Environmental Assessment

Blanco Southside Grazing Allotments

Blanco Ranger District, White River National Forest

Rio Blanco County, Colorado
Environmental Assessment (EA)
Blanco Southside Grazing Allotments

Blanco Ranger District, White River National Forest
Rio Blanco County, Colorado

Lead Agency: USDA Forest Service

Responsible Official: Glenn R. Adams, District Ranger
Blanco Ranger District
White River National Forest
220 E. Market St.
Meeker, Colorado  81641
(970) 878-4039

For Further Information: Mary L. Cunningham, Interdisciplinary Team Leader
White River National Forest
220 E. Market St.
Meeker, Colorado  81641
(970) 878-4039

This document is available on the internet: http://www.fs.fed.us/r2/whiteriver/projects/decisions/index.shtml

ABSTRACT

Environmental Assessment – This Environmental Assessment (EA) is a public document that provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). It reveals the direct, indirect, and cumulative effects of a proposed action and alternative actions for permitted domestic livestock grazing management within the Blanco Southside Grazing Allotments Analysis Area.

This document follows the format established in the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations {CFR} §1500-1508). It includes a discussion of the need for the proposal; alternatives to the proposal; the physical, biological, social and economic impacts of the proposed action and alternatives; and a listing of agencies and persons consulted. It is tiered to the Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for the White River National Forest Land and Resource Management Plan – 2002 Revision.
The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.
# Table of Contents

## Chapter 1 - Introduction

1.1 Document Structure ................................................................. 9
1.2 Background ........................................................................... 9
1.3 Purpose and Need for Action .................................................. 12
1.4 Desired Condition ................................................................. 12
1.5 Existing Condition ................................................................. 17
1.6 Need for Change ................................................................... 18
1.7 Proposed Action ................................................................... 24
1.8 Scope of the Analysis and Decision Framework....................... 25
1.9 Public Involvement ................................................................. 26
1.10 Issues Associated with the Proposed Action ......................... 26

## Chapter 2 – Alternatives, Including the Proposed Action

2.1 Alternatives - Introduction ....................................................... 30
2.2 Alternative 1: No Action – No Permitted Livestock Grazing ..... 30
2.3 Alternative 2: No Change – Current Livestock Grazing Management .................................................. 30
2.4 Alternative 3: Proposed Action – Adaptive Livestock Grazing Management ........................................... 32
2.5 Comparison of Alternatives .................................................... 36

## Chapter 3 – Environmental Consequences

3.1 Introduction ........................................................................... 41
3.2 Activities That Have Affected Existing Conditions (Past and Present) ................................................... 41
3.3 Reasonably Foreseeable Activities ......................................... 42
3.4 Range Resource .................................................................... 42
3.5 Noxious Weeds ..................................................................... 58
3.6 Wildlife – Including Threatened, Endangered and Sensitive (TES) Species and Management Indicator Species (MIS) ................................................................. 62
3.7 Fisheries – Including Threatened, Endangered and Sensitive (TES) Species and Management Indicator Species (MIS) ................................................................. 76
3.8 Watershed ............................................................................ 85
3.9 Soils ..................................................................................... 91
3.10 Heritage Resources ............................................................... 92
3.11 Recreation .......................................................................... 97
3.12 Social and Economic Factors ............................................... 99
3.13 Cumulative Effects Analysis ................................................ 102

## Chapter 4 – Consultation and Coordination

................................................................. 110
4.1 Introduction ..................................................................................................................... 110
4.2 Interdisciplinary Team Members .................................................................................. 110
4.3 Federal, State and Local Agencies ................................................................................. 110
4.4 Tribal Governments ........................................................................................................ 111
4.5 Individuals / Organizations ............................................................................................ 111

Literature Cited ................................................................................................................... 113

Appendices .......................................................................................................................... 115

List of Appendices

Appendix A. Forestwide Goals and Objectives that the Blanco southside grazing allotments project is designed to achieve (USFS 2002) 116
Appendix C. Management Areas within the seven southside allotments from the White River National Forest, Land and Resource Management Plan – 2002 Revision. 122
Appendix D. Desired Conditions for Management Areas included in the Blanco Southside Allotment Planning Area including Standards and Guidelines that relate to livestock grazing. 123
Appendix E. FSH 2509.25 – Watershed Conservation Practices Handbook – Management Measures that relate to livestock grazing. 126
Appendix F. Rangeland Health Evaluation Form (Rangeland Analysis and Training Guide 1994; Form R2-2200-RH). 128
Appendix G – Tables 1 – 7. Existing condition of plant communities within the seven southside allotments, Blanco Ranger District, White River National Forest. 129

List of Tables

Table 1.1. Suitable acres for livestock grazing within the Blanco Southside Allotment Analysis Area by allotment. 10
Table 1.2. Management Area acres within the seven southside allotments analysis area. 13
Table 1.3. Desired conditions of plant communities within the seven southside grazing allotments. 15
Table 1.4. Need for Change on the Seven Lakes C&H Allotment. 19
Table 1.5. Need for Change on the North Elk C&H Allotment. 20
Table 1.6. Need for Change on the East Miller C&S Allotment. 21
Table 1.7. Need for Change on the Middle Miller C&H Allotment. 22
Table 1.8. Need for Change on the Salt Box C&S Allotment. 23
Table 1.9. Need for Change on the West Miller C&S Allotment. 23
Table 1.10. Need for Change on the Hay Flat C&H Allotment. 24
Table 2.1. Current Animal Unit Months (AUM), permitted on/off dates, class and permitted number of livestock on the seven Blanco Southside grazing allotments. 31
Table 2.2. Grazing Management Toolbox for the seven southside allotments.* 33
Table 2.3. Monitoring schedule for the seven southside allotments. 35
Table 2.4. Blanco Southside Allotments Alternative Comparison Table 37
Table 3.1. Range health data for the Seven Lakes Allotment. 45
Table 3.2. Range health data for the North Elk Allotment. 46
Table 3.3. Range health data for the East Miller Allotment. 48
Table 3.4. Range health data for the Middle Miller Allotment. 49
Table 3.5. Range health data for the Salt Box Allotment. 50
Table 3.6. Range health data for the West Miller Allotment. 51
Table 3.7. Range health data for the Hay Flat Allotment. 53
Table 3.8. Vegetation Cover Types in the Southside Wildlife Analysis Area (7 Allotments) 65
Table 3.9. Threatened and Sensitive Species either occurring or potentially occurring in the Southside Wildlife Analysis Area. 68
Table 3.10. Determination Statements for Sensitive and Threatened Species under Alternative 2 72
Table 3.11. Riparian Monitoring Results. 73
Table 3.12. Determination statements for sensitive and threatened species under Alternative 3. 76
Table 3.13. Stream information from Colorado Division of Wildlife database. 77
Table 3.14. Lake information from Colorado Division of Wildlife database. 79
Table 3.15. Watershed information for the Blanco southside grazing allotments. 85
Table 3.16. Recommended design criteria for eligible sites. 96
Table 3.17. Population statistics for race, ethnicity, and poverty status for Colorado and Rio Blanco County. (US Census Bureau State and County Quick Facts 2006). 100
Table 3.18. Southside grazing allotments cumulative effects table. 102
Table 4.1. Interdisciplinary Team (IDT) Members for the Southside Allotment Environmental Assessment. 110
Table 4.2. Federal, State and Local Agencies contacted for initial scoping on the Blanco Southside Allotments Environmental Assessment. 110
Table 4.3. Tribal Governments contacted for initial scoping on the Blanco Southside Allotments Environmental Assessment. 111
Table 4.4. Individuals and organizations contacted for initial scoping on the Blanco Southside Allotments Environmental Assessment. 111
List of Figures

Figure 1.1. Vicinity map of the seven southside allotments, Blanco Ranger District, White River National Forest. 11

Figure 3.1. Livestock head months permitted on the Seven Lakes C&H Allotment, 1966-2007. 44

Figure 3.2. Livestock head months permitted on the North Elk Allotment, 1968-2007. 46

Figure 3.3. Livestock head months permitted on the East Miller Allotment, 1935-2007. 47

Figure 3.4. Livestock head months permitted on the Middle Miller Allotment, 1935-2007. 49

Figure 3.5. Livestock head months permitted on the West Miller Allotment, 1935-2007. 51

Figure 3.6. Livestock head months permitted on the Hay Flat Allotment, 1965-2007. 52
Chapter 1 - Introduction

1.1 Document Structure

This Environmental Assessment (EA) is prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 and other relevant federal and state laws and regulations. The EA is also required by Section 504 of the Rescission Act of 1995 (Public Law 104-19), which directs the Forest Service to develop a schedule for the completion of NEPA analyses on existing livestock grazing allotments. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts:

- **Chapter 1 - Introduction**: This section includes information on the history of the project proposal, the purpose of and need for the project, and the agency’s proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- **Chapter 2 – Alternatives, including the Proposed Action**: This section provides a more detailed description of the agency’s proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on key issues raised by the public and other agencies. This discussion also includes possible design criteria.
- **Chapter 3 - Environmental Consequences**: This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area. Within each section, the affected environment is described first, followed by the effects of the No Action (No Grazing) Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.
- **Chapter 4 – Consultation and Coordination**: This section provides a list of preparers and agencies consulted during the development of the environmental assessment.

Appendices provide more detailed information to support the analyses presented in the environmental assessment. Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Blanco Ranger District Office in Meeker, Colorado.

1.2 Background

The White River National Forest, Blanco Ranger District has prepared this assessment to address the environmental consequences of a proposed agency action to allow for continued authorized livestock grazing on seven Forest Service grazing allotments. The grazing allotments considered for this analysis include (east to west): 1) Seven Lakes Cattle and Horse (C&H), 2) North Elk C&H, 3) East Miller Cattle and Sheep (C&S), 4) Middle Miller C&H, 5) Salt Box C&S, 6) West Miller C&S and 7) Hay Flat C&H. The allotments are located on National Forest System (NFS) lands within White River Plateau.
of northwest Colorado. These seven grazing allotments encompass 59,788 acres. Figure 1.1 displays the location of the seven allotments being analyzed in this EA.

Allotment acres are classified as suitable for livestock grazing based on parameters such as percent slope, distance to water, accessibility for livestock, and inherent forage producing capabilities. Suitable livestock grazing acres were determined during the 2002 White River National Forest Land and Resource Management Plan Final Environmental Impact Statement Grazing Suitability Analysis. The process used is outlined in the Rocky Mountain Region desk guide, “A Process to Determine Rangeland Suitability for Livestock Grazing at the Forest Plan Level” (July 6, 2001).

Suitable acres for livestock grazing are then determined on an allotment by allotment basis. Although much of an allotment may be non-suitable for livestock grazing, that doesn’t mean the allotment itself is non-suitable or that it should not be grazed. Allotments are stocked and managed based on the suitable acres within that allotment. Suitable livestock grazing acres by allotment are shown in Table 1.1 below.

Table 1.1. Suitable acres for livestock grazing within the Blanco Southside Allotment Analysis Area by allotment.

<table>
<thead>
<tr>
<th>Allotment Name</th>
<th>Total NFS Acres</th>
<th>Suitable Cattle Acres</th>
<th>Suitable Sheep Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Miller C&amp;S</td>
<td>11,601</td>
<td>7,172</td>
<td>8,515</td>
</tr>
<tr>
<td>Hay Flat C&amp;H</td>
<td>5,162</td>
<td>4,391</td>
<td>4,678</td>
</tr>
<tr>
<td>Middle Miller C&amp;H</td>
<td>10,740</td>
<td>7,174</td>
<td>8,418</td>
</tr>
<tr>
<td>North Elk C&amp;H</td>
<td>11,223</td>
<td>6,547</td>
<td>9,148</td>
</tr>
<tr>
<td>Salt Box C&amp;S</td>
<td>3,853</td>
<td>2,873</td>
<td>3,219</td>
</tr>
<tr>
<td>Seven Lakes C&amp;H</td>
<td>11,703</td>
<td>7,658</td>
<td>8,277</td>
</tr>
<tr>
<td>West Miller C&amp;S</td>
<td>5,500</td>
<td>2,736</td>
<td>4,076</td>
</tr>
</tbody>
</table>

Livestock grazing has remained a long-standing activity in the Blanco Southside Allotment area beginning with settlers. In 1891 President Benjamin Harrison named the area that is now contains Blanco Ranger District lands the ‘White River Plateau Timberland Reserve’. In 1905, the Reserve changed from the Department of Interior to the Department of Agriculture and assumed the name ‘National Forest’. Livestock grazing records kept by the government start in the 1920s. Forest Service records indicate that the number of livestock grazed has decreased over time from historical highs in the 1930s to the present.

While many areas within this allotment are meeting or moving toward desired conditions as identified in the White River National Forest Land and Resource Management Plan – 2002 Revision (Forest Plan), historic and current grazing by cattle and sheep as well as elk and deer has resulted in specific resource conditions that are in need of improvement. The proposed action is designed to improve existing conditions, where a need for change is identified, to move toward or achieve desired conditions within an acceptable timeframe.
Figure 1.1. Vicinity map of the seven southside allotments, Blanco Ranger District, White River National Forest.
1.3 Purpose and Need for Action

Purpose
The purpose of this analysis is to determine whether to continue permitting livestock grazing on all, none or some potion of Blanco Southside Allotment Analysis Area. If authorized, livestock grazing of available forage would be managed in a manner that maintains or moves conditions toward achieving Forest Plan and project level objectives and desired conditions in a defined timeframe (see Section 1.4 Desired Condition).

This decision will bring these allotments into compliance with the National Environmental Policy Act (NEPA) and Section 504 of the Rescission Act (Public Law 104-19), which directed the agency to complete NEPA analysis of grazing allotments by 2010.

Need
Permitting of livestock grazing is a discretionary action by the Forest Service. The analysis area contains lands identified as available for domestic livestock grazing in the Forest Plan. It is Forest Service policy to make forage available to qualified livestock operators from suitable lands for livestock grazing provided such grazing is consistent with land management plans and the multiple use goals, objectives, standards, and guidelines of the Forest Plan.

With regard to the Blanco Southside Allotments, there is an overall need to analyze the possible effects of continuing or modifying the grazing authorization. There is also an overall need for greater management flexibility to cope with fluctuations in environmental and social conditions including, but not limited to, annual changes in weather; to be responsive to permittee requests for reasonable operational adjustments; and to respond to unforeseen concerns or opportunities.

More specifically, the need for this action is tied to any important resource, social, or economic disparity that was found when comparing the existing condition in the analysis area to the Forest Plan and project-specific desired conditions, as determined by the interdisciplinary team and authorized officer on a site-specific basis. The need for action is further defined by the scope of the analysis (i.e. the analysis is limited to evaluating the appropriate level of livestock grazing, given considerations of rangeland and related resource condition and trends, and other Forest Plan goals and objectives).

1.4 Desired Condition
This project is designed to achieve regional and forest-wide goals objectives (Forest Plan, pp. 1-1 through 1-17) and forest-wide desired conditions (Forest Plan, pp. 2-1 through 2-41). This project ties specifically to the forest’s “ecosystem health” and “multiple benefits to people” goals.

Forest Plan Standards and Guidelines
Within the Forest Plan, there are several standards and guidelines that relate to livestock grazing (Appendix B). A ‘Standard’ is a course of action that must be followed, or a level of attainment that must be reached, to achieve forest goals. Adherence to standards is mandatory. Standards are used to assure that individual projects are in compliance with the Forest Plan. A ‘Guideline’ is a preferred or advisable course of action or level of attainment. Guidelines are designed to achieve desired conditions. The standards and guidelines in Appendix B also serve as design criteria to be applied in implementing the proposed action.

**Forest Plan Management Areas**

Lands within the White River National Forest are managed for a particular emphasis or theme known as a Management Area. Each Management Area in the Forest Plan has a description of the physical setting for the area, a description of the desired conditions for the area, and a list of the standards and guidelines that apply to the area. A map of the Management Areas within the southside analysis area is shown in Appendix C. Table 1.2. (below) depicts the Management Areas and associated acres represented within the southside allotments analysis area. Appendix D lists the desired conditions under each Management Area shown in Appendix C. Livestock grazing is appropriate within each of the Management Areas.

**Table 1.2. Management Area acres within the seven southside allotments analysis area.**

<table>
<thead>
<tr>
<th>Management Area Number and Description</th>
<th>Acres within the southside allotments analysis area</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Private Land)</td>
<td>(1,993)</td>
</tr>
<tr>
<td>1.31  Backcountry Recreation – Non-motorized</td>
<td>904</td>
</tr>
<tr>
<td>2.1    Special Interest Areas</td>
<td>2,516</td>
</tr>
<tr>
<td>4.3    Dispersed Recreation</td>
<td>1,608</td>
</tr>
<tr>
<td>5.12   General Forest and Rangelands – Range Vegetation Emphasis</td>
<td>11,615</td>
</tr>
<tr>
<td>5.13   Resource Production – Forest Products</td>
<td>1,756</td>
</tr>
<tr>
<td>5.4    Forested Flora and Fauna Habitat</td>
<td>14,154</td>
</tr>
<tr>
<td>5.41   Deer and Elk Winter Range</td>
<td>12,138</td>
</tr>
<tr>
<td>5.43   Elk Habitat</td>
<td>15,097</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59,788</strong></td>
</tr>
</tbody>
</table>

*Total acreage does not include privately owned land. There is a discrepancy of 6 acres between management area acres and allotment acres (Table 1), presumably due to minor differences in the Geographical Information Systems layers from where this data was recorded.

**Watershed Conservation Practices**

In addition to Forest Plan direction, applicable standards listed in the USDA Forest Service Rocky Mountain Region’s Watershed Conservation Practices Handbook (WCP; FSH 2509.25) also apply (Appendix E).
Site-Specific Desired Conditions
This direction is then further refined and applied to the “on the ground” conditions at the project level. The following table illustrates the desired condition for the plant communities within the seven southside allotments. Desired conditions were developed from multiple sources including: 1) White River Forest Plan, 2) Plant Associations of Region Two (Johnston 1987), 3) Grassland, Shrubland and Forestland Habitat Types of the White River – Arapaho National Forest (Hess and Wasser 1982), and 4) site-specific conditions as defined by the interdisciplinary team. Monitoring of desired condition indicators is conducted on benchmark (long term effectiveness monitoring) and key (short term implementation monitoring) areas. All of the allotments share the same desired conditions with the exceptions listed below:

1. The ‘Forest Plan Standard – northern leopard frog’ section under the Riparian and Wetlands desired condition description only applies to the Seven Lakes C&H allotment.
2. The ‘Forest Plan Standard – Colorado River cutthroat trout’ and ‘Forest Plan Guideline – Colorado River cutthroat trout’ sections under the Riparian and Wetlands desired condition description only apply to the North Elk C&H allotment.

Detailed species composition for the vegetation communities discussed in the desired condition table can be found in Johnston (1987).

Cover-Frequency Index and Rangeland Health Evaluation
Cover-Frequency Index (CFI) and Rangeland Health Evaluation scores were used to define desired condition in the uplands (grasslands) on a site-specific level. Using Hess and Wasser (1982), Johnston (1987) and professional judgment, range and wildlife personnel developed numerical levels for desired condition for the following CFI parameters: 1) bare soil, 2) native grasses, and 3) Kentucky bluegrass (*Poa pratensis*). The desired CFI numerical levels were based on data collection on sites that were considered to be healthy rangeland and whose condition offered an attainable goal on similar sites where existing condition was not meeting desired condition.

The CFI scores are considered as a goal to work toward. In some cases due to site-specific conditions (i.e. soils, water availability, slope, aspect) these numbers stated may be too high or too low to achieve. The acceptable rate of change agreed upon by IDT members was 2.5% per year when discussing the CFI for bare ground in those areas where bare ground was higher than the desired condition. This was also the figure agreed upon for an acceptable rate of change in the CFI for native grasses, in those areas where native grasses were lower than the desired condition.

CFI transects were established where Parker 3-step transects were located in the past or in new areas defined as ‘benchmark’ areas based on their representative characteristics of allotment condition. Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5-10 year intervals (see monitoring schedule, Table 2.3).
CFI specific to *Poa pratensis* (Kentucky bluegrass)

In areas where the *Poa pratensis* community is well-established, it is acknowledged that this is difficult to change through normal management practices. Once it has gained dominance, it is persistent and remains a relatively stable community component (Uchytil 1993). *P. pratensis* is well adapted to meadows which have seasonally high water tables and midsummer drought (Volland 1985). Replacement of *P. pratensis* with the original natives is impractical because of its competitive ability. Even after 11 years of rest from livestock grazing, a *P. pratensis* meadow in central Oregon did not advance toward dominance by tufted hairgrass, a native species (Volland 1978). State and transition models indicate that the threshold where *P. pratensis* replaced native species was probably reached some time ago and we are now in a steady state where *P. pratensis* dominates certain grassland communities (Westoby et al. 1989). Without a large investment in revegetation of these sites it is likely not possible to do more than change the species mix by a few percentage points in the higher productivity sites through livestock management.

While total recovery of *P. pratensis* dominated sites (in this case, benchmark areas with high CFI values for *P. pratensis* and corresponding low CFI values for native grasses) to native grasses, free of *Poa pratensis*, is not considered an achievable goal with or without domestic livestock grazing, the desired condition is to produce conditions favorable for native species reestablishment. For livestock use, these sites are best managed under a grazing system other than season-long use. Current management on the southside allotments uses a deferred rotation system and season-long grazing is not practiced in any of the allotments. Both Alternatives 2 and 3 would continue to use deferred rotation grazing systems (Chapter 2).

Table 1.3. Desired conditions of plant communities within the seven southside grazing allotments.

<table>
<thead>
<tr>
<th>Desired Condition</th>
<th>Uplands - Native Grasslands and Forblands</th>
</tr>
</thead>
<tbody>
<tr>
<td>General description</td>
<td>Grasslands/Forblands (these are not separated by vegetation type under current vegetation mapping standards)</td>
</tr>
<tr>
<td></td>
<td>Mixed native bunch grass community primarily dominated by native grasses and forb species. This plant community provides a mosaic of plants with species diversity, a variety of vegetative structures and sufficient amounts of litter/duff. Principle grass species may include: Thurber fescue, Idaho fescue, slender wheatgrass, mountain brome, and needle grass. Bare ground is less than 30% (RAMTG). Grass communities show vigor. Forblands support a diverse mix of upland forbs and graminoids. For detailed species composition of native grassland communities refer to Plant Associations of Region Two by Johnston (1987) and Grassland, Shrubland and Forestland Habitat Types of the White River – Arapahoe National Forest by Hess and Wasser (1982).</td>
</tr>
<tr>
<td></td>
<td>The desired condition for <strong>Rangeland Health Evaluations</strong> (defining abiotic characteristics, rangeland vegetation condition and recovery mechanisms (see Appendix F)) is 100% in the healthy category on all <strong>benchmark areas</strong> within the Southside Allotments.</td>
</tr>
</tbody>
</table>
**Desired Condition**

<table>
<thead>
<tr>
<th>Cover-Frequency Index values that define desired condition within the grassland type on the Southside Allotments include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Grasses – Cover-Frequency Index of 800 or higher</td>
</tr>
<tr>
<td><em>Poa pratensis</em> – Cover-Frequency Index of 1000 or lower</td>
</tr>
<tr>
<td>Bare Ground – Cover-Frequency Index of 1500 or lower</td>
</tr>
</tbody>
</table>

Trend data will be collected on the selected *benchmark areas* in five-year increments (2012 and 2017). The goal for bare ground is to move toward the desired cover-frequency index at a rate of 2.5% per year or 25% in 10 years.

Where *P. pratensis* is established, it may be difficult to decrease the CFI while increasing the CFI of native grasses. On these benchmark areas, the goal is to not increase the CFI of *P. pratensis* and to not decrease the CFI for native grasses.

On those benchmark areas where the CFI for *P. pratensis* is low (at or below the desired CFI of 1000) but the CFI for native grasses is not at the desired CFI level of 800 or higher, the acceptable rate of change towards achieving the desired condition is 2.5% higher per year or 25% higher in 10 years. In these areas, the bare ground CFI would be expected to decrease with an increase in native grasses CFI.

**Sagebrush**

**General description**
The desired condition in the sagebrush community type is vigorous growth and regeneration of mid to late seral shrub species interspersed with a variety of native grasses and forbs. Desired sage cover ranges from 20-40%.

**Brewer’s Sparrow**

**Forest Plan – Brewer’s sparrow:** For management activities in Brewer’s sparrow habitat, a minimum of 5% of sagebrush cover over 48 inches in height is maintained where site characteristics allow, along with a minimum of 20% canopy cover of sagebrush.

Livestock activity in known or suspected Brewer’s sparrow nesting areas is managed to reduce the likelihood of cowbird presence. Actions such as rotating livestock use by alternating years or seasons or minimizing the intensity of number of livestock concentration areas are considered.

Brewer’s sparrow habitat occurs in the Hay Flat, Middle Miller and Seven Lakes allotments.

**Riparian and Wetland Resources**

**General description**
Plant species may include mesic sedges, rushes, tufted hairgrass, Kentucky bluegrass, shrubby cinquefoil, willow, alder, birch or spruce of mixed age class. In hardwood systems, riparian shrub cover of at least 35% to include a variety of species appropriate to the site potential.

**Canada lynx habitat**

**Southern Rockies Lynx Amendment EIS - Canada lynx:** In riparian areas and willow carrs, livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regime (*preponderance is defined for these purposes as 51% or greater in mid to late seral stage on riparian benchmark areas*)

**Northern leopard frog habitat**

(*Applies to Seven Lakes C&H only*)

**Forest Plan – leopard frog:** Adequate vegetation cover (as determined by annual allowable use guidelines in riparian areas, Appendix B, and professional judgment of wildlife biologist*) around occupied leopard
**Desired Condition**

frog breeding ponds is maintained when implementing management activities to minimize avian predation on newly metamorphosed frogs.

*Literature reviewed does not define what adequate vegetation cover for leopard frogs is in terms of vegetation structure, density, herbaceous and woody component, etc.

**Colorado River cutthroat trout habitat**

(*Applies to North Elk C&H only*)

Forest Plan - Colorado River cutthroat trout: For management activities that have the potential to impact occupied cutthroat trout habitat, tributaries of occupied cutthroat trout habitat, or identified reintroduction areas, maintain or enhance existing cutthroat trout habitat. At minimum and where necessary:

- Reduce sediment from existing roads and trails.
- Maintain pool depths.
- Maintain riparian vegetation.
- Retain large woody debris in streams.

---

**Aspen Regeneration**

**General description**

Aspen communities across project area have diverse age structures including old growth communities, areas of regeneration, openings, standing snags and down woody debris. A vigorous and diverse native grass, shrub and forb understory is present.

**Canada lynx habitat**

Southern Rockies Lynx Amendment EIS - Canada lynx: In fire- and harvest-created openings, livestock grazing should be managed so impacts do not prevent shrubs and trees from regenerating. (The Forest Plan standard for the required minimum numbers of aspen seedlings for adequate restocking of a regeneration site is 300 trees per acre).

In aspen stands, livestock grazing should be managed to contribute to the long-term health and sustainability of aspen.

---

**1.5 Existing Condition**

The existing conditions on the seven allotments included in this EA are described from broad scale down to site-specific. General descriptions were made over several years by range inspections and reports from other resource specialists. The more site-specific information included here was derived from several monitoring methods, including:

1. **Rangeland Health Evaluations** (2-4 per allotment) completed in 2007.
2. **Cover-Frequency transects** (One Cluster, two transects per allotment) completed in 2007. These were established where Parker 3-step transects were located in the past or in new areas defined as ‘benchmark’ areas based on their representative characteristics of allotment condition.
3. **Riparian Vegetation Cross-Section and Greenline transects** completed in 2007 in selected riparian areas within the East Miller, Middle Miller and North Elk allotments. These were established in riparian ‘benchmark’ areas, where historic livestock use was high, and are considered good indicators of riparian condition in other parts of the allotment.
4. **Aspen Regeneration Surveys and Site Examinations** completed in 2007 and 2008. Regeneration surveys were completed on areas that were harvested from 1995 to 2000 and site examinations were completed in existing aspen stands and post-burn areas within the Seven Lakes Allotment (2003 Langlas Draw Fire).

5. **Sagebrush Field Reconnaissance** completed in 2003 and 2004 to field verify vegetation composition of sagebrush stands larger than five acres and to document presence/absence of Brewer’s sparrow.

6. **Allotment Inspection Information** collected in recent years along with general reconnaissance reports completed by various specialists.

Appendix G, Tables 1 through 7, discuss the existing condition by allotment for the plant community types listed above in Table 1.3. Each allotment’s existing condition relates back to the general description and Forest Plan Standards and Guidelines for a specific plant community type. Each allotment’s existing condition is then described at a site-specific level based on the monitoring established within that allotment. If a plant community within an allotment is not meeting the desired condition as described in Table 1.3, there is a ‘Need for Change’ discussed for that plant community type within the specific allotment carried forward into Tables 1.4 through 1.10. If a plant community within an allotment is meeting the desired condition as described in Table 1.3, it is discussed in Appendix G and no ‘Need for Change’ is carried forward – e.g. management will focus on maintenance of the current status.

### 1.6 Need for Change

The **Need for Change** on each of the seven southside allotments is defined by community type in Tables 1.4 through 1.10 below. A Need for Change exists when there is a disparity between the desired condition and existing condition (See Appendix G Tables 1-7 for detailed information).

