearling 39 Cow/calf pairs	371 Cow/calf pairs 875 Cattle 92 Cow/calf pairs	0 0 0	371 Cow/calf pairs 875 Cattle 64 Cow/calf pairs
Grazing System - Cedar Creek - Lake Creek - Sawmill Creek	Short season Season-long Season-long	Short season Short season Short season	N/A N/A N/A	Short Season Short Season Short Season
Maximum Days Used by Livestock each Year - Cedar Creek - Lake Creek - Sawmill Creek	30 99 100	30 30 39	N/A N/A N/A	30 30 39
Permitted AUM's - Cedar Creek - Lake Creek - Sawmill Creek	499 1,023 169 (NFS) 108 (STE) 277 (Total)	499 875 53 (NFS) 103 (STE) 156 (Total)	N/A N/A N/A	Same as Alt. 2 Same as Alt. 2 Same as Alt. 2
Estimated Capacity (AUM's) - Cedar Creek - Lake Creek - Sawmill Creek	538 611 37 (NFS) 63 (STE) 100 (Total)	538 875 53 (NFS) 103 (STE) 156 (Total)	N/A N/A N/A	Same as Alt. 2 Same as Alt. 2 Same as Alt. 2
Years of Rest from Livestock Grazing - Cedar Creek - Lake Creek - Sawmill Creek	0 3 0	0 3 0	N/A N/A N/A	3-5 7 0
Fence Reconstruction - Cedar Creek - Lake Creek - Sawmill Creek	0 miles 2 ½ miles 0 miles	0 miles 2 ½ miles 0 miles	N/A N/A N/A	0 miles 2 ½ miles 0 miles
Water Developments - Cedar Creek - Lake Creek - Sawmill Creek	1 0 0	1 0 0	N/A N/A N/A	1 0 0

Table 4. How the Issues Are Addressed By the Alternatives.

Issue Indicator	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Soil Erosion and Compaction	Continued erosion in localized areas. Soil productivity would continue to decline due to soil compaction.	Gradual recovery. Moving toward meeting Forest Plan Standards.	Most rapid recovery of all alternatives.	Best soil recovery of all action alternatives.
Condition of Some Stream Channels and Banks	Delayed recovery and possible degradation. Likely that some streams would continue not to meet Forest Plan Standards and/or Water Quality Standards.	Delayed recovery. Possible that a few streams may not meet Forest Plan Standards for several decades without additional rest.	Fastest recovery of all alternatives. All streams would meet Forest Plan Standards within approximately 5 years.	Fastest recovery of all action alternatives. Probable that all streams would meet Forest Plan Standards within 5 - 10 years.
Condition of Some Plant Communities in Riparian Areas and Adjacent Uplands	Rapid or consistent improvement is not expected, particularly in Lake Creek and Sawmill Creek allotments, since permitted use exceeds estimated capacity and timely and consistent removal of livestock at maximum allowable use levels may be difficult to achieve.	Areas in unsatisfactory condition are expected to improve due to minimized overgrazing and trampling. Plant vigor and litter cover should improve fairly rapidly.	Unsatisfactory rangeland conditions should improve more quickly than under any other alternative.	The effects would be similar to Alternative 2; however, unsatisfactory conditions on Lake Creek and Cedar Creek allotments would improve more quickly due to rest from livestock use.
Economic Viability/Efficiency for Permittees	Least change in management practices, but substantial reduction in AUM's for Lake Creek and Sawmill Creek permittees if cattle are actually removed at proper use (40% reduction on Lake Creek, 61% reduction on Sawmill Cr). No use of Lake Creek for three years. Greatest uncertainty in when livestock will have to be brought home	Least reduction of AUM's of all action alternatives. No use of Lake Creek for 3 years. Requires more work than Alt. 1 on the Lake Creek and Sawmill Creek allotments regarding changing how permittees run livestock on some of the non Forest pastures. Rotation systems on private and/or BLM pastures could benefit rangeland health on those areas, ultimately providing more forage and/or more management flexibility for permittees.	Greatest negative impact on all permittees. Loss of 100% of permitted AUM's. Would require permanent herd reductions or purchase or lease of alternate pasture on the part of the permittee.	Second greatest negative impact to permittees Cedar Creek-No use for 3 years Lake Creek-No use for 7 years, then 15% reduction in AUM's Sawmill Creek-43% reduction in AUM's

Chapter III. Existing Condition and Environmental Consequences

Introduction

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in Table 5.

Existing Condition

Existing condition information provides details about the various resources and uses within the SRC #1 analysis area. Resource descriptions include the existing condition of the environment and the effects of past, known management activities.

Environmental Consequences

Environmental Consequences information describes the consequences, or environmental effects, of implementing the alternatives. The alternatives were designed to address one or more of the issues outlined in Chapter I of this EA. Direct, indirect, and cumulative impacts are described for each alternative. The issues from EA Chapter I, particularly the indicators used to measure the effects of the issues, are used as the organizational basis of this chapter.

Definitions:

Direct Effects are caused by the action and occur at the same time and place.

Indirect Effects are caused by the action and occur later in time and farther removed in distance.

Cumulative Effects are impacts on the environment which result from increased impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions.

Past, present, reasonably foreseeable future actions analyzed in this EA include: Grazing has been the primary land use in this area. Historical grazing included both sheep (until 1956) and cattle at higher stocking rates than present. Utilization levels have often exceeded the allowable levels in the past (Haas, 2001a).

Road density in the area is generally low. However, due to the highly erodible soils, roads are contributing sediment to streams in the area. Middle Cedar Creek and the headwaters of Sawmill Creek have the highest road densities in the analysis area.

Prescribed burning has occurred in the Lake Creek and Cedar Creek Watershed within the past 10 to 15 years. One area burned in the headwaters of a tributary of Cumberland Gulch (Section 4, T 17N, R82 W) now has a primarily grass vegetative cover, including bluegrass. This area was headcutting up the drainage even prior to the large rainstorm event (Snook, 2001, Purchase, 2002). Similar areas of headcutting have not been observed in other areas with mature sagebrush vegetation.

Multiple cattle trails are evident on the steep erodible slopes of these watersheds. In areas, the parallel trails have created a terraced effect on the hillsides. The amount of connected disturbed area in some areas is very large, leading to the expansion of the stream network and increased runoff response during rainstorm events (Purchase, 2002).

Timber from the Cedar Timber Sale has been harvested in the Cedar Creek Watershed since 1996 and will be ongoing over the next several years. One section of the Cedar Pass road (NFSR) 261 has slumped repeatedly in the headwaters of Middle Cedar Creek. This section of road was improved in 1998, which has increased the stability of the road. The slump area is not located near any streams, and is not contributing sediment directly to streams in this watershed. Water diversion ditches located in the Cedar Creek watershed have overtopped or otherwise failed over the past decade, leading to localized gully development and other soil erosion and sedimentation. The effects of these failures on stream channels have not been surveyed.

The Forest Service, in conjunction with the Bureau of Land Management (BLM) and the Wyoming Game and Fish Department (WGFD), has proposed a prescribed burn for the Pennock Mountain area. The prescribed burn would result in approximately 3,600 treated acres total within two different management units; the Pennock Mountain BGCWR, located on BLM and WGFD lands, and the Lake Creek grazing allotment, located on National Forest System lands. The treatment target is to kill approximately 50 percent of the sagebrush and mountain shrub plants within the analysis area, with an acceptable range of 35 to 75 percent. The burn is anticipated to take place in the spring of 2004.

SIGNIFICANT ISSUES: Existing Condition and Environmental Consequences

ISSUE 1: Poor condition of riparian, aquatic habitats, and adjacent uplands due to over-utilization caused by poor livestock distribution and/or overstocking.

Indicators include:

- Soil Erosion and Compaction
- Condition of Stream Channels and Banks
- Condition of Plant Communities in Some Riparian Areas and Adjacent Uplands

INDICATOR 1. Soil Erosion and Compaction

EXISTING CONDITION

Exposed soil conditions from trailing and trampling exist in certain areas, especially in the Goetze Creek, Troublesome Creek area, Cedar Creek, Badger Creek, Cumberland Gulch (Lake Creek) and Sawmill Creek and (Barott, 2002) (Snook, 2001) (Haas, 2001a) (Safranek, 2001). Transects conducted in the analysis area show that some areas have high amounts of bare soil. The highest areas of bare soil found in transects are in Cedar Creek and Lake Creek allotments. There is one horse trail used by an outfitter that is mid-slope and runs parallel to the slope in the Cumberland Gulch Area.

There are three large gullies and a few smaller ones that have formed in the Cumberland Gulch caused primarily by one large rain event during July, 2001. However, there is evidence that smaller gullies may have existed before the rain event (Barott, 2002). The Troublesome Creek area also has some gully formation, but appears stable. Grazing activities should be planned to insure that the gullies do not become larger than under current management.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Grazing in the Sawmill and Lake Creek allotments would occur during the times of the year when soils usually contain the most moisture (early summer) and would cause more soil compaction than in other times of the year. Increased compaction on these soil types would reduce water infiltration, increase surface runoff and, therefore, increase soil erosion. Continual grazing with high stocking rates would not allow plants to maintain their vigor. Compacted soil also can reduce plant vigor. Bare and compacted soil from trampling and trailing in the Sawmill and Lake Creek allotments would not change substantially.

Under Alternatives 1 and 2, the management plan for the Cedar Creek Allotment would stay the same as it has for the past 7 years. There would be increased compaction around the immediate vicinity of the new water development, but the development would take grazing pressure off the riparian areas. Monitoring for utilization and trampling standards would insure that the soil standards in this area are not exceeded.

Cumulative Effects: Compared to the other alternatives, the potential for adverse cumulative effects for soils would be the greatest with this alternative. Due to the high rate of stocking, season long grazing and difficulty of removing stock when the forage has reached capacity in Sawmill and Lake Creek allotments, unacceptable soil compaction and erosion would still occur. As long as Cedar Creek Allotment continues to be monitored, there would be slowly improving soil conditions.

All Terrain Vehicle (ATV) use, horse trail use in the Cumberland Gulch, herbivore grazing other than cattle and the Pennock Mountain prescribed fire would all have some effect to the overall soil productivity.