The **Indicators to Meet Desired Conditions** are the parameters that will be measured through monitoring to determine if existing condition is moving towards or has achieved the desired condition.

The **Management Actions to achieve or move toward desired conditions** are the changes in management, documented in the AOI for the allotment that will be adopted if trend data shows that existing conditions are not moving toward desired conditions. These are tools that can be taken from Table 2.2, the Grazing Management Toolbox.
Table 1.4. Need for Change on the Seven Lakes C&H Allotment.

<table>
<thead>
<tr>
<th>Seven Lakes C&amp;H</th>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF1 Scores</td>
<td>The CF1 score for native grasses is lower than desired while the CF1 score for <em>Poa pratensis</em> is higher than desired on the benchmark area in the Spray Pasture.</td>
<td>Produce conditions favorable for native species reestablishment on the benchmark area in the Spray Pasture.</td>
<td>The annual allowable use guidelines (Appendix B) for upland plant communities will be adhered to. Diligent administration/annual short-term monitoring of allowable use will insure guidelines are followed. When allowable use is reached, livestock will be moved out of the area. Data will be collected on transects in five and 10 year increments to establish trends in the upland plant communities.</td>
</tr>
</tbody>
</table>
Table 1.5. Need for Change on the North Elk C&H Allotment.

<table>
<thead>
<tr>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rangeland Health Evaluation</strong> – The Hiner and Divide Pastures have certain characteristics in the ‘at risk’ category according to rangeland health data collected.</td>
<td>Achieve 100% healthy on all indicators of Rangeland Health on the benchmark areas in the Hiner and Divide Pastures.</td>
<td>The annual allowable use guidelines (Appendix B) for upland plant communities will be adhered to. Diligent administration/annual short-term monitoring of allowable use will insure guidelines are followed. When allowable use is reached, livestock will be moved out of the area. Data will be collected on transects in five and 10 year increments to establish trends in the upland plant communities. If the CFI score for bare ground is not 25% closer to the desired condition in ten years, then other management options may be implemented (in addition to the decrease in duration of use). The number of livestock using the pasture at one time, the season of use, and the duration of use will be all be considered and adjusted to decrease the CFI for bare ground.*</td>
</tr>
<tr>
<td><strong>CFI Scores</strong> – The CFI score for bare ground on the benchmark area in the Divide Pasture is higher than desired.</td>
<td>Decrease in bare ground CFI score on the benchmark area in the Divide Pasture.</td>
<td>More diligence by the permittee is needed to ensure that cattle do not occupy this pasture during rest years and only occupy this pasture during the allotted time frame on use years. If the permittee cannot completely keep cattle out of this pasture during rest years, a fence will be constructed to the south of this area, in a logical location (a notch identified in the drainage within the forested vegetation type). If bank stability and vegetative cover on the West Fork of North Elk Creek do not increase by 2012, a cross-fence will be constructed below the confluence of Prospect Draw and the West Fork of North Elk Creek. This site will be above the open riparian bottom in the West Fork of North Elk Creek. This cross-fence will increase the level of control that the permittee has over the distribution of cattle and act as a tool to keep livestock out of the open riparian bottom of this pasture.</td>
</tr>
<tr>
<td><strong>Bank Stability (Colorado cutthroat trout habitat)</strong> – Bank stability and vegetative cover are lower than desired on the West Fork of North Elk Creek within the Middle Mountain Pasture.</td>
<td>Increase in percent of stable banks and vegetative cover on the West Fork of North Elk Creek within the Middle Mountain Pasture.</td>
<td></td>
</tr>
</tbody>
</table>

*Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5-10 year intervals.
### Table 1.6. Need for Change on the East Miller C&S Allotment.

<table>
<thead>
<tr>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI Scores</td>
<td>Decrease in bare ground CFI score.</td>
<td>The annual allowable use guidelines (Appendix B) for upland plant communities will be adhered to. Diligent administration/annual short-term monitoring of allowable use will insure guidelines are followed.</td>
</tr>
<tr>
<td></td>
<td>Produce conditions favorable for native species reestablishment on the benchmark area in the East Miller Pasture.</td>
<td>When allowable use is reached, livestock will be moved out of the area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data will be collected on transects in five and 10 year increments to establish trends in the upland plant communities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the CFI score for bare ground is not 25% closer to the desired condition in ten years, then other management options may be implemented (in addition to the decrease in duration of use).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The number of livestock using the pasture at one time, the season of use, and the duration of use will be all be considered and adjusted to produce more favorable conditions for the reestablishment of native grasses and a decrease in bare ground.*</td>
</tr>
</tbody>
</table>

*Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5-10 year intervals.*

---

21
Table 1.7. Need for Change on the Middle Miller C&H Allotment.

<table>
<thead>
<tr>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CFI Scores</strong> – The CFI score for bare ground is higher than desired on the benchmark area in the Unit 1 Pasture.</td>
<td>Decrease in bare ground CFI score on this benchmark area in the Unit 1 Pasture.</td>
<td>The annual allowable use guidelines (Appendix B) for upland plant communities will be adhered to. Diligent administration/annual short-term monitoring of allowable use will insure guidelines are followed. When allowable use is reached, livestock will be moved out of the area (decrease in duration of use in the Unit 1 pasture). Data will be collected on transects in five and 10 year increments to establish trends in the upland plant communities. If the CFI score for bare ground is not 25% closer to the desired condition in ten years, then other management options may be implemented (in addition to the decrease in duration of use). The number of livestock using the pasture at one time, the season of use, and the duration of use will be all be considered and adjusted to decrease bare ground.*</td>
</tr>
</tbody>
</table>

*Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5-10 year intervals.*
Table 1.8. Need for Change on the Salt Box C&S Allotment.

<table>
<thead>
<tr>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI Scores - The CFI score for native grasses is lower than desired on the benchmark area in the Salt Box Pasture.</td>
<td>Increase in native grasses CFI score on the benchmark area in the Salt Box Pasture.</td>
<td>Data will be collected on transects in 2012 and 2017 to establish trends in the upland plant communities. If CFI scores are not 25% higher in 10 years, then other management options may be implemented (in addition to the decrease in duration of use).*</td>
</tr>
</tbody>
</table>

*Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5-10 year intervals.

Table 1.9. Need for Change on the West Miller C&S Allotment.

<table>
<thead>
<tr>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangeland Health Evaluation - The Center Pasture has certain characteristics in the ‘at risk’ category according to rangeland health data collected.</td>
<td>Achieve 100% healthy on all indicators of rangeland health on the benchmark area in the Center Pasture.</td>
<td>The annual allowable use guidelines (Appendix B) for upland plant communities will be adhered to. Diligent administration/annual short-term monitoring of allowable use will insure guidelines are followed. When allowable use is reached, livestock will be moved out of the area. Data will be collected on transects in five and 10 year increments to establish trends in the upland plant communities. If the CFI score for bare ground is not 25% closer to the desired condition in ten years, then other management options may be implemented (in addition to the decrease in duration of use). The number of livestock using the pasture at one time, the season of use, and the duration of use will be all be considered and adjusted to decrease the CFI for bare ground.*</td>
</tr>
<tr>
<td>CFI Scores - The CFI score for bare ground is higher than desired on the benchmark area in the Center Pasture.</td>
<td>Decrease in bare ground CFI score on the benchmark area in the Center Pasture.</td>
<td></td>
</tr>
</tbody>
</table>

*Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5-10 year intervals.
Table 1.10. Need for Change on the Hay Flat C&H Allotment.

<table>
<thead>
<tr>
<th>Need for Change</th>
<th>Indicators to Meet Desired Conditions</th>
<th>Management Actions to achieve or move towards desired conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI Scores - The CFI scores for bare ground and <em>Poa Pratensis</em> are higher than desired while the CFI score for native grasses is lower than desired on the benchmark area in the Unit 2 Pasture.</td>
<td>Decrease in bare ground, increase in native grasses and decrease in <em>Poa pratensis</em> CFI scores on this benchmark area in the Unit 2 Pasture.</td>
<td>The annual allowable use guidelines (Appendix B) for upland plant communities will be adhered to. Diligent administration/annual short-term monitoring of allowable use will insure guidelines are followed. When allowable use is reached, livestock will be moved out of the area. Data will be collected on transects in five and 10 year increments to establish trends in the upland plant communities. If the CFI score for bare ground is not 25% closer to the desired condition in ten years, then other management options may be implemented (in addition to the decrease in duration of use). The number of livestock using the pasture at one time, the season of use, and the duration of use will be all be considered and adjusted to decrease the CFI for bare ground.*</td>
</tr>
</tbody>
</table>

*Desired and attainable CFI numerical values will become more definitive as long-term monitoring information is collected in 5 and 10 year intervals.

1.7 Proposed Action

The proposed action is to permit livestock grazing within the Southside Grazing Allotments Analysis Area (hereafter referred to as the Analysis Area) under an adaptive management strategy (Forest Service Handbook [FSH] 2209.13, Chapter 90; Quimby 2007) that will meet or move toward Forest Plan and site-specific desired conditions. The proposed action is designed to:

- Meet or adequately move toward desired conditions in the Forest Plan and WCP handbook.
- Provide adaptive management flexibility.
- Continue improving resource trends or maintain currently satisfactory resource conditions as appropriate.

The management actions listed in Tables 1.4 through 1.10 are specific actions that could be implemented under the proposed action’s adaptive management framework.
If selected, the proposed action would give direction for the development of new allotment management plans (AMP) for the allotments within the Analysis Area. These AMPs are implementing documents for the alternative selected in the Decision Notice. Chapter 2 describes the proposed action and other alternatives in more detail.

The proposed action will contain a monitoring plan to allow determination as to whether actions are being implemented as planned, and if so, if the desired results are being attained. Based on monitoring findings, livestock grazing management may be adjusted within specified adaptive management limits as described in this NEPA analysis and the Decision Notice.

1.8 Scope of the Analysis and Decision Framework

The scope of this analysis is limited to evaluating the appropriate level of permitted livestock grazing, given considerations of rangeland condition and other Forest Plan goals and objectives. The analysis does not address recreation livestock, animals authorized under livestock use permits (i.e., where the primary purpose is not livestock production), or outfitter and guide livestock.

This EA discloses the environmental consequences of implementing the proposed action and alternatives to that action. The responsible official for this project is the Blanco District Ranger. A separate Decision Notice (DN), signed by the responsible official, will explain the management and environmental reasons for selecting an alternative to be implemented. The DN will disclose the rationale for choosing the selected alternative; discuss the rationale for rejecting other alternatives; and disclose how the decision responds to the relevant issues.

The decision that the responsible official will make is whether or not to authorize some level of livestock grazing on all, part, or none of the Analysis Area given considerations of rangeland condition, Forest Plan goals and objectives, and public input. If the decision is made to authorize some level of livestock grazing, the management framework will be described (including standards, guidelines, grazing management, and monitoring) so that desired condition objectives are met or that movement occurs toward those objectives in an acceptable timeframe.

Once a decision is made, Term Grazing Permits, Allotment Management Plans (AMP), and Annual Operating Instructions (AOI) may be issued provided that they are in compliance with the NEPA-based decision. These documents are implementing documents and do not constitute decision points. These items are defined below.

**Term Grazing Permits** – authorize a permit holder to graze livestock (specifies numbers, kind, class, and season of use) on specific National Forest System lands. The permit holder is required by the permit to graze under specific terms and conditions designed for resource protection and enhancement, according to the NEPA-based decision. Term livestock grazing permits are typically issued for a 10-year term. Term livestock grazing permits by themselves do not authorize the permittee to develop water,
construct fences, build roads or trails, manipulate vegetation, or do other ground-disturbing activities.

**Allotment Management Plans (AMP)** – an administrative document developed by the Forest Service that incorporates the decisions made in the DN from the environmental assessment. The AMP is not a decision document in that it simply documents in a clear format management requirements and actions decided upon in the DN.

**Annual Operating Instructions (AOI)** – on an annual basis, these documents provide instructions to the term permit holder (called a permittee) regarding management requirements, projects, agreements, and so forth for the current grazing season. They are not decision documents in that they simply implement on an annual basis the decision made in the NEPA-based DN.

Currently, there are five Term Livestock Grazing Permits issued that authorize livestock grazing in this Analysis Area. The AMPs on file are from the early 1990s. Updated AMPs will be written following a written DN for this EA. The existing management is being directed by AOIs.

### 1.9 Public Involvement

The White River National Forest invited public comment and participation regarding this project through a Public Notice in the Herald Times, the newspaper of record, on January 25, 2007. Scoping letters were sent to potentially concerned public, Tribal governments, and State and other Federal agencies on January 19, 2007. The purpose of this scoping period was to provide an opportunity for the public to provide early and meaningful comments on the proposed action. The forest provided quarterly status updates for this project through the Schedule of Proposed Actions (SOPA).

The forest received two response letters to the scoping. Of the two letters received, one listed six ‘things that should be considered’ and one contained issues that the respondent felt needed to be addressed by the interdisciplinary team (IDT).

### 1.10 Issues Associated with the Proposed Action

The purpose of public scoping is to identify key issues and how to address them, whether through design criteria or a new alternative. A key issue is a point of dispute or disagreement with a Proposed Action, based on an effect that the Proposed Action would cause. The Forest Service identifies key issues through contact and discussion internally and with other agencies and the general public as described above.

We get many comments during scoping, but not all are considered key issues. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, “…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…..”
An issue is an effect on a physical, biological, social, or economic resource. An issue is not an activity in itself; instead, it is the projected effects of the activity that create the issue. For example, livestock grazing is an activity, but its effects on a resource can result in an issue. A key issue suggests different courses of actions, thus suggesting a new alternative.

The two respondents to initial public scoping did not identify any site-specific, on the ground, key issues with existing resource condition resulting from existing domestic livestock management within the Analysis Area. The responses were general in nature, being either supportive of the livestock grazing that is occurring or identified the need to do an adequate analysis of resource conditions to determine the direct, indirect, and cumulative effects of current and proposed livestock grazing.

The IDT compared on the ground resource conditions (Existing Conditions, Appendix G Tables 1 through 7) with the desired conditions identified in Table 1.3. Disparities between desired and existing conditions were identified in Appendix G, Tables 1 through 7. Key issues were identified based on these disparities.

Key issues identified:
1) Impacts to riparian areas (Key Issue #1 – Riparian and wetland condition)

There are numerous riparian systems within the seven Southside allotments with some isolated areas that are affected by livestock grazing. When livestock exceed allowable use levels on herbaceous plants, they begin to browse shrubs and walk up and down the riparian corridor. This is when soil compaction, streambank trampling, and shrub hedging begin to exceed acceptable levels.

Vegetation cross-section and greenline transects have been established in riparian areas within the East Miller, Middle Miller and North Elk drainages to monitor riparian community types and trend. Although a Need for Change was not identified based on riparian transect information collected (a preponderance, as described in the Southern Rockies Lynx Ammendment (2008) of riparian vegetation in mid to late seral stage was apparent on all riparian benchmark areas), resource specialists still agree that riparian area condition needs to be monitored on the three cattle allotments listed above. This decision is based on the important values of riparian areas within these allotments to wildlife and fish species and the need to maintain riparian areas in acceptable conditions.

Three of the remaining four allotments did not contain a substantial amount of riparian corridors. In these cases, annual allowable use guidelines are considered sufficient to maintain acceptable riparian conditions. West Miller is the exception, where the willow bottom is currently not used by the permittee and is in late seral condition. Photo points were established in this drainage. If this riparian bottom is used by livestock in the future, which is not likely based on topography, vegetation cross-section and greenline transects will be established at that time to monitor trend in condition.
Annual allowable use guidelines will be followed in riparian areas. Riparian values and condition are further discussed in the wildlife and fisheries specialist reports located in the project file.

2) Impacts to northern leopard frogs at the Balloon/Sterry Wetland Complex (Key Issue #1 – Riparian and wetland condition)

This wetland complex supports one of two breeding populations of northern leopard frogs (a Forest Service Sensitive Species) on the Blanco Ranger District. This wetland complex is within the Seven Lakes Allotment. It is often difficult to avoid livestock impacts at watering sources despite the permittee’s knowledge of this leopard frog population. It will be important to actively manage and monitor this allotment to: 1) ensure that cattle are accurately using the pasture rotation system, 2) ensure that allowable use guidelines are adhered in regards to riparian vegetation, and 3) to continue gathering information on the northern leopard frog population status, and determine the best timing and location of grazing to minimize impacts.

Annual allowable use guidelines will be followed in riparian areas. Riparian and wetland values and condition are further discussed in the wildlife and fisheries specialist reports located in the project file. Potential impacts to leopard frogs will continue to be discussed with the permittee. Projects have been developed to address these concerns, including an ATV crossing in the wet meadow near Balloon Lake used by leopard frogs and also culvert placement along the road leading to Sterry Lake where frogs have been observed (see Table 1.4).

3) Impacts to Colorado River Cutthroat Trout (CRCT) in North Elk Creek (Key Issue #2 – Colorado River cutthroat trout habitat condition)

North Elk Creek contains Colorado River cutthroat trout (CRCT), a Region 2 Sensitive Species and management indicator species (MIS). CRCT are a species of high concern, especially with such things as bank stability, over-hanging cover, and general riparian condition.

The existing condition of this drainage is discussed in Table 1.5 and the Need for Change identified in Table 1.12. The fisheries specialist report further discusses CRCT in the North Elk drainage. Changes in rotation, stocking and use of the North Elk Creek riparian will be evaluated each year as CRCT habitat is monitored by the fisheries biologist.

4) Impacts to upland parks and aspen regeneration (Key Issue #3 and #4 – successful aspen regeneration* and grassland condition in uplands i.e., vegetation composition, bare soil component)

There are several parks that have a less than desirable vegetation composition, and a bare soil component. These parks and the aspen stands that border them provide important elk calving habitat. Over-utilization in aspen stands by both elk and livestock can affect the ability of these stands to self-regenerate. Aspen provides important habitat for a wide variety of cavity nesting bird species including purple martin, flammulated owl, saw-whet owl, several woodpeckers, and others.
**Key Issue Dropped from Detailed Analysis**

*Successful Aspen Regeneration (Key Issue #4)*

Successful aspen regeneration was initially identified as a key issue and then dropped from detailed analysis based on field surveys completed in 2007 and 2008. In the previously harvested aspen sites, regeneration levels were above the 300 stems per acre required by the Forest Plan, and trees had grown above the height considered to be available to browsing ungulates.

**Development of the Need for Change**

A need for change was shown where disparities exist between desired conditions (Table 1.3) and existing conditions (Appendix G, Tables 1 through 7). Management actions to move towards desired conditions were identified in Tables 1.4 through 1.10. Design criteria, described in Chapter 2, were developed to deal with those disparities and included as part of the proposed action. Alternatives were then weighed as to how well they meet the “Purpose and Need” for the project and dealt with disparities (see Table 2.4). Monitoring (long-term and short-term) will help show if we are moving toward desired condition at an acceptable rate of change (see Table 2.3).
Chapter 2 – Alternatives, Including the Proposed Action

2.1 Alternatives - Introduction
This chapter describes and compares the alternatives considered for the management of the seven southside allotments. It includes a description of each alternative considered and presents the alternatives in comparative form, defining the differences between each alternative and providing a clear basis for choice among options by the responsible official 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.

The IDT considered the following elements when developing the alternatives for the EA addressing the above project: 1) public scoping and internal review by the Forest Service, 2) purpose and need for this project, 3) responsiveness to key issues, listed in Section 1.10, as identified in the ‘Issues Tracking Worksheet’, 4) acts, regulations, policies, and plans governing land management on National Forest System lands including the Forest Plan (USDA 2002), and 5) site-specific resource information.

2.2 Alternative 1: No Action – No Permitted Livestock Grazing
Under the No Action - No Livestock Grazing alternative, no livestock grazing would be permitted on any of the seven Blanco Southside Grazing Allotments, including Seven Lakes C&H, North Elk C&H, East Miller C&S, Middle Miller C&H, Salt Box C&H, West Miller C&S and Hay Flat C&H. Under this alternative, the current permits would be cancelled and not issued to any other applicant. According to direction given in Forest Service Handbook (FSH) 2209.13, Chapter 90, section 94.1, the “No Grazing” alternative “will always be fully developed and analyzed in detail.” This decision would stand unless a subsequent NEPA-based decision was reached to allow for re-stocking or permanent closure. This alternative provides an environmental baseline for evaluation of the action alternatives.

The permittee may be given a one year phase-out period to adjust his operations during which time he would be authorized to graze the allotment while the cancellation process proceeds (following 36 CFR 222.4(a)(8) and Forest Service Handbook 2209.13, Sections 16.1, 16.3). During that timeframe, livestock grazing would continue to follow the Term Grazing Permit terms and conditions and AOI as provided for in Alternative 2.

2.3 Alternative 2: No Change – Current Livestock Grazing Management
Under the No Change – Current Livestock Grazing Management alternative, term grazing permits would continue to authorize livestock grazing on the seven allotments included in this EA. As provided for in FSH 2209.13, Chapter 90, section 94.1, R2 Interim Directive
of 6/8/07, “Current Management will also be analyzed in detail as an alternative to the proposed action if current management will meet the stated purpose and need for action.”

All seven allotments included in this EA would continue to utilize a deferred rotation grazing system over multiple pastures within each allotment. The AOI for each of the following allotments, developed by the rangeland management specialist and discussed each spring with the grazing permittee prior to the on-date, would determine the current year’s rotation on the allotment.

Table 2.1. Current Animal Unit Months (AUM), permitted on/off dates, class and permitted number of livestock on the seven Blanco Southside grazing allotments.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Permitted Number</th>
<th>Permitted Kind</th>
<th>Permitted On Date</th>
<th>Permitted Off Date</th>
<th>Total Days</th>
<th>Permitted AUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seven Lakes C&amp;H</td>
<td>455</td>
<td>Cow/Calf</td>
<td>6/16</td>
<td>10/15</td>
<td>122</td>
<td>2387</td>
</tr>
<tr>
<td>North Elk C&amp;H</td>
<td>200</td>
<td>Cow/Calf</td>
<td>6/16</td>
<td>10/20</td>
<td>127</td>
<td>1092</td>
</tr>
<tr>
<td>East Miller C&amp;S</td>
<td>300</td>
<td>Cow/Calf</td>
<td>6/16</td>
<td>10/15</td>
<td>122</td>
<td>1574</td>
</tr>
<tr>
<td>East Miller C&amp;S</td>
<td>900</td>
<td>Ewe/lamb</td>
<td>6/26</td>
<td>9/10</td>
<td>77</td>
<td>702</td>
</tr>
<tr>
<td>Middle Miller C&amp;H</td>
<td>518</td>
<td>Cow/Calf</td>
<td>6/20</td>
<td>10/4</td>
<td>107</td>
<td>2384</td>
</tr>
<tr>
<td>Salt Box C&amp;H</td>
<td>352</td>
<td>Cow/Calf</td>
<td>8/20</td>
<td>9/30</td>
<td>42</td>
<td>636</td>
</tr>
<tr>
<td>West Miller C&amp;S</td>
<td>900</td>
<td>Ewe/lamb</td>
<td>6/26</td>
<td>9/10</td>
<td>77</td>
<td>702</td>
</tr>
<tr>
<td>Hay Flat C&amp;H</td>
<td>276</td>
<td>Cow/Calf</td>
<td>7/6</td>
<td>10/2</td>
<td>89</td>
<td>1056</td>
</tr>
</tbody>
</table>

Seven Lakes C&H
This allotment would remain active and the permit would be re-issued for the amount, class, and time identified in Table 2.1.

North Elk C&H
This allotment would remain active and the permit would be re-issued for the amount, class, and time identified in Table 2.1. Currently, half of the permitted livestock begin their rotation on the Middle Fork of Elk Creek and the other half begin on the West Fork of Elk Creek. On alternate years, the entire amount permitted begins the rotation on Big Ridge.

East Miller C&S
This allotment is currently utilized as a Cattle and Sheep Allotment. Cattle and sheep utilize opposite sides of the allotment at any given time to minimize conflicts between the sheep guard dogs and cattle. This dual-use (sheep and cattle) allows the sheep to reduce larkspur in several areas of the allotment. The permits for East Miller would be re-issued for the amount, class, and time identified in Table 2.1.

Middle Miller C&H
Salt Box C&H
West Miller C&S
Hay Flat C&H
These four allotments are managed collectively with a deferred rotation grazing system. Cattle travel briefly through the Salt Box and Big Mountain/Flag Creek allotments to
access the West Miller, Middle Miller and Hay Flat allotments. Sheep travel through the extreme southern portion of the Middle Miller and Salt Box allotments, along the Ute Stock Driveway, on their way to their permitted allotment. The permits for Middle Miller, Salt Box, West Miller and Hay Flat would be re-issued for the amount, class, and time identified in Table 2.1.

**Monitoring**
Under Alternative 2, monitoring may involve annual inspections for Term Grazing Permit and AOI compliance (on/off dates, improvement maintenance, movement/distribution of livestock, etc.), range readiness, and range resource and riparian resource trend. However, under the current Term Grazing Permit, changing livestock grazing management as a result of monitoring is limited. Minor management adjustments could be made, by exception, in the AOI. Changes that cannot be done through the AOI or permit modifications may require new NEPA analysis.

### 2.4 Alternative 3: Proposed Action – Adaptive Livestock Grazing Management
This alternative is based on the principle of “adaptive management,” a process that uses focused monitoring information to determine if management changes are needed, and if so, what changes and to what degree. It is a process that allows the Forest Service to manage for changing conditions and new information over time. This alternative strives to resolve the disparity between existing conditions within the analysis area and desired conditions as defined in the Forest Plan and further defined at the project level. It gives the authorized officer the flexibility to adapt to change within the constraints imposed by the subsequent decision. As long as implementation continues to remain within the scope of the EA, the District Ranger may choose to implement adaptive changes. If a needed change has not been evaluated within this EA, additional NEPA analysis and decisions may be necessary.

Under this alternative, the current management system would be selected as a starting point (see Table 2.1). Recurrent monitoring would occur over time with evaluation of the results being assessed by the Forest Service to make appropriate adjustments in management, as needed, to ensure adequate progress toward Forest Plan and site-specific desired conditions. All adaptive management options available (see Table 2.2, Grazing Management Toolbox) are analyzed in this EA and could be adopted for potential future use. Allotment Management Plans would be developed for the seven allotments.

If short and/or long-term monitoring indicates desired conditions are not being met or on-the-ground conditions are not moving toward desired conditions within the identified timeframes and livestock are determined to be a major contributing factor then additional activities identified in Table 2.2 may individually or in combination be applied. New rangeland management techniques, as they are developed, would be incorporated into this toolbox, to the extent that their implementation is consistent with the effects documented in this EA and its accompanying DN.
Implementation of adaptive management actions would need to be within the scope of effects documented in this EA, or a supplemental NEPA document and decision would be prepared.

**Table 2.2. Grazing Management Toolbox for the seven southside allotments.***

<table>
<thead>
<tr>
<th>Action Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change season of use -- do not exceed the estimated Animal Unit Month (AUM) capacity; use range readiness to determine livestock turn on date and allowable use design criteria to determine livestock off date.</td>
<td></td>
</tr>
<tr>
<td>Change livestock numbers -- do not exceed the estimated AUM capacity; use allowable use design criteria to determine proper rangeland use and time to move livestock (including off date).</td>
<td></td>
</tr>
<tr>
<td>Change livestock class -- do not exceed estimated AUM capacity.</td>
<td></td>
</tr>
<tr>
<td>Adjust livestock grazing intensity and/or duration.</td>
<td></td>
</tr>
<tr>
<td>Adjust livestock herding to manage specific areas of concern.</td>
<td></td>
</tr>
<tr>
<td>Rest specified areas from livestock grazing.</td>
<td></td>
</tr>
<tr>
<td>Restrict livestock grazing in specified areas (does not apply to recreation and outfitter/guide livestock under this analysis).</td>
<td></td>
</tr>
<tr>
<td>Use or exclusion of a pasture.</td>
<td></td>
</tr>
<tr>
<td>Adjust allotment boundaries (includes combining allotments or subsequently dividing allotments, based on resource conditions and management opportunities).</td>
<td></td>
</tr>
<tr>
<td>Construct range improvements (fencing and water developments) to improve livestock distribution (will require additional project level NEPA analysis and decision).</td>
<td></td>
</tr>
<tr>
<td>Use temporary electric fencing to improve livestock distribution or exclude livestock from sensitive areas.</td>
<td></td>
</tr>
<tr>
<td>Use revegetation techniques such as seeding with native grass, forb and/or shrub species.</td>
<td></td>
</tr>
<tr>
<td>Use newly developed rangeland management techniques to the extent that their implementation is consistent with the effects documented in this EA and its accompanying Decision Notice.</td>
<td></td>
</tr>
</tbody>
</table>

* Use of any tool must consider rangeland condition, site potential, and other relevant multiple-use objectives for the Analysis Area under study.

**Monitoring**

Under Alternative 3, monitoring provides the responsible official with the rationale and flexibility to adapt livestock grazing management to changing conditions. If monitoring results indicate resource concerns with either meeting the design criteria or in meeting or moving toward desired conditions, adjustments would be made using one or more of the livestock grazing management adaptive options as described in Table 2.2.
The focus of monitoring is two-fold. First, implementation monitoring (short-term) answers the question: Are management activities being implemented? Second, effectiveness monitoring (long-term) answers the question: Are management activities resulting in the desired effect? In adaptive management, both types of monitoring are used to determine if changes are needed and if so what changes would be expected to best move toward desired condition.

**Implementation (Short-Term) Monitoring**

Implementation monitoring is short-term monitoring (annual or as needed) to evaluate whether livestock management is being applied as prescribed. The Forest Service, with assistance and cooperation from the permit holder, conducts this type of monitoring through inspections of the analysis area to evaluate whether livestock management is in compliance with the AOI and the Term Grazing Permit. The Term Grazing Permit includes Forest Plan standards and guidelines, the AMP, and design criteria.

Implementation monitoring is conducted on “key” areas to determine if management objectives are being met. Key areas are defined as: “…a portion of the range, which, because of its location, grazing or browsing value, and/or use, serves as an indicative sample of range conditions, trend, or degree of use seasonally.” Key areas were identified on each allotment and are used to monitor design criteria such as allowable use and other general observations.

Key areas identified were established in both the uplands and in riparian areas and are in the same locations as the benchmark areas discussed under existing condition, Appendix G. Appendix G shows the location of benchmark areas on each allotment, which overlap with the established key areas.

Forest Service inspections of the allotments check for compliance with the requirements listed in the AOI and the Term Grazing Permit. Noncompliance concerns are brought to the attention of the permittee and the responsible official for resolution.

**Effectiveness (Long-Term) Monitoring**

Effectiveness monitoring focuses on long-term trends for the following: 1) overall permittee compliance, 2) meeting or moving toward Forest Plan standards and guidelines, 3) meeting or moving toward project specific desired conditions, and 4) stocking levels are appropriate relative to other resource values.

Effectiveness monitoring is conducted on “benchmark” areas, or reference points that are sensitive to management changes. Effectiveness monitoring determines whether the analysis area is meeting or moving toward desired conditions, and if the rate of change is acceptable (within the scope of this analysis). The rate of acceptable change is determined by the Forest Officer unless expressly directed otherwise in the Forest Plan or this document (see Desired Condition and associated acceptable rate of change discussion, Section 1.4). If monitoring shows that Forest Plan or project specific desired conditions are not being met, the District Ranger and IDT would review the situation to determine an appropriate course of action to change management to improve conditions.
The following table displays the schedule for implementation and effectiveness monitoring in detail.

**Table 2.3. Monitoring schedule for the seven southside allotments.**

<table>
<thead>
<tr>
<th>IMPLEMENTATION (SHORT-TERM) MONITORING</th>
<th>Frequency</th>
<th>By Whom</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring Item</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permit and AOI Compliance (on/off dates, improvement</td>
<td>Annually</td>
<td>Forest Service – Range</td>
<td>Permittee compliance with terms and conditions.</td>
</tr>
<tr>
<td>maintenance, movement/distribution of livestock, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Range Readiness</td>
<td>Annually on a</td>
<td>Forest Service – Range and/or</td>
<td>Minimize impacts to allow for:</td>
</tr>
<tr>
<td></td>
<td>landscape basis.</td>
<td>Permittee</td>
<td>- improved riparian conditions</td>
</tr>
<tr>
<td>Allowable use:</td>
<td></td>
<td></td>
<td>- improved rangeland conditions</td>
</tr>
<tr>
<td>Stubble height</td>
<td>Annually (or more</td>
<td>Forest Service – Range and</td>
<td>- improved Colorado River Cutthroat Trout (CRCT) habitat resource conditions</td>
</tr>
<tr>
<td></td>
<td>less frequently</td>
<td>Permittee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>depending on</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>resource concerns</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>on specific</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>allotments)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| EFFECTIVENESS (LONG-TERM) MONITORING                     |                    |                                  |                                                                                            |
| Monitoring Item                                          | Frequency          | By Whom                          | Objective                                                                                   |
| Range resource (grassland) trend:                        | 5-10 year intervals | Forest Service – Range           | Move trends toward satisfactory range condition within 10 years of this project decision. |
| Rangeland Health Evaluation                               |                    |                                  |                                                                                            |
| Cover-Frequency Transect                                  |                    |                                  |                                                                                            |
| Riparian resource trend:                                 | 5-10 year intervals | Forest Service – Wildlife,       | Achieve a <em>preponderance</em> of riparian vegetation in mid to late seral stage (SRLA 2008). |
| Vegetation Cross-Section transects                        |                    | Fisheries, and/or Range          | Maintain riparian in current condition if above is met.                                    |
| Greenline transects                                       |                    |                                  |                                                                                            |</p>
<table>
<thead>
<tr>
<th>In-stream habitat/water quality:</th>
<th>Years 1, 5 &amp;10</th>
<th>Forest Service - Fisheries</th>
<th>Determine species and densities of macro-invertebrates to determine changes in habitat/water quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macro-invertebrate sampling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(stations established in Elk Creek CRCT habitat)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-stream habitat quality:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisheries in-stream physical habitat survey</td>
<td></td>
<td></td>
<td>Improve trend (if necessary) of in-stream physical habitat parameters in CRCT streams.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Range Readiness: Indicators used to determine rangeland readiness are soil and vegetation conditions. Rangeland is generally ready for grazing when soil has become firm after winter and spring precipitation, and when plants have reached the defined stage of growth at which grazing may begin under the specific management plan without long-lasting damage.

In addition, any of the monitoring techniques from the Rangeland Analysis and Management Training Guide (or other established techniques) may also be used alone or in combination. As new techniques become available and are approved for Forest Service use, they may also be incorporated as a monitoring method.

**Design Criteria**

In the planning and implementation of management activities, the Forest Service uses many design criteria to reduce or prevent negative impacts on the environment. The application of these design criteria begins at the planning and design phase of a project. The Forest Plan standards and guidelines and the direction contained in the Watershed Conservation Practices Handbook are the first design criteria to be applied under the two action alternatives (Appendix B and Appendix E respectively). Other specific design criteria are included within Chapter 3 under specific resource areas. The effects analysis disclosed in Chapter 3 assume these criteria are applied.

**2.5 Comparison of Alternatives**

The following table provides a summary of the alternatives in comparative form. This table shows the difference between alternatives and summarizes key information necessary to make an informed decision.
Table 2.4. Blanco Southside Allotments Alternative Comparison Table

<table>
<thead>
<tr>
<th>Key Issue 1: Riparian/Wetland Conditions</th>
<th>ALTERNATIVE 1 – NO ACTION/NO GRAZING</th>
<th>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</th>
<th>ALTERNATIVE 3 - ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian benchmark areas in healthy condition (mid- to late seral stage)</td>
<td>Fully responds to issue, limited improvement for 1-year phase-out period. After one year, livestock grazing will no longer impact riparian conditions and/or wetlands.</td>
<td>Partially responds to issue if permit administration is adequate; limited improvement in riparian conditions and/or wetlands.</td>
<td>Fully responds to the issue; adaptive management allows for the flexibility to adjust management based on monitoring results and improve riparian and/or wetlands.</td>
</tr>
<tr>
<td>Time of recovery</td>
<td>If the one year phase-out period is necessary for permittee operations, livestock grazing would continue to follow the Term Grazing Permit terms and conditions and AOI as provided for in Alt. 1. After one year, livestock grazing will no longer impact riparian conditions. Condition of all riparian areas and/or wetlands would be expected to improve.</td>
<td>Riparian and/or wetland condition would be expected to improve less with Alt. 2 than with the other alternatives. Tools such as range readiness and utilization standards could be used to limit riparian and/or wetland impacts on an annual basis.</td>
<td>Condition of all riparian and/or wetland areas would be expected to improve with Alt. 3 as management could be adjusted based on monitoring results.</td>
</tr>
<tr>
<td>Riparian and/or wetland condition would be expected to improve more quickly with Alt. 1 than with the other alternatives.</td>
<td>Riparian and/or wetland condition would be expected to improve more slowly with Alt. 2 than with the other alternatives.</td>
<td>Riparian and/or wetland condition would be expected to improve more quickly than Alt. 2 and slower than Alt. 1.</td>
<td></td>
</tr>
<tr>
<td>Risk of failure of management to achieve improved conditions.</td>
<td>ALTERNATIVE 1 – NO ACTION/NO GRAZING</td>
<td>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</td>
<td>ALTERNATIVE 3 - ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>-------------------------------------</td>
<td>--------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Without livestock grazing impacts, Alt. 1 would achieve improved riparian and/or wetland conditions.</td>
<td>Alt. 2 would carry the greatest risk that livestock grazing management would not achieve improved riparian and/or wetland conditions.</td>
<td>It is highly likely that management would achieve improved riparian and/or wetland conditions with Alt. 3. Improvement would be dependent upon frequent monitoring and management changes based on monitoring results.</td>
<td></td>
</tr>
<tr>
<td>Ability for management to respond to changing conditions</td>
<td>After one year phase-out period, flexibility in livestock grazing management would no longer be applicable with Alt. 1.</td>
<td>Alt. 2 would be the least flexible in response to changing or unanticipated resource conditions.</td>
<td>Alt. 3 would be the most flexible in response to changing or unanticipated resource conditions.</td>
</tr>
<tr>
<td><strong>Key Issue 2: Colorado River Cutthroat Trout Habitat Condition</strong></td>
<td>Fully responds to issue, limited improvement for one year phase-out period. After one year, livestock grazing will no longer impact riparian conditions.</td>
<td>Partially responds to issue, limited improvement in CRCT habitat.</td>
<td>Fully responds to the issue, adaptive management allows for the flexibility to adjust management and improve CRCT habitat conditions.</td>
</tr>
<tr>
<td>Riparian benchmark areas in healthy condition (mid- to late seral stage) in CRCT identified streams (North Elk Creek)</td>
<td>If the one year phase-out period is necessary for permittee operations, livestock grazing would continue to follow the Term Grazing Permit terms and conditions and AOI as provided for in Alt. 2. After one year phase-out period, livestock grazing will no longer impact CRCT and conditions would be expected to improve more rapidly than Alts. 2 and 3.</td>
<td>CRCT habitat conditions would be expected to improve less with Alt. 2 than with the other alternatives.</td>
<td>Condition of CRCT habitat would be expected to improve with Alt. 3 as management could be adjusted based on monitoring results.</td>
</tr>
<tr>
<td>Fisheries in-stream physical habitat parameters adequate to support CRCT</td>
<td>CRCT habitat conditions would be expected to improve more quickly with Alt. 1 than with the other alternatives.</td>
<td>CRCT habitat conditions would be expected to improve more slowly with Alt. 2 than with the other alternatives.</td>
<td>CRCT habitat conditions would be expected to improve more quickly than Alt. 2 and slower than Alt. 1.</td>
</tr>
<tr>
<td>Time of recovery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of failure of management to achieve improved conditions.</td>
<td>ALTERNATIVE 1 – NO ACTION/NO GRAZING</td>
<td>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</td>
<td>ALTERNATIVE 3 – ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Without grazing impacts, Alt. 1 would achieve improved CRCT habitat conditions.</td>
<td>Alt. 2 would carry the greatest risk that livestock grazing management would not achieve improved CRCT habitat conditions.</td>
<td>It is highly likely that management would achieve improved CRCT habitat conditions with Alt. 3. Improvement would be dependent upon frequent monitoring and management changes resulting from monitoring.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ability for management to respond to changing conditions.</th>
<th>ALTERNATIVE 1 – NO ACTION/NO GRAZING</th>
<th>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</th>
<th>ALTERNATIVE 3 – ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>After one year phase-out period, flexibility in livestock grazing management would no longer be applicable with Alt. 1.</td>
<td>Alt. 2 would be the least flexible in response to changing or unanticipated resource conditions.</td>
<td>Alt. 3 would be the most flexible in response to changing or unanticipated resource conditions.</td>
<td></td>
</tr>
</tbody>
</table>

**Key Issue 3: Grassland condition in uplands (vegetation composition, bare soil component)**

<table>
<thead>
<tr>
<th>Percent of bare ground and percent of desirable grass and forb species based on vegetation community type (or plant association)</th>
<th>ALTERNATIVE 1 – NO ACTION/NO GRAZING</th>
<th>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</th>
<th>ALTERNATIVE 3 – ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassland condition would be expected to improve more quickly with Alt. 1 than with the other alternatives.</td>
<td>Grassland condition would be expected to improve less with Alt. 2 than with the other alternatives depending on level of administration.</td>
<td>Grassland condition would be expected to improve with Alt. 3 to a greater extent than with Alt. 2. Monitoring would indicate if and what changes should be made to improve grasslands.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time of recovery.</th>
<th>ALTERNATIVE 1 – NO ACTION/NO GRAZING</th>
<th>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</th>
<th>ALTERNATIVE 3 – ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassland condition would be expected to increase more quickly with Alt. 1 than with the other alternatives.</td>
<td>Grassland condition would be expected to improve more slowly with Alt. 2 than with the other alternatives.</td>
<td>Grassland condition would be expected to improve more quickly than Alt. 2 and slower than Alt. 1.</td>
<td></td>
</tr>
<tr>
<td>Risk of failure of management to achieve improved conditions.</td>
<td>ALTERNATIVE 1 – NO ACTION/NO GRAZING</td>
<td>ALTERNATIVE 2 – CURRENT LIVESTOCK GRAZING MANAGEMENT</td>
<td>ALTERNATIVE 3 - ADAPTIVE LIVESTOCK GRAZING MANAGEMENT</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Without grazing impacts, Alt. 1 would achieve improved grassland condition.</td>
<td>Alt. 2 would carry the greatest risk that livestock grazing management would not achieve improved grassland condition.</td>
<td>It is highly likely that management would achieve improved grassland condition with Alt. 3. Improvement would be dependent upon frequent monitoring and management changes resulting from monitoring.</td>
<td></td>
</tr>
<tr>
<td>Ability for management to respond to changing conditions.</td>
<td>After one year phase-out period, flexibility in livestock grazing management would no longer be applicable with Alt. 1.</td>
<td>Alt. 2 would be the least flexible in response to changing or unanticipated resource conditions.</td>
<td>Alt. 3 would be the most flexible in response to changing or unanticipated resource conditions.</td>
</tr>
</tbody>
</table>
Chapter 3 – Environmental Consequences

3.1 Introduction
This chapter 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 Chapter 2.

The chapter is organized by selected environmental and social resources. Each resource discussion addresses the existing condition and the direct, indirect, and cumulative effects.

Geographic Scope of the Analysis
Not every resource area conducts their specific analysis using the same analysis area boundary. Some evaluations need only focus on only the resources within the analysis area while others might need to use a larger area outside the formal analysis area as shown in Figure 1.1 and Appendix C. This expanded area is appropriate for resources such as water, or certain wildlife species that do not confine them to just the analysis area. If the “Scope of the Analysis” is different from the analysis area shown in Figure 1.1 for a particular resource, it is described under that resource’s section within this chapter.

3.2 Activities That Have Affected Existing Conditions (Past and Present)
The following activities have occurred through time and space, and have, or potentially may, affect environmental and social resources within the Analysis Area. These will be discussed in detail in the cumulative effects section (Section 3.13) but also provide context to discussions on direct and indirect effects as they relate to the project (e.g. these impacts combine with current and planned livestock management to create known or probable outcomes).

Historic Actions (late 1800s)
- Timber harvest (logging)
- Homesteading
- Market hunting of the elk herds
- Heavy and uncontrolled livestock grazing

Past Actions (post 1905)
- Wildfire suppression
- Timber harvest and associated road systems
- Expansion of the elk herds
- Increases in recreational uses including off highway vehicle (OHV) use
- Heavy livestock grazing into the mid 1900s
Current Management Actions (late 1980s to present)
- Prescribed burning to improve wildlife habitat
- Timber harvest
- Noxious weed treatments
- Continually expanding elk herds
- Increase in recreational uses including off highway vehicle (OHV) use
- Residential development of adjacent private lands
- Relatively low levels of livestock use (when compared to historic levels)
- Implementation of Forest Plan direction and Watershed Conservation Practices for all activities occurring on the National Forest.

3.3 Reasonably Foreseeable Activities
The following activities have potential to affect environmental and social resources within the reasonably foreseeable future.

Reasonably Foreseeable Future Actions
- Mountain Pine beetle epidemic, resulting in die-off of lodgepole pine
- Continued development of adjacent private land
- Continued prescribed burning treatments to benefit wildlife habitat
- Continued increase in recreational use, both summer and winter
- Continued timber harvest in selected areas
- Continued relatively low levels of livestock grazing
- Continued implementation of Forest Plan direction and Watershed Conservation practices.

3.4 Range Resource

Introduction
Most native rangelands have evolved with periodic disturbance such as fire and grazing by native ungulates. The evolution of herbivores and edible plants occurred together. Selective pressures over thousands of years favored plants resistant to browsing, grazing and trampling.

Grazing animals affect plant communities in several interrelated ways, including plant defoliation, nutrient removal and redistribution through excreta, and mechanical impact on soil and plant material through trampling. Positive impacts such as contact between seed and the soil can be achieved with hoof action (Savory 1994).

The short-term or immediate effect of grazing on a plant can (1) be detrimental, that is, reduce plant vigor or even kill the plant; (2) be beneficial, that is, increase size or growth rate of forage species; or (3) have no apparent beneficial or negative effect. Defoliation can promote shoot growth and enhance light levels, soil moisture, and nutrient availability (Frank et al. 1998). Grazing by large herbivores in the short run often is of
little importance in the process of vegetation change, unless grazing is so excessive that the grazed plants cannot restore themselves.

The long-term effect of grazing would largely depend not only on the adaptation of the plant to local environmental factors but also on the relative effects of grazing on associated plant species. Most plants can withstand some loss of foliage and still maintain their position in the plant community. Grazing removes the aerial portion of the plant, allowing sunlight to reach the meristem, where growth occurs.

Perennial plants generally store enough food to last more than one year. Thus, even if a plant is defoliated for a year or two, as by grazing, it generally will not die. As the plant produces leaf surface, photosynthetic processes begin to replace depleted carbohydrate reserves, thus generally making herbaceous plants highly resistant to grazing pressures. However, over-utilization of forage species over an extended period of time results in those plants eventually depleting their food reserves (stored carbohydrates) and root death occurs. In the long term, those forage species highly desired by herbivores (thus first to be over-utilized) would be replaced by other species less desired by herbivores.

Forest-wide standards and guidelines continue to phase out season-long grazing; rather, they emphasize short-duration grazing, set maximum forage, and riparian utilization guidelines for domestic livestock and wildlife.

The degree to which domestic livestock grazing affects riparian vegetation and stability mainly depends on the timing, intensity, and duration and frequency of that grazing. Excessive stream bank trampling, overuse of plant species, and compaction of soils resulting from improper grazing practices can all have an adverse impact on riparian vegetation. As water tables are lowered and riparian areas are drained, the abundance and diversity species dependent on free and unbound water is reduced.

Forest-wide standards and guidelines, and design criteria developed in project planning, address these issues by avoiding season-long grazing, emphasizing short duration grazing, setting utilization limits on herbaceous and woody vegetation, allowing for periods of regrowth and recovery, and setting acceptable limits of stream bank trampling. Overall these standards and guidelines are designed to maintain plant vigor and hydrologic function.

**Existing Condition**

**Seven Lakes C&H Allotment**

The Seven Lakes C&H allotment was originally managed as a pasture in the North Elk C&H Allotment. Records starting in 1928 for North Elk C&H show the allotment was divided into north and south pastures, with the north pasture becoming the Seven Lakes Allotment in 1966.

The allotment is generally north-facing with aspen and a few pockets of conifer at higher elevations. Elevation ranges from 7,500 to 9,500 feet.
Figure 3.1. Livestock head months permitted on the Seven Lakes C&H Allotment, 1966-2007.

<table>
<thead>
<tr>
<th>Seven Lakes Date Range</th>
<th>(1928-1966 part of North Elk) 1966 - 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Animal Unit Months</td>
<td>1277  Took place in 1955</td>
</tr>
<tr>
<td>Maximum Animal Unit Months</td>
<td>5521  Took place in 1935</td>
</tr>
<tr>
<td>Average Animal Unit Months</td>
<td>2710</td>
</tr>
<tr>
<td>Last 15 years average</td>
<td>2299  Not including years where data is incomplete</td>
</tr>
</tbody>
</table>

**Range Analysis** - There are several old Parker 3-step transects on this allotment, however, the stakes for the transects were not locatable. During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in benchmark areas on the allotment (Appendix H – Figure 1). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File.

The field analysis shows the ecosystem to be healthy and stable. The cover frequency transects show that the area is fair to good condition with a stable plant community present. The range health data shows all healthy marks in the three categories. Refer to Appendix G – Table 1 for a more detailed description of existing conditions.
Table 3.1. Range health data for the Seven Lakes Allotment.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seven Lakes #1</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>Seven Lakes #2</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>Seven Lakes #3</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>

North Elk C&H
The original North Elk C&H Allotment included Seven Lakes C&H as part of the original permit. The current boundaries are approximately in the same locations as they were in the 1930s, with the exception of a portion of Clark Ridge and Triangle Park. This permit was part of a cattle pool until 1966. The elevation ranges from 7,000 to just under 10,000 feet.

The allotment is located between the East Miller C&S and the Seven Lakes C&H Allotments. The terrain is made up of steep hillsides that lead into the bottom of East, Middle, and West Fork of North Elk Creek. The southern portion of the allotment consists of large parks. The middle and northern portions are mostly hillsides and small parks. The Hamilton Cow Camp is located at the intersection of the West and East Forks of North Elk Creek.
Figure 3.2. Livestock head months permitted on the North Elk Allotment, 1968-2007.

North Elk Head Months

<table>
<thead>
<tr>
<th>Year</th>
<th>Head Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td></td>
</tr>
<tr>
<td>1969</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td></td>
</tr>
<tr>
<td>1984</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
</tr>
</tbody>
</table>

Range Analysis – During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in benchmark areas on the allotment (Appendix H – Figure 2). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File. The cover frequency transects shows that the area is stable and fair to good condition. Refer to Appendix G – Table 2 for a more detailed description of existing conditions. The rangeland health factors that are at risk are described in the Range Specialist’s Report.

Table 3.2. Range health data for the North Elk Allotment.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Elk #1</td>
<td>At Risk</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>North Elk #2</td>
<td>Healthy</td>
<td>At Risk</td>
<td>Healthy</td>
</tr>
<tr>
<td>North Elk #3</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>North Elk #4</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>
East Miller C&S
From the 1920s to 1966, the East Miller Allotment was part of a cattle pool with six permittees running on several allotments with a common range rider. When the allotment was separated, there were two permittees running in common. Eventually, one permittee purchased the other’s operation, leaving one permittee on the allotment. In the early 1980s, a band of sheep was permitted in addition to the cattle. The dual-use has been beneficial for the cattle as the sheep could graze down the larkspur, thereby reducing the death-loss of cattle.

The band of sheep moves in a counter-rotation to the cows. This allotment is located between the North Elk C&H and Middle Miller C&H Allotment. The elevation ranges from 7,500 to 9,500 feet and has a mix of aspen, parks and steep spruce/fir hillsides. Access is limited to the Four Mile Road (FSR 215) via Miller Creek Road (FSR 214). There are several old Parker 3-step transects on this allotment, however, the stakes for the transects were not locatable. Cover frequency transects were established in 2007 in a benchmark area on this allotment.

**Figure 3.3. Livestock head months permitted on the East Miller Allotment, 1935-2007.**

<table>
<thead>
<tr>
<th>East Miller C&amp;S Date Range</th>
<th>1935 – 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Animal Unit Months</td>
<td>1193</td>
</tr>
<tr>
<td>Took place in 1988</td>
<td></td>
</tr>
<tr>
<td>Maximum Animal Unit Months</td>
<td>7515</td>
</tr>
<tr>
<td>Took place in 1935</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>3426</td>
</tr>
<tr>
<td>Not including years there is incomplete data</td>
<td></td>
</tr>
<tr>
<td>Last 15 years average</td>
<td>1562</td>
</tr>
<tr>
<td>Not including years there is incomplete data</td>
<td></td>
</tr>
</tbody>
</table>

**Range Analysis** – There are several old Parker 3-step transects on this allotment, however, the stakes for the transects were not locatable. During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in
benchmark areas on the allotment (Appendix H – Figure 3). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File. The cover frequency transects showed a healthy mix of forbs and grasses. Range health monitoring shows that the area is healthy under all factors. Refer to Appendix G – Table 3 for a more detailed description of existing conditions.

### Table 3.3. Range health data for the East Miller Allotment.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Miller #1</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>East Miller #2</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>

**Middle Miller C&H**

Middle Miller C&H allotment is located west of East Miller. The allotment consists predominantly of rolling hills covered in snowberry (*Symphoricarpos albus*) and Thurber fescue (*Festuca thurberi*) which make up Bar HL Park. Forest Service Road 211 runs through the southern portion. Bar HL Cow Camp is located in the south-central section, with water holding improvements scattered throughout the park. Two drainages flow north out of the park, East Miller and Red Canyon. Elevation ranges from 7,400 to 9,400 feet.

Middle Miller is currently used as a pasture in a larger three-allotment rotation between Saltbox C&S and Hay Flat C&H. It is used as a gathering area in mid to late summer for all cattle on the three allotments. Around the first of September, the cattle begin a slow drift across Saltbox and down Flag Creek, leaving the Forest around the first of October.
Figure 3.4. Livestock head months permitted on the Middle Miller Allotment, 1935-2007.

<table>
<thead>
<tr>
<th>Middle Miller Date Range</th>
<th>1935 – 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Animal Unit Months</td>
<td>623</td>
</tr>
<tr>
<td>Maximum Animal Unit Months</td>
<td>7515</td>
</tr>
<tr>
<td>Average</td>
<td>3934</td>
</tr>
<tr>
<td>Last 15 years average</td>
<td>1966</td>
</tr>
</tbody>
</table>

**Range Analysis** – During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in benchmark areas on the allotment (Appendix H – Figure 4). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File. The cover frequency transects showed a healthy mix of forbs and grasses. The range health monitoring shows the area to be healthy under all factors. Refer to Appendix G – Table 4 for a more detailed description of existing conditions.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Miller #1</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>Middle Miller #2</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>Middle Miller #3</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>

Table 3.4. Range health data for the Middle Miller Allotment.
Salt Box S&G
This allotment is located between Middle Miller C&H and West Miller C&S Allotments. Sykes Gulch makes up the northern portion of the allotment. Middle Miller Creek is the western boundary, with the rim heading into West Miller Creek as the eastern boundary. The allotment is a mix of aspen and conifer trees with intermixed parks comprised of snowberry (Symphoricarpos albus) and rabbitbrush (Ericameria nauseosa) communities. Elevations range from approximately 7,800 to 9,400 feet.

This allotment is used with neighboring allotments as a short duration high intensity rotational grazing system. The cattle use the north end of the allotment on their way to Middle Miller and the south end on their way off the permit in the fall. A band of sheep also crosses the southern portion of the allotment in the mid summer.

Range Analysis – During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in benchmark areas on the allotment (Appendix H – Table 5). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File. The cover frequency transect showed a healthy mix of forbs and grasses. The range health monitoring shows the area to be healthy under all factors. Refer to Appendix G – Table 5 for a more detailed description of existing conditions.

Table 3.5. Range health data for the Salt Box Allotment.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt Box #1</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>Salt Box #2</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>

West Miller S&G
West Miller C&S Allotment is located between Saltbox C&S and Hay Flat C&H. The majority of the allotment is located along the bottom of the West Miller Creek. The east and west boundaries are the respective rims of the drainage. The east side of the allotment is mostly conifer trees and interspersed aspen. The east side has some benches that are covered in conifers and the west side is mostly Gambel oak. The bottom of the creek is a wide riparian area with native grasses, sedges and willows. Elevations range from 7,200 to 9,100 feet.

Cattle travel across West Miller in the spring in route to Saltbox and return briefly in the fall on their way off of the forest.
Figure 3.5. Livestock head months permitted on the West Miller Allotment, 1935-2007.

<table>
<thead>
<tr>
<th>West Miller Date Range</th>
<th>1935 - 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Animal Unit Months</td>
<td>1483</td>
</tr>
<tr>
<td></td>
<td>Took place in 1991</td>
</tr>
<tr>
<td>Maximum Animal Unit Months</td>
<td>8825</td>
</tr>
<tr>
<td></td>
<td>Took place in 1935</td>
</tr>
<tr>
<td>Average Animal Unit Months</td>
<td>3186</td>
</tr>
<tr>
<td></td>
<td>Not including years there is incomplete data</td>
</tr>
<tr>
<td>Last 15 years average</td>
<td>2193</td>
</tr>
<tr>
<td></td>
<td>Not including years there is incomplete data</td>
</tr>
</tbody>
</table>

Range Analysis – During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in benchmark areas on the allotment (Appendix H – Figure 6). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File. The cover frequency transect showed a healthy mix of forbs and grasses. The range health monitoring shows the area to be healthy under all factors. Refer to Appendix G – Table 6 for a more detailed description of existing conditions. The rangeland health factor that is at risk has a detailed description in the range specialist report.

Table 3.6. Range health data for the West Miller Allotment.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Miller #1</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>West Miller #2</td>
<td>At Risk</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>

Hay Flat C&H

This allotment was originally called Cold Springs; in 1970 the name was changed to Hay Flat C&H. In 1983 it was changed from a sheep and goat to a cow and horse allotment. It
is located on the west side of West Miller. The Forest boundary makes up the western edge of the allotment and the eastern boundary is the rim that drops into West Miller Creek. The majority of the allotment is made up of a large park called Hay Flat. Elevations range from 7,800 to 9,200 feet.