ALTERNATIVE 2 – Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: *This alternative would have less compaction problems in the Lake Creek and Sawmill Creek allotments because typically late summer and early fall are times when the soil is the driest. If compaction is reduced, the plants would grow more vigorously. Further, there would be less bare soil. Reducing the length of the grazing season would allow for a slow recovery of the soil conditions in the Cumberland Gulch. There is no difference in management in the Cedar Creek allotment between alternatives 1 and 2, so the effects would be the same.*

The reduction in the stocking rate would mean less pressure on the soil resources. Due to the lower numbers of cattle, soil compaction would decrease. With proper stocking rates, plants would grow more vigorously and the larger root mass would help hold the soil in place. Lower stocking rate would also reduce the amount of trampling that is taking place and would reduce the potential for soil erosion. If implemented, these practices should maintain Standards and Guidelines. The allotments would be monitored and the necessary adjustments would be made.

Cumulative Effects: Under this alternative, the overall soil conditions would include less soil erosion due to more vigorous plant growth. As long as the Cedar Creek allotment is monitored, there would be a slow improvement in soil conditions. The remaining cumulative effects would be the same as Alternative 1.

ALTERNATIVE 3 - No Action – No Livestock Grazing:

Direct and Indirect Effects: There would be no cattle grazing impacts to the soil resource which would allow sagebrush, willows and alder vegetation to mature. Areas along the ridgetops with shallow soils do not have as much grazing pressure as downslope, but are drier and not as productive. Consequently, they would take longer to improve. The riparian areas that are trampled, compacted, and have exposed soil would slowly recover from grazing pressures. The infiltration of water into the soil would increase if the compaction is reduced over time and the vegetation is restored to bare spots. The midslope to toeslope positions and riparian areas without heavy trampling and trailing and with a shrub and grass component would see the quickest vegetative and soil recovery. There would be an increased amount of litter, which would help to reduce the effects of erosion. Nutrients would be cycled more slowly with the no grazing alternative. This alternative would provide the most rapid recovery for all grazing impacted areas.

Cumulative Effects: This alternative would have the least cumulative impact on the soil resource. Compaction would gradually diminish over time and bare areas would revegetate. Soils would recover most quickly in areas where soils are moist. Recovery would take the longest in low productive shallow soils along the ridges or in areas of greatest compaction on trails, around salt blocks, under shade or localized riparian areas. Other activities, such as grazing from other herbivores, would continue at some level.

ALTERNATIVE 4 – Preferred Alternative - Rest Followed by Shortened Grazing Seasons and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Allowing more time for the Lake Creek and Cedar Creek allotments to accumulate more ground cover and for more vegetation to become established would be beneficial, especially in the Cumberland Gulch areas where the gullies have formed from a high intensity rainstorm.

Resting the allotment for a longer period of time would allow for more plant growth and more ground cover from dead leaves and grasses. Increased vegetative litter would increase water infiltration into the soil and reduce overland flow of water and soil erosion. Compaction in the trampled areas would subside, allowing for better plant growth. Exposed soil would have a longer time to revegetate. Gullies would have a longer time to stabilize since there would be no chance for sloughing of the sides of the gully by cattle.

Cumulative Effects: Of all the grazing alternatives, this would have the least potential for adverse cumulative effects. The resting period for Lake Creek and Cedar Creek would give an additional time for bare areas or eroded areas to revegetate and those plants to become established. Mitigations recommended to reduce the potential adverse effects would improve areas currently not meeting Forest Plan Standards and Guidelines and ensure that they are not exceeded in the future. Other activities mentioned in the cumulative effects of Alternative 1 would continue.

INDICATOR 2. Condition of Stream Channels and Banks

EXISTING CONDITION

Good distribution of livestock has been a problem, resulting in the concentration of livestock in riparian areas. Streambank trampling, trailing along streambanks, altered riparian vegetation and a reduction of streambank shrubs have reduced the stability of these streams. Willow and other streambank vegetation has been replaced by bluegrass, making these areas much more susceptible to trampling and erosion.

The lower reaches of Cumberland Gulch and Troublesome Creek were rated using the Proper Functioning Condition method, with Cumberland Gulch rated as Non-Functioning³ (Snook, 2001) and Troublesome Creek rated as Functioning at Risk⁴ (Snook, 2000). The primary impact to both creeks was from bank trampling and poor riparian vegetation condition, with areas of streambank sloughing common along Cumberland Gulch and Goetze Creek.

Goetze Creek, Cumberland Gulch, Cedar Creek tributaries, Badger Creek, portions of Cedar Creek and its tributaries and Troublesome Creek were found to not meet Forest Plan Standards for Management Area 9A applicable to Range and Water Uses Management (listed below)

ENVIRONMENTAL CONSEQUENCES

Compliance with Forest Plan Standards and Guidelines for forage utilization and bank trampling are the largest key to control livestock grazing effects on stream channels and banks. Under all action alternatives, livestock would be removed from the affected allotment when Forest Plan Standards and Guidelines are met. The effects analysis documented in this section hinges on the following Standard and Guideline:

Streambank Conditions: Removal of livestock would be triggered so that streambank stability is maintained at 80 percent of reference conditions.

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Recovery of heavily impacted riparian and stream channel area would be difficult in Lake and Sawmill Creek allotments since permitted use is higher than estimated capacity. Frequent monitoring of riparian utilization and streambank trampling standards would need to occur each year, followed by rapid removal of cattle from the allotment when standards are met. This would be difficult due to logistical and budgetary constraints and it is likely that riparian areas would continue to be heavily impacted most years. In the Lake Creek allotment, removal of cattle mid-season would be very difficult, increasing the probability that riparian areas in this allotment would continue to be heavily impacted. The streams currently not meeting Forest Plan Standards in Lake Creek and Sawmill Creek allotments would likely not recover and would continue to not meet Management Area 9A standards for range and water use management.

³ These are stream systems that do not provide adequate vegetation, landform, or large woody debris to reduce stream energy associated with high flows.

⁴ These are stream systems that are functioning, but existing soil, water, or vegetation conditions make them sensitive to degradation.

It is unknown why the streambanks and riparian areas in Cedar Creek Allotment have not recovered with the shorter grazing season that has been in place since 1996, unless it is because the streams have not yet recovered from the effects of the previous season long grazing system. Monitoring to determine when riparian stubble height and streambank trampling have reached acceptable limits would help to determine when to remove cattle. With this criterion for cattle removal, this grazing strategy should gradually reduce streambank impacts and improve stream channel conditions.

Under this alternative, floodplain function would likely be similar to existing conditions on Lake Creek and Sawmill Creek Allotments. Heavily impacted riparian areas would continue to have decreased floodplain function and some wetland areas would continue to be trampled and grazed due to overstocking and season long grazing.

Floodplain and wetland conditions in Cedar Creek allotment should recover slowly under the current shorter season of use grazing system. The riparian stubble height and woody browse utilization criteria should trigger removal of cattle prior and allow slow recovery in this allotment.

Cumulative Effects: In Lake Creek and Sawmill Creek allotments, the cumulative effect of this grazing system, in addition to years of over-utilization, would continue to delay recovery, or possibly contribute to additional degradation of the riparian ecosystems. During drought years, it is highly likely that riparian ecosystems would be further degraded under this grazing strategy.

In the Cedar Creek Allotment, the cumulative effects of the timber harvest would have little effect on the streams affected by grazing due to the limited amount of harvest in the watershed and the upper watershed location of the units. The primary cumulative effect in this allotment is the effects of the long history of grazing and over utilization of riparian areas. This short season grazing strategy, with increased riparian utilization monitoring should allow gradual recovery of the riparian ecosystems over the next several decades.

In Cumberland Gulch, the effect of the cattle grazing (after 3 years of rest), in combination with recovery from the 2001 flood event and prescribed burn, would continue to delay recovery of the riparian ecosystem and stream channel morphology. Riparian conditions may remain the same or may continue to degrade due to the overstocking of this allotment and the difficulty in removing the cattle mid-season.

ALTERNATIVE 2 – Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: The short grazing season in Sawmill and Cedar Creek allotments would reduce late season grazing to one season in three, which should allow the willows and other riparian shrubs to improve in vigor and density.

Lake Creek allotment would be grazed during late summer/fall as this is the only feasible short season grazing period. Fall grazing often is incompatible with willow growth but can be acceptable in riparian areas if utilization levels are controlled to leave protective vegetation cover (Clary and Webster, 1989) (Kovalchik and Elmore, 1991). The three years of rest would start the recovery process of the riparian vegetation community. Since a criterion used to trigger cattle removal includes the amount of browsing on woody shrubs, the monitoring on this allotment should prevent unacceptable impacts to riparian vegetation. It should also allow the riparian community to continue to slowly recover from past impacts.

The reduced season of use would reduce impacts on stream channels and riparian areas. Deferring grazing until after streambanks have dried out would reduce effects of streambank trampling (Marlow and Pogacnik, 1985). Reducing the current season long grazing in Sawmill Creek and Lake Creek allotments should reduce both streambank trampling and grazing on riparian vegetation. The rotation grazing system in Sawmill Creek and Cedar Creek allotments would allow spring grazing one season in three. This would reduce impacts in Sawmill Creek Allotment, as it is currently grazed season long. Streams currently not meeting Forest Plan Standards would recover slowly, most likely requiring decades.

Floodplain function should improve due to the reduced grazing pressure in riparian areas. Riparian stubble height and woody shrub utilization would both be controlled by removing cattle when standards are reached. Riparian shrub cover should improve, increasing attenuation of floodflows and the ability of the floodplain to filter sediment and nutrients.

Impacts on wetlands should be reduced due to the shorter grazing seasons on Sawmill Creek and Lake Creek allotments and by removing cattle when streambank trampling exceeds acceptable levels.

Cumulative Effects: All of the allotments should slowly recover from the past history of over grazing in riparian areas. Riparian areas currently not meeting Forest Plan Standards should recover over the next few decades, but with the increased riparian utilization monitoring, these areas should eventually meet desired conditions.

In Cumberland Gulch, the recovery would be slow due to the effects of the 2001 flood event, and to a lesser degree, the increased runoff from the prescribed burn. However, the watershed should recover if the utilization is monitored sufficiently that the cattle are removed when Forest Plan Standards and Guidelines are reached.

ALTERNATIVE 3 - No Action – No Livestock Grazing:

Direct and Indirect Effects: Riparian vegetation would have the fastest recovery. Areas currently vegetated by Kentucky bluegrass would convert to sedges and woody shrubs. Streambanks stability would increase due to the increased riparian shrub community and reduction of bank trampling. Stream channels would become narrower and deeper, with increased woody debris over the next 10 to 15 years.

Floodplains would become more densely vegetated with shrubs, improving flood attenuation, filtering and other floodplain processes. Wetlands would slowly recover from grazing and trampling, increasing the diversity of the wetland plant community. Wetlands may expand along the more heavily impacted stream channels as the water table slowly rises.