This allotment is currently being used as a pasture in conjunction with Middle Miller and Saltbox as a large three-allotment high intensity short duration rotation system. Cattle begin in this allotment eventually move across and into Saltbox in route to Middle Miller. It is also a dual use allotment with sheep using the southern portion of the allotment, and cattle using a portion of Flag Creek S&G and West Miller C&S when exiting the allotments.

**Figure 3.6. Livestock head months permitted on the Hay Flat Allotment, 1965-2007.**

<table>
<thead>
<tr>
<th>Hay Flat Date Range</th>
<th>1965 - 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Animal Unit Months</td>
<td>367</td>
</tr>
<tr>
<td>Maximum Animal Unit Months</td>
<td>5665</td>
</tr>
<tr>
<td>Average Animal Unit Months</td>
<td>2574</td>
</tr>
<tr>
<td>Last 15 years average</td>
<td>610</td>
</tr>
</tbody>
</table>

**Range Analysis** – During the summers of 2006 and 2007, a cover frequency transect and range health evaluation sites were established in benchmark areas on the allotment (Appendix H – Figure 7). Complete results of this monitoring are located within the Range Specialist’s Report in the Project File. The cover frequency transect showed a healthy mix of forbs and grasses. The range health monitoring shows the area to be
healthy under all factors. Refer to Appendix G – Table 7 for a more detailed description of existing conditions.

Table 3.7. Range health data for the Hay Flat Allotment.

<table>
<thead>
<tr>
<th>Allotment</th>
<th>Abiotic Factors</th>
<th>Vegetation condition</th>
<th>Recovery Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hay Flat #1</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
<tr>
<td>Hay Flat #2</td>
<td>Healthy</td>
<td>Healthy</td>
<td>Healthy</td>
</tr>
</tbody>
</table>

**Alternative 1 – No Action - No Livestock Grazing**

**Direct and Indirect Effects**

Selection of Alternative 1, the No Grazing Action alternative, would result in the cancellation of the existing Term Grazing Permit. The current permit holders would have to find alternative summer range for their 2101 cow/calf and 1800 ewe/lamb operations.

There would be no direct effects to soils or vegetation from livestock grazing and trailing. There would be no direct impact from livestock on stream banks. There would be no grazing of riparian shrubs (mostly willow) by cattle or sheep.

Eliminating domestic livestock grazing on these allotments would only reduce the total amount of grazing that is presently occurring.

The overall effect of no livestock grazing on rangeland condition could be beneficial the first few years and potentially neutral to negative thereafter. Indirectly, those areas in poor to fair condition would experience increases in litter accumulation and decreases in bare ground. This matting and accumulation of dead plant material would insulate the ground; provide for water-holding capacity and a decrease in surface soil movement and erosion. In areas where vegetation is currently stressed, by frequent and/or excessive defoliation, vigor of forage species over the short term would improve with the removal of domestic livestock.

Grasses evolved with the periodic removal of vegetative material through fire, insects, or ungulates. In the absence of grazing or other disturbance, plants continue to accumulate litter (dead grass blades left at the end of the growing season). After years of litter accumulation, plants go into a “self-imposed stress” whereby the detritus (previous years’ growth) chokes out new shoots competing for light (Knapp et al. 1986). The vigor of the entire plant is compromised and rangelands become less productive and unhealthy. Many invertebrate and wildlife species depend upon productive grasslands, especially for winter range. In addition to loss of plant vigor and decrease in rangeland health, the accumulation of litter allows fine fuels to build, which increases susceptibility to fire.

Any depleted root reserves would have an opportunity to recover, provided grazing by elk was not excessive. Species composition would be expected to shift slightly toward desired forage species with root systems that could take advantage of soil moisture at varying depths. Kentucky bluegrass would be expected to persist; growth form could be
expected to become more vigorous and less prostrate except where elk continue to concentrate use.

In areas where present grazing allows for regrowth and recovery, and forage species are presently vigorous, these species may not show an improvement in plant vigor in the short term and may show a decline in vigor and production as litter build up effects the amount of sunlight reaching the base of the plant. At this point excessive amounts of nutrients and energy would be trapped in the dead plant material reducing that available for plant growth.

**Forest Plan Consistency**

Alternative 1 is consistent with the following Forest Plan direction:

- Improving watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial uses.
- Increase the amount of rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects, disease, and invasive species.
- Implement management practices, which will move landscapes towards desired vegetation composition and structure.
- Identify those rangelands in unhealthy condition and prescribe and implement treatments and strategies that restore or enhance the health and long term sustainability of the native plant communities, soil surface conditions, and proper ecosystem functions.

Alternative 1 is not consistent with the following Forest Plan direction:

- Continue to work cooperatively with grazing permittees and other interested individuals to design and implement grazing systems that maintain or enhance ecosystem function.
- Continue to satisfy the demand for livestock products through environmentally responsible grazing.
- Management Area 5.12 direction to emphasize forage production for livestock.

**Alternative 2 – No Change - Current Management with Livestock Grazing**

**Direct and Indirect Effects**

Stocking rates and management plans would remain constant with this alternative. Upland areas presently receiving moderate use, having adequate soil coverage, litter incorporation into the soil and providing plants with sufficient recovery time to replenish root reserves can be expected to continue to be maintained or improve slowly. Maintenance or recovery of native perennial grasses can be expected in these areas.

Without a change in management, any areas of heavy use will continue to produce primarily Kentucky bluegrass and forbs. Kentucky bluegrass is very resistant to grazing and would remain the dominant forage species on these sites. Kentucky bluegrass provides limited soil protection and forage production. Recovery of native perennials
would not occur in areas dominated by Kentucky bluegrass receiving heavy and prolonged use by elk and/or livestock.

Limited upland waters would continue to focus wildlife and livestock dependency for water in the riparian areas. Riparian area and wetland conditions would continue to be similar to that described in the affected environment section. While some areas continue to provide for stream health, others would remain in a degraded condition with limited willow cover, and limited deep rooted herbaceous species to trap sediment and amour streambanks.

Turnout dates would be adjusted from year to year to allow for the range to dry out and plants to get through the early growth period and through a portion of the rapid growth period prior to livestock grazing. Elk use occurs throughout the growing period. Moderate defoliation has minimal effect on the plant because the plant is oriented to producing leaves and growing conditions are most favorable. Severe defoliation during this period causes carbohydrates stored in the roots and crown to be used to initiate regrowth, subsequently slowing or stopping root development. Plants are most easily injured by grazing when their food storage is depleted in the building of tops and roots.

Multi-pasture grazing systems provide an opportunity to adjust the time and timing of grazing to allow for plant needs. The alternate year rotation varies the time of year a pasture is grazed. This allows plants to go completely to seed prior to grazing on some years or to provide time for regrowth and recovery on other years.

**Forest Plan Consistency**

Alternative 2 is not consistent with the following Forest Plan direction:

- Improving watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial uses.
- Increase the amount of rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects, disease, and invasive species.
- Implement management practices, which will move landscapes towards desired vegetation composition and structure.
- Identify those rangelands in unhealthy condition and prescribe and implement treatments and strategies that restore or enhance the health and long term sustainability of the native plant communities, soil surface conditions, and proper ecosystem functions.
- Continue to work cooperatively with grazing permittees and other interested individuals to design and implement grazing systems that maintain or enhance ecosystem function.
- Continue to satisfy the demand for livestock products through environmentally responsible grazing.
Alternative 3 – Proposed Action – Adaptive Management with Livestock Grazing
Direct and Indirect Effects
Proposed adaptive grazing management and associated improvements will move existing conditions toward desired conditions. Monitoring will measure the progress of existing conditions and determine when management activities, taken from the grazing management toolbox, will be implemented. The more productive range sites may recover rapidly (10-15 years), especially those associated with plant communities in early-intermediate seral stages dominated by native species. Early seral plant communities associated with less resilient shallow rooted species and/or rocky soils, especially those dominated by introduced species, such as Kentucky bluegrass, may require more than 15 years to move toward later seral vegetative conditions.

Less bare ground means more plants holding the soil in place, lessening the likelihood of invasion by noxious weeds. Risk of noxious weed invasion would be decreased in the long-term under this alternative. The proposed action prescribes livestock management and limits utilization, which would lessen the chance of weed invasion. As rangeland conditions improve and less soil disturbance occurs, there will be less bare soil to invite weed invasion.

Overall, the direct effects of implementing the proposed alternative of livestock grazing using adaptive management would be positive in achieving or moving toward desired conditions for all vegetation types. The effects of specific management actions that are listed in the Grazing Management Toolbox (Table 2.2) are discussed below:

1. **Change season of use** will allow for range readiness to take place in the spring. In most cases moving livestock on earlier in the spring and bringing them off earlier in the fall will allow for plants to be grazed at the optimum time and reduce heavy of areas that cattle like to accumulate in the fall. The design criteria will determine livestock off dates (See Appendix G for annual allowable use).

2. **Change in livestock numbers** without exceeding the maximum estimated AUM capacity by increasing the numbers and decreasing the season will increase the amount of time plants have to replenish root reserves. Decreasing numbers and extending time in an allotment can lead to better distribution if careful livestock management is practiced.

3. **Changing class of livestock** from cattle to sheep or sheep to cattle may also be used if deemed necessary to utilize an area to its fullest potential.

4. **Changing livestock grazing intensity and/or duration** will reduce the number of times (frequency) within the season that individual plants will be grazed. The fewer times a plant has to pull from it’s root reserves for regrowth, the more that is available for maintaining and producing root system.

5. **Adjusting livestock herding to manage specific areas of concern** can reduce heavy use prior to an area being grazed to the allowable use standard.

6. **Resting specific areas from livestock grazing** can aid in the recovery of an area where over grazing (wildlife or domestic) has decreased the range condition. Natural events such as fire or large scale land movements may also require rest in order to recover fully.
7. **Restrict livestock grazing in specified areas** can be applied where livestock grazing is deemed beneficial for a short period of time (i.e. using sheep to move through an area before cattle to eliminate or decrease plants that may be harmful to cattle) or a specialized method of grazing is required.

8. **Using or excluding a pasture in a rest rotation grazing system for one or many years** will allow for the range condition of such pasture to increase or increase the condition of an adjacent pasture in the rotation.

9. **Adjusting allotment boundaries to meet the needs of the resource or management of such allotment.** Logical boundaries such as ridge lines and creek bottoms are useful in describing the allotment as well as keeping control of the animals permitted on the allotment. In some cases, boundary lines are roads or openings in parks which allows for multiple use of the same piece of ground by several herds.

10. **Construct range improvements such as fencing or water improvements for the handling or distribution of livestock.** Fencing is a tool that should be employed when there is a lack of structures currently in place or herding the animals is not feasible. Water development is a tool that can encourage cattle to move into areas previously inaccessible due to distance to water. This in turn can also increase wildlife utilization of different areas.

11. **Using temporary electric fence to improve livestock distribution or exclude livestock from sensitive areas.** Examples of this would be fencing off water to encourage cattle to move away from a favorite area and maintain utilization standards.

12. **Use revegetation techniques such as seeding with a native grass, forb and/or shrub mix.** This may be used where entire parks are lacking key components that would aid in a quick recovery.

13. **Use of any newly developed rangeland management techniques to the extent that their implementation is consistent with the effects documented and its accompanying Decision Notice.** This gives the land managers the ability to use not yet developed tools that would aid in positive rangeland management.

**Forest Plan Consistency**

Alternative 3 is consistent with the following Forest Plan direction:

- Improving watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial uses.
- Increase the amount of rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects, disease, and invasive species.
- Implement management practices, which will move landscapes towards desired vegetation composition and structure.
- Identify those rangelands in unhealthy condition and prescribe and implement treatments and strategies that restore or enhance the health and long term sustainability of the native plant communities, soil surface conditions, and proper ecosystem functions.
• Continue to work cooperatively with grazing permittees and other interested individuals to design and implement grazing systems that maintain or enhance ecosystem function.
• Continue to satisfy the demand for livestock products through environmentally responsible grazing.
• Management Area 5.12 direction to emphasize forage production for livestock.

Irreversible and Irretrievable Commitments:
There are no irreversible and irretrievable commitments of rangeland resources in any of the grazing alternatives. If livestock grazing was halted and range improvements removed from the allotment, natural processes would restore any impacts due to past activities over time.

3.5 Noxious Weeds

Introduction
Non-native weed populations have slowly but continually increased within the project area in the past few decades, often in the absence of soil disturbance. Grazing by livestock, when managed to Forest Plan standards, does not have a significant negative impact on the spread of noxious weeds. In fact, healthy, properly managed rangelands seem to be more resistant to weed invasion and spread than those under stress. This is most likely due to the diversity and robustness of the native vegetation. Noxious weeds are very opportunistic and seem to invade where there is a soil disturbance or a plant community is under a stress situation such as by overgrazing.

Current Management Direction
Two specific objectives concerning Noxious Weed Management are stated in the Forest Plan 1) Prevention of the introduction and establishment of noxious weed infestations, and 2) containment and suppression of existing noxious weed infestations. The Forest Plan lists Standards and Guidelines for noxious weed management, including:

Standards
1. For all proposed projects or activities, determine the risk of noxious weed introduction or spread and implement appropriate prevention and mitigation measures.
2. Manage noxious weeds and other undesirable exotic species of plants according to the Integrated Weed Management Principles.
3. Use only certified noxious weed-free hay, straw, seed, or mulch for feed or revegetation projects on National Forest System lands.
4. Include provisions that are necessary to prevent the spread of and to control the introduction of noxious weeds in contracts and permits for use of National Forest System lands and resources.
Guidelines
1. Maintain the noxious weed program that addresses the following Integrated Weed Management components:
   ♦ Education and awareness
   ♦ Prevention
   ♦ Inventory
   ♦ Planning
   ♦ Integrated treatment
   ♦ Monitoring and evaluation
   ♦ Reporting
   ♦ Management activities
   ♦ Coordination and cooperation with federal, state, and local governments and adjacent private landowners.

2. Priorities for controlling noxious weeds are:
   ♦ Preventing the introduction of new invaders
   ♦ Conducting early treatment of new infestations
   ♦ Containing and controlling established infestations.

3. When setting priorities for the treatment of noxious weeds, give consideration to the following:
   ♦ Rate of spread of the species
   ♦ Potential for environmental degradation
   ♦ Invasions found within remote areas and special management areas such as research natural areas and wilderness
   ♦ Probability that the treatment(s) will be successful.


Affected Environment
There are six main species of noxious weeds known to occur within the analysis area: They are yellow toadflax (*Linaria vulgaris*), Canada thistle (*Cirsium arvense*), houndstongue (*Cynoglossum officinale*), leafy Spurge (*Euphorbia esula*), musk thistle (*Cardius nutans*), leafy spurge (*Euphorbia esula*) and spotted knapweed (*Centaurea maculosa*). The species of most importance and concern is yellow toadflax. Yellow toadflax is a deep-rooted perennial that grows in dense stands gradually becoming a monoculture and crowding out the other vegetation. It is extremely hard to control and resistant to many types of herbicide. Biological control agents became available in 2002 to help in the control of toadflax. Their effectiveness is yet to be determined and will take several years to be successful at best. Because yellow toadflax tends to crowd out other plant species, carrying capacity would need to be addressed before any increase of permitted livestock is approved.
The existing condition concerning these weeds is somewhat different on each of the seven allotments and therefore needs to be assessed individually.

The Seven Lakes Allotment is heavily infested with yellow toadflax throughout much of the allotment. Other species present but not as established as toadflax are Canada thistle, houndstongue, and musk thistle. Current weed management on this allotment is containment only. Due to the size of the infestations and remoteness of many of them, conventional herbicide treatments are impractical and cost prohibitive. Biological releases in the remote areas, and herbicide treatments at the access points and high use areas (roadsides, trailheads, etc.) have been employed. This approach along with monitoring and mapping is all that is feasible at this time. Hopefully with the stress of the biological controls and limited herbicide treatments, the native plant species will be able to increase. There is one infestation of leafy spurge on this allotment. It has been treated with herbicides and is currently being annually monitored and treated as necessary. Eradication is approximately 85%. The current livestock permittee is actively involved with the Forest Service in mapping and monitoring weed infestations and helping with treatments where applicable and appropriate.

The North Elk Allotment has a widely dispersed noxious weed infestation. The most predominant weed species is yellow toadflax. There are also scattered infestations of houndstongue, leafy spurge, and musk thistle in or near the bottom of North Elk Creek. The major emphasis on this allotment is to keep the toadflax invasion contained, with eradication of leafy spurge and musk thistle the goal in the creek bottoms. Recent reductions in annual utilization in West Fork have greatly assisted the weed control effort. Use in the lower reaches of East and Middle Fork however are of some concern. Early frost or snows often drive cattle into this area resulting in some fairly heavy utilization. Current stocking rates are not anticipated to be detrimental to noxious weed control efforts as long as utilization guidelines are adhered to.

The East Miller Allotment has areas of very dense yellow toadflax infestations, especially in the big park north of GV Spring and the smaller parks leading down to Widow Spring. An extensive herbicide treatment program has been conducted in this area for the past several years consisting of 200 to 300 acres treated annually. Herbicide test plots have also been developed in cooperation with Colorado State University, DuPont Chemical Company, and DowAgro Chemical Company. Treatments have been successful in the 50-80% range, however much of the forb community has been lost within the treatment areas. Grass species within the treatment areas has increased.

In the bottom of East Miller Creek there has historically been a large infestation of biannual weed species, houndstongue and musk thistle. These are well under control and in combination with grazing rotation and timing changes implemented in 2007, eradication appears to be obtainable in the near future.

In the areas of the allotment where utilization by sheep and cattle has been kept to within Forest Plan Standards and Guides, grazing has not had a negative effect on noxious weed control. High use areas, however, still seem to be of concern.
The Middle Miller, Salt Box, West Miller, and Hay Flat Allotments have been managed collectively for the past several years and have very few noxious weed infestations throughout. There are only small isolated patches of yellow toadflax, with all known infestations mapped and treated, and similar issues in the bottom of Middle and West Miller exist as in East Miller with most of those infestations under control. The strategy on this allotment has been one of eradication. The cattle permittee is very involved with the Forest Service with weed mapping and monitoring, and herbicide treatments where applicable and appropriate. Continued cattle and sheep grazing on these allotments is not expected to be a concern as far as noxious weed management.

Environmental Effects

Alternative 1 – No Action – No Permitted Livestock Grazing
Direct and Indirect Effects
Under the no grazing alternative, there could be a reduction in noxious weeds in areas of past high grazing utilization. This would be due to the increased vigor of the ungrazed native vegetation being able to compete with the weed species. However in areas where the rangeland is grazed to Forest Standard, this effect is not expected.

Alternative 2 – No Change – Current Livestock Grazing Management
Direct and Indirect Effects
An increase in noxious weed infestations is not anticipated in Alternative 2. Grazing by livestock, when managed to Forest Standard, will not increase the spread of noxious weeds. In fact, healthy, properly managed rangelands seem to be more resistant to weed invasion and spread than those under stress. This is most likely due to the diversity and robustness of the native vegetation. Noxious weeds are very opportunistic and seem to invade where there is a soil disturbance, bare soil, or a plant community is under a stress situation such as by overgrazing.

Alternative 3 – Adaptive Livestock Grazing Management (Proposed Action)
Direct and Indirect Effects
An increase in noxious weed infestations is not anticipated in Alternative 3. Noxious weeds could actually decrease due to the ability to adapt the grazing scheme to better fit certain site-specific situations - for example, removing the livestock from an herbicide treatment site for a specified amount of time to allow the plant community to respond in a certain way. Similar to Alternative 2, grazing by livestock, when managed to Forest Standard, does not have a negative impact on the spread of noxious weeds.

Actions included in the Grazing Management Toolbox (Chapter 2, Table 2.2) under Alternative 3 will have no negative effect on noxious weed management (as long as utilization standards and guidelines are adhered to). The only item that could have a detrimental effect on noxious weed management would be excluding or resting an area from livestock grazing where livestock were being used as a tool to target a weed species (i.e. domestic sheep are excluded from using an area where they currently are being used to control leafy spurge).
Recommended Design Criteria to Minimize Risk
Currently, all the allotments in question are under some level of noxious weed management. As far as livestock grazing is concerned, it is not anticipated to have a significant negative effect on noxious weed management if utilization stays within the Forest Standards and Guidelines (see Appendix B for Forest Plan allowable use guidelines).

These guidelines will allow the native forage species to remain healthy and vigorous. This, in conjunction with a proactive integrated weed management program, could become beneficial to the ecosystem and help achieve weed containment and control.

Other criteria to minimize risk would be to strictly adhere to the Forest Standard, to only use certified noxious weed-free hay, straw, seed or mulch for feed or revegetation projects. This needs to be included in all grazing permits and annual operating instructions. Any planned earth disturbance such as pond development, trail construction, etc. will need to also address the issue of noxious weeds.

Forest Plan Consistency – All alternatives in this analysis meet Forest Plan direction for Noxious Weed Management.

3.6 Wildlife – Including Threatened, Endangered and Sensitive (TES) Species and Management Indicator Species (MIS)

Forest Plan Standards and Guidelines (USDA 2002)
The following standards and guidelines are pertinent to wildlife and wildlife habitat as it relates to livestock grazing and this EA.

1) Forest-wide Wildlife Standard: In riparian areas, vegetation cover will be managed to provide suitable wildlife habitat along a minimum of 80 percent of the length of riparian zones within the project area. New corridor interruptions will be spaced to minimize interruptions to habitat connectivity.
2) Forest-wide Wildlife Guideline: Structures such as fences, major highways, bridge upgrades or replacements, and canals should be designed and built taking wildlife movement into consideration.
3) Forest-wide Brewers Sparrow Standard: For management activities in sage grouse and Brewer's sparrow habitat, retain or enhance existing habitat by:
   • Managing for native vegetation,
   • Retaining a minimum of five percent of sagebrush over 48 inches in height where site characteristics allow, and
   • Maintaining a minimum of 20 percent canopy cover of sagebrush
4) Forest-wide Brewer's Sparrow Standard: Restrict the use of insecticides in sage grouse and Brewer's sparrow sagebrush habitat to maintain adequate forage insects.
5) **Forest-wide Brewer’s Sparrow Standard**: Restrict activities that have the potential to impact sage grouse and Brewer’s sparrow breeding activities from April 1 to July 31 in areas where breeding is known or suspected in order to minimize any negative impacts to reproductive success or survival.

6) **Forest-wide Brewer’s Sparrow Guideline**: When implementing vegetation management activities in sage grouse and Brewer's sparrow sagebrush habitat:
   - Design and implement the activities so that a mosaic distribution of open and closed canopy areas will result.
   - Incorporate actions to remove invading conifers in order to maintain and expand the sagebrush cover type.
   - Incorporate actions to reduce or eliminate non-native plant species and promote the re-establishment of native plant species.
   - Limit the use of herbicides in sagebrush areas to direct application when eliminating or reducing non-native plants in sagebrush areas in order to minimize impacts to sagebrush.

7) **Forest-wide Brewer’s Sparrow Guideline**: The installation of new fences, power lines, and other structures in sage grouse and Brewer’s sparrow sagebrush habitat to reduce possible raptor perches and maintain sagebrush.

8) **Forest-wide Brewer’s Sparrow Guideline**: Manage livestock activity in known or suspected Brewer’s sparrow nesting areas to reduce the likelihood of cowbird presence in Brewer’s sparrow nesting areas. Actions to consider include, but are not limited to:
   - Rotating livestock use by alternating years or seasons.
   - Minimizing the intensity or number of livestock concentration areas.

9) **Forest-wide Boreal toad and leopard frog standard**: Allow no loss or reduction in habitat quality of occupied or known historic boreal toad or leopard frog habitat.

10) **Forest-wide Boreal toad and leopard frog standard**: Maintain adequate vegetation cover around occupied boreal toad or leopard frog breeding ponds when implementing management activities to minimize avian predation on newly metamorphosed frogs and toads.

11) **Forest-wide Boreal toad and leopard frog standard**: Use only chemical herbicides shown to have no effect on boreal toads or leopard frogs, or use other vegetation management techniques, within 300 feet of occupied or known historic boreal toad sites.

12) **Forest-wide Boreal toad and leopard frog guideline**: Where impacts to occupied or known historical boreal toad or leopard frog breeding sites associated with livestock grazing are identified, consider actions to reduce or remove impacts such as, but not limited to:
   - Fencing,
- Modification of season of use, or
- Provision of alternate water sources at a sufficient distance.

13) **Forest-wide Standard:** Conduct surveys for the following butterfly species needing more baseline inventory and evaluation before implementation of projects that may result in not maintaining a viable population in occupied habitat: theano alpine, dark blue, white-veined arctic, indra swallowtail, and two-banded checkered skipper. Prohibit actions that may result in the extirpation of the species in an area that is occupied. Actions that may be restricted include but are not limited to:
  - Recreation use and development outside of established routes.
  - Livestock grazing
  - Vegetation treatments
  - Butterfly collecting
  - Road and trail construction

14) **5.41 Management Area Standard:** Establish stocking levels for livestock to ensure adequate forage is available for deer and elk.

15) **5.43 Management Area Guideline:** Design livestock management strategies, including distribution and stocking rates, to be compatible with elk habitat objectives.

16) **Southern Rockies Lynx Amendment:** The Southern Rockies Lynx Amendment EIS was completed this fall and the management direction in that document is effective on the White River National Forest as of November 14, 2008. This management direction now replaces all Forest Plan objectives, standards and guidelines for lynx in the current White River Forest Plan. The following management direction related to livestock grazing is listed below.

**LIVESTOCK MANAGEMENT (GRAZ):** The following objectives and guidelines apply to grazing projects in lynx habitat in lynx analysis units (LAUs) in occupied habitat. They do not apply to linkage areas. (There are no linkage areas in the Southside Grazing Allotment Wildlife Analysis Area)

Objective GRAZ O1: Manage livestock grazing to be compatible with improving or maintaining lynx habitat.

Guideline GRAZ G1: In fire- and harvest-created openings, livestock grazing should be managed so impacts do not prevent shrubs and trees from regenerating.

Guideline GRAZ G2: In aspen stands, livestock grazing should be managed to contribute to the long-term health and sustainability of aspen.

Guideline GRAZ G3: In riparian areas and willow carrs, livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.
Guideline GRAZ G4: In shrub-steppe habitats, livestock grazing should be managed in the elevation ranges of forested lynx habitat in LAU’s, to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.

The three alternatives associated with this analysis are consistent with Forest Plan wildlife standards and guidelines listed above.

Existing Condition

Wildlife Analysis Area
The Southside Wildlife Analysis Area is made up of the seven grazing allotments that are being analyzed for this project, including the Seven Lakes C&H, North Elk C&H, East Miller C&S, Middle Miller C&H, Salt Box C&S, West Miller C&S and Hay Flat C&H. The Wildlife Analysis Area totals 61,680 acres. Table 3.8 shows the vegetation composition of the entire analysis area.

<table>
<thead>
<tr>
<th>Cover Type</th>
<th>Acres</th>
<th>% of Total Analysis Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspen</td>
<td>10,901</td>
<td>17.7%</td>
</tr>
<tr>
<td>Aspen with conifer</td>
<td>12,916</td>
<td>20.9%</td>
</tr>
<tr>
<td>Spruce/fir</td>
<td>2,579</td>
<td>4.2%</td>
</tr>
<tr>
<td>Spruce/fir mixed</td>
<td>9,707</td>
<td>15.7%</td>
</tr>
<tr>
<td>Douglas fir</td>
<td>1,998</td>
<td>3.2%</td>
</tr>
<tr>
<td>Douglas fir mixed</td>
<td>2,396</td>
<td>3.9%</td>
</tr>
<tr>
<td>Blue spruce</td>
<td>572</td>
<td>.9%</td>
</tr>
<tr>
<td>Lodgepole pine</td>
<td>155</td>
<td>.3%</td>
</tr>
<tr>
<td>Lodgepole pine mixed</td>
<td>566</td>
<td>.9%</td>
</tr>
<tr>
<td>Pinyon juniper</td>
<td>174</td>
<td>.4%</td>
</tr>
<tr>
<td>Shrub</td>
<td>5,863</td>
<td>9.5%</td>
</tr>
<tr>
<td>Snowberry</td>
<td>2,039</td>
<td>3.3%</td>
</tr>
<tr>
<td>Sagebrush</td>
<td>2,609</td>
<td>4.2%</td>
</tr>
<tr>
<td>Serviceberry</td>
<td>134</td>
<td>.2%</td>
</tr>
<tr>
<td>Willow</td>
<td>120</td>
<td>.2%</td>
</tr>
<tr>
<td>Grass/orb</td>
<td>8,872</td>
<td>14.4%</td>
</tr>
<tr>
<td>Barren</td>
<td>79</td>
<td>.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>61,680</td>
<td>100%</td>
</tr>
</tbody>
</table>

The elevation of the analysis area ranges from approximately 7,000 to 10,000 feet. There is a large diversity of habitat types and a broad range of elevation within the analysis area. For this reason there are numerous wildlife species that are present, or could potentially occur in the area. There is a table in Appendix B of the Wildlife Technical Report that lists the terrestrial wildlife species that could potentially occur within the analysis area.
Deer and Elk Winter Habitat: The lower elevations of these allotments have some of the largest blocks of mountain shrub habitat on the Blanco District. There is a total of 12,140 acres of management prescription 5.41 (Deer and Elk Winter Range) within these allotments, which is 20% of the total area. These areas are managed to provide adequate amounts of quality forage, cover and solitude for deer, elk, and other wildlife species. Habitat improvement projects, primarily prescribed burning, have been implemented across this winter range habitat since the late 1980’s. The higher elevations of these allotments contain large expanses of pure aspen and mixed aspen habitat that used is heavily as elk calving habitat.

Riparian Areas and Wetlands: The main drainages associated with the seven allotments are Flag Creek, West Miller Creek, Middle Miller Creek, East Miller Creek, and the West, Middle and East Forks of North Elk Creek. There are numerous side tributaries that drain into these larger streams. Riparian areas provide valuable wildlife habitat for a variety of wildlife species, particularly neotropical migratory birds, small mammals and amphibians. Riparian areas in the western United States comprise less than 1% of the total land area but support most of the terrestrial wildlife (Finch and Stangel 1993). In addition to the willow riparian stream systems described above, the Seven Lakes Allotment contains a unique wetland complex, which includes Balloon and Sterry Lakes, and several other small wetlands. This wetland complex supports one of two breeding populations of northern leopard frogs on the Blanco Ranger District. It also provides important breeding habitat for several species of montane waterfowl, including mallard, cinnamon teal, green-winged teal, gadwall, and others.

Sagebrush Habitat: There is a total of 2,609 acres of sagebrush habitat within all seven of the Southside grazing allotments. Sagebrush provides important winter browse for mule deer. Although most of the Southside grazing allotments are above the elevation of mule deer winter range, there is a small portion of mule deer winter range that has been mapped by the Colorado Division of Wildlife (CDOW) in the Seven Lakes, North Elk, East Miller and West Miller Allotments. Bird species that are typically found in this type of habitat on the Blanco District include Brewer’s sparrow, vesper sparrow, white-crowned sparrow, bluebird, and others. The Brewer’s sparrow is a Forest Service sensitive species, a Management Indicator Species, and is also listed as a species of viability concern in the Forest Plan. Brewer’s sparrows are more likely to occur in sites with high shrub cover and large patch size, and generally stands that are greater then 5 acres. In the Southside Allotments there are 66 polygons of sagebrush over 5 acres, totaling 2,576 acres. The largest blocks of sagebrush occur on the west edge of the Seven Lakes Allotment, the northern edge of the East and Middle Miller Allotments, the Bar HL Park area of the Middle Miller Allotment, and the Hay Flat Allotment. A majority of this sagebrush habitat has been surveyed for Brewer’s sparrows, and they have been documented in the Hay Flat Allotment, Middle Miller Allotment and Seven Lakes Allotment.

Aspen and Mixed Aspen Habitat: There are a total of 23,817 acres of aspen and aspen mixed with conifer (where aspen is still the dominant species) habitat in the Southside
Allotments, comprising 39% of the total area. Some of the wildlife species associated with the aspen and mixed aspen cover types include: warbling vireo, American robin, northern goshawk, common flicker, red-naped sapsucker, purple martin, elk, mule deer, snowshoe hare, western wood peewee, and flammulated owl. The aspen habitat in the higher elevations of the Southside allotments provides important elk calving habitat. During the summers of 2007 and 2008 specific surveys were conducted in existing aspen stands and harvested aspen units throughout the Southside Allotments. A detailed report summarizing these surveys can be found in the Appendices of the Wildlife Technical Report.

**Conifer Habitat:** Nearly 30% of the Southside Wildlife Analysis Area is made up of conifer habitat, with the majority being spruce-fir. Livestock grazing has little affect on the structural stage, distribution, or species composition of coniferous forests, so wildlife species that predominantly inhabit coniferous forests will not be addressed in great detail this wildlife report.

**Field Reconnaissance**
Several general field inspections of each of the seven allotments were conducted during the summers of 2007 and 2008. In addition, the district wildlife biologists have visited these allotments on numerous occasions over the last 12 years. In preparation for the analysis for the Environmental Assessment (EA) it was determined that more detailed monitoring data was desired to help assess habitat conditions within the Southside Allotments.

Specific monitoring practices, including cover-frequency transects, greenline/cross-section vegetation transects, rangeland health monitoring, and allowable use standards (stubble height monitoring) have been established on the Southside grazing allotments. The detailed descriptions, number of transects, and initial baseline data are described in Appendix G – Tables 1 through 7.

**Threatened, Endangered and Sensitive Wildlife Species**
The following table shows the list of threatened and sensitive species that occur or have the potential to occur in the Southside Wildlife Analysis Area. There are no Federally Endangered terrestrial species that occur or have the potential to occur on the Blanco Ranger District. The detailed effects analysis for these species can be found in the Biological Assessment (BA) and Terrestrial Biological Evaluation (BE) in the project file.
Table 3.9. Threatened and Sensitive Species either occurring or potentially occurring in the Southside Wildlife Analysis Area.

<table>
<thead>
<tr>
<th>Species Scientific Name</th>
<th>Species Common Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAMMALS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myotis thysanodes</td>
<td>fringed myotis</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Corynorhinus townsendii</td>
<td>Townsend's big-eared bat</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Gulo gulo</td>
<td>wolverine</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Lynx canadensis</td>
<td>Canada lynx</td>
<td>Threatened</td>
</tr>
<tr>
<td>BIRDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accipiter gentilis</td>
<td>northern goshawk</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Circus cyaneus</td>
<td>northern harrier</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Contopus cooperi</td>
<td>olive-sided flycatcher</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Haliaeetus leucocephalus</td>
<td>bald eagle</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Lanius ludovicianus</td>
<td>loggerhead shrike</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Otus flammeolus</td>
<td>flammulated owl</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Progne subis</td>
<td>purple martin</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Spizella breweri</td>
<td>Brewer’s sparrow</td>
<td>Sensitive</td>
</tr>
<tr>
<td>AMPHIBIANS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bufo boreas boreas</td>
<td>boreal toad</td>
<td>Sensitive</td>
</tr>
<tr>
<td>Rana pipiens</td>
<td>northern leopard frog</td>
<td>Sensitive</td>
</tr>
<tr>
<td>INSECTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speyeria nokomis nokomis</td>
<td>Great Basin silverspot</td>
<td>Sensitive</td>
</tr>
<tr>
<td>PLANTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carex diandra</td>
<td>lesser-panicled sedge</td>
<td>Sensitive</td>
</tr>
</tbody>
</table>

Management Indicator Species
Management Indicator Species (MIS) for the White River National Forest can be found in Table EE-3 of the WRNF Plan Appendix EE on page EE-3 (USDA 2002a). From this list, species were selected to address in the project analysis based on potential presence in the project area. Only terrestrial wildlife species are addressed in this report. Aquatic MIS are discussed in the Aquatic Report for this project.

The terrestrial MIS species analyzed in greater detail for this project are:

◆ elk
◆ Brewer’s sparrow
◆ Virginia’s warbler

A detailed analysis for each of this species is displayed in the Management Indicator Species Report, which can be found in Appendix A of the Wildlife Technical Report.

Environmental Effects
The environmental effects section analyzes the direct, indirect and cumulative effects on wildlife and wildlife habitat. Effects on wildlife species are grouped under the following
categories of habitat: riparian and wetland habitat, deer and elk habitat, sagebrush habitat, and aspen habitat.

**Alternative 1: No Action – No Permitted Livestock Direct and Indirect Effects**

*Riparian Areas and Wetlands*: Riparian areas are very important for a diversity of species, particularly neotropical migratory birds. In northwest Colorado, 82% of all nesting birds use riparian areas (Finch and Stangel 1993). There are also numerous ponds and lakes, especially in the Seven Lakes Allotment, that provide habitat for several waterfowl species and northern leopard frogs. Because amphibians are highly dependent on aquatic habitat, any action that changes water volume, water quality, aquatic vegetation, or the aquatic fauna can have negative impacts on these species. The absence of livestock grazing under the No Action Alternative would likely increase the quality of amphibian habitat in these allotments.

Although the allotments in this EA are considered to meet Forest Plan standards and guidelines, the quality of riparian habitat is reduced to some degree by livestock grazing. Livestock numbers are currently at a lower level than they were several decades ago (see Chapter 3, Range Resource, historical grazing information). For this reason, managers believe that both riparian and upland conditions are showing an upward trend. Under the No Action Alternative, riparian and wetlands would improve at a faster rate as compared to Alternative 2 and 3. This would particularly be the case for species that nest and forage in heavy shrub or herbaceous ground cover.

*Deer and Elk Habitat*: With the absence of livestock grazing on the Southside allotments there would be less pressure on the winter range habitat that occurs at the lower elevations of these allotments. Although cattle grazing does not generally have much of an effect on mountain shrub and oakbrush shrubs, they do graze on the grass species in this winter range habitat. On heavier snow winters much of the winter range habitat is likely used more as transitional range. The quality of forage in this transitional habitat helps determine the body condition of elk and deer going into the winter months.

During the summer months, elk and deer may avoid pastures that contain livestock, which can cause animals to concentrate in vacant pastures, or at least in habitats that provide security cover from livestock activities. Without livestock presence, big game animals may disperse wider throughout summer concentration areas within the project area, although influences due to dispersed recreation and other existing activities would continue. Under this alternative there would be less competition for forage, however given the current livestock stocking levels, forage availability is not believed to be a limiting factor for deer or elk on summer range.

*Aspen Habitat*: The primary factor affecting aspen habitat, besides climate and precipitation, is grazing by livestock and wild ungulates. Aspen regeneration occurs in existing mature aspen stands, timber harvest units, and burned areas. In the Seven Lakes Allotment there was the Langlas Draw Fire that burned 720 acres in the year 2003. There
have been numerous aspen clearcuts in the Southside Allotments (See Cumulative Effects Table 3.18). Under the no action alternative there would be less grazing affecting aspen regeneration, although there would still be wild ungulate grazing. Elk can have noticeable affects on aspen regeneration in areas of concentration, which in the Southside allotments, is the aspen habitat up on the flat mesa top in the Bar HL area, as well as further east on the North Elk and Seven Lakes allotments.

**Alternative 2: No Change – Current Livestock Grazing Management**

**Direct and Indirect Effects**

*Riparian Area and Wetlands:* Riparian ecosystems are extremely productive and have diverse habitat values for wildlife. Riparian areas within cattle grazing allotments are good indicators of management successes or failures. If there are distribution or overstocking problems, the riparian areas within the allotment will generally reflect these. When livestock exceed allowable use levels on herbaceous plants, they begin to browse shrubs and walk up and down the riparian corridor. This is when soil compaction, streambank trampling, and shrub hedging begin to exceed acceptable levels.

Several studies have been conducted on the effects of livestock grazing on neotropical migratory birds. Finch and Stangel (1993) summarized the studies that occurred in western riparian ecosystems. Out of 43 species of birds, 8 were positively influenced by grazing, 17 species were negatively influenced by grazing, and 18 species were unresponsive or showed inconsistent or uncertain responses (Finch and Stangel 1993). Species that responded positively to grazing generally included aerial foragers associated with open habitats (e.g., mountain bluebird, kill deer, house wren, American robin, brown headed cowbird, and pine siskin). Species that responded negatively to grazing were species that nest and/or forage in heavy shrub or herbaceous ground cover (e.g., Lincoln’s sparrow, yellow-rumped warbler, McGillivray’s warbler, chipping sparrow, white-crowned sparrow, and Cassin’s finch). Canopy nesting species are generally unaffected by grazing. (Finch and Stangel 1993).

Channel cross-section and green-line vegetation transects were established on three of the seven allotments in this EA, where managers felt the most riparian impacts were occurring. Detailed results of this monitoring can be found in Appendix G – Tables 1 through 7. All of the monitoring sites showed that a majority of the riparian vegetation was in a late seral stage. This is important because well-developed green-line vegetation stabilizes channel banks and buffers water forces. This enhances channel stability, even for inherently unstable stream types. Late seral conditions also are likely to provide good nesting and foraging habitat for neotropical migratory birds.

The Forest Plan (USDA 2002) identifies a potential to impact individual amphibians as a result of grazing, particularly in areas of concentrated impact to breeding habitat. Particular management attention has been given to the northern leopard frog population on the Seven Lakes Allotment. The permittee has tried to limit grazing around Balloon Lake and some of the other small wetlands that are known to provide breeding habitat for northern leopard frogs, or where adult frogs have been found. Biologists placed woody debris and larger trees around a section of shoreline on Balloon Lake to discourage
livestock from congregating at this water source. Allowable use standards, including stubble height requirements, and field inspections have been used to determine if there is sufficient vegetation cover around water sources and uplands. Northern leopard frogs are one of the more terrestrial of the ranid frog species, and adult frogs move up into the uplands where they will feed for the entire summer (Smith and Keinath 2007). Although specific studies on the effects of livestock grazing on northern leopard frogs and their habitat have not been conducted, the Species Conservation Assessment (Smith and Keinath 2007) recommends protecting water quality at known breeding sites, and providing for sufficient vegetation cover at occupied ponds and moist uplands.

**Elk and Deer Habitat:** The most recent elk population estimate for Data Analysis Unit (DAU) E-6 in 2007 is 43,868 animals, which is very close to the population objective of 43,000 animals set by the Colorado Division of Wildlife. Over the last 10 years there has been a decline in elk numbers in DAU E-6, from 51,724 animals in 1998. For more detailed information on elk population numbers, see the Management Indicator Species Report in the Wildlife Technical Report. Under this Alternative 2 there would be greater competition for winter, transition and summer forage and more displacement of elk and deer as a result of the increased amount of livestock grazing, as compared to Alternative 1. This could result in elk being more concentrated in certain areas, resulting in more impacts to the vegetation, particularly the willow habitat. On the vast majority of the summer and transitional range on these allotments, utilization and forage availability is not a concern. As long as Forest Plan standards for utilization are being met, there should be sufficient forage for elk and deer.

**Aspen Habitat:** As described in the existing condition, aspen habitat provides important habitat for a wide variety of wildlife species, including sensitive species (purple martin and flammulated owl), numerous cavity nesting species, several species of neotropical migratory birds, and elk (for calving). Aspen regeneration surveys are conducted as part of the timber harvesting program, and were also conducted as part of this analysis (see Appendices in the Wildlife Technical Report). The majority of the aspen clear cuts had successful and robust regeneration. The only concern with the aspen regeneration was a unit in the Fourmile timber sale in the East Miller Allotment. The lack of regeneration was attributed to poor site selection for a clear cut and the combination of livestock and elk grazing. Attempts were made to fence the unit with an electric fence, however this was not very successful. There is scattered regeneration, but it is not yet at the desired level.

There is successful regeneration in the Langlas Draw wildfire, and there have been no impacts as a result of livestock grazing documented in this burn. In random field visits through mature aspen stands on the Bar HL Mesa top, there does not seem to be very much natural aspen regeneration. The cause for the lack of regeneration is not known. Managers have speculated that is could be a combination of wild ungulate grazing, livestock grazing and drought.
Threatened, Endangered and Sensitive Species
The following table lists the Threatened and Sensitive species that were analyzed for Alternative 2. A detailed effects analysis and rationale for each determination is described in the BE and BA in the project file.

Table 3.10. Determination Statements for Sensitive and Threatened Species under Alternative 2

<table>
<thead>
<tr>
<th>Species</th>
<th>Determination Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
</tr>
<tr>
<td>fringed myotis</td>
<td>No Impact</td>
</tr>
<tr>
<td>Townsend’s big-eared bat</td>
<td>No Impact</td>
</tr>
<tr>
<td>wolverine</td>
<td>MAII</td>
</tr>
<tr>
<td>Canada lynx</td>
<td>NLAA</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
</tr>
<tr>
<td>northern harrier</td>
<td>MAII</td>
</tr>
<tr>
<td>northern goshawk</td>
<td>No Impact</td>
</tr>
<tr>
<td>olive-sided flycatcher</td>
<td>No Impact</td>
</tr>
<tr>
<td>flammulated owl</td>
<td>No Impact</td>
</tr>
<tr>
<td>loggerhead shrike</td>
<td>No Impact</td>
</tr>
<tr>
<td>purple martin</td>
<td>No Impact</td>
</tr>
<tr>
<td>Brewer’s sparrow</td>
<td>MAII</td>
</tr>
<tr>
<td>bald eagle</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Amphibians</strong></td>
<td></td>
</tr>
<tr>
<td>western boreal toad</td>
<td>MAII</td>
</tr>
<tr>
<td>northern leopard frog</td>
<td>MAII</td>
</tr>
<tr>
<td><strong>Insects</strong></td>
<td></td>
</tr>
<tr>
<td>Great Basin silverspot</td>
<td>MAII</td>
</tr>
<tr>
<td><strong>Plants</strong></td>
<td></td>
</tr>
<tr>
<td>lesser-panicled sedge</td>
<td>No Impact</td>
</tr>
</tbody>
</table>

MAII = May adversely impact individuals, but are 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.

NLAA = May affect, not likely to adversely affect.

Alternative 3: Adaptive Livestock Grazing Management
General effects to the different wildlife habitat types as a result of livestock grazing are discussed under Alternative 2. The discussions under Alternative 3 are more related to how this adaptive alternative is different than current management under Alternative 2 as well as the use of the Grazing Management Toolbox in Table 2.2 in Chapter 2.

Direct and Indirect Effects
*Riparian Areas and Wetlands:* Cross-section composition and green-line vegetation transects were established on the North Elk, Middle Mountain, and East Miller Allotments. The Cross-Section Composition Method describes and quantifies the distribution of riparian communities within the riparian area. This method measures the
intercept of plant communities along the transect, not individual plant species. Community Type classification and percent composition can then be used to define the seral stage within the stream reach surveyed. Table 3.11 summarizes the riparian monitoring results.

Table 3.11. Riparian Monitoring Results.

<table>
<thead>
<tr>
<th></th>
<th>North Elk Allotment</th>
<th>East Miller Allotment</th>
<th>Middle Miller Allotment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-Section: Early Seral</td>
<td>30%</td>
<td>36%</td>
<td>16%</td>
</tr>
<tr>
<td>Cross-Section: Late Seral</td>
<td>70%</td>
<td>64%</td>
<td>84%</td>
</tr>
<tr>
<td>Green-line: Early Seral</td>
<td>0%</td>
<td>34%</td>
<td>5%</td>
</tr>
<tr>
<td>Green-line: Late Seral</td>
<td>100%</td>
<td>66%</td>
<td>95%</td>
</tr>
</tbody>
</table>

The only wildlife Forest Plan direction that applies to riparian condition is included under the lynx management direction. Forest Plan Guideline (from Southern Rockies Lynx Amendment): *In riparian areas and willow carrs, livestock grazing should be managed to contribute to maintaining or achieving a preponderance of mid- or late-seral stages, similar to conditions that would have occurred under historic disturbance regimes.*

The riparian monitoring that was conducted indicated that this guideline is being met, with a preponderance of riparian vegetation in the mid to late seral stages. Although site specific monitoring was only conducted on three allotments, general field inspections were conducted throughout all of the allotments. The cross-section and green-line transects were established in areas that were of the most concern to managers. This monitoring will be read again in 5-10 years to determine the change from this baseline. If this riparian monitoring, or other monitoring techniques (annual inspections, photo points, etc.) indicate that resource conditions are in a downward trend, management options from the toolbox in Table 2.2 may be employed. Tools from the Grazing Management Toolbox that could be used to improve riparian conditions include: #1) Change season of use, #2) Change livestock numbers, #4) Adjust grazing intensity or duration, #5) Adjust herding to manage specific areas of concern, #6) Rest specified areas of concern, #7) Restrict livestock grazing in specified areas, #8) Use or exclusion of a pasture, #10) Construct range improvements, and #11) Use temporary electric fence.

Wetlands – Seven Lakes Allotment: The following Forest Plan Standards and Guidelines would apply to the northern leopard frog population and habitat on the Seven Lakes Allotment.

1) **Forest-wide Boreal toad and leopard frog standard:** Allow no loss or reduction in habitat quality of occupied or known historic boreal toad or leopard frog habitat.

2) **Forest-wide Boreal toad and leopard frog standard:** Maintain adequate vegetation cover around occupied boreal toad or leopard frog breeding ponds when implementing management activities to minimize avian predation on newly metamorphosed frogs and toads.
3) **Forest-wide Boreal toad and leopard frog standard:** Use only chemical herbicides shown to have no effect on boreal toads or leopard frogs, or use other vegetation management techniques, within 300 feet of occupied or known historic boreal toad sites.

4) **Forest-wide Boreal toad and leopard frog guideline:** Where impacts to occupied or known historical boreal toad or leopard frog breeding sites associated with livestock grazing are identified, consider actions to reduce or remove impacts such as, but not limited to:
   - Fencing,
   - Modification of season of use, or
   - Provision of alternate water sources at a sufficient distance.

The way these standards and guidelines are written, requires District managers to determine what would qualify as a loss in quality of occupied northern leopard habitat, and what is considered adequate vegetation around occupied breeding ponds. There is a lack of research that has been conducted on the effects of livestock grazing on northern leopard frogs and their habitat. At this time, District Biologists and Range Staff visit the wetland complex that supports northern leopard frogs on the Seven Lakes Allotment one or more times during the grazing and ensure that allowable use guidelines are being followed, and that livestock concentration problems are not occurring. In addition, habitat improvement projects are being planned that are not related to grazing activities, including installing a culvert along FSR 240, and closing an ATV trail that is causing resource damage to an intermittent drainage that is used by northern leopard frogs.

Biologists will continue to obtain information that will assist in providing management direction for this area including: GIS mapping of all occupied habitat, breeding pond surveys and timing of breeding activities, and the use patterns of uplands by adult frogs. If any new information is obtained from research studies, this will also be incorporated into the management of this population.

If the above activities result in the determination that undesirable impacts are occurring to northern leopard habitat, tools from the Grazing Management Toolbox that could be used to improve riparian and wetland conditions in the Seven Lakes Allotment include: #1) Change season of use, #2) Change livestock numbers, #4) Adjust grazing intensity or duration, #5) Adjust herding to manage specific areas of concern, #6) Rest specified areas of concern, #7) Restrict livestock grazing in specified areas, #8) Use or exclusion of a pasture, #10) Construct range improvements, and #11) Use temporary electric fence.

**Deer and Elk Habitat:** As discussed under Alternative 2, in the Southside Allotments, cattle grazing has not been shown to have a detrimental effect on upland shrub species, such as oakbrush, serviceberry, chokecherry, and snowberry. When the mountain shrub species become dense, it is hard to get livestock to utilize these areas for foraging. Livestock grazing does have a more noticeable effect on grassland parks within the winter and transitional range habitat. There were two cover-frequency monitoring transect that were established in mapped winter range habitat on the Seven Lakes
Allotment. The baseline results showed a good diversity of native grasses, and a relatively low amount of bare ground. The remaining cover-frequency and rangeland health assessments were conducted in deer and elk summer range. The results are described in the Existing Condition Tables, Appendix G – Tables 1 through 7.

As stated in Alternative 2, the elk population numbers are very close to the herd objective set by the CDOW for DAU E-6. Forage competition and any displacement that may result from livestock grazing does not seem to be having a measurable effect on elk population numbers in the Southside Allotments. There may be some isolated site specific locations were early elk grazing compounds with livestock grazing. Tools from the Grazing Management Toolbox that could be used to manage elk and livestock conflicts include: #1) Change season of use, #2) Change livestock numbers, #3) Change livestock class – do not exceed estimated AUM capacity, #4) Adjust grazing intensity or duration, #5) Adjust herding to manage specific areas of concern, #6) Rest specified areas of concern, #7) Restrict livestock grazing in specified areas, #8) Use or exclusion of a pasture, #9) Adjust allotment boundaries, #10) Construct range improvements, and #11) Use temporary electric fence.

Aspen Habitat: As stated under Alternative 2, the majority of aspen regeneration in harvested areas is successfully regenerating, with the exception of one unit. Some impacts were noted in mature aspen stands that were adjacent to water sources. These areas are likely used for shade where livestock congregate near water. Tools from the Grazing Management Toolbox that could be used to manage livestock impacts to aspen regeneration include: #2) Change livestock numbers, #4) Adjust grazing intensity or duration, #5) Adjust herding to manage specific areas of concern, #6) Rest specified areas of concern, #7) Restrict livestock grazing in specified areas, #8) Use or exclusion of a pasture, #9) Adjust allotment boundaries, #10) Construct range improvements, and #11) Use temporary electric fence.

Threatened, Endangered and Sensitive Species
The following table lists the Threatened and Sensitive species that were analyzed for Alternative 3. The detailed effects analysis and rationale for each determination is described in the BE and BA in the project file.
Table 3.12. Determination statements for sensitive and threatened species under Alternative 3.

<table>
<thead>
<tr>
<th>Species</th>
<th>Determination Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
</tr>
<tr>
<td>fringed myotis</td>
<td>No Impact</td>
</tr>
<tr>
<td>Townsend’s big-eared bat</td>
<td>No Impact</td>
</tr>
<tr>
<td>wolverine</td>
<td>MAII</td>
</tr>
<tr>
<td>Canada lynx</td>
<td>NLAA</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
</tr>
<tr>
<td>northern harrier</td>
<td>MAII</td>
</tr>
<tr>
<td>northern goshawk</td>
<td>No Impact</td>
</tr>
<tr>
<td>olive-sided flycatcher</td>
<td>No Impact</td>
</tr>
<tr>
<td>flammulated owl</td>
<td>No Impact</td>
</tr>
<tr>
<td>loggerhead shrike</td>
<td>No Impact</td>
</tr>
<tr>
<td>purple martin</td>
<td>No Impact</td>
</tr>
<tr>
<td>Brewer’s sparrow</td>
<td>MAII</td>
</tr>
<tr>
<td>bald eagle</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Amphibians</strong></td>
<td></td>
</tr>
<tr>
<td>western boreal toad</td>
<td>MAII</td>
</tr>
<tr>
<td>northern leopard frog</td>
<td>MAII</td>
</tr>
<tr>
<td><strong>Insects</strong></td>
<td></td>
</tr>
<tr>
<td>Great Basin silverspot</td>
<td>MAII</td>
</tr>
<tr>
<td><strong>Plants</strong></td>
<td></td>
</tr>
<tr>
<td>lesser-panicled sedge</td>
<td>No Impact</td>
</tr>
</tbody>
</table>

3.7 Fisheries – Including Threatened, Endangered and Sensitive (TES) Species and Management Indicator Species (MIS)

Introduction
This section discusses the existing condition and potential effects of the proposed Blanco Southside Grazing Allotments project to fisheries and aquatic biota, including aquatic management indicator species (MIS) on the Blanco Ranger District of the White River National Forest (WRNF). A separate report was prepared to assess potential effects of the proposed project on aquatic species listed under the Endangered Species Act, and Forest Service Sensitive Species (Aquatic Species Biological Assessment/Biological Evaluation located in the Project File).

For a full description of the existing grazing activities, as well as detailed descriptions of the proposed Alternatives, refer to Chapter 2.

Management Indicator Species – The Code of Federal Regulations {36 CFR 219.19 (a) (6)} states “population trends of management indicator species will be monitored and relationships to habitat changes determined.” The Forest Plan’s ecosystem health goal and objectives for MIS states “within 15 years, demonstrate positive trends in habitat
availability, habitat quality, or other factors affecting sensitive species and Management Indicator Species.” MIS trends are to be evaluated at the Forest scale.

**Existing Condition**
This section is based upon field investigations and personal knowledge of the Project Analysis Area. The Project Analysis Area is defined by 5<sup>th</sup> and 6<sup>th</sup> Level Watersheds. These watersheds encompass approximately 141,069 acres. The project area is located on the western edge of the White River Plateau.

The proposed allotment revision project analysis area contains numerous streams and some lakes. The streams and lakes contain numerous species of trout (Tables 3.13 and 3.14).

Table 3.13. Stream information from Colorado Division of Wildlife database.