Cumulative Effects: Recovery of riparian ecosystems would be the most rapid in this alternative. Within 10 to 15 years, streams should have regained robust woody riparian vegetation and stream channel morphology should be in the process of recovering. Downcut streams, such as Badger Creek would take longer to recover, but would eventually regain streamchannel and floodplain processes. Active restoration, such as willow planting and woody debris placement, could speed up recovery and should be considered under this alternative for streams that would not readily recover on their own.

With no grazing, watershed condition would improve as the areas disturbed by the recent flood event revegetate. Gullies should stabilize within 5 to 10 years in the absence of any other large rainstorm events. Within 10 to 15 years, it is likely that watershed condition would recover sufficiently to be no longer classified as a Class III watershed.

ALTERNATIVE 4: Preferred Alternative - Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Effects of this alternative would be the same as described for Alternative 2 for the streams in the Sawmill Creek Allotment. In the other two allotments, the increased rest would possibly allow slightly quicker recovery of riparian areas and stream channels in these allotments. Heavily impacted areas would slowly recover, improving the probability that these areas would regain their ecosystem function.

Floodplain and wetland conditions would be improved as compared to Alternative 2 in the Lake Creek and Cedar Creek Allotments since the riparian shrub and sedge communities would have a longer rest period to improve plant density and vigor.

Cumulative Effects: Recovery would be more probable and swifter in this alternative as compared to Alternatives 1 and 2. By allowing the streams in Cedar Creek and Lake Creek allotments to regain healthy riparian vegetation, the recovery process is more likely to continue with resumed grazing. With the riparian and streambank utilization monitoring during grazing, under this alternative, all streams should meet Forest Plan Standards within 10 to 15 years.

The Lake Creek Watershed would recover during the 7 years of rest. If utilization is monitored sufficiently so that cattle are removed when Forest Plan Standards and Guidelines are reached, the watershed should recover sufficiently within 15 years to be no longer classified as a Class III watershed.

INDICATOR 3. Condition of Plant Communities in Riparian Areas and Adjacent Uplands

EXISTING CONDITION

Riparian range within ¼ mile of some water sources were found to be in Unsatisfactory Condition (fair to poor condition) (Haas, 2001a). Riparian areas found to be in Unsatisfactory range condition in 2000 were Cumberland Gulch, Badger Creek, S. Fork Goetze Creek and the lower reaches of North Cedar Creek and some of its tributaries, lower reaches of Bitter Creek, Troublesome Creek and portions of Middle Cedar Creek and its tributaries (Haas, 2001a).

A majority of rangelands are in satisfactory condition within the analysis area. Rangelands include sagebrush/grass shrublands, mixed mountain shrublands, aspen stands with forage, meadows and riparian areas. However, as mentioned above, primary rangelands that are within ¼ mile of some streams are in unsatisfactory condition. These plant communities are dominated by plants resistant to grazing or unpalatable to cattle, exhibit poor plant vigor or growth forms indicative of repeated heavy browsing/grazing, and have above average amounts of bare ground, much of it from a network of animal trails. These are all effects of repeated instances of excessive grazing, trampling and trailing. These conditions are not in compliance with desired

vegetation condition standards in either the current Forest Plan or the Proposed Revised Forest Plan. The present day conditions on these sites were likely initially caused by the very heavy historic livestock use that occurred throughout most of the Snowy Range from the early 1900's to the 1950's. However, present use levels may be degrading some sites further. Monitoring within the past decade has shown that grazing levels have often exceeded Forest Plan maximum allowable use guidelines in key grazing areas on these allotments.

The season-long grazing systems currently in place on Lake Creek and Sawmill Creek allotments do not meet Forest Plan direction or Standards and Guidelines for management prescription areas 4B, 5B and 9A. Livestock management within these prescription areas should emphasize implementation of rotational grazing systems to ensure protection of wildlife habitat, vegetation health and proper watershed function. The season-long systems are not in compliance with the draft Proposed Revised Forest Plan. The new plan includes a Forest-wide standard that calls for phasing out season-long grazing except where determined necessary to achieve or maintain a desired plant community.

Both the present and draft Proposed Revised Forest Plans direct that we manage livestock use to benefit wildlife (especially deer and elk) on areas designated as winter range. Under the present Forest Plan, 39 percent of the analysis area falls under the winter range prescription (5A and 5B); while under the draft of the Revised Plan, over half the analysis area is designated as winter range.

ENVIRONMENTAL CONSEQUENCES

Compliance with Forest Plan Standards and Guidelines for forage utilization and bank trampling are the largest key to control of livestock grazing effects on aquatic and riparian resources. Under all action alternatives, livestock would be removed from the affected allotment when Forest Plan Standards and Guidelines are met. The following alternative effects analysis hinge on these key Standards and Guidelines:

Upland Forage Conditions: Removal of livestock would be triggered when upland forage meets Forest Plan Standards for grazing system and range conditions.

Riparian Herbaceous Forage Utilization: Removal of livestock would be triggered when *Carex* species (sedges) stubble height reaches an average of 6 inches forage in key riparian areas.

Woody Forage Utilization in Riparian Areas: Removal of livestock would be triggered when cattle begin to have a preference for woody riparian shrubs.

ALTERNATIVE 1 – Proposed Action: Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Alternative 1 is not expected to provide very rapid or consistent improvement in the condition of unsatisfactory rangelands for the following reasons:

- Achieving proper use is entirely dependent upon frequent monitoring over the course of each grazing season to determine the appropriate date for removal of livestock. This is especially true for Lake Creek and Sawmill Creek allotments since their present permitted use is well in excess of estimated capacity. In the past, the Forest Service has not been able to achieve the monitoring levels necessary to ensure proper use. This is not likely to change in the near future due to continuing fluctuations in budget, workload, and District priorities.

- Experience has shown that removing livestock from rugged, heavily forested allotments in a timely manner mid-way through the grazing season is difficult. Even if permittees are given an appropriate date by which to remove their livestock, there is a good chance that actual removal of all the cattle would not occur until weeks, possibly months, after the removal deadline. By the time complete removal is achieved, many key grazing areas would have exceeded Forest Plan Standards for utilization and trampling. On Lake Creek allotment, the permittee has sometimes had considerable difficulty removing the cattle by late September, when colder temperatures often cause cattle to head down toward their winter pastures on their own. It is likely he would have even more difficulty removing them in mid-August.
- Season-long grazing systems, as would be retained on Lake Creek and Sawmill Creek allotments, may not allow for recovery of forage plants on key grazing areas, particularly in riparian areas. Even when maximum allowable use standards are met, preferred forage plants can be reduced in vigor under this type of grazing system. This is because plants that have enough moisture to re-grow after being grazed would often be grazed repeatedly by the end of a three month grazing season. This stresses plants and can lead to plant death or reduced vigor. Reduced plant vigor results in lower forage production, less root mass for stabilizing soils and less resistance to drought and disease.

Localized livestock impact areas could still be expected to occur at fence corners, creek crossings and at salt grounds or stock tanks. These are unavoidable under any livestock management system and would tend to be larger and more heavily impacted in the two allotments where season-long use is continued. In general, these localized impacts would not be so large as to negatively affect rangeland health or riparian function and are similar to effects from other perennial forest uses such as recreation (dispersed campsites, vehicle parking spots, user-created hiking paths, etc).

Cumulative Effects: Past vegetation treatments within the analysis area have included timber harvest, sagebrush spraying and prescribed sagebrush burning. Timber harvest has created some transitory range for livestock in Cedar Creek Allotment. Transitory range can help draw grazing pressure away from primary range for a period of years, until tree regeneration shades out the herbaceous forage species. It can, therefore, have a temporary beneficial effect upon primary rangelands. Any future timber harvest would likely not affect or would benefit primary range areas depending upon whether openings are large enough and sunny enough to encourage growth of palatable forage species.

Small prescribed burns were conducted on Lake Creek and Cedar Creek allotments within the past 10 years. Vegetation cover is still dominated by grasses and forbs, but shrubs (mostly sagebrush) can be expected to re-colonize the sites over time. The livestock management proposed under this alternative would have little effect on these sites if cattle are removed at or near proper use levels most years. If frequent over-use of these sites were to occur, it could speed the rate at which sagebrush returns to dominate the sites, especially on the allotments where season-long grazing is still practiced.

A large burn is proposed for the south-facing slopes of Lake Creek Allotment for spring 2004. Its effects have been analyzed in a separate document produced in concert with the BLM. The three years of rest built into the selected alternative for this allotment would ensure that these plants have ample time (two full years) to recover from the burn before they are grazed by livestock.

The burn is expected to have a temporary beneficial effect upon livestock distribution and forage production and could aid in achieving utilization levels that meet maximum allowable use guidelines. When livestock grazing resumes on the burned area under a season-long system, sagebrush and other shrubs could attain dominance more quickly than they would have under a shorter grazing period or no livestock use. This would only be a problem if livestock were not regularly removed at maximum allowable use, such as if monitoring was not done in a timely way or the permittee could not remove his cattle by the required date.

There is some possibility that the severe drought we have been experiencing since 2000 would negate some of the benefits normally experienced from cool spring burns simply because the vegetation is already stressed. These negative effects could include delayed or poor resprouting of herbaceous and/or woody species after the fire and increases in undesirable drought tolerant species such as cheatgrass. If this were to occur on some sites, livestock grazing, particularly on the two season-long allotments, could further stress recovering native plants and/or help spread or perpetuate cheatgrass infestations.

During summer 2001 a localized thunderstorm created a 100-year flood event in Cumberland Gulch (through which Lake Creek flows), down-cutting side drainages, and creating a debris flow in Lake Creek that uprooted many trees and shrubs and scoured out the bed and banks. Livestock grazing, trailing and trampling produce effects that would retard recovery of vegetation in this area. The season-long grazing system proposed under this alternative for Lake Creek Allotment is one of the worst types of systems to prescribe for a riparian area recovering from such a large disturbance event. It would take some years for the vegetation to stabilize the loose sediments and raw side drainages to the point where they can withstand moderate livestock effects with little evidence of disturbance. The three year rest period in Alternative 1 would help hasten vegetation recovery in Cumberland Gulch, but is not long enough to heal it to where it is resistant to livestock impacts unless livestock are consistently and efficiently removed from the allotment when allowable use is reached.