<table>
<thead>
<tr>
<th>Stream</th>
<th>Scode</th>
<th>Fish Species**</th>
<th>Fish Value</th>
<th>Limiting Factors*</th>
<th>Stocking History</th>
<th>Surveys</th>
<th>Comments: FS Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Miller Creek</td>
<td>25773</td>
<td>BRK, LOC</td>
<td>Average</td>
<td>C1, E1</td>
<td>None</td>
<td>7/24/79 CDOW</td>
<td>FS: BRK, LOC</td>
</tr>
<tr>
<td>Middle Miller Creek</td>
<td>25785</td>
<td>BRK, RBT</td>
<td>Average</td>
<td>A4, A9</td>
<td>None</td>
<td>7/24/79 CDOW</td>
<td></td>
</tr>
<tr>
<td>East Miller Creek</td>
<td>25761</td>
<td>BRK, RBT</td>
<td>Average</td>
<td>E1</td>
<td>None</td>
<td>7/24/79 CDOW</td>
<td>FS: BRK, LOC</td>
</tr>
<tr>
<td>Red Canyon</td>
<td>21720</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dutch Creek</td>
<td>19988</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
<tr>
<td>Whiskey Gulch</td>
<td>23233</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
<tr>
<td>Prospect Draw</td>
<td>21610</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
<tr>
<td>Bear Gulch</td>
<td>19329</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
<tr>
<td>West Fork North Elk Creek</td>
<td>28111</td>
<td>CRCT, BRK</td>
<td>Average</td>
<td>A4, C12, E1</td>
<td>None</td>
<td>7/23/79 CDOW</td>
<td>2006-07 Brook Trout Removal</td>
</tr>
<tr>
<td>North Elk Creek</td>
<td>20139</td>
<td>CRCT, BRK</td>
<td>Above Average</td>
<td>A7, C12</td>
<td>None</td>
<td>7/23/79 CDOW</td>
<td>2006-07 Brook Trout Removal</td>
</tr>
<tr>
<td>Middle Fork North Elk Creek</td>
<td>28096</td>
<td>CRCT, BRK</td>
<td>Average</td>
<td>A5, A9, A11</td>
<td>None</td>
<td>7/23/79 CDOW</td>
<td>2006-07 Brook Trout Removal</td>
</tr>
<tr>
<td>Stream</td>
<td>Scode</td>
<td>Fish Species**</td>
<td>Fish Value</td>
<td>Limiting Factors*</td>
<td>Stocking History</td>
<td>Surveys</td>
<td>Comments: FS Survey</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------</td>
<td>----------------</td>
<td>------------</td>
<td>-------------------</td>
<td>------------------</td>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>East Fork North Elk Creek</td>
<td>28109</td>
<td>CRCT, BRK, RBT</td>
<td>Average</td>
<td>C12</td>
<td>None</td>
<td>7/23/79 CDOW</td>
<td>2006-07 Brook Trout Removal</td>
</tr>
<tr>
<td>Smizer Gulch</td>
<td>22236</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
<tr>
<td>Vaughn Creek</td>
<td>22587</td>
<td>None</td>
<td>Average</td>
<td>A5, A16</td>
<td>RBT-82</td>
<td>8/14/81 CDOW</td>
<td>Low flows</td>
</tr>
<tr>
<td>Greenstreet Creek</td>
<td>25709</td>
<td>None</td>
<td>None</td>
<td>A1</td>
<td>BRK-79</td>
<td>7/24/79 CDOW</td>
<td>Low flows</td>
</tr>
<tr>
<td>Sawmill Creek</td>
<td>No record</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
<tr>
<td>Smith Gulch</td>
<td>22197</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td>Low flows</td>
</tr>
</tbody>
</table>

*CDOW Limiting Factor Codes (recorded from visual observations by the CDOW personnel at the time of electroshocking survey which is defined by 100 meters and not necessarily the entire stream length or lake survey):
Limiting Factors fields—A1=intermittent stream, A4=highly erosive soil, A5=steep gradient, A7=poor pools & cover, A9=riffle area excessive, A11=remoteness, A16=low flow; C1=water diversion-irrigation, C12=land abuse-livestock; E1=excessive siltation.

**CDOW Species Codes: LOC=Brown trout, CRCT=Colorado River cutthroat trout, BRK=Brook trout.
<table>
<thead>
<tr>
<th>Lake</th>
<th>Scode</th>
<th>Origin</th>
<th>Fish Species**</th>
<th>Stocking History</th>
<th>Limiting Factors*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howey Reservoir</td>
<td>67397</td>
<td>Man Made</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Shallow</td>
</tr>
<tr>
<td>Trojan Lake</td>
<td>70582</td>
<td>Man Made</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Shallow</td>
</tr>
<tr>
<td>Dynamite Lake</td>
<td>66366</td>
<td>Natural</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Shallow</td>
</tr>
<tr>
<td>Shadow Lake</td>
<td>69784</td>
<td>Man Made</td>
<td>No record</td>
<td>No record</td>
<td>None</td>
<td>Private</td>
</tr>
<tr>
<td>Cabin Lake</td>
<td>65661</td>
<td>Man Made</td>
<td>No record</td>
<td>No record</td>
<td>None</td>
<td>Private</td>
</tr>
<tr>
<td>Seventh Lake</td>
<td>73320</td>
<td>Man Made</td>
<td>No record</td>
<td>No record</td>
<td>None</td>
<td>Private</td>
</tr>
<tr>
<td>Beaver Lake</td>
<td>65116</td>
<td>Man Made</td>
<td>No record</td>
<td>No record</td>
<td>None</td>
<td>Private</td>
</tr>
<tr>
<td>Burro Mountain Lake</td>
<td>65640</td>
<td>Natural</td>
<td>No record</td>
<td>None</td>
<td>A6, A11</td>
<td></td>
</tr>
<tr>
<td>Balloon Lake</td>
<td>No record</td>
<td>Natural</td>
<td>No record</td>
<td>No record</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Sterry L. Lake</td>
<td>70235</td>
<td>Natural</td>
<td>FMW</td>
<td>None</td>
<td>A2, A6</td>
<td></td>
</tr>
<tr>
<td>Harker Park Lake</td>
<td>71376</td>
<td>Natural</td>
<td>No record</td>
<td>None</td>
<td>A2</td>
<td></td>
</tr>
<tr>
<td>Gilley Lake</td>
<td>66844</td>
<td>Man Made</td>
<td>BRK, LOC, FMW</td>
<td>Yes</td>
<td>C1</td>
<td>Small Fish Population</td>
</tr>
</tbody>
</table>

*CDOW Limiting Factor Codes (recorded from visual observations by the CDOW personnel at the time of electroshocking survey which is defined by 100 meters and not necessarily the entire stream length or lake survey):
Limiting Factors fields—A2 (spawning areas inadequate), A6 (winter kill), A11 (shallow depth), C1 (water diversion—excessive drawdown)

**CDOW Species Codes: BRK=Brook trout, LOC=Brown trout, FMW=Fathead Minnow.

Forest Service surveys have been completed on Flag, Miller, and North Elk Creeks within the seven allotments. The above Table 3.13 displays the Colorado Division of Wildlife (CDOW) information for associated streams from their database, including Forest Service surveys in the comments section. North Elk Creek and associated stream forks is the only stream that contains Colorado River cutthroat trout (CRCT) within the analysis area. All of the other identified streams contain other species or no species of fish. CRCT are a Forest Service Region 2 Sensitive Species therefore careful management and monitoring would be incorporated into the proposed action. A Forest Management Indicator Species (MIS) site was established on the East Fork of North Elk Creek.
Creek in 2007. A two pass depletion electroshocking survey and physical habitat survey were completed at this time. This site will be repeated in five years to establish trend data for fish and associated habitat.

An on-going brook trout removal project in North Elk Creek was started in 2006. This is in cooperation with the CDOW. The intent of this project is to remove the brook trout in all three forks of North Elk Creek to reduce the competition with CRCT. An MIS site is also located on the East Fork of North Elk Creek. This population of CRCT is considered a “Conservation Population” identified in the Range Wide Status of Colorado River Cutthroat Trout, 2005 and the Conservation Strategy for Colorado River Cutthroat Trout, a multi-state agreement with Colorado, Wyoming and Utah, June 2006.

Currently, there is no known barrier or water diversion structure in North Elk Creek that prevents non-native species from migrating from the White River upstream into North Elk Creek. Approximately 3.0 miles of North Elk Creek, from the confluence with the White River, flows through private property owned by Elk Creek Ranch. The CDOW has been discussing with the private landowner, the potential construction of a fish passage barrier on their property or a location on the Forest above the private property. This would likely extend CRCT available habitat downstream for a substantial distance, thus allowing them to expand their population without competition from other species.

The lower flat area around the confluence of West Fork North Elk Creek and East Fork North Elk Creek is fenced to allow for the gathering of cattle from the upper portions in the fall before taking them off Forest. Heavy use of these fenced areas by livestock has been documented, particularly in the West Fork of North Elk Creek during the fall of 2007. Streambank trampling by both cattle and big game (elk) was documented. This trampling may lead to sediment transport along the west and middle forks. Sediment within the stream bed is not conducive to fish spawning or macroinvertebrate life stages, which is the main food source for fish. These pastures should be monitored for excessive use by cattle (see Table 1.5).

The forks of Miller Creek contain brook and brown trout. The East and Middle forks of Miller Creek are located on Forest and are easily accessed. This area and experiences heavy recreation use and heavy fishing pressure, with activity escalating during the fall hunting seasons. Heavy livestock use in the area around the Miller Creek Cow Camp has been documented in the fall when cattle are gathered in the fenced areas before leaving the Forest. Blanco Range personnel are aware of the historic heavy use in this area. Riparian vegetation, including willows and alders, has experienced severe hedging and trampling of streambanks by livestock has occurred.

Most of West Miller Creek is private, except the upper 4-5 miles which is on Forest land. Very little fishing pressure exists on the portion of West Miller Creek located on the Forest due to difficult public access. In 2002, the Forest Service assisted the CDOW with fish electroshocking efforts on the private land in West Miller Creek. Brook and brown trout were the only species identified during the survey. Above the Forest boundary, there is excellent habitat, with a good riparian over story and beaver ponds. At this time,
no survey has been completed in the upper reaches on Forest, but it would be likely that brook trout inhabit this area.

The other streams listed in Table 3.13 do not support fish populations at this time. No species are present due to the fact that these streams are intermittent and support very low water flow. No sampling has occurred for this reason.

The lakes identified in Table 3.14 are too shallow to support fish species. Water temperatures in these lakes are too warm to support fish or fish would experience winter-kill due to the shallow water. The exception is Gilley Lake which supports brook and brown trout according to the CDOW database. This lake also contains fathead minnows which were most likely introduced by fisherman using them as bait. Gilley Lake is man made, and was probably constructed to hold water for release to supplement the water in the four lakes nearby located on private property. This lake is the only lake associated with the seven allotments that is available for recreational fishing.

**Population Trends**

Population trends of the trout species occurring in the lakes and streams within the analysis areas are considered stable with no identified desire to increase population levels. The exception to this is North Elk Creek, where ongoing activities should contribute to an upward trend in the CRCT population. This is based on the Forest Service and Colorado Division of Wildlife files and database information, which shows only CRCT populations, mixed populations of trout species, or single trout species other than CRCT, that occur in streams and lakes.

The Forest Plan lists the following Standards (page 2-22) for Colorado River cutthroat trout:

For management activities that have the potential to impact occupied cutthroat trout habitat, tributaries of occupied cutthroat trout habitat, or identified reintroduction areas, maintain or enhance existing cutthroat trout habitat. At minimum and where necessary:
- Reduce sediment from existing roads and trails.
- Maintain pool depths.
- Maintain riparian vegetation.
- Retain large woody debris in streams.

Forest Plan Guidelines that apply to grazing:

4. Where impacts on cutthroat trout habitat associated with livestock grazing are identified, such as hedged shrubs and collapsed banks, consider actions to reduce or remove impacts such as, but not limited to:
   - Altering the timing of grazing
   - Altering the timing of livestock crossings of occupied cutthroat streams until after fish have emerged from gravel.
   - Excluding sensitive or problem areas.
To minimize sedimentation, channel stability, and direct disturbance of spawning areas, alter routes of sheep bands or other trailed livestock. Limit sheep crossings and cattle driveways to designated locations or roads to avoid crossing occupied cutthroat streams and tributaries.

**Effects on Aquatic Management Indicator Species (MIS):**

Trout and macroinvertebrates are aquatic MIS species that reside in numerous streams, lakes and wetlands within or adjacent to the project analysis area. One stream within the project analysis area contains CRCT, although only small headwater portions are in the project area. Aquatic species may be directly affected by high flows during storm events, snowmelt, or influx of sediment due to resource management and or potential erosion factors within the watersheds.

In reference to the previous Management Indicator Species section:

**Question 1: Does forest management maintain or improve the physical habitat quality for salmonids in mountain streams?**

With CRCT chosen to represent “All Trout”, in regards to the allotment revisions, using the information provided in this report one would conclude that the allotment revision will not impact the aquatic resources. From this it could be derived that the aquatic resources are maintaining, but not improving, as evidenced by the fact that brook trout are also located in one of the CRCT streams. Brook trout are very competitive for available habitat with CRCT in the same streams. On the other hand, brook trout provide recreational fisheries on the Forest.

**Question 2: Does forest management maintain or improve water quality (including chemical aspects as well as sediment) such that aquatic faunal communities are similar between managed and reference sites?**

Due to constraints of time and budget, the Forest Service has not collected macro-invertebrate samples for analysis within the project analysis area.

The identified streams (Table 3.13) contain diverse macro-invertebrate populations, which include mayflies, caddisflies, and stoneflies (visual observations by fisheries personnel). These macro-invertebrate species indicate good water quality and a predominant food source. On the White River National Forest, only stream or lotic systems are surveyed for macro-invertebrates. No lentic or lake systems have been surveyed for macro-invertebrates at this time with the exception of those lakes surveyed by the CDOW. Macro-invertebrate surveys have been conducted on select streams outside the project analysis area and the assumption is that the macro-invertebrate species would be very similar. The Biological Evaluation (BE) in the Project File addresses CRCT and documents if the proposed action will or will not impact this species.

There are numerous intermittent tributaries to the identified streams within the project analysis area. These channels may provide seasonal spawning or key habitat based on their connectivity to streams containing fish.
**Alternative 1 – No Action - No Livestock Grazing**  
**Direct and Indirect Effects**
Direct effects are those that may impact the aquatic species directly, such as sediment introduction, bank trampling from livestock, and higher water temperatures. With no livestock grazing on any of the allotments, these effects would be reduced and over time, there is the potential to be diminished. With healthy uplands and riparian vegetation communities, potential sediment influx into streams would be diffused as a positive indirect effect of Alternative 1.

**Alternative 2 - No Change – Current Livestock Grazing Management**  
**Direct and Indirect Effects**
Direct effects are those that may impact the aquatic species directly, such as sediment introduction, bank trampling from livestock, and higher water temperatures with reduced riparian over story. Current grazing practices are affecting East and Middle Miller Creeks and North Elk Creek. The main effects are to the riparian corridor and stream banks in pastures that are used in the fall to gather cattle, before exiting the Forest. These pastures are heavily used, with streambank trampling and heavy use of willows and grasses documented. This can lead to sediment from the crumbled bank material and or movement from just outside the riparian corridor. This sediment can effectively reduce the fish spawning areas as flows tend to subside. The sediment settles into the gravel, essentially stopping the water flow and oxygen from reaching the eggs. This also applies to the macro-invertebrates that live in the substrate.

Indirect effects would be such things as the road system, that can funnel sediment into streams, particularly where there is a stream crossing. Camping and fishing pressure increases when roads allow easy access to streams. This is the case with the bottom of the East and Middle forks of Miller Creek, which is also where cattle are gathered in the fall. Fishing pressure in basically non-existent within the other streams associated with the allotments.

**Alternative 3: Adaptive Livestock Grazing Management (Proposed Action)**  
**Direct and Indirect Effects**
Direct and indirect effects would be the same as in Alternative 2, but with the Adaptive Management approach, a more intense monitoring will take place and as such changes in management can be implemented more quickly to reduce potential adverse effects.

The effects of specific management actions that are listed in the Grazing Management Toolbox (Table 2.2) are discussed below:

1. **Change season of use** - This could affect the fisheries from the standpoint of the timing of grazing occurring during the fall spawning of CRCT. Sediment impacts within the streams of the area would be less if grazing did not occur during spawning.
2. **Change livestock numbers** - A change, particularly a reduction, in livestock numbers could drastically reduce impacts from livestock, reducing impacts to riparian areas and/or streambank trampling.

3. **Change livestock class** - Changing from cattle to sheep could have a beneficial effect to the fisheries resource as sheep are herded and do not tend to use riparian areas to the extent of cattle.

4. **Adjust livestock grazing intensity and/or duration** - This could have a beneficial effect to fisheries as grazing intensity and/or duration could be reduced in riparian areas, enhancing fish habitat.

5. **Adjust livestock herding to manage specific areas of concern** - Typically cattle are not herded, with the exception of traveling onto and off of the Forest. An increase in herding or riding on the allotments could be beneficial to the fisheries if there are areas of concern such as stream corridors where livestock tend to congregate.

6. **Rest specified areas** - Resting areas such as riparian or stream corridors has the beneficial effect of allowing these to become more robust in the absence of livestock grazing pressure.

7. **Restrict livestock grazing in specified areas** - This could be the same affect as identified in number 6 above.

8. **Use or exclusion of a pasture** - Exclusion of pasture(s) could benefit the fisheries by removing livestock, for example in a riparian pasture, to reduce potential for streambank trampling or heavy browsing/grazing on riparian vegetation.

9. **Adjust allotment boundaries** - This would allow managers to identify specific areas of resource concerns and make necessary adjustments that would be beneficial to the fisheries.

10. **Construct range improvements** - The same benefits could be obtained as in number 9 above.

11. **Use temporary electric fencing to improve livestock distribution or exclude livestock from sensitive areas** - Although short term, electric fencing has the potential for managers to alleviate problems in identified sensitive areas.

12. **Use revegetation techniques** - Seeding areas of concern, like a riparian area, can benefit fisheries, although livestock may have to be excluded until planted vegetation is established in the short-term and livestock use on revegetation sites monitored both short and long term.
13. **Use newly developed rangeland management techniques** – New management techniques could benefit fisheries, though because they are not identified, benefits cannot be determined at this time.

**Discussion**
In my professional opinion, the proposed Blanco Southside Allotments Livestock Grazing Permit Renewal Project is a viable project with regards to the Aquatic Resources of the area. Potential impacts associated with this project should not adversely affect these resources, if the Annual Operating Plans that are developed displays mitigation and monitoring standards, such as applicable Watershed Conservation Practices, that should be adhered to during the life of the revision.

**Forest Plan Consistency** – All alternatives within this analysis meet Forest Plan direction for the Fisheries Resource.

### 3.8 Watershed

**Existing Condition**
The purpose of this section is to provide information for the environmental analysis of the proposed Blanco Southside Allotments Livestock Grazing Project. This report is based upon field investigations and personal knowledge of the project analysis area. The project analysis area is defined by 5th and 6th Level Watersheds. These watersheds encompass approximately 141,069 acres. The project area is located on the western edge of the White River Plateau. There are no known slumps or landslides identified within these watersheds. All of the watersheds are well vegetated with timber, shrubs or grasses. Table 3.15 identifies these watersheds.

**Table 3.15. Watershed information for the Blanco southside grazing allotments.**

<table>
<thead>
<tr>
<th>Watershed Name</th>
<th>6th level HUC number</th>
<th>Approx. Acres on Forest/Total Acres</th>
<th>Condition Class Number*</th>
<th>Factors**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flag Creek</td>
<td>1405000050301</td>
<td>8386/33,544</td>
<td>2</td>
<td>HNF, MHI</td>
</tr>
<tr>
<td>Miller Creek</td>
<td>1405000050308</td>
<td>28,114/37,485</td>
<td>2</td>
<td>MNF, MHI</td>
</tr>
<tr>
<td>Dry Creek</td>
<td>1405000050309</td>
<td>5760/11,518</td>
<td>2</td>
<td>MNF, MHI</td>
</tr>
<tr>
<td>North Elk Creek</td>
<td>1405000050310</td>
<td>24,896/28,452</td>
<td>2</td>
<td>MNF, MHI</td>
</tr>
<tr>
<td>Lower South Fork White River C</td>
<td>1405000050201</td>
<td>15,035/30,070</td>
<td>1</td>
<td>None</td>
</tr>
</tbody>
</table>

*Condition Class Number: 1=Regimen Attainment—the watershed provides a robust basis for sustained production of good and services, 2=Special Emphasis—the watershed does not need capital investments to restore to condition class 1.*

**Factor Definitions:** HNF=high natural factors, MNF=moderate natural factors, MHI=moderate human influence.
The total acres for all watersheds are 141,069 with approximately 82,191 acres, or 58% on Forest land. The Lower South Fork White River C is the only watershed with a Condition Class rating of 1. This watershed is in a pristine valley with little development. Livestock grazing is limited due to steep slopes, and a substantial amount of the private river corridor is controlled by a conservation easement. Under the current Forest Plan, the South Fork White River is proposed for submittal to Congress to be designated as a Wild and Scenic River.

Colorado State Stream Classification identifies (Region 11, Basin White River) the following classifications by segments:

Segment 6: Main-stem of the South Fork of the White River, including all tributaries, wetlands, lakes and reservoirs, from the boundary of the Flat Tops Wilderness Area to the confluence with the North Fork of the White River, with the following designations; Aquatic Life Cold 1, Recreation 1a, Water Supply, and Agriculture.

Segment 3: Mainstem of the North Fork of the White River and mainstem of the White River from the Flat Tops Wilderness Area boundary to a point immediately above the confluence with Miller Creek, with the following designations; Aquatic Life Cold 1, Recreation 1a, Water Supply, and Agriculture.

Segment 7: Mainstem of the White River from a point immediately above the confluence with Miller Creek to a point immediately above the confluence with Piceance Creek, with the following designations; Aquatic Life Cold 1, Recreation 1a, Water Supply, and Agriculture.

Water Quality
The Clean Water Act (CWA) of 1977 (33 U.S.C. 1251, 1254, 1323, 1324, 1329, 1342, 1344) is a series of laws, written to restore and maintain the chemical, physical, and biological integrity of the Nation's waters (Section 101). Congress sought to sustain the

---

1 Designation Definitions:
Aquatic Life Cold 1: These are waters that (1) currently are capable of sustaining a wide variety of cold water biota, including sensitive species, or (2) could sustain such biota but for correctable water quality conditions. Waters shall be considered capable of sustaining such biota where physical habitat, water flows or level, and water quality conditions result in no substantial impairment of the abundance and diversity of species.
Recreation 1a: The surface waters are suitable or intended to become suitable for recreational activities in or on the water when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming, rafting, kayaking and water-skiing.
Water Supply: These surface waters are suitable or intended to become suitable for potable water supplies. After receiving standard treatment these waters will meet Colorado drinking water regulations and any revisions, amendments, or supplement thereto.
Agriculture: These waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.
integrity of water quality and aquatic habitat so that waters of the United States will support diverse, productive, stable aquatic ecosystems with a balanced range of aquatic habitats.

Primary responsibility for water quality control in Colorado is invested in the Water Quality Control Division and the Water Quality Control Commission, both located within the Colorado Department of Public Health and Environment, Water Quality Control Division (CDPHE 2005).

The State program develops “Best Management Practices” (BMPs) to manage water quality from nonpoint sources. “Best Management Practices” are defined as:

*A practice or combination of practices, as determined by a responsible group after examination of alternative practices and appropriate public participation, to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water/stream quality goals. They include, but are not limited to structural and nonstructural controls, and operation and maintenance procedures.*

The courts have held that implementation of state approved BMPs will constitute compliance with federal CWA unless water quality monitoring reveals that the BMPs have permitted violation of these water quality standards. Section 313 of the CWA waives the United States sovereign immunity to state and local requirements related to abatement of water pollution in the same manner and to the same extent as private parties.

The Forest Service must comply with federal, state and local water quality laws and rules coordinate actions that affect water quality with States, and control nonpoint source pollution (Section 313).

To comply with state water quality laws the U.S. Forest Service has developed the Watershed Conservation Practices Handbook ((FSH 2509.25) USDA Forest Service 2006) to provide guidance on how to accomplish water quality goals during the various activities on federal lands. Practices applicable to livestock grazing are incorporated into the action alternatives as design criteria.

The State program identifies waters and their watersheds that are impaired by nonpoint source pollution and identifies important unimpaired waters that are threatened or otherwise at risk. The State also identifies federal lands and activities which are not managed consistently with State nonpoint source program objectives.

The CDPHE has not identified any known water quality problems in the project area related to livestock grazing. Streams in the project area are tributaries to the White River which is not listed on the Colorado 303(d) list of water quality limited waters (http://www.cdphe.state.co.us/op/wqcc/SpecialTopics/303(d)/303dlist.pdf).

Studies indicate that livestock grazing can increase the levels of certain bacteria and nitrogen (Gary et. al.1983; Buckhouse 2000), although nutrient increases may not always
occur or may be minimal. The amount of contamination is related to the concentration of livestock near streams and the ability of riparian vegetation to filter out pollutants. Management Measures and design criteria identified in the WCP’s ((FSH 2509.25, 2006) USDA Forest Service 2006) identify livestock management practices designed to maintain or improve long term stream health, and thereby to improve the ability of the riparian areas to provide high quality filter strips. These include controlling time, timing, duration, frequency, and intensity of use in riparian areas. Also keeping stock tanks, salt supplements, stock drive ways (except to cross) and similar features out of riparian areas and wetlands reduces potential for livestock concentration. These management activities are incorporated into both action alternatives.

Within the project area, only a few localized riparian areas show heavy use by livestock. There are no known water quality problems in the project area related to livestock grazing.

There are no federal, state or local requirements that the Forest Service, or any private parties, conduct water quality sampling to ensure that state BMPs are meeting state water quality standards, especially in the absence of any indication that a problem may exist relative to livestock grazing management. No monitoring has been conducted for nutrients or fecal bacteria.

**Alternative 1 – No Action - No Livestock Grazing**

Direct and Indirect Effects

Direct and Indirect Effects: direct effects are those that may impact the watersheds directly. Direct effects to the watershed from livestock grazing would be diminished over time under Alternative 1. Natural events such as a catastrophic flood event or wildfire could still occur, affecting the watershed. Direct effects would be diminished and thus the Class 2 watersheds over time could reach a robust potential. Indirect effects such as new road construction could affect the watersheds, but at this time there are no new roads or timber sales planned in the project analysis area.

**Alternative 2 - No Change – Current Livestock Grazing Management**

Direct and Indirect Effects

Direct effects are those that may impact the watersheds directly. Current grazing practices are affecting East and Middle Miller Creeks and North Elk Creeks. The main effects are to the riparian corridor and stream banks in pastures that are used in the fall to gather cattle, before exiting the Forest. These pastures are heavily used, with streambank trampling and heavy browsing/grazing of riparian vegetation documented in the past. This can lead to degradation of these watersheds in the lower elevations.

Indirect effects would be such things as the road system, that can funnel sediment into streams, particularly where there is a stream crossing. Camping and fishing pressure increases when roads allow easy access to streams. This is the case with the bottom of the East and Middle forks of Miller Creek, which is also where cattle are gathered in the fall.
Alternative 3. Adaptive Livestock Grazing Management (Proposed Action)

Direct and Indirect Effects

Under this alternative, the current management system would be selected as a starting point. Recurrent monitoring would occur over time with evaluation of the results being assessed by the Forest Service to make appropriate adjustments in management, as needed, to ensure adequate progress toward the Forest Plan and site specific desired conditions. Allotment Management Plans would be developed for the seven allotments. New rangeland management techniques, as they are developed, would be incorporated into this grazing management toolbox below, to the extent that their implementation is consistent with the Environmental Analysis and Decision Notice documents.

The effects of specific management actions that are listed in the Grazing Management Toolbox (Table 2.2) are discussed below:

1. **Change season of use** – Changing season of use could allow for enhanced vegetation growth in riparian areas, reducing potential for sediment movement within watersheds.

2. **Change livestock numbers** – A change, particularly a reduction, in livestock numbers, could reduce impacts from livestock to watersheds.

3. **Change livestock class** - Changing from cattle to sheep could have a beneficial effect to watersheds as sheep are herded and do not tend to use riparian areas to the extent of cattle.

4. **Adjust livestock grazing intensity and/or duration** - This could have a beneficial effect to watersheds as grazing intensity and/or duration could be reduced in riparian areas.

5. **Adjust livestock herding to manage specific areas of concern** - Typically cattle are not herded with the exception of traveling onto and off of the Forest. An increase in herding or riding on the allotments could be beneficial to watersheds if there are areas of concern, such as stream corridors, where livestock tend to congregate.

6. **Rest specified areas** - Resting areas, such as riparian or stream corridors, from livestock grazing has the beneficial effect of allowing riparian vegetation growth and streambank healing (if trampling has occurred), thereby improving watershed conditions.

7. **Restrict livestock grazing in specified areas** - This could be the same affect as identified in number 6 above.

8. **Use or exclusion of a pasture** - Exclusion of pasture(s) could benefit the fisheries by removing livestock, for example in a riparian pasture, to reduce potential for
streambank trampling or heavy browsing/grazing on riparian vegetation. Watershed stability would be enhanced by resting pastures periodically.

9. **Adjust allotment boundaries** - This would allow managers to identify specific areas of resource concerns and make necessary adjustments that would be beneficial to the watersheds.

10. **Construct range improvements** – Range improvements provide managers with tools to distribute livestock, eliminating use in sensitive area or areas with concerns regarding watershed conditions.

11. **Use temporary electric fencing to improve livestock distribution or exclude livestock from sensitive areas** - Temporary fencing to improve distribution or exclude livestock from areas of concern could benefit watersheds in the short term.

12. **Use revegetation techniques** - Seeding areas of concern, like a riparian area, can benefit watersheds, although livestock may have to be excluded until planted vegetation is established in the short-term and livestock use on revegetation sites monitored both short and long term.

13. **Use newly developed rangeland management techniques** - at this point in time, the NEPA analysis may define new techniques and as such watershed affects would not be known.

**Direct and Indirect Effects**
Direct effects would be such things as the road system that can funnel sediment into streams, particularly when there is a stream crossing. Direct and indirect effects would be the same as in Alternative 2, but with the adaptive management approach, short and long term monitoring will take place. Management changes could be implemented more quickly to reduce any potential negative effects to watersheds.

**Discussion**
In my professional opinion, the proposed Blanco Southside Allotments Livestock Grazing Permit Renewal Project is a viable project with regards to the Aquatic Resources of the area. Potential impacts associated with this project should not adversely affect these resources, if the Annual Operating Plans that are developed displays mitigation and monitoring standards, such as applicable Watershed Conservation Practices, that should be adhered to during the life of the revision.

**Forest Plan Consistency** – All alternatives meet Forest Plan direction for Watersheds under this analysis.
3.9 Soils

Affected Environment
The Analysis Area contains many different soil types within a total of 61,833 acres (U.S. Forest Service Geographical Information Systems database). The soils in the project area are predominantly derived from a red sandstone and shale. Major soil types include: Angostura (2,249 acres), Clayburn (1,804 acres), Cochetopa (1,230 acres), Cowdrey (1,674 acres), Hobacker (2,576 acres), Lamphier (14,770 acres), Miracle & Miracle cool (1,601 acres), Scout (9,843 acres), Tampico cool (4,463 acres), Winnemucca (2,126 acres) and Rock outcrop (1,340 acres). There are numerous other types associated with these allotments, but in smaller acreages. Some soil compaction currently exists on localized areas preferred by cattle and/or big game (predominantly elk), around stock ponds, springs or loafing areas where shade is available. The amount of soil compaction noted and total acreage was not identified as a management issue.

The descriptors for these soil types indicate their locations to be on hillslopes, ridges, uplands, and upland meadows. Erosion hazard potential for all these types is listed as slight to moderate, with no high erosion hazard potential soil types. These soils are relatively stable and conducive to vegetation production with calcareous sandstone parent material. Predominant vegetation is spruce/fir timber, aspen, mountain shrub, and grasses. Theses soil types are conducive to ungulate grazing (livestock and wildlife).

Environmental Consequences-Direct, Indirect, and Cumulative Effects

Alternative 1 – No Action – No Permitted Livestock Grazing
Soil conditions would improve slightly as ground cover is restored in the localized compacted and bare areas near water developments, corrals, and access areas. These relatively few sites would see increased forb and grass cover, changing to predominately grass cover over time. These sites could be occupied by noxious weeds although this is relatively unlikely. As native plant cover increases, root structure builds, soil heating and moisture relationships improve, compaction, if present, begins to lessen, infiltration and percolation improve, and growing conditions for native plants improves. Time frames for recovery would depend entirely on the soil type (depth, structure, texture, parent material, water holding capacity, etc.), elevation, aspect, and impacts from other factors such as wildlife, recreation, roads, etc.

Alternative 2 – No Change – Current Livestock Grazing Management
This alternative would result in no measurable changes in overall soil conditions in the allotments. Some soils may be compacted and bare in the immediate vicinity of water developments, springs, stock trails, corrals, and access areas depending on the soil type (e.g. structure, texture, etc.) and the extent and scope of the existing impacts. These minor instances of soil impacts would generally be expected to continue unchanged overtime under the current situation alternative as management would not change to be responsive.
Current grazing management is affecting localized areas in East, Middle and North Elk Creeks, primarily during the fall when cattle are gathered in the narrow bottom pastures that include riparian corridors. These pastures show heavy use when used in the fall during certain years, with trampling of banks and heavy grazing/browsing on grasses and willows. Under current management, these affects may be alleviated through increased administration and allowable use monitoring (both have been increased in the past three years).

**Alternative 3 – Proposed Action – Adaptive Management with Livestock Grazing**

Implementation of this alternative would have very similar impacts to those of alternative 2. Under this alternative more flexibility exists to manage livestock to resolve any soil compaction issues that may occur. Tools used from Table 2.2, the Grazing Management Toolbox, could help reduce localized impacts. Changes in rotation, season of use, livestock numbers and potential range improvements could all help in reducing localized impacts.

**Forest Plan Consistency** – All alternatives under this analysis meet Forest Plan direction for Soils Management.

### 3.10 Heritage Resources

**Existing Condition**

**Introduction**

This cultural resource assessment is mandated by the National Historic Preservation Act of 1966 (NHPA). Section 106 of the NHPA requires that Federal agencies take into account the effects of a Federal undertaking on any cultural resource that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Decisions authorizing the permitting of such activities and the associated activities used to maintain grazing are considered undertakings. Cultural resources may refer to sites, areas, buildings, structures, districts, and objects which possess scientific, historic, and/or social values of a cultural group or groups as specified by 36 CFR 296.3.

This assessment is based on archaeological sources that indicate the historic and prehistoric utilization of lands, such as hunting, gathering, grazing, timber harvesting, and natural resource transport, within and adjacent to the Blanco Southside Livestock Grazing Allotments. NRHP eligibility is evaluated in terms of the integrity of the resource; its association with significant persons, events, or patterns in history or prehistory; its engineering, artistic, or architectural values; or its information potentially relative to important research questions in history or prehistory. The significance of NRHP eligibility of cultural resources is determined by the Forest Archaeologist in consultation with the State Historic Preservation Officer (SHPO).

The Analysis Area lies within portions of Rio Blanco and Garfield County, Colorado. The grazing allotments included in this analysis are listed in Chapter 1, Table 1.1.
Class I File Search Results
The files of the Colorado Office of Archaeology and Historic Preservation (OAHP) Compass database and the WRNF were consulted prior to the initiation of fieldwork. The Colorado OAHP defines an isolated find as five or fewer surface artifacts with no associated cultural features and minimal potential deposition. The Colorado OAHP defines a site as five or more artifacts within 50 meters of one another, or at least one cultural or structural feature. Portions of these range allotments have undergone a cultural resource inventory for prior projects. The analysis area totals 61,834 acres; of this 13,000 acres (or 4.75%) have been previously inventoried.

Cultural Survey Objectives
Since the majority of these earlier inventories were conducted for timber sales and projects other than range management, additional inventory was conducted by Forest Service archeologists in the summer of 2008. A sample pedestrian survey was done in areas where concentrated grazing activity overlapped with archeologically sensitive areas. Approximately 510 acres were surveyed. The inventory was done per the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, as well as other laws and mandates, including the Native American Graves Protection and Repatriation Act, the Archaeological Resource Protection Act of 1979, the Antiquities Act of 1906, and Executive Orders. The objective of the inventory was to identify and evaluate cultural resources in areas where livestock congregate. A sample pedestrian survey was done in areas where concentrated grazing activity overlapped with archeologically sensitive areas. Another objective was to assess the effects that livestock grazing has on cultural resources, to identify any necessary mitigation measures, and to make management recommendations of these properties in consultation with the Ute tribes and SHPO. Previously recorded sites were examined for existing impacts. Newly recorded sites were evaluated for their eligibility to the National Register of Historic Places (NRHP). The inventory was conducted in accordance to the legal requirements of Section 106 of the National Historic Preservation Act of 1979, as amended. Survey methods are described in detail in the complete Heritage Resources Specialist Report, located in the Project File.

Cultural Survey Results
The inventory resulted in two newly recorded historic properties and five isolated finds. These sites are recommended as not eligible to the National Register of Historic Places (NRHP). Previously recorded sites that were determined eligible were also revisited and examined for effects by livestock grazing. A complete discussion of survey results is included in the Heritage Resources Specialist Report, located in the Project File.

Range projects may directly affect exposed artifacts, cultural contexts, and cultural landscapes. Disbursed livestock grazing has the potential to disturb historic or cultural resources through several different means including displacement, trampling, breakage, and obliteration. Concentrations of livestock, such as at springs and other watering holes, wallows, sheep and cattle drives, shade areas, trails, salt blocks, and riparian areas, have the potential to damage or remove important resources. These resources may include individual artifacts, historic buildings, historic debris sites, prehistoric lithic scatters,
cultural landscapes, and significant features including cairns, sacred sites, and traditional cultural properties, as well as a myriad of other types of aboriginal sites. The disturbance may not be immediate but delayed as in the case of erosion caused from continued use on sheep and cattle trails and areas of concentration. These events may expose fragile resources to destructive effects of natural elements. Other types of activities such as fence construction, development and use of springs, building of trails and roads, also have potential to affect cultural resources.

Environmental Consequences-Direct, Indirect, and Cumulative Effects

Environmental Consequences
The following are the direct and indirect effects of implementing the alternatives as described in Chapter 2 on heritage resources within the Analysis Area. None of the Alternatives are expected to result in significant direct, indirect, or cumulative effects to the heritage resources within the Analysis Area.

Results of cultural resource inventories conducted on these grazing allotments revealed few significant impacts to historic properties. Most livestock impacts were limited to animal trails. Most sites were well covered in grasses and forbs; the exceptions were those sites situated near or at existing stock ponds. Site 5GF1698 is situated very near a pond, and although measures have already been taken to reduce cattle concentrations at this location, additional measures are recommended to help vegetation recover. Site 5GF2788 is situated on a stock pond and it is recommended to use logs and debris to block animal access to allow vegetation to recover along its western bank. Site 5GF2787 is lacking vegetation in areas most likely due to soil type. It is recommended to monitor this area for vegetation recovery. Other impacts noted were existing range and property boundary fences. All future range developments, such as fence and stock pond construction, will require a cultural resource inventory on a project-by-project basis.

Alternative 1 – No Action – No Permitted Livestock Grazing
Alternative 1 would have the least impact on cultural resources. There would be less potential for disturbance to cultural resources due to livestock grazing and construction of related range improvements.

Alternative 2 – No Change – Current Livestock Grazing Management
The overlapping of historic properties and livestock grazing creates a potential conflict in cultural resource management. Livestock, especially cattle, tend to concentrate at watering areas, salting grounds and driveways. As stock may consistently use the same pathways, erosion on trails may unearth subsurface materials, displace surface deposits and cause breakage to prehistoric ceramics and tools. Construction of range improvements such as fences, corrals and springs also have potential to disturb cultural resources.

Alternative 3 – Proposed Action – Adaptive Management with Livestock Grazing
It is proposed to authorize livestock grazing on the Blanco Southside Livestock Grazing Allotments using an adaptive management strategy to reduce the impacts of grazing on
the environment (including cultural resources). Future range developments will require Section 106 review on a project-specific basis. Following specific design criteria, it is recommended that reissuance of the grazing permits will result in “no adverse affects to historic properties”.”

Alternative 3 presents the potential for fewer adverse effects of livestock grazing on cultural resources than Alternative 2. Improving forage conditions through the use of rotational livestock grazing and/or shortening the livestock grazing season and protecting riparian habitats will potentially aid the protection of cultural resources. Encouraging vegetation cover will stabilize the soil and reduce erosion of cultural resources. Thicker vegetation will also disguise and protect sites from illegal artifact collectors. Encouraging the planned frequent movement of livestock will reduce the likelihood of stock concentrating in particular areas. This will tend to reduce the long term trampling impacts to cultural resources.

While many areas within these allotments are meeting or moving toward desired conditions as identified in the Forest Plan, historic and current grazing by cattle and sheep as well as elk and deer has resulted in very specific resource conditions that are in need of improvement. The proposed action is designed to improve watershed conditions, provide for wildlife needs, as well as improve upland vegetative composition, structure and production. Using an adaptive management strategy will reduce the impacts of grazing on the environment (including cultural resources). Future range developments will require Section 106 review on a project-specific basis. With the following design criteria, it is recommended that reissuance of the grazing permits will result in “no adverse affect to historic properties”.

**Design Criteria**

In consultation with the State Historic Preservation Officer (SHPO), the Design Criteria for eligible sites listed in Table 3.16, should be applied under Alternatives 2 and 3. If these are implemented the SHPO concurred that a finding of conditional no adverse effects is appropriate for this project (letter dated 10/22/2008).
Table 3.16. Recommended design criteria for eligible sites.

<table>
<thead>
<tr>
<th>Resource Category</th>
<th>Allotment</th>
<th>Design Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Resources</td>
<td>North Elk Cow and Horse</td>
<td>5GF1698 - Improve vegetation around stock pond: reseed, move cattle frequently, detour sheep drive, monitor periodically</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Middle Miller Cow and Horse</td>
<td>5GF2787 - Reduced vegetation cover may be due to noxious weed treatments; monitor periodically</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Salt Box Sheep and Goat</td>
<td>5GF2788 - Situated at a pond; bank is barren of vegetation. Limit animal access with log and debris barriers; monitor periodically</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>All allotments</td>
<td>A cultural resource inventory shall be conducted for proposed livestock grazing improvements or removal of improvements on a project-by-project basis. Consultation with the State Historic Preservation Office (SHPO) and tribes will be conducted in accordance to the legal requirements of Section 106 of the National Historic Preservation Act of 1979, as amended.</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>All allotments</td>
<td>New archaeological sites found or located as a result of project implementation shall require that the activity cease within the area until the Forest Archaeologist evaluates the site and proposes mitigation.</td>
</tr>
</tbody>
</table>
Cultural Resources | All allotments | Where adverse impacts from livestock grazing or related activities are identified as occurring on eligible historic properties, an archaeologist shall develop appropriate protection measures in consultation with SHPO, the Tribes and the Range Specialists. Protection measures may include avoidance, exclosure fences, site stabilization, site testing, or a combination of these. The selected protection measures shall be monitored for effectiveness.

### 3.11 Recreation

**Introduction**

Livestock grazing and recreation have co-existed on these allotments since the creation of the National Forest System. Livestock grazing has decreased while recreational use has increased and numerous recreational activities have been added. What was once an occasional hunter or fisherman who might camp on the National Forest has now become more hunters, more fishermen and with them campers in tents, in trailers and motor homes. They participate not only in camping, but in gathering forest products (i.e. firewood gathering or berry picking) motorized OHV use and mechanized uses on roads and trails, driving for pleasure in full size vehicles and viewing livestock, wildlife and scenery to name just a few.

In some areas within these allotments conflicts are occurring between recreation users and livestock operations. The drainages of Miller Creek have become heavily used as a dispersed camping area. It is popular throughout the spring, summer and fall. People fish, hunt, ride ATV/UTV/motorcycles and bicycles. They enjoy every aspect of camping and with these activities come some conflicts with the grazing activities.

People as well as livestock impact the riparian areas, especially along the creeks in the allotment. Campers in Miller Creek have contributed to the degradation of stream banks and riparian areas. There are no limitations on camping in these allotments and some sites are extremely close to the water.

Hunting seasons that occur within the grazing period have the most impacts between livestock and humans in all allotments. This includes the early bow seasons, muzzleloader season and the first rifle season during most years.
Conflicts between ATV/UTV/motorcycle use and livestock on roads and motorized trails is increasing in those timeframes where it is allowed both during the summer and hunting seasons.

Camping along roads and trails and throughout the allotments may also cause conflicts between livestock and recreationists. This is especially true in Middle and East Miller Creeks throughout the entire grazing season.

Gates may be left open by recreational users which can end up disrupting proper distribution of livestock.

Additionally, illegal ATV/UTV/motorcycle use off of identified roads and trails is impacting the resource.

Environmental Effects

**Alternative 1: No Action – No Permitted Livestock Grazing**

**Direct and Indirect Effects**

Disruptions to recreational activities caused by livestock grazing will continue for one season and then when grazing is removed will no longer be a factor. The recreational value of the pastoral scenes, traveling through trailing livestock and the beneficial effects of livestock grazing will be lost (allowing the grass to become rank and unpalatable to wildlife may affect hunting and viewing of wildlife as animals tend to move to areas that are grazed on a regular basis). Impacts to the environment from recreational uses will continue.

**Alternative 2: No Change – Current Livestock Grazing Management**

**Direct and Indirect Effects**

The current conflicts between recreationists and livestock interests will continue. Impacts to the resource from recreation uses as described earlier will also continue.

**Alternative 3: Adaptive Livestock Grazing Management**

**Direct and Indirect Effects**

The current conflicts between recreationists and livestock interests will continue. Impacts to the resource from recreation uses will also continue. With adaptive management some actions may be taken to reduce or avoid conflicts between recreation activities and livestock operations.

Actions included in the Grazing Management Toolbox (Table 2.2) under this alternative will have no negative effects on recreation. The only item that could have a detrimental effect on recreation activities would be extending the livestock grazing season into the rifle hunting seasons in later October. This could cause some interference between livestock and hunters and some displacement of game animals when gathering livestock. There would also be some inconvenience when hunters have to go through livestock trailing to winter pasture on roads accessing the National Forest.
This being said, some allotment grazing seasons currently extend into the rifle hunting seasons with little effect on the hunting. The archery and muzzleloader seasons occur during the grazing season in late August and September with minimal impacts.

**Forest Plan Consistency**
All alternatives under this analysis meet Forest Plan direction for the Recreation Resource.

**3.12 Social and Economic Factors**
The social and economic implications of forest resource management are of interest to local residents surrounding the forest, forest users (including grazing permittees) and other residents throughout the area. The project area along with the base property owned by the permittees is in Rio Blanco County.

Industries in Rio Blanco County include agriculture, recreation, coal, nahcolite, natural gas, oil and oil shale. The county is currently experiencing a great influx of oil and gas related employment due to the sharp increase in this activity in the area, especially in the Piceance Basin to the west of Meeker. The agricultural sector makes up approximately 9% of employment in the county (Rio Blanco County Government website [http://www.co.rio-blanco.co.us/](http://www.co.rio-blanco.co.us/); Natural Resource Conservation Service ranch records, Meeker, CO).

The importance of the agricultural sector is highlighted more as a social benefit than as an economic benefit. Although agriculture provides a smaller portion of the economy than it once did, it adds significantly to the diversity within the county. The ranching lifestyle is an important part of the heritage and culture of the area. Ranching operations often operate close to the margin and their profitability can be significantly affected by market conditions. Federal land grazing plays an important and vital role in the economic viability of those ranchers who hold grazing permits and significant changes to the permitted animal months affect those operations.

**Environmental Justice**
Concern for environmental justice stems from Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” signed February 11, 1994 by President Clinton. In this order (Section 1-101),

> “Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.”

Table 3.17 summarizes key demographic indicators of minority populations and low-income populations. While these indicators or the associated thresholds are not formally...
identified in federal codes and regulations, they serve as reasonable predictors of minority and low-income population status.

Table 3.17. Population statistics for race, ethnicity, and poverty status for Colorado and Rio Blanco County. (US Census Bureau State and County Quick Facts 2006).

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>2000 Total population</th>
<th>White</th>
<th>Black or African American</th>
<th>American Indian and Alaska Native</th>
<th>Asian</th>
<th>Native Hawaiian and Other Pacific Islander</th>
<th>Hispanic or Latino (of any race)</th>
<th>Percent of 2006 total population</th>
<th>Income in 2004 below poverty level</th>
<th>Percent of persons below poverty status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>4,301,261</td>
<td>90.1%</td>
<td>4.1</td>
<td>1.1</td>
<td>2.6</td>
<td>0.1</td>
<td>17.1</td>
<td>10.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rio Blanco Co.</td>
<td>5,986</td>
<td>97.3%</td>
<td>0.2</td>
<td>0.9</td>
<td>0.4</td>
<td>0.0</td>
<td>5.8</td>
<td>9.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minority Population
About 7.3% of Rio Blanco County residents are non-white minority (Black, Hispanic, Asian, Alaska Native, Native American, or some other race) and about 5.8% of the population is Hispanic or Latino (the total of 104.6% can be explained by those persons reporting two or more races). This is less than the Council on Environmental Quality (CEQ) threshold value of 50%, and the State of Colorado average population. It is unlikely that this project would have disproportionately negative impacts on any minority population.

Low-Income Population
The percent of individuals and families at or below the poverty level in Rio Blanco County are both less than the CEQ threshold value of 20%, and less than that of the State of Colorado average. It is unlikely that this project would have disproportionately negative impacts on any low-income populations.

Based upon the review of demographic characteristics of the population of Rio Blanco County and how they compare with suggested threshold levels for concern, there is no indication that the project area would have a disproportionate effect on minority populations or low-income populations.

Environmental Effects

Alternative 1: No Action – No Permitted Livestock Grazing
Direct and Indirect Effects
The elimination of grazing within the seven southside allotments would reduce available summer grazing for all of the permittees. Summer grazing on the forest would have to be
replaced by private land grazing leases or changes in the operation. Additionally, some part-time and/or seasonal jobs could be eliminated.

Permittees may be able to find alternate grazing leases on private lands to replace the summer grazing now provided on National Forest. Although direct costs for private leases are more than grazing fees for National Forest, there are additional costs associated with forest permits, such as improvement maintenance, riding and salting, and transportation costs that bring overall costs on forest permits closer in line with private leases. As an alternative to private grazing leases, permittees could choose to change their operations somewhat, moving from hay production to grazing on at least a part of their private lands. This type of change would at least partially replace summer use on the National Forest.

If summer livestock grazing could not be replaced, one or more of the ranching operations could go out of business, with possible resulting sale and development of a portion of the private lands involved for home sites. Because ranching employs a small percentage of workers in Rio Blanco County, the economic impact to the county would likely be minimal. Conversely, social effects could be significant, particularly if grazing could not be replaced and ranches were sold to development. Open space and wildlife habitat could change. Economic diversity in the county could also decline to some degree.

**Alternative 2: No Change – Current Livestock Grazing Management**

**Direct and Indirect Effects**

No change to permittee operations or the local economy will result under Alternative 2. Continuation of the current grazing management system would not create any further risk or changes in operation to permittees using summer range on the seven southside allotments. There would be no change in the social demographics of the area. Economic and social impacts to Rio Blanco County would not change. Those in the area who would like to see an end to grazing in the area will continue to have concerns associated with the use of forage on National Forest lands.

**Alternative 3: Adaptive Livestock Grazing Management**

**Direct and Indirect Effects**

Since this alternative maintains the forage opportunities of the permittee’s operations, it has a similar effect on the social aspects of the community as Alternative 2. It is likely that Alternative 3 would be viewed positively by individuals and groups who view the desired conditions as improved resource and ecological health and by those that view multiple use management as a positive way for managing resources.

**Forest Plan Consistency**

All alternatives meet Forest Plan direction for Socio-Economic considerations under this analysis.
3.13 Cumulative Effects Analysis

The following table lists the different management activities that are occurring or have occurred in the past in each allotment. These activities would occur regardless of which alternative in this EA was selected.

Table 3.18. Southside grazing allotments cumulative effects table.

<table>
<thead>
<tr>
<th>Allotment Name</th>
<th>Activities Within Allotment Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seven Lakes C&amp;H</td>
<td>Recreation</td>
</tr>
<tr>
<td></td>
<td>a. The Buford/New Castle Road (FSR 245) runs through the middle of the Seven Lakes Allotment for approximately 6.6 miles. This is a main road that traverses both the Blanco and Rifle Districts and connects Buford and the town of New Castle. This road gets moderate to high use throughout the summer and fall hunting seasons, and considerable snowmobile use in the winter.</td>
</tr>
<tr>
<td></td>
<td>b. Summer motorized recreation and dispersed camping - There is a total of 11.6 miles of 4-wheel drive roads that come off of the Buford/New Castle Road. There is also approximately 5 miles of ATV trails in this allotment. This allotment receives its heaviest use of motorized recreation and dispersed camping during the fall big game hunting seasons.</td>
</tr>
<tr>
<td></td>
<td>c. Outfitter/Guide activity – There are two outfitter/guide camps in this allotment.</td>
</tr>
<tr>
<td></td>
<td>Timber Management</td>
</tr>
<tr>
<td></td>
<td>a. Big Ridge Aspen – 70 acres aspen clearcuts</td>
</tr>
<tr>
<td></td>
<td>b. Langlas Draw Salvage – 66 acres post-fire salvage in spruce-fir</td>
</tr>
<tr>
<td></td>
<td>Prescribed Burning/Wildfire</td>
</tr>
<tr>
<td></td>
<td>a. Langlas Draw Wildfire – 720 acres, occurred in 2003</td>
</tr>
<tr>
<td></td>
<td>b. North Elk Prescribed Burn – 298 acres burned of oakbrush and mountain shrub habitat to improve big game winter range, accomplished in 2004</td>
</tr>
<tr>
<td></td>
<td>Noxious Weed Treatments</td>
</tr>
<tr>
<td></td>
<td>Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>North Elk C&amp;H</th>
<th>Recreation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. The Buford/New Castle Road (FSR 245) borders the south east edge of this Allotment. The primary public access into this allotment is along the southern portion of the allotment in the Triangle Park area. Although there is a road in the bottom of North Elk Creek, there is no public access on this road. The entire center of the allotment does not have any roads or trails. There is a foot and horse trail that accesses North Elk Creek from the Buford/New Castle Road.</td>
</tr>
<tr>
<td></td>
<td>b. Dispersed camping occurs along the Buford/New Castle Road and FSR 248; this activity is heaviest during the fall big game hunting seasons.</td>
</tr>
<tr>
<td></td>
<td>c. Outfitter/Guide activity – There are two designated outfitter/guide camps in this allotment.</td>
</tr>
<tr>
<td></td>
<td>Timber Management</td>
</tr>
<tr>
<td></td>
<td>a. Middle Clark 1 and 2 – 166 acres spruce-fir selective cut, harvested in 1994</td>
</tr>
<tr>
<td></td>
<td>b. Middle Clark Aspen – 10 acres aspen clearcut, harvested in 1994</td>
</tr>
<tr>
<td></td>
<td>c. Elk Creek – 32 acres spruce-fir selective cut, harvested in 1999</td>
</tr>
<tr>
<td></td>
<td>Prescribed Burning/Wildfire</td>
</tr>
<tr>
<td></td>
<td>North Elk Prescribed Burn - 881 acres burned in the oakbrush and mountain shrub habitat to improve big game winter range, accomplished in 2004</td>
</tr>
<tr>
<td></td>
<td>Noxious Weed Treatments</td>
</tr>
<tr>
<td></td>
<td>Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control.</td>
</tr>
<tr>
<td>Allotment Name</td>
<td>Activities Within Allotment Area</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------</td>
</tr>
</tbody>
</table>
| East Miller C&H | Recreation | a. This allotment is heavily roaded. The Bar HL Road (FSR 211) travels along the southern border of the allotment, and is a maintained 4-wheel drive road. There are several other more primitive 4-wheel drive roads that are most commonly used by ATV’s and jeeps. There is a total of approximately 26 miles of these primitive 4-wheel drive roads.  
  b. Snowmobile use – There are two designated snowmobile routes that come up the bottom of the allotment (Fourmile and Widow Springs). The entire southern half of the allotment is a designated over the snow play area, and receives heavy snowmobile use in the open parks.  
  c. Outfitter/Guide activity – There are no outfitter/guide camps in this allotment.  
|  | Prescribed Burning/Wildfire | Miller Creek Prescribed Burn - 600 acres burned in 1995 and 340 acres burned in 1987. The oakbrush and mountain shrub habitat was treated to improve big game winter range conditions.  
|  | Noxious Weed Treatments | Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control.  
| Middle Miller C&H | Recreation | a. There is one motorized road that accesses this allotment from the bottom of Middle Miller Creek. This is the Wells Ridge Road, which is primarily used by ATV’s or extreme 4-wheel drives. The Bar HL Road (FSR 211) travels along the entire southern border of the allotment.  
  b. The only designated snowmobile route that accesses the allotment from the north is the Wells Ridge Road. As with the East Miller Allotment, the majority of the southern half of the allotment is a designated snowmobile play area, and receives heavy use.  
  c. Outfitter/Guide activity- There are no outfitter/guide camps in this allotment.  
|  | Prescribed Burning/Wildfire | Miller Creek Prescribed Burn - 640 acres burned in 1999 and 135 acres burned in 1989. The oakbrush and mountain shrub habitat was treated to improve big game winter range conditions.  
|  | Noxious Weed Treatments | Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control.  
| Salt Box C&H | Recreation | a. There are two main motorized trails that access this allotment from the bottom of Miller Creek. The Middle Mountain trail, which is suitable for ATV’s and the Middle Miller trail which is only suitable for motorcycles, and is not often used.  
  b. Outfitter/Guide activity – There are no outfitter/guide camps in this allotment.  
  c. Bar HL North – 41 acres spruce-fir selective cut, harvested in 1999
<table>
<thead>
<tr>
<th>Allotment Name</th>
<th>Activities Within Allotment Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Prescribed Burning/Wildfire</strong></td>
</tr>
<tr>
<td></td>
<td>Miller Creek Prescribed Burn – 100 acres burned in 1999. The oakbrush and mountain shrub habitat was treated to improve big game winter range conditions.</td>
</tr>
<tr>
<td></td>
<td><strong>Noxious Weed Treatments</strong></td>
</tr>
<tr>
<td></td>
<td>Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>West Miller C&amp;H</th>
<th>Recreation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Motorized Recreation – There are relatively few roads in the West Miller Allotment. There is a 4-wheel drive road (FSR 221), West Miller, which turns into an ATV trail. The only access is from the Bar HL road to the south. The ATV trail dead-ends on private land to the north.</td>
</tr>
<tr>
<td></td>
<td>b. Non-motorized recreation occurs on the allotment to a lesser degree then motorized recreation.</td>
</tr>
<tr>
<td></td>
<td>c. Winter Recreation – Because of the terrain and vegetation cover, there is very little snowmobile use in this allotment. The exception is a small area at the southern tip of the allotment.</td>
</tr>
<tr>
<td></td>
<td>d. Outfitter/Guide activity - There are no outfitter/guide camps in this allotment.</td>
</tr>
</tbody>
</table>

|               | **Prescribed Burning/Wildfire**  |
|               | West Miller Creek Prescribed Burn – 100 acres burned in 1999. The oakbrush and mountain shrub habitat was treated to improve big game winter range conditions. |
|               | **Noxious Weed Treatments**      |
|               | Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control. |

<table>
<thead>
<tr>
<th>Hay Flat C&amp;H</th>
<th>Recreation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Motorized Recreation – This allotment can be accessed from a 4-wheel drive road in the Flag Creek Drainage. There is a loop around the Hay Flat Area, and access up onto Bar HL. This area receives low to moderate use during the summer and high use during the big game hunting seasons.</td>
</tr>
<tr>
<td></td>
<td>b. Non-motorized recreation – There is relatively little non-motorized recreation on this allotment.</td>
</tr>
<tr>
<td></td>
<td>c. There is a designated snowmobile route up Flag Creek, and a 1000 acre snowmobile play area on Hay Flat.</td>
</tr>
<tr>
<td></td>
<td>d. Outfitter/Guide activity- There are no outfitter/guide camps in this allotment.</td>
</tr>
</tbody>
</table>

|               | **Prescribed Burning/Wildfire**  |
|               | Hay Flat Prescribed Burn – 351 acres burned in 1998. The oakbrush and mountain shrub habitat was treated to improve big game winter range conditions. |
|               | **Noxious Weed Treatments**      |
|               | Noxious weeds are treated aggressively across all grazing allotments using both chemical and biological control. |

Cumulative effects described below are grouped into general categories due to the similar and inter-related effects to those resources.