ALTERNATIVE 2 – Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Alternative 2 is expected to minimize instances of overgrazing and trampling and thereby allow for improvement of those areas that are in unsatisfactory condition. Plant vigor and plant litter cover on the ground would improve fairly rapidly. Changes in plant species composition would come about more slowly, but could be expected to improve over the long term in the absence of major disturbances such as hot-burning wildfires, noxious weed invasions, flood events, etc. Improvement is expected for the following reasons:

- Overstocking on Lake Creek and Sawmill Creek allotments would be eliminated because the number of permitted AUM's would be reduced to match the estimated capacity. Monitoring included in the new AMP would allow rangeland managers to fine-tune the stocking from the estimated level to the actual level and respond to large annual changes in forage production (such as from drought) which necessitate stocking adjustments.
- Length of the grazing season would be much shorter on all three allotments. Sawmill Creek and Lake Creek allotments would change from season-long use to short grazing seasons. These would be substantial changes; 69 fewer grazing days on Lake Creek and 61 fewer grazing days on Sawmill Creek. Shorter grazing seasons would mean that plants have more time for growth and nutrient storage either before cattle come onto the

allotments or after they go off. Also, since cattle would be on the allotments for shorter periods, there would be fewer trips to and from water and, therefore, less trailing and trampling.

- Season of use would be varied on two of the allotments. The fact that the season of use would be varied among early, mid and late on Cedar Creek and Sawmill Allotments means that forage plants would not be grazed at the same growth stage each year and that, to some extent, different forage plants would be selected for in different seasons of use. During early season use, cattle tend to select upland grasses and some forbs more readily and minimize use of woody browse species. During late grazing seasons early-curing upland grasses and coarse sedges such as beaked sedge would often not be selected by cattle.
- Late season use on Lake Creek Allotment means that forage plants would have matured, set seed and stored nutrients for winter survival before they are grazed by livestock.
- The three year rest period on Lake Creek Allotment prior to implementing the new management system would build litter cover on disturbed soils and accelerate improvement in vigor of forage plants. A seed-bank would be built up in the soil which could begin to improve plant density and composition under suitable germination conditions. Unfortunately, the drought we are currently experiencing may slow or somewhat lessen the beneficial effects of the rest period.

An increase in density and height of willows and other woody species along the riparian areas within primary range sites could be expected as livestock utilization levels are brought into compliance with Forest Plan Standards. In time, this change could encourage new or increased beaver activity. This would raise the water table and allow native wetland grasses and sedges to expand into unsatisfactory condition areas now dominated by less desirable species such as Kentucky bluegrass, dandelion, and non-native clovers.

Small, localized livestock impact areas could still be expected to occur at fence corners, creek crossings and at salt grounds or stock tanks. These are unavoidable under any livestock management system, but they would not be so large as to negatively affect rangeland health or riparian function and are similar to effects from other perennial forest uses such as recreation (dispersed campsites, vehicle parking spots, user-created hiking paths, etc).

Cumulative Effects: This alternative differs from the Alternative 1 in that plant recovery in disturbed sites, such as the prescribed burns and the flood damage in Cumberland Gulch, could be expected to proceed more rapidly.

ALTERNATIVE 3 – No Action – No Livestock Grazing:

Direct and Indirect Effects: Under the No Action alternative, unsatisfactory rangeland areas should improve more quickly than under any of the other alternatives. There would be relatively rapid reduction of bare ground attributable to livestock trailing and a rapid increase in height and density of willows and other riparian shrubs in areas that are presently in unsatisfactory condition. As in Alternative 1, changes in herbaceous plant species composition in unsatisfactory areas would not occur rapidly, but would likely progress more quickly than it would under the other alternatives. Changes in riparian herbaceous plant communities could be greatly accelerated if

beavers raised the water table on some sites.

The localized areas of heavy use that occur under nearly any cattle management system (such as at fence corners and water crossings) would gradually heal. Weedy species would likely establish themselves first, and then natural succession would proceed with more desirable native species gradually filling in the area. Invasion by aggressive weeds such as noxious weeds or cheatgrass could prevent the natural successional changes that would normally follow, and such sites would then need to be treated (likely with herbicides) to allow for recovery.

Cumulative Effects: There would be no livestock grazing under this alternative, so there would be no cumulative effects to the vegetation. Improvement in flood-damaged area in Cumberland Gulch would proceed fastest under this alternative.

ALTERNATIVE 4 – Preferred Alternative - Rest Followed by a Reduced Grazing Season and Adjustments in Livestock Management:

Direct and Indirect Effects: The effects under this alternative would be the same as under Alternative 2 with the following exceptions:

Unsatisfactory condition areas, especially riparian areas, would likely improve more quickly on the Lake Creek and Cedar Creek allotments than under Alternative 2 because of the rest from livestock use. Localized impacts described under Alternative 2 would apply here.

Cumulative Effects: Seven consecutive years of rest would allow for quicker recovery of the flood damaged portions of Lake Creek and its down-cut side drainages than would the alternatives 1 or 2. Seven years is often a minimum timeframe for recovery of woody vegetation in severely impacted riparian areas.

The flush of nutrients provided by the proposed Pennock Mtn prescribed burn, followed by seven years of rest from livestock use, may result in grass stands that have a lot of accumulated litter. This is good for soil stability, but it also makes the area more susceptible to lightning-caused wildfire and is often not optimal for health of upland bunchgrasses. Much or all of the increased palatability that burning can produce would be gone by the time livestock were run on the allotment again. Palatability goes down as standing litter accumulates on the plants and the extra nutrients released by fire are used up. Much of the potential benefit from the fire in improving livestock distribution might therefore be lost. In some areas, however, elk are likely to be attracted to the post-burn growth and may keep standing litter from accumulating during the seven year rest period.

ISSUE 2: Economic efficiency and operational stability

Indicators include:

- Economic Viability/Efficiency for Permittees

INDICATOR 1. Economic Viability/Efficiency for Permittees

EXISTING CONDITION

Although the alternatives described and analyzed in this EA are expected to have a very slight economic effect on the region that includes Economic Impact Area (EIA) 209, they do have the potential to affect individual permittees. EIA 209 includes Albany, Carbon, and Laramie Counties and is displayed in Figure III-1 on page III-6 of the Final Environmental Impact Statement (FEIS) for the Forest Plan. A detailed discussion of economic factors and sectors within the EIA can be found on pages III-9 through III-11 of the FEIS for the Forest Plan.

The grazing allotments evaluated in this EA are contained within the Upper Platte River Human Resource Unit (HRU), as shown in Figure III-3 on page III-18 of the Forest Plan FEIS. A detailed description of lifestyles, social organization, population, land use, attitudes, beliefs, and values within the HRU can be reviewed on pages III-25 and II-26 of the Forest Plan FEIS. The impacts of the proposed action and other alternatives described in this EA are expected to be very minor on all aspects of social life in the HRU.

The livestock industry is an important sector of the economic and social setting of the Upper Platte River HRU. Income and employment generated by the industry plays a key role in promoting stability in local economies. Many of the economic costs and benefits associated with livestock grazing on public land can be difficult to quantify. Some of the benefits are:

- Ranches that operate on National Forest land are often highly dependant on the forage and land they are permitted to use. Grazing permits serve to maintain viable ranching operations, thus helping to maintain jobs, produce valuable products and generate income for local communities.
- Ranches provide critical winter habitat for many wildlife species, particularly deer, elk and pronghorn antelope. Maintaining viable populations of big and small game species contributes significantly to recreation opportunities that generate income and employment for local communities.
- As a general rule, a ranching operation that has a grazing permit is worth more than an operation that does not have a permit. Real estate markets recognize this difference in value through purchases and sale of ranch property. The value difference reflects the benefits associated with having a federal grazing permit.
- Livestock operations with federal permits are usually larger than operations without a permit. Permit holders who graze cattle, on the average, have more livestock than non-permit holders.
- Livestock operators generally sell their products outside the local communities they operate in, thus bringing outside revenue into the local economy.
- A significant aspect of ranching concerns the maintenance of “open space” vs. selling off ranches and having the land subdivided into smaller parcels. Although it is very difficult to quantify these changes as they relate to managing the many resources dealt with, it is nonetheless felt to be extremely positive, keeping working ranches intact.

Some of the costs include:

- When not properly managed, livestock grazing can create negative impacts to plant communities, soils, water, riparian areas, wildlife habitat and recreation opportunities and experiences.
- Construction and maintenance of rangeland improvements (fences, water developments, corrals, etc/) are necessary to control and manage stock.
- Conflicts between multiple uses (commodity and non-commodity) of the land need to be mitigated and intensively managed to meet the needs of the general public.

According to economic statistics compiled by Carbon County in the 1990's, the average ranch spends approximately \$95,600 in the county. The statistics also showed that \$27.3 million in direct expenditures and \$11.5 million in indirect expenditures were attributed to ranching in Carbon County. All three of the allotments analyzed here are in Carbon County.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Implementation of Alternative 1 would affect permittees in different ways. There would be no change from present practices for the permittee on Cedar Creek Allotment. However, the permittees on the Lake Creek and Sawmill Creek allotments would be faced with an uncertain period of use on their allotments and would need to have alternate pastures available most years for when cattle have to come off early. This makes planning use periods on other pastures on their ranches more difficult. In addition, it would take many more person-hours to get the livestock off the allotments in mid-summer in years when permittees are required to do so. This extra labor would be needed at a time when most ranchers in this area are very busy with haying operations on their home ground.

Because Sawmill Creek allotment has intermingled National Forest and State lands that are not separately fenced, this alternative would make use of the State land more problematic for the permittee. When early removal from the Forest Service portion is required, he would either have to find some way to confine the allotment cattle to the State lands he leases (which would require a fence or a full-time, on-site rider) or he would have to forego any more use of the State land for the season and take the cattle completely off the allotment.

Cumulative Effects: The drought is the greatest factor affecting the permittees. We have begun our fourth year of severe drought and there are projections that it may continue at least another 2-3 years. This puts considerable strain on the resources of many ranching operations from a variety of sources such as lower forage production on private pastures, poor hay production, high prices for hay and other feed, less pastureland available for lease, loss of water sources for livestock, and poor prices when livestock must be sold (due to the glut on the market). The AUM reductions that are imposed when livestock have to be removed early and the three year rest period for Lake Creek add to the financial impacts already produced by the drought.

ALTERNATIVE 2 - Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Implementation of Alternative 2 would also affect permittees in different ways. There would be no major change in management practices for the permittee on Cedar Creek Allotment, except that closer monitoring during the initial implementation period of the new management plan could reveal a need to either manage distribution more closely or remove livestock early some years. If the present drought continues, this would almost certainly be the case. Reductions in permitted stocking on Sawmill Creek and Lake Creek allotments would mean that the permittees would have to reduce their herds slightly or lease or buy alternate pasture if it does not currently exist. Their fence and water development maintenance responsibilities would not decrease, so they would not have any savings there to offset the loss of permitted AUM's. The short seasons on all three allotments means that the permittee would not have to spend as many days riding to distribute cattle while they are on the National Forest. They would be moving the cattle to and from their Forest Allotments and other pastures over the course of the summer and fall, so there would be little net increase or decrease in rider-days needed to manage cattle under Alternative 2. There would be a greater likelihood that livestock would not have to be removed from the allotments early under the short season systems, so there would not be as much uncertainty for the permittees when planning use of their private pastures.

The permittee on Lake Creek Allotment has expressed a desire to run dry cows instead of yearlings on Lake Creek Allotment in future. The estimated capacity for Lake Creek Allotment was based on use patterns of yearling cattle. Yearling cattle can usually utilize steep terrain better than mature cows. Capacity for dry cows could be lower than the present estimated capacity. If monitoring shows this to be the case, the permittee would have to take his cattle off the allotment earlier than the projected OFF date, and his permitted use would have to be further reduced beyond the 15 percent reduction in permitted AUM's described for this alternative.

The permittee on Lake Creek Allotment has the expense of finding alternate pasture for all of his permitted numbers for the scheduled three year rest period or must reduce his herd size.

A well-run rotation system that incorporates private, State and or BLM lands, such as is being proposed for Cedar Creek and Sawmill Creek allotments, has potential to improve these off-Forest lands as well and ultimately benefit the permittees through improvement in range condition. Better condition rangelands translate to better forage production, better watershed function, less erosion and more resilience to drought effects.

Cumulative Effects: Reducing the number of AUM's has the potential to negatively affect permittees, particularly when coupled with effects from the drought. However, out of all the grazing alternatives, Alternative 2 would reduce AUM's the least. Therefore, financial impacts to the permittees should be the least.

ALTERNATIVE 3: No Action – No Livestock Grazing:

Direct and Indirect Effects: Implementation of this alternative would have the greatest negative effect on all permittees. Permanent herd reductions equal to the present permitted numbers would have to be made, or long term leases on alternate pasture would have to be acquired.

Cumulative Effects: Canceling the three grazing permits would produce a negative financial impact to the permittees that would be cumulative to the effects from the drought. Most ranchers have already reduced their herds in response to the drought and have experienced greatly

increased feed costs due to the shortage of hay. Cattle prices decline as more livestock are put on the market. There is not much alternative pasture to lease within the valley and the scope of this drought means there is not much pasture at affordable rates available anywhere in the west at present.

ALTERNATIVE 4: Preferred Alternative - Rest Followed by a Reduced Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: The permittee on Lake Creek Allotment would have to find alternate pasture for four more years than he would under Alternative 2, and the Cedar Creek permittee would need alternate pasture for 3 years. Buying or leasing cattle pasture in Carbon County is currently difficult and costly due to high land values and heavy competition for leased pasture. Competition for pasture has long been high in this area and has been intensified by the drought.

Cumulative Effects: Alternative 4 would produce the second greatest negative impact to the permittees due to both rest, reduction in AUM's, and the effects of the drought.

OTHER RESOURCES NOT TIED TO SIGNIFICANT ISSUES: Existing Condition and Environmental Consequences

A. FISHERIES and AMPHIBIANS

EXISTING CONDITION

The SRC #1 Allotments include the headwaters and foothill reaches of several North Platte River tributaries. The North Platte itself is a stream fishery of state and regional significance. Many of the lower reaches of streams within the watersheds affected by these allotments provide spawning and rearing habitat for fish species of interest in the mainstem Platte River. Horn and Meason Reservoir, downstream of the grazing allotments on private lands, is a fishery of local significance because of its management and use by members of the Old Baldy Club, a prestigious rod and gun club located in Saratoga, WY. Lake Creek and Cedar Creek are the two primary stream systems affected by the SRC #1 Allotments; they provide habitat for resident populations of non-native brook trout. There are extensive reaches of apparently non fish-bearing streams in both the headwater and foothills reaches of affected streams. Although there are wetland habitats present in all these drainages, the relative paucity of wetland habitats on NFS lands limits the extent of potential amphibian habitat and populations we have considered.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Most streams in the analysis area have continued to support viable populations of brook trout under the existing grazing systems, so it is likely that brook trout populations would persist under Alternative 1. An exception to this is Cumberland Gulch, where recovery of the brook trout population following the 2001 flood event is dependent on the rate of

habitat recovery and availability of seed populations above or below the affected stream reach. Aquatic habitat conditions for fish and amphibians in the Lake Creek and Sawmill Creek allotments would be expected to be maintained at current levels with adequate allotment administration, but there is unlikely to be improvement because permitted use levels exceed allotment capacity. Although permitted numbers have been reduced to near capacity in the Cedar Creek allotment, there would likely be limited to no improvement in habitat conditions for fish or amphibians in the Cedar Creek allotment, because conditions have not improved since that change was made, and no additional management changes are recommended.

Cumulative Effects: There would be cumulative risks to brook trout habitats and populations in the southern portion of the Lake Creek allotment and northern Sawmill Creek allotment from livestock grazing impacts and proposed prescribed burning in conjunction with extreme stochastic events (see Purchase, Guenther-Gloss, and Barott 2003).

ALTERNATIVE 2 – Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Most streams in the analysis area would be more likely to support viable populations of brook trout under Alternative 2, given reduced grazing pressure in the Lake Creek and Sawmill Creek allotments. In Cumberland Gulch, where recovery of the brook trout population following the 2001 flood event is dependent on the rate of habitat recovery and availability of seed populations above or below the affected stream reach, brook trout recovery would be more likely under Alternative 2 than Alternative 1 because channel recovery should be accelerated. This is because aquatic habitat conditions for fish and amphibians in the Lake Creek and Sawmill Creek allotments would be expected to improve incrementally as overall watershed, riparian, and channel conditions improve from reduced grazing pressure under this alternative. There would likely be limited to no improvement in habitat conditions for fish or amphibians in the Cedar Creek allotment, because no substantive management changes are recommended.

Cumulative Effects: Cumulative effects would be similar to Alternative 1; however, impacts would be reduced somewhat because of proposed reductions in grazing intensity.

ALTERNATIVE 3 – No Action – No Livestock Grazing:

Direct and Indirect Effects: Streams in the analysis area would be more likely than under Alternative 2 to maintain and increase brook trout habitats and populations. This is because riparian recovery would be accelerated compared to any of the action alternatives. In Cumberland Gulch, where recovery of the brook trout population following the 2001 flood event is dependent on the rate of habitat recovery and availability of seed populations above or below the affected stream reach, brook trout recovery would likely be more likely under the no action alternative because channel recovery would not be dampened by ongoing livestock grazing impacts. Overall, aquatic habitat conditions for fish and amphibians would increase.

Cumulative Effects: Cumulative effects would be similar to Alternative 2; however, ongoing livestock grazing impacts would not contribute to this risk.

ALTERNATIVE 4: Preferred Alternative - Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Viable populations of brook trout would be even more likely under Alternative 4, given planned rest and reduced grazing pressure because permitted numbers in the Lake Creek and Sawmill Creek allotments would be reduced to capacity. In Cumberland Gulch,

brook trout recovery would likely be more likely under Alternative 4 than under any of the other action alternatives. This is because aquatic habitat conditions for fish and amphibians in the Lake Creek and Sawmill Creek allotments would be expected to improve incrementally as overall watershed, riparian and channel conditions improve from further reduced grazing pressure under this alternative. This alternative also has the most likely chance for improvement in habitat conditions for fish or amphibians in the Cedar Creek allotment, because the proposed period of rest may allow a determination of why no condition improvement has followed management changes to date.

Cumulative Effects: Cumulative effects would be the same as under Alternative 2.

FEDERAL THREATENED, ENDANGERED, OR SENSITIVE AQUATIC SPECIES

Federally Listed Species: There are no federally listed aquatic species with habitat or populations within the project area.

Sensitive Species: Western boreal toad (*Bufo boreas boreas*), wood frog (*Rana sylvatica*), northern leopard frog (*Rana pipiens*) and tiger salamander (*Ambystoma tigrinum*) may be present (very low probability) and/or have suitable habitat within or adjacent to the analysis area.

DETERMINATIONS

Federally Listed Species:

Implementation of the alternatives analyzed in this EA would have ***no effect*** on local populations or habitats of listed aquatic species.

Sensitive Species:

- **Western boreal toad and Wood frog** – Implementation of the alternatives analyzed in this EA ***may adversely impact individuals, but is not likely to result in a loss of viability on the planning area, nor cause a trend to federal listing or a loss of species viability rangewide*** for these species.
- **Northern leopard frog and Tiger salamander** - Implementation of the alternatives analyzed in this EA would have ***no impact*** on these species' habitats or populations.

More detailed information related to Threatened, Endangered, or Sensitive Species are located in the Biological Assessment and Biological Evaluation documents prepared for this analysis. The documents are located in the project file at 2468 Jackson Street, Laramie, Wyoming 82070.

B. HERITAGE RESOURCES

EXISTING CONDITION

Heritage resource compliance with the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA) for this Environmental Assessment effort is in accordance with a Memorandum of Understanding (MOU) with the Wyoming and Colorado State Historic Preservation Office (SHPO). This was implemented under a National Programmatic Agreement among the National Councils of SHPO's, the Advisory Council on Historic Preservation and the 3 USDA Forest Service. Under terms of the MOU, a literature survey of existing information on the entire analysis area was conducted. Next, the area of potential effect

(APE) was determined. In the context of livestock grazing as related to cultural resources, we defined the APE as the intersection of high livestock impact areas with areas that contain or are likely to contain cultural resources. The cultural resource analysis for the APE within these allotments consisted of three important steps: 1) the identification of areas that have a high potential for livestock impact; 2) the identification of known sites that are potentially eligible (need data), eligible, or on the National Register of Historic Places (NRHP), and that are located within those areas determined to have a high potential for livestock impact; and 3) the determination of areas that have not been previously surveyed, but where significant sites may occur.

The heritage resource field inventory for the Snowy Range Horse and Cattle Allotments project was conducted during September 1999. A total of 423 acres were intensively inventoried. The acres surveyed included areas where potential livestock impacts overlapped with defined heritage sites. Individual sites were evaluated for their eligibility to the NRHP. They were also evaluated to determine the effects livestock grazing could have on the sites. Areas not specifically surveyed were those areas identified for range improvements after the cultural heritage report was submitted, including new spring development construction, spring development removal, and new fence construction/reconstruction.

During the inventory, one historic site was recorded and one prehistoric site was reevaluated for cultural significance, where were both determined to be ineligible to the NRHP. In addition, four isolated finds were recorded including one prospect pit and three prehistoric artifacts. It was also determined that one of the eligible sites previously identified were affect by current grazing activities.

ENVIRONMENTAL CONSEQUENCES

ALL ALTERNATIVES:

As mentioned in the Affected Environment Section, two cultural sites were located and evaluated/reevaluated during the 1999 field inventory. These sites included one historic site and one prehistoric site. Of these sites, none were considered to be eligible to the NRHP. Current livestock grazing activities was affecting none of the sites recorded or monitored during the inventory, nor would they be affected by proposed future grazing activities. The State Historic Preservation Office concurred with this determination (see Appendix A).

Cumulative Effects: Prior to the cultural survey for this analysis, six previous surveys were completed, resulting in 2,100 acres of intensive survey for cultural resources. The surveys resulted in the identification of 18 cultural sites, including 11 historic sites and seven prehistoric sites. Of these, two were considered to be eligible to the NRHP, four had not been evaluated for significance, and 12 were considered to be ineligible to the NRHP.

There are many other cultural sites that are known to exist in the Snowy Range Horse and Cattle Allotments area. Location of these sites has been noted; however, until there is a specific project planned in the site area or until monies become available, these sites will remain unrecorded and unevaluated.

C. RECREATION and VISUAL RESOURCES

EXISTING CONDITION

The analysis area is used extensively for dispersed recreation activities including: camping, hiking, big game hunting, as well as upland bird hunting for sage and blue grouse, small game hunting, mountain biking, scenery viewing, horseback riding, fishing, and ATV travel. The area does not contain any designated wilderness areas. The area does contain the Pennock Mountain Inventoried Roadless Area (R20615). The area has one trailhead for a horse and foot trail and no campgrounds located within the allotment area. National Forest System Road 289 accesses the Pennock Mountain Trailhead. Four-wheel drive and high clearance vehicles should travel this road, which is very narrow and rutted in some places.

The area is used by one Special Use permittee for guided horseback rides and by several permittees for outfitted/guided hunting.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Because of the shorter grazing season with fewer AUM's associated with this alternative, little to no direct or indirect effects to recreation use and visual resources would result. Recreation use would continue in the area regardless of the selected alternative. Based on nationwide trends, recreation would increase over time.

ALTERNATIVES 2 and 4 – Shortened Grazing Season and Adjustments in Livestock Numbers AND Preferred Alternative - Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers, respectively:

Direct and Indirect Effects: The effects of Alternatives 2 and 4 are similar to Alternative 1.

ALTERNATIVE 3 – No Action – No Livestock Grazing:

Direct and Indirect Effects: This alternative would have no direct or indirect effects on recreation use and visual resources in this area.

Cumulative Effects: There is a minor amount of special use outfitting in the vicinity of these three allotments. The largest activity occurring in the Cedar and Sawmill Allotments is the Cedar Timber Sale. The next largest activity in this area would be all the recreation use previously discussed in the existing condition. Grazing on the three allotments has little to no cumulative effects to recreation use or visual resources.

D. SENSITIVE, THREATENED, and ENDANGERED PLANT SPECIES

EXISTING CONDITION

There are no Region 2 sensitive species known to occur within the SRC #1 Analysis Area; however, based on knowledge of habitat requirements, there are three which could potentially occur. They include:

Clustered lady's-slipper (*Cypripedium fasciculatum*): Nearly all of the forest sites on the Brush Creek/Hayden District where Clustered lady's-slipper has been found have sparse understory growth. Plants that do occur, such as grouse whortleberry and heart-leaf arnica, are not palatable to cattle. For this reason, there is little to attract cattle to most Clustered lady's-slipper sites.

Livid sedge (*Carex livida*): This sedge has potential to occur elsewhere in Colorado and Wyoming, and possibly in riparian areas in the project area.

Hall fescue (*Festuca hallii*): There is potential for this perennial grass to occur in riparian zones within the project area.

ENVIRONMENTAL CONSEQUENCES

ALL ALTERNATIVES: Clustered Lady's-slipper

Direct and Indirect Effects: Clustered lady's-slipper is the sensitive species most likely to occur within the project area. However, since it occurs in habitats that are seldom used by livestock (coniferous forest with little understory vegetation), it is not likely to be affected by the proposed livestock management changes for the allotments.

ALL ALTERNATIVES: Livid Sedge and Hall Fescue

Direct and Indirect Effects: Alternative 3 (No Livestock Grazing) would have no negative effect upon potential habitat for these two species for the following reasons:

- Neither are early successional species dependent upon livestock-related disturbance for their survival or reproduction.
- There would be no livestock trailing, trampling or grazing to damage or weaken the plants. Since Alternative 3 would likely allow for the most rapid improvement in riparian area condition in primary grazing areas, it would provide the most rapid improvement in habitat for livid sedge and Hall fescue if they occur within the allotments.

Analysis of rangelands, soils and hydrology for the SRC#1 Analysis Area indicates that all grazing alternatives would provide for improvement in unsatisfactory condition plant communities, including riparian areas. The major difference between the action alternatives is the rate at which that improvement is likely to occur. Under Alternative 1, improvement is likely to be slow and uneven, as it is dependent on the level and effectiveness of year to year monitoring to trigger livestock removal at the appropriate time. Also, once the appropriate livestock removal date is determined, there will be annual variation in how well actual livestock removal complies with that date.

Under Alternative 2, the improvement in unsatisfactory condition plant communities would be faster and steadier because of the benefits to plant health from short season grazing, stocking at

capacity and variation of season of grazing use. Alternative 4 would produce more rapid improvements than Alternative 2 because it includes the benefits of Alternative 2 plus multi-year rest periods on two of the allotments.

Since the proposed management systems in all alternatives would allow for improvement in the health of native plant communities (and especially riparian area plant communities) on capable rangelands, the only effects to livid sedge and Hall fescue (if any populations of these species occur within the project area) are likely to be beneficial.

DETERMINATIONS

Hall fescue, livid sedge, and clustered lady's-slipper: Alternative implementation may impact individuals but are not likely to cause a trend to federal listing or loss of viability.

E. WATER RESOURCES

EXISTING CONDITION

The perennial streams in this area, are designated Class 2AB - Fisheries and Drinking Waters. Class 2AB waters are those surface waters known to support or have the potential to support populations of gamefish and/or drinking water supplies and are considered to be high quality waters which support the beneficial uses of aquatic life, fisheries, drinking water, recreation, wildlife, agriculture and scenic value (WYDEQ, 2001). Intermittent streams in this area are classified by the State of Wyoming as Class 3B if no fisheries are thought to be present. These waters support beneficial uses of aquatic life other than fish, recreation, wildlife, agriculture and scenic value (WYDEQ, 2001). None of the streams within the analysis area have been listed as impaired on the current WYDEQ 303d list (WYDEQ, 2002). Streamflow from the project area contributes significantly to irrigated agriculture on private lands west and downstream of the project area.

Studies indicate that livestock grazing can increase the levels of bacteria and nitrogen (Gary et al, 1983) (Buckhouse, 2000), although nutrient increases may not occur or are minimal (Mosley et al, 1999). Within these allotments, riparian areas with heavy grazing impacts likely have increased bacteria levels due to the lack of filtering riparian vegetation and concentration of livestock near the stream channel. Some of these streams may not meet bacterial water quality standards while cattle are on the allotment.

ENVIRONMENTAL CONSEQUENCES

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct and Indirect Effects: Water quality would be unchanged, with localized area of increased bacterial levels due to cattle concentration in riparian areas. Sediment levels would remain similar to current levels as it is likely that streambank trampling would continue to exceed standards due to the overstocking of Lake Creek and Sawmill Creek Allotments.

Cumulative Effects: The effects of the Pennock Mtn prescribed burn (spring of 2004) would likely increase nutrients for several years in the Lake Creek Watershed. Since the burn area would not be grazed for two years after the burn, grazing effects would likely not overlap.

Therefore, nutrient levels should remain approximately the same. Cumulatively, water quality would remain similar to existing conditions with areas of elevated bacterial levels. Nutrient levels would remain elevated near and downstream of concentrated cattle use. Future large rainstorms would continue to increase gully erosion on steep slopes due to the amount of trails and bare soil on steep erodible slopes in these watersheds. Fine sediment levels would continue to be high after rainstorm events erode the vulnerable uplands and the ATV trails in the area.

ALTERNATIVE 2 – Shortened Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Water quality in the previously heavily impacted riparian areas should improve as the riparian vegetation recovers. Fine sediment levels would decrease due to increased streambank stability and riparian vegetation. Stream temperatures would decrease as riparian shrub cover increases. The six-inch riparian stubble height standard would improve the ability of the riparian area to filter out sediment and contaminants. Six-inch riparian stubble height is generally considered adequate protection for riparian areas (Mosley et al, 1999) (Clary and Webster, 1989). Cattle concentration in riparian areas should be reduced through stricter riparian utilization standards and shorter seasons of use. This should reduce the likelihood of exceeding bacterial water quality standards.

Cumulative Effects: Over time, water quality would improve as riparian vegetation recovers and increases nutrient uptake and sediment filtering capacity. As with the other alternatives, The Pennock Mtn. Prescribed Burn would increase nutrients slightly; although, levels would remain about the same since the area would not be grazed for two years after the burn. Bacterial levels would gradually decrease as the riparian vegetation both filters out contamination and restricts access to the streamchannel. Sediment levels would decrease both from reduced streambanks trampling as well as from increased riparian filtering capacity which would reduce the amount of sediment reaching streams from ATV trails.

ALTERANTIVE 3 – No Action – No Livestock Grazing:

Direct and Indirect Effects: Bacterial and nutrient levels would decrease slightly, due to the reduction of ungulate manure and increased riparian vegetation. Stream temperatures would decrease as the riparian shrub community increases and as the stream channel narrows and deepens. Fine sediment levels would decrease with the reduction of bank trampling.

Cumulative Effects: Water quality would improve as the upland and riparian areas recover. Nutrient levels may be slightly elevated for a few years due to the scheduled prescribed burn project, but would persist for only a few years after the burn. Nutrient levels and bacterial levels would return to levels similar to an ungrazed system as the riparian vegetation recovers. Sediment levels would decrease, as the uplands recover, although the scattered ATV trails would still contribute sediment to stream channels in localized areas.

ALTERNATIVE 4 – Preferred Alternative - Rest Followed by a Reduced Grazing Season and Adjustments in Livestock Numbers:

Direct and Indirect Effects: Bacterial and nutrient levels would be lower than under Alternative 2, as the improved riparian vegetation would filter out more of these substances. Stream temperature would decrease with the increase in riparian vegetation and recovery of the stream channel.

Cumulative Effects: Cumulative Effects would be similar to Alternative 2; however, with the increased rate of recovery of riparian areas, water quality improvement would also be more rapid and more assured. Denser riparian vegetation would both restrict cattle access to streams and improve filtering. Nutrient, bacterial and sediment levels would all decrease more rapidly than under Alternative 2. Sediment contributed from the uplands during rainstorms and from ATV trails would decrease as the uplands would revegetate more rapidly under this alternative.

F. WILDLIFE

1. FEDERALLY LISTED PROPOSED, ENDANGERED, AND THREATENED (PET) SPECIES:

EXISTING CONDITION

Two PET species were analyzed for this EA. They include:

Bald Eagle: No viable populations exist on the Medicine Bow National Forest. Bald eagles that use the forest are a small part of a larger population. Although one or two nests are present on the Brush Creek/Hayden RD most years, there are no known or recorded nesting sites, winter roosts, or sightings within the project area. There are at least two active beaver/wetland complexes in North Fork Middle Cedar Creek, Sage Brush Park Area of the Cedar Creek Allotment. These beaver complexes could potentially provide bald eagle foraging habitat.

Canada Lynx: Although lynx are not known to breed on the Medicine Bow NF, lynx habitat has been mapped. The project area contains 7,335 acres of the Cedar/Brush Lynx Analysis Unit (LAU). The Lake Creek Allotment contains 786 acres of the LAU, Sawmill Creek Allotment contains 1,898 acres, and Cedar Creek Allotment contains 4,651 acres of the LAU.

Impacted streams within the Cedar Creek allotment (Troublesome and Middle Cedar Creeks) affect mapped denning and winter foraging lynx habitat. Under current allotment conditions, the impacted areas do not meet Forest Plan or Lynx Conservation Assessment Strategy grazing and general lynx habitat standards.

DETERMINATION of EFFECT and RATIONALE

Bald Eagle:

A "May affect, but not likely to adversely affect" determination is made for ALL ALTERNATIVES. This determination is based on the following:

- Grazing and associated activities would not disturb any known suitable nesting or home range foraging habitat.

- There would be no loss of trees or snags within ¼ mile of rivers or lakes.

Canada Lynx:

A "May affect, but not likely to adversely affect" determination is made for Alternatives 1, 2, and 4. The determination is based on the following:

- Primary rangelands within ¼ mile of identified streams are in unsatisfactory condition and are in a "static or downward trend."
- Under the current allotment conditions, impacted areas do not meet Forest Plan Standards or Lynx Conservation Assessment Strategy (LCAS), grazing and general lynx habitat standards.
- Allotment grazing management plans need to be sufficient to maintain or exceed standards outlined in the LCAS. Proposed prescriptions for the Cedar Creek Allotment should address these conditions and should meet the standards in the future.
- Under LCAS, mechanisms (i.e. sufficient monitoring) need to be in place to ensure compliance with and adherence to standards.

The "Terrestrial Wildlife Biological Evaluation" (BE) prepared for this analysis contains more detailed information related to PET species. The BE is located at 2468 Jackson Street, Laramie, Wyoming 82070

2. REGION 2 SENSITIVE SPECIES:

EXISTING CONDITION

A total of 14 Region 2 Sensitive species were analyzed for this EA. They include:

- **North American Wolverine (Gulo gulo) and Marten (Martes Americana):** Current activities do not affect the potential available suitable foraging and denning habitat for these species. However, there is potential for conflict between wolverine and marten and trapping for predators within the allotments.
- **Fringed Myotis (Myotis thysanodes), Townsend's Big-eared Bat (Plecotus townsendii), Boreal Owl (Aegolius funereus), Golden-crowned Kinglet (Regulus satrapa), and Three-toed Woodpecker (Picoides tridactylus):** Both the Fringed Myotis and Townsend's Big-eared Bat occupy a diversity of habits whereas boreal owls generally occupy only boreal and subalpine forests. The golden-crowned kinglet breeds primarily in dense coniferous forests, especially where spruce is present. The three-toed woodpecker is known to occur in spruce-fir forests and has been documented in the analysis area.
- **Pygmy Shrew (Microsorex hoyi montanus) and Dwarf Shrew (Sorex nanus):** Current riparian conditions have likely reduced preferred habitat of the shrews by altering vegetative components through trampling and over utilization of forage and eliminating the preferred habitat of the shrew's prey base. The shrew's prey base is directly linked to the associated vegetation in the area.
- **Northern Goshawk (Accipiter gentiles):** Goshawks have been recorded in the analysis area for a number of years. Current grazing impacts in riparian areas, riparian shrublands, and open grassland parks bordering riparian zones could be impacting prey species.
- **Olive-sided Flycatcher (Contopus borealis):** This species prefers high elevation spruce-fir forests, especially old-growth.

- **Merlin (Falco columbarius):** Current grazing impacts in open grassland parks bordering riparian zones could be impacting prey species.
- **Greater Sandhill Crane (Grus Canadensis):** Cranes on the Sawmill allotment could be affected by human disturbance depending on timing of allotment use.
- **Fox Sparrow (Passerella satrapa):** Fox Sparrow and their prey have likely been affected by riparian impacts within the allotments.

DETERMINATION of EFFECT and RATIONALE

The following specific factors were considered in making the determination on the potential effects of implementing the proposed project on sensitive species:

- No activities such as road building/closing or timber harvest are being proposed.
- A majority of the rangelands are in satisfactory condition. However, primary rangelands that are within ¼ mile of streams (riparian areas and adjacent uplands) are in unsatisfactory condition. These conditions are not in compliance with desired vegetation condition standards of the current Forest Plan.
- The season-long grazing systems currently in place on Lake Creek and Sawmill Creek allotments do not meet Forest Plan direction and Standards and Guidelines for management prescription areas 4B, 5B, and 9A. Livestock management within these prescription areas should emphasize implementation of rotational grazing systems to ensure protection of wildlife habitat, vegetation health, and proper watershed function.
- Livestock would be removed from the affected allotment when Forest Plan Standards and guidelines are met.
- Monitoring items identified on pages 18 and 19 of this EA would be implemented.

Table 5. Summary of Determination of Effects for Sensitive Species

Common Name	Scientific Name	Determination of Effects ¹			
		Alt.1	Alt. 2	Alt. 3	Alt. 4
Wolverine	<i>Gulo gulo luscus</i>	MAII	MAII	BI	MAII
Marten	<i>Martes americana</i>	MAII	MAII	BI	MAII
Fringed Myotis	<i>Myotis thysanodes</i>	NI	NI	NI	NI
Townsend's big-eared bat	<i>Plecotus townsendii</i>	NI	NI	NI	NI
Pygmy shrew	<i>Microsorex hoyi montanus</i>	MAII	MAII	MAII	MAII
Dwarf shrew	<i>Sorex nanus</i>	MAII	MAII	BI	MAII
Northern goshawk	<i>Accipiter gentiles</i>	MAII	MAII	BI	MAII
Boreal owl	<i>Aegolius funereus</i>	MAII	MAII	MAII	MAII
Olive-sided flycatcher	<i>Contopus cooperi</i>	MAII	MAII	MAII	MAII
Merlin	<i>Falco columbarius</i>	NI	NI	NI	NI
Greater Sandhill Crane	<i>Grus canadensis</i>	MAII	MAII	NI	MAII
Fox Sparrow	<i>Passerella satrapa</i>	MAII	MAII	BI	MAII
Three-toed woodpecker	<i>Picoides tridactylus</i>	NI	NI	NI	NI
Golden-crowned kinglet	<i>Regulus satrapa</i>	NI	NI	NI	NI

¹ The following wording is used for species listed as sensitive species by the Regional Forester:

- **NI--“No impact”** -- where no effect is expected.

- **BI--“Beneficial impact”**-- where effects are expected to be beneficial, and no negative effects are expected to occur.
- **MAII--“May adversely impact individuals, but not likely to result in a loss of viability on the Planning Area, nor cause a trend to federal listing or a loss of species viability range wide”** -- where effects are expected to be insignificant (immeasurable) or discountable (extremely unlikely).
- **LRLV--“Likely to result in a loss of viability on the Planning Area, in a trend to federal listing, or in a loss of species viability range wide”** - where effects are expected to be detrimental and substantial.

3. NEOTROPICAL MIGRATORY BIRDS:

An Executive Order (EO), dated 1/11/01, directs Federal Agencies to protect migratory birds. A Memorandum of Understanding (MOU) between the USFS and USFWS (dated 01/16/01) was developed to complement and implement this EO in a collaborative effort between the two agencies. The EO and MOU have been reviewed. This analysis and project are consistent with the criteria in these documents for protection of migratory birds. The chance for any intentional or unintentional take of any migratory bird is minimal.

4. MANAGEMENT INDICATOR SPECIES (MIS):

EXISTING CONDITION

The Forest Plan lists MIS which are to be emphasized when planning management activities. The MIS selected for this analysis are those which are dependent upon riparian zones, sagebrush-grass, and mixed mountain shrub plant communities. These are the habitat types most affected by livestock within this analysis area. Selected species include: **Featured Species**—Rock Mountain Elk and **Ecological Indicator Species**—White-crowned Sparrow.

Rocky Mountain Elk (Cervus Canadensis): Competition for forage between elk and cattle is more intense than with any other large herbivores in the western United States. Both species are dietary opportunists, using a variety of grasses, forbs, and shrubs. Because of their body sizes, each species has potential for a high impact on the forage availability. The timing of forage utilization is such that cattle may consume forage essential to elk survival during critical periods. Conversely, heavy winter and spring foraging of grazing allotments by elk can create an adverse situation for cattle.

White-Crowned Sparrow (Zonotrichia leucophrys): White-crowned sparrow (WCSP) is a common summer resident of lodgepole, ponderosa pine, Douglas fir, spruce-fir, and aspen habitat within the forest. Despite human activity which opens suitable breeding habitat (e.g. forest clearing) this species has suffered a sustained and significant decline continent wide (Chilton et al. 1995).

Over-utilization by domestic livestock grazing is detrimental to riparian communities (Clary and Webster, 1989, Hall and Bryant 1995, Schulz and Leininger 1990, Saab, et al. 1995). Over-utilization alters plant composition in riparian habitats, including the herbaceous under story, as well as the willow over story communities. This alters the preferred nesting and foraging habitats for the WCSP. Further, alteration of plant communities may alter insect species composition and impact a portion of the WCSP's prey base.

Given existing impacts to stream/riparian within the analysis area, it is likely that WCSP habitat for local populations have been highly altered within the impacted portions of the analysis area.

ENVIRONMENTAL CONSEQUENCES

Rocky Mountain Elk: Evaluation criteria for Rocky Mtn elk are: a) decrease competition for forage between elk and cattle; and b) improve riparian and associated uplands habitats.

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Levels and Management Systems:

Direct, Indirect, and Cumulative Effects: This alternative provides the greatest probability of resource competition between cattle and elk by allowing season long (mid June to Sept. 30th) grazing to continue in Lake Creek and Sawmill Creek Allotments. This could degrade the elk/ winter and calving ranges. Alternative 1 does not fully address the unsatisfactory condition of the riparian and associated upland primary rangelands.

The season-long grazing systems currently in place on Lake Creek and Sawmill Creek allotments do not meet Forest Plan Direction and Standards and Guidelines for management of MIS and big game within MA's 4B, 4D, 5A, 5B and 9A. Livestock management within these prescription areas should emphasize implementation of rotational grazing systems to ensure protection of big game forage, cover and habitat, maintenance of vegetation health in fair or better condition, and maintenance of riparian ecosystems in at least upper mid-seral successional stage.

ALTERNATIVES 2 and 4 – Shortened Grazing Season and Adjustments in Livestock Numbers AND Preferred Alternative - Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers, respectively:

Direct, Indirect, and Cumulative Effects: These alternatives reduce the likelihood of competition between cattle and elk and the resultant winter/ calving range degradation by reducing the grazing period on Lake Creek and Sawmill Creek to 30 and 39 days, respectively. Alternative 2 provides a temporary allotment rest period in Lake Creek to encourage riparian recovery while Alternative 4 provides temporary rest periods in Cedar and Lake Creek. Rotational summer grazing would then be allowed in these riparian areas that, with proper monitoring and management, would allow for riparian area improvement.

With adequate monitoring of forage conditions and utilization these alternatives would meet Forest Plan Direction and Standards and Guidelines for MA's 4B, 4D, 5A, and 5B.

The proposed 3-year rest period of Lake Creek under Alternative 2 may not be adequate for the recovery of the riparian primary range. First year willow seedlings are very sensitive to grazing and the permittee proposes to run cows rather than yearlings, which prefer to stay on gentler terrain and closer to water.

The proposed 3-5 years of rest for Cedar Creek and 7 years of rest for Lake Creek under Alternative 4 would give more time for willows to become established and become more woody and resistant to grazing in the degraded riparian areas. Alternative 4 best meets Forest Plan Direction for managing riparian ecosystems to reach the latest seral stage possible while still allowing grazing to occur.

ALTERNATIVE 3 – No Action – No Livestock Grazing:

Direct, Indirect, and Cumulative Effects: This alternative would eliminate resource competition between cattle and elk on the winter/calving ranges. However, prior grazing of range by cattle has been found to stimulate regrowth of some herbaceous species thus enhancing forage quality available for elk (Miller 2002) Within 5 years, increased rankness of upland forage may decrease the over all quality of the winter/calving ranges for elk. Given the over all ruggedness of these allotments, however, it is believed that this would not be a significant effect. Degraded riparian and associated uplands would return to a more natural state.

Alternative 3 would not meet the multiple use objectives for the prescription areas as outlined in Forest Plan Direction and Standards and Guidelines.

White-crowned Sparrow: Evaluation criteria for white-crowned sparrow are: a) improvement and maintenance of riparian willow-shrub habitats in order to increase; and b) maintain nesting and foraging habitats.

ALTERNATIVE 1 – Proposed Action - Maintain Existing Stocking Level and Management Systems:

Direct, Indirect, and Cumulative Effects: This alternative does not fully address the unsatisfactory condition of the riparian and associated upland primary rangelands.

The season-long grazing systems currently in place on Lake Creek and Sawmill Creek allotments do not meet Forest Plan Direction and Standards and Guidelines for management of habitat needs of MIS within MA's 4B, and 4D; manage for birds and small mammals in 5B and 9A; maintain all riparian ecosystems in at least an upper mid-seral successional stage; and manage the area to maintain wildlife habitat in good condition in MA 9A.

ALTERNATIVES 2 and 4 – Shortened Grazing Season and Adjustments in Livestock Numbers AND Preferred Alternative - Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers, respectively:

Direct, Indirect, and Cumulative Effects: The effects of these alternatives are similar to those described under Rocky Mountain Elk, minus the discussion pertaining to elk in the first paragraph.

ALTERNATIVE 3 – No Action – No Livestock Grazing:

Direct, Indirect, and Cumulative Effects: Degraded riparian and associated uplands would return to a more natural state. However, Alternative 3 would not meet the multiple use objectives for the prescription areas as outlined in Forest Plan direction, standards and guidelines.

G. REQUIRED DISCLOSURES FOR THE PROPOSED ACTION AND THE ALTERNATIVES**Irreversible and Irrecoverable Commitment of Resources**

The term "irreversible commitment of resources" refers mainly to nonrenewable resources or actions which disturb a resource to the point that renewal can occur only over a long period of

time and/or at great expense. “Irretrievable commitment of resources” is the loss of production and/or use of renewable resources because of an allocation decision. It also relates to opportunities foregone for the period of time that resources cannot be used.

There are no irreversible or irretrievable commitment of resources associated with any alternative. Forage produced on rangelands is an annually renewed resource. None of the grazing systems analyzed in this document would disturb rangelands to the point that annual renewal would not occur.

Forest Plan Consistency

Excessive stocking levels in Alternative 1 are likely to prevent recovery of riparian areas not currently meeting Forest Plan Standards. As this alternative is not likely to improve these areas, it is not consistent with Forest Plan Standards under both Forest-wide and MA 9A Direction to protect riparian ecosystems and to meet state water quality standards. Further, the season-long grazing systems currently in place on Lake Creek and Sawmill Creek allotments do not meet Forest Plan Direction and Standards and Guidelines for MA’s 4B and 5B. It was included in the analysis to provide a basis for comparison for other alternatives.

ALTERNATIVES 2, 3 and 4 – Shortened Grazing Season and Adjustments in Livestock Numbers; No Action – No Livestock Grazing; and Rest Followed by a Shortened Grazing Season and Adjustments in Livestock Numbers, respectively:

If the Watershed Conservation Plan requirements and the recommended mitigation for livestock grazing in the SRC #1 Allotments are effectively implemented, this project would be consistent with the goals, Guidelines and Standards related to aquatic resources for the 1985 Forest Plan and the proposed Revised Forest Plan. This project and mitigation measures have been designed to minimize effects on soil, riparian and aquatic resources. In some areas or under some alternatives, livestock grazing decisions would result in requirements that could improve existing resource conditions. However, while the overall conditions may not still meet Forest Plan direction, improving administration and reduced grazing pressure should create a situation where an upward trend toward meeting Forest Plan direction is achieved within 5-15 years under these alternatives.

With adequate monitoring of forage conditions and utilization, these alternatives would meet Forest Plan direction and Standards and Guidelines for management prescription areas 4B and 5B.

Forest Plan Amendments Required to Ensure Project Consistency: A Forest Plan amendment may be required under Alternative 1 as this alternative does not appear to meet Forest Plan Standards. A Forest Plan amendment would not be required for Alternatives 2, 3, and 4 to ensure project consistency with existing 1985 Forest Plan direction for management of soil, water, riparian, and fisheries resources.

Public Health and Safety

The alternatives do not pose any risk to public health or safety. Cattle grazing has occurred in these allotments for many years without incident regarding public health or safety.

Unique Characteristics

Alternatives 2 through 4 would not affect the unique characteristics of such things as historical or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. Alternative 1 would affect the unique characteristics of wetlands only.

Effects on the Human Environment

Due to the limited scope of both the Proposed Action and the remaining alternatives, significant effects to the human environment are not anticipated. Further, the civil rights of any American citizen would not be differently affected by implementation of any alternative. Potentially localized effects to Carbon County are discussed in Chapter III.

Unique and Unknown Risks

The cause and effect relationships associated with the alternatives are well known and have been analyzed in depth to determine their impacts. Cattle grazing at the levels proposed in the action alternatives are at or below historical levels of use. There are no unique or unknown risks expected through implementation of the alternatives.

Precedent Setting Decision

The decision to be made is like one of many that have previously been made and will continue to be made by Forest Service line officers regarding livestock grazing activities on National Forest System lands. The decision to be made is within the scope of the Forest Plan for the Medicine Bow National Forest and is not expected to establish a precedent for future actions. The decision to be made does not represent a decision in principle about a future consideration.

Consistency with Wetlands/Floodplains Executive Orders

Under Alternative 1, floodplain function would likely be reduced due to the decrease in riparian vegetation and altered stream channel morphology in some areas. Wetlands would be impacted from trampling and overgrazing under this alternative, reducing wetland function. This alternative may not meet the intent of these two Executive Orders.

Under Alternatives 2, 3 and 4, wetland and floodplain processes should improve due to the expected improvement in riparian vegetation and decrease in cattle concentration near streams and wetland areas. Recommended mitigation measures and Best Management Practices are intended to further reduce risks to wetlands. The overall project is consistent with both Executive Order 11988 and 11990.

Clean Water Act

Under Alternative 1, the expected continued over-utilization in some riparian areas may result in bacterial levels that could exceed state water quality standards. This alternative likely would result in localized water quality conditions that would not meet the Clean Water Act at times. For Alternatives 2, 3 and 4, the grazing strategies and mitigation measures should improve the existing water quality. With these alternatives, State water quality standards would be met and all beneficial uses of the streams in this area would be supported. These alternatives would be consistent with the Clean Water Act.

Threatened and Endangered (T&E) Species

Forest Plan direction states “manage and provide habitat for recovery of endangered and threatened species” (Forest Plan III-30). Forest Service Manual 2670.4 also requires that a Biological Assessment (BA) be completed as part of the National Environmental Policy Act (NEPA) decision making process to review proposed Forest Service programs or activities in sufficient detail to determine how an action would affect any species which is listed under the Endangered Species Act. Determinations for T&E species are contained on pages 39 through 41 of this EA. The BA completed for this project is contained in the project file, located at 2468 Jackson Street, Laramie, Wyoming, 82070.

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

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