**Rangeland Vegetation, Forested Vegetation, Soils, And Botanical Resources:**
Certain vegetation communities have changed over the past 50-120 years with: 1) Timber harvest, 2) Historically high levels of livestock grazing, 3) Suppression of naturally occurring wildfires, 4) Fluctuations and substantial increases in wildlife (especially elk) over time, and 5) Construction and use of Forest Roads and trails.
The communities mostly affected by these changes include those with a strong natural fire disturbance relationship and/or riparian areas and wetlands which provide available water.

Overall, the adaptive management alternative will provide the best mix of resource uses and values while minimizing cumulative effects to vegetative and soil resources. It will do so by: 1) Improving livestock management, 2) Improving control over timing, intensity, and frequency of livestock utilization, and 3) Improving plant health and vigor, providing acceptable impact to those species of concern that need periodic disturbance while minimizing impacts to other species.

Alternative 1 cannot provide the disturbance effects necessary in many plant communities. Conversely, those areas where livestock tend to congregate or utilize heavily would likely see improved conditions over time with the No Action alternative. Under Alternative 2, continuing current management would perpetuate the conditions described in the existing condition Appendix G - Tables 1 through 7. Continuing current management would provide fewer options for resolving localized resource concerns. Improvement in long-term trends would be slower or not realized without changes in livestock management as provided for in Alternative 3.

As trend data is collected through long-term monitoring (Table 2.3), a better understanding of long-term trends in vegetation communities will evolve. Based on the much-decreased levels of livestock grazing, more diligent administration of grazing permits and more involvement by the permittee in annual short-term monitoring (Table 2.3), vegetation communities are expected to continue to move toward desired conditions as described in Table 1.3. Reaching desired conditions in the upland vegetation communities is very likely within 10-20 years with the acceptable rate of change discussed in Chapter 1, Sections 1.4 through 1.6.

**Fire and Fuels**

Prescribed burning has been implemented successfully within all of the allotments over the past 21 years, in an attempt by land managers to incorporate fire back into the ecosystem. The goal of prescribed burning has been to emulate this naturally occurring process in the mountain shrub community.

Prescribed fire in the mountain shrub community type has successfully set back succession in some areas and enhanced forage for big game (namely mule deer and elk) while maintaining older growth stands that provide nesting habitat for migratory birds or mast production for wildlife that consumes acorns or berries (black bear, wild turkey, etc...).

There are only minimal differences between alternatives relative to fire and fuels. All of the alternatives, as described in Chapter 2, will provide for adequate fine fuels to carry either wild or prescribed fires. Alternative 3 provides the most flexibility in managing fine fuels to ensure that prescribed fires can be carried out within prescriptions and that adequate recovery can occur.
Riparian and Aquatic Resources
Riparian and aquatic resources have undoubtedly been altered by the activities described in Table 3.18 in addition to historic heavy livestock use in some areas and substantial increases in big game populations (especially elk). Historically, permitted livestock numbers were high and permittees were likely not required to move livestock (mainly cattle) from loafing in riparian areas. Stream bank trampling and heavy use of willows, sedges and other riparian vegetation would have resulted in degraded riparian areas and compromised stream health.

The habitat and range of native aquatic species have been dramatically altered by the cumulative effects of activities within the project analysis area. Native fish were, in some cases, denied access to the Colorado River basin by naturally developed or man-made structures. Fishing pressure and changes in fishing regulations over the years also led to changes in range and numbers of native aquatic species.

Lower permitted livestock numbers (see Section 3.4) and cooperation by current permittees, as well as more diligent administration by range staff, has resulted in improving trends in riparian condition over time (Project File – historic photos and range reconnaissance reports). Quantitative monitoring techniques (including riparian vegetation cross-section and greenline transects) as well as permanent photo points established in 2006 through 2008 on benchmark areas (Tables 1.4 through 1.10) will assist in better assessing trends in riparian conditions over time. The small amount of early successional vegetation recorded on riparian benchmark monitoring areas suggests that current management has led to improving conditions of the riparian resource (assuming degraded riparian areas with predominantly early successional vegetation communities occurred in the past as a result of heavy livestock use).

Under Alternative 1, complete livestock exclusion would undoubtedly result in the most rapid recovery of riparian and aquatic resources over time. Alternative 2 (current management) would result in the least improvement of riparian and aquatic resources. The need for change identified (Tables 1.11 through 1.17), especially in the North Elk drainage which contains Colorado River cutthroat trout, would not be addressed as quickly or efficiently under Alternative 2 as it would under Alternative 3, the adaptive management alternative. Alternative 3 would be capable of providing acceptable rates of recovery while still allowing for use of the resources by permitted livestock. Under Alternative 3, management activities from Table 2.2 can be implemented in those areas where a need for change was identified. This could also help to alleviate any potential riparian and/or aquatic resource concerns related to grazing more quickly in the future, addressing impacts in a timely manner.

Impacts due to grazing in the higher elevations of the watersheds would not likely occur under any of the alternatives, due to the rotation systems in place for alternatives 2 and 3 that adequately disperse livestock use.
Invasive Species

Under Alternative 1, no action – no grazing, there would be one less vector for seed transport (e.g. livestock). In addition, recovery of areas of concentrated use (e.g. potential sites for invasion) could be more rapid than under either of the other two alternatives. Conversely, an increase in noxious weed infestations throughout the project area could occur under this alternative. The vigor of properly grazed plants tends to be higher than that of ungrazed plants, providing more competition to non-native invaders than ungrazed vegetation would. Livestock grazing permittees also participate in detection and treatment programs of noxious weeds on their individual allotments. Elimination of livestock permits would eliminate this management tool. The other vectors of noxious weed spread such as recreational use and wildlife would continue.

Alternatives 2 (current management) and 3 (adaptive management) could both contribute to a reduction in noxious weed infestations. Properly grazed rangelands seem to be more resistant to new infestations. Permittees actively involved in weed management on their allotments would be identifying new infestations before they become large and unmanageable. This, in conjunction with the Forest level weed management efforts, would enable weed treatments to be completed in a more timely and efficient manner. Alternative 3 would result in faster recovery of currently impacted sites, more potential to adapt management to control invasive species, and fewer sites available for invasion, than Alternative 2. In addition, adoption of prevention tools under this alternative and the ability to manipulate the grazing scheme to enhance herbicide treatments make Alternative 3 preferable to the current situation.

Roads and Trails: Road and trail impacts will continue under any alternative. In general, the additive effect of roads and trails with livestock grazing may be slightly decreased under the no-grazing alternative but the net effect would not be significantly different from the adaptive management alternative. The current situation alternative would be the least able to mitigate some cumulative effects.

Recruitment

Some recreationists would certainly prefer to have no livestock in areas where they camp, hike or drive. Conflicts between recreationists and livestock grazing would cease under Alternative 1, no action, no grazing. Elimination of livestock would mean that fences, cattleguards, and so forth could be removed, eliminating an inconvenience for recreationists. However, other people like the “western” atmosphere associated with livestock and would miss their presence.

Under Alternative 2 and 3, increasing conflicts between the livestock interests and those seeking a recreational experience could occur due to increasing human populations in the local community and the western slope of Colorado. With expected human population growth, impacts to the resource will increase from camping, motorized and mechanized uses and general recreation activities. With the completion and implementation of the Forest Travel Management Plan, uses including ATV, motorcycle and bicycle, will be limited to certain roads and trails. This may alleviate some conflicts or make solutions to some conflicts easier to attain. Of the two action alternatives, the adaptive management
alternative would provide the most flexibility to respond to concerns associated with recreation management.

**Heritage Resources**
Cumulative effects to cultural resources relate primarily to the kind, amount and locations of structural improvements (i.e. stock tanks, fences, etc…), stocking rate and season of use by livestock, recreational activities, timber harvest activities, prescribed burning, and other ground-disturbing activities within the analysis area.

Alternative 1 would have the least impact on cultural resources, with less potential for disturbance to cultural resources due to livestock grazing and construction of related range improvements. Removal of existing range improvements, however, may adversely affect cultural resources through ground disturbing actions. Livestock grazing is a historic activity on White River National Forest since the late 1800’s. The removal of associated range structures, for example cow camps, would have to be assessed under Section 106 of the National Historic Preservation Act.

Under Alternative 2, current management, the overlapping of historic properties and livestock grazing creates a potential conflict in cultural resource management. Livestock, especially cattle, tend to concentrate at watering areas, salting grounds and driveways. As stock may consistently use the same pathways, erosion on trails may unearth subsurface materials, displace surface deposits and cause breakage to prehistoric ceramics and tools. Construction of range improvements such as fences, corrals and springs also have potential to disturb cultural resources.

Alternative 3 presents the potential for fewer adverse effects of livestock grazing on cultural resources than Alternative 2. Improving forage conditions through the use of rotational livestock grazing and/or shortening the livestock grazing season and protecting riparian habitats will potentially aid the protection of cultural resources. Encouraging vegetation cover will stabilize the soil and reduce erosion of cultural resources. Thicker vegetation will also disguise and protect sites from illegal artifact collectors. Encouraging the planned frequent movement of livestock will reduce the likelihood of stock concentrating in particular areas. This will tend to reduce the long term trampling impacts to cultural resources.

**TES, MIS, and Wildlife Resources**
Livestock grazing would add cumulatively to effects on wildlife habitat. Recreational activities combined with livestock and livestock grazing activities can displace and disturb wildlife. Often times, recreational activities are associated with riparian areas, including fishing and camping. This is the case with the lower reaches of Middle and East Miller Creeks.

Livestock grazing has been shown to impact aspen regeneration in harvested areas, although based on aspen regeneration surveys, this is limited to a few isolated sites within the southside allotments analysis area. Any future timber harvesting in the aspen cover type needs to be coordinated and managed with respect to livestock grazing. Noxious
weed treatments have a beneficial effect on wildlife habitat. Livestock permittees often participate in noxious weed treatments and mapping. This would be a beneficial cumulative effect of the proposed action.

The adaptive management alternative would provide the greatest benefit and the least overall cumulative effects associate with TES, MIS and wildlife of the two action alternatives. Detrimental effects to certain wildlife species could be best mitigated under this alternative. Current management, though adequate, does not allow for timely response to habitat concerns or a need for change that could be identified in the future based on monitoring or field reconnaissance.

**Socio-Economics/Private Lands/Open Space**

Alternative 1, no grazing, has the greatest negative impact to individual ranchers. In addition, it clearly promotes increased subdivision of private lands once ranches are no longer viable due to loss of the summer forage resources provided by the project area. Some of the ranch operations would be forced to sell to the highest bidder in an attempt to recoup economic losses. This would favor second home owners. The net result would be increased fragmentation of wildlife and native plant habitats, loss of access to public lands, and increased operating costs to counties. The current situation alternative would have no immediate economic cost increases to ranch operations but the viability of the operations would continue to be in question as increasing pressures would force changes to management. The adaptive management alternative would improve the viability of the operations over time in that they would be better positioned to adapt to changing resource concerns.
Chapter 4 – Consultation and Coordination

4.1 Introduction
The Forest Service consulted numerous Federal, State, and local agencies; tribal governments; and individuals/organizations during the development of this environmental assessment and they are listed below.

4.2 Interdisciplinary Team Members
Table 4.1. Interdisciplinary Team (IDT) Members for the Southside Allotment Environmental Assessment.

<table>
<thead>
<tr>
<th>Name</th>
<th>Resource/Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glenn Adams</td>
<td>District Ranger/Responsible Official</td>
</tr>
<tr>
<td>Andrea Brogan</td>
<td>Heritage Resources</td>
</tr>
<tr>
<td>Mary Cunningham</td>
<td>IDT Leader</td>
</tr>
<tr>
<td>Greg Glasgow</td>
<td>Fisheries/Watershed/Soils</td>
</tr>
<tr>
<td>Troy Osborn</td>
<td>Range Specialist</td>
</tr>
<tr>
<td>Hal Pearce</td>
<td>Noxious Weeds</td>
</tr>
<tr>
<td>Linn Pettijohn</td>
<td>Biological Scientist</td>
</tr>
<tr>
<td>Skye Sieber</td>
<td>NEPA Coordinator</td>
</tr>
<tr>
<td>Ron Taussig</td>
<td>Recreation</td>
</tr>
</tbody>
</table>

4.3 Federal, State and Local Agencies
Table 4.2. Federal, State and Local Agencies contacted for initial scoping on the Blanco Southside Allotments Environmental Assessment.

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Organization Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Div of Parks &amp; Outdoor Rec</td>
<td>Rifle Gap/Rifle Falls SRA</td>
<td></td>
</tr>
<tr>
<td>BLM</td>
<td>deVergie</td>
<td>White River Field Office</td>
</tr>
<tr>
<td>Bill</td>
<td>Nelson</td>
<td>Area Director CDOW</td>
</tr>
<tr>
<td>Forrest</td>
<td></td>
<td>Rio Blanco County Commissioners</td>
</tr>
</tbody>
</table>
### 4.4 Tribal Governments

Table 4.3. Tribal Governments contacted for initial scoping on the Blanco Southside Allotments Environmental Assessment.

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Organization Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard D.</td>
<td>Richards, Sr.</td>
<td>Southern Ute Indian Tribe</td>
</tr>
<tr>
<td>Edna</td>
<td>Frost</td>
<td>Southern Ute Indian Tribe</td>
</tr>
<tr>
<td>Neil B.</td>
<td>Cloud</td>
<td>Southern Ute Tribe</td>
</tr>
<tr>
<td>Betsy</td>
<td>Chapoose</td>
<td>Ute Indian Tribe</td>
</tr>
<tr>
<td>Maxine</td>
<td>Natchees</td>
<td>Ute Indian Tribe</td>
</tr>
<tr>
<td>Terry</td>
<td>Knight</td>
<td>Ute Mountain Ute Tribe</td>
</tr>
</tbody>
</table>

### 4.5 Individuals / Organizations

Table 4.4. Individuals and organizations contacted for initial scoping on the Blanco Southside Allotments Environmental Assessment.

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Organization Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron</td>
<td>Baird</td>
<td></td>
</tr>
<tr>
<td>Brian</td>
<td>Boettcher</td>
<td></td>
</tr>
<tr>
<td>Kenn &amp; Rosemary</td>
<td>Brown</td>
<td></td>
</tr>
<tr>
<td>Bruce</td>
<td>Clatterbaugh</td>
<td></td>
</tr>
<tr>
<td>Joe</td>
<td>Collins</td>
<td></td>
</tr>
<tr>
<td>Ed</td>
<td>Coryell</td>
<td></td>
</tr>
<tr>
<td>Marvelle</td>
<td>Couey</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Gentry</td>
<td></td>
</tr>
<tr>
<td>Reed</td>
<td>Kelley</td>
<td></td>
</tr>
<tr>
<td>Lowell</td>
<td>Klinglesmith</td>
<td></td>
</tr>
<tr>
<td>David</td>
<td>Lien</td>
<td></td>
</tr>
<tr>
<td>Tom</td>
<td>Pearce</td>
<td></td>
</tr>
<tr>
<td>Andrew</td>
<td>Peroulis</td>
<td></td>
</tr>
<tr>
<td>Jonathan</td>
<td>Ramsey</td>
<td></td>
</tr>
<tr>
<td>Steve &amp; Shelly</td>
<td>Reed</td>
<td></td>
</tr>
<tr>
<td>Pat</td>
<td>Sturgeon</td>
<td></td>
</tr>
<tr>
<td>Nick</td>
<td>Theos</td>
<td></td>
</tr>
<tr>
<td>Steve</td>
<td>Wix</td>
<td></td>
</tr>
<tr>
<td>Oscar</td>
<td>Wyatt</td>
<td></td>
</tr>
<tr>
<td>Ron</td>
<td>Hilkey</td>
<td>Adams Lodge</td>
</tr>
<tr>
<td>Sloan</td>
<td>Shoemaker</td>
<td>Aspen Wilderness Workshop</td>
</tr>
<tr>
<td>Scott</td>
<td>Balcomb</td>
<td>Balcomb &amp; Green, PC</td>
</tr>
<tr>
<td>Randy &amp; Jeanne</td>
<td>Horne</td>
<td>Bar-H Outfitters</td>
</tr>
<tr>
<td>Sam</td>
<td>Potter</td>
<td>Big Mountain Outfitters</td>
</tr>
<tr>
<td>Betty &amp; Gary</td>
<td>Ball</td>
<td>Boulder Env Activists Res</td>
</tr>
<tr>
<td>Tom</td>
<td>Tucker</td>
<td>Buford Guides</td>
</tr>
<tr>
<td>Dennis</td>
<td>Rodebaugh</td>
<td>D&amp;S Guides</td>
</tr>
<tr>
<td>Carolyn Lee</td>
<td>Davidson</td>
<td>Davidson Yellowjacket Ranch</td>
</tr>
<tr>
<td>Don</td>
<td>Dockins</td>
<td>Eagles Nest Outfitting</td>
</tr>
<tr>
<td>First Name</td>
<td>Last Name</td>
<td>Organization Name</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>William</td>
<td>Wheeler</td>
<td>Elk Creek Lodge</td>
</tr>
<tr>
<td>Stanley</td>
<td>Peroulis</td>
<td>Four-Mile Sheep Co</td>
</tr>
<tr>
<td>Marie</td>
<td>Hasket</td>
<td>JML Outfitters</td>
</tr>
<tr>
<td>Paul</td>
<td>Janke</td>
<td>Lone Tom Outfitting</td>
</tr>
<tr>
<td>Perry</td>
<td>French</td>
<td>Lost Solar Outfitters</td>
</tr>
<tr>
<td>John</td>
<td>Winkleried</td>
<td>Marvine Ranch, LLC</td>
</tr>
<tr>
<td>Terry</td>
<td>Miller</td>
<td>Oscar Wyatt Ranches</td>
</tr>
<tr>
<td>Ken</td>
<td>Jett</td>
<td>Ripple Creek Lodge</td>
</tr>
<tr>
<td>Gene</td>
<td>Scritchfield</td>
<td>Sable Mountain Outfitters</td>
</tr>
<tr>
<td>Judy</td>
<td>Byrd</td>
<td>Seven Lakes Lodge</td>
</tr>
<tr>
<td>Scott</td>
<td>Hatfield</td>
<td>Sierra Club, Trappers Lake Group</td>
</tr>
<tr>
<td>Dan</td>
<td>Lisco</td>
<td>Sierra Club – Rocky Mtn Chapter</td>
</tr>
<tr>
<td>Butch</td>
<td>Theos</td>
<td>Theos Swallow Fork Ranches</td>
</tr>
<tr>
<td>Major RE</td>
<td>Woodrow</td>
<td>USMCR Retired</td>
</tr>
<tr>
<td>Karl</td>
<td>Maser</td>
<td>Ute Lodge</td>
</tr>
<tr>
<td>BLM</td>
<td></td>
<td>White River Field Office</td>
</tr>
<tr>
<td>Forrest</td>
<td>Nelson</td>
<td>White River Ranch</td>
</tr>
<tr>
<td>William</td>
<td>Martin</td>
<td>Wilderness Study Group</td>
</tr>
<tr>
<td>Alan</td>
<td>Jones</td>
<td>Winslett Ranch Inc.</td>
</tr>
<tr>
<td>Harold</td>
<td>Shepherd</td>
<td>Center for Water Advocacy</td>
</tr>
</tbody>
</table>
Literature Cited


114
Appendices

Appendix A. Forestwide Goals and Objectives that the Blanco southside grazing allotments project is designed to achieve (USFS 2002) 116


Appendix C. Management Areas within the seven southside allotments from the White River National Forest, Land and Resource Management Plan – 2002 Revision. 122

Appendix D. Desired Conditions for Management Areas included in the Blanco Southside Allotment Planning Area including Standards and Guidelines that relate to livestock grazing. 123

Appendix E. FSH 2509.25 – Watershed Conservation Practices Handbook – Management Measures that relate to livestock grazing. 126

Appendix F. Rangeland Health Evaluation Form (Rangeland Analysis and Training Guide 1994; Form R2-2200-RH). 128

Appendix G – Tables 1 – 7. Existing condition of plant communities within the seven southside allotments, Blanco Ranger District, White River National Forest.129

Appendix A. Forestwide Goals and Objectives that the Blanco southside grazing allotments project is designed to achieve (USDA 2002).

**Forestwide Goal 1: Ecosystem Health:** Promote ecosystem health and conservation using a collaborative approach to sustain the nation’s forests, grasslands, and watersheds.

**Forestwide Objective 1a:** Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial uses.

To clarify, ecological functions include water cycle, nutrient cycle, energy flow and plant community dynamics. Intended beneficial uses include aquatic life, water supply, recreation and agriculture.

In each stream currently supporting a self-sustaining fish population, ensure that projects maintain sufficient habitat, including flow, for all life history stages of native and desired non-native species.

**Forestwide Objective 1d:** Increase the amount of forest and rangelands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects, disease, and invasive species.

**Forestwide Strategies**

1d.7 Implement management practices, which will move landscapes towards desired vegetation composition and structure as described in the management area descriptions and the Historic Range of Variability.

1d.10 Over the life of the plan continue to work cooperatively with grazing permittees and other interested individuals to design and implement grazing systems that maintain or enhance ecosystem function. (e.g. water cycle, nutrient cycle, energy flow and plant community dynamics).

1d.11 Through the life of the plan, identify those rangelands in unhealthy condition and prescribe and implement treatments and strategies that restore or enhance the health and long term sustainability of the native plant communities, soil surface conditions, and proper ecosystem functions (e.g., water cycle, nutrient cycle, energy flow and plant community dynamics).

**Forestwide Objective 1e** Work cooperatively with individuals, organizations, local, state, tribal, and other federal agencies to promote ecosystem health and sustainability across landscapes.

**Forestwide Strategy**

1e.2 Continue to cooperatively work with federal, state, county agencies, adjacent landowners, and non-governmental organizations for the control and management of noxious weeds across jurisdictional boundaries.
Forestwide Goal 2: Multiple Benefits to People: Provide a variety of uses, products, and services for present and future generations by managing within the capability of sustainable ecosystems.

Forestwide Objective 2c Improve the capability of national forests and rangelands to sustain desired uses, values, products, and services.

Forestwide Strategies
2c.3 Continue to satisfy the demand for livestock products through environmentally responsible grazing.

2c.15 Over the life of the plan, cooperate with the CDOW for wildlife and fish population management to support the achievement of desired population objectives through appropriate habitat management.
Appendix B. Standards and Guidelines that Relate to Livestock Grazing (USDA 2002).

**Rangeland Ecosystem Management**

**Standard**

1. For animal damage control activities conducted by other governmental entities, cooperate by providing mitigation measures to protect national forest resources. Mitigation measures emphasize protection of public safety; proposed, threatened, endangered, and sensitive species, water quality, and other resource values.

2. Allow continuous season-long grazing in an allotment only where determined to achieve or maintain the desired ecosystem conditions.

**Guidelines**

1. Identify desired plant communities and designate key areas to evaluate whether the existing plant communities are at, moving toward, or moving away from desired conditions in site-specific analyses required for allotment management plans.

2. During range allotment planning, develop site-specific herbaceous vegetation utilization, vegetation residue, streambank disturbance, and woody species utilization guidelines. In the absence of updated planning and approved decision documents, the following allowable use and riparian vegetation residue guidelines and mitigation measures will apply. These utilization guidelines are applicable at the time the livestock leave the unit and include use by both domestic livestock and wildlife. **Table 2-3** shows the maximum allowable use guidelines for cattle allotments. Sheep allotment utilization guidelines are given by narrative description (below). **Table 2-4** provides riparian residue guidelines for both cattle and sheep.

**Table 2-3.** Maximum allowable use guidelines (percent utilization by weight) for cattle allotments

<table>
<thead>
<tr>
<th>Type of management</th>
<th>Satisfactory</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Season long</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Deferred rotation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units grazed &gt; 30 days</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>Units grazed &lt; 30 days</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>Rest rotation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units grazed &gt; 30 days</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>Units grazed &lt; 30 days</td>
<td>55</td>
<td>45</td>
</tr>
</tbody>
</table>

*Notes:* Rangeland condition is defined as the present state of vegetation on a range site in relation to the climax (natural potential) plant community.

**Sheep Allotments**

The following visual description of post-grazing conditions should be used to determine the proper measure of allowable use on sheep allotments.

- After sheep have completed using an area, there should be only moderately visible signs that they have used the area. One should have to walk or ride through the area to see where use has been made. Although bedgrounds may show more evidence of use than areas sheep have only grazed through, one should still have to walk or ride through the bedground to determine that animals had bedded there.
Soil and vegetation should be restored to at least the pre-grazing condition by the return to the same point in the next grazing cycle.

Forage should show that it has been topped and selectively grazed. Favored forbs such as *Angelica spp.*, cow parsnip, Porter lovage and *Senecio spp.* may be stripped of their leaves, but in most cases, the stem is standing.

**Table 2-4. Riparian vegetation residue guidelines**

Remove livestock from riparian areas when the average stubble height of Carex species reaches:

<table>
<thead>
<tr>
<th>Type of management</th>
<th>Satisfactory</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Use (up to July 15)</td>
<td>3 inches</td>
<td>4 inches</td>
</tr>
<tr>
<td>Summer/fall use (after July 15)</td>
<td>4 inches</td>
<td>6 inches</td>
</tr>
</tbody>
</table>

*Note: Measurements are of plant heights.*

3. The following should be applied to all riparian habitats:

- Avoid season long grazing in riparian areas and wetlands.
- Implement short-duration grazing (generally less than 20-30 days) as feasible to provide opportunity for re-growth and avoid utilization of woody species.
- Remove livestock from a grazing unit when stream bank disturbance (trampling and exposed soils) from the current year’s livestock grazing reaches 20 to 25 percent of the key area stream reach.
- Design grazing systems to limit utilization on woody species. No more than 50 percent of the twigs of woody species should be browsed during one growth cycle.
- Limit utilization of herbaceous species to 40-45 percent of weight.
- Keep stock driveways out of riparian areas except to cross. Rehabilitate or relocate stock driveways that are causing damage to riparian areas.

**Wildlife – General**

**Standard**

6. In riparian areas, vegetation cover will be managed to provide suitable wildlife habitat along a minimum of 80 percent of the length of riparian zones within the project area.

**Guideline**

1. Structures such as fences (etc…) should be designed and built taking wildlife movement into consideration.

**Wildlife – Proposed, Threatened, and Endangered Species and Sensitive Species**

**Canada Lynx**

**Standards**

1. Projects that have the potential to affect lynx or lynx habitat must include a broad scale assessment that addresses the ecological conditions for the area. In the absence of guidance developed from such an assessment, limit disturbance within each lynx analysis unit (LAU) as follows: if more than 30 percent of lynx habitat within an LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result of vegetation management by federal agencies.

7. Manage livestock grazing to maintain or achieve mid-seral or later conditions in shrub-steppe habitats, riparian areas, and willow carrs.
8. Manage livestock use in post-fire and post-harvest created openings to assure successful regeneration of the shrub and tree components.

**Guidelines**

4. Manage livestock grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.

**Colorado River Cutthroat Trout**

**Standards**

1. For management activities that have the potential to impact occupied cutthroat trout habitat, tributaries of occupied cutthroat trout habitat, or identified reintroduction areas, maintain or enhance existing cutthroat trout habitat. At minimum and where necessary:
   - Reduce sediment from existing roads and trails.
   - Maintain pool depths.
   - Maintain riparian vegetation.
   - Retain large woody debris in streams.

**Guidelines**

4. Where impacts on cutthroat habitat associated with livestock grazing are identified, such as hedged shrubs and collapsed banks, consider actions to reduce or remove impacts such as, but not limited to:
   - Altering the timing of grazing.
   - Altering the timing of livestock crossings of occupied cutthroat stream until after fish have emerged from gravel.
   - Excluding sensitive or problem areas.

5. To minimize sedimentation, channel instability, and direct disturbance of spawning areas, alter routes of sheep bands or other trailed livestock. Limit sheep crossings and cattle driveways to designated locations or roads to avoid crossing occupied cutthroat streams and tributaries.

**Boreal Toad and Leopard Frog**

**Standards**

1. Allow no loss or reduction in habitat quality of occupied or known historic boreal toad or leopard frog habitat.

2. Maintain adequate vegetation cover around occupied boreal toad or leopard frog breeding ponds when implementing management activities to minimize avian predation on newly metamorphosed frogs and toads.

**Guidelines**

3. Where impacts to occupied or known historical boreal toad or leopard frog breeding sites associated with livestock grazing are identified, consider actions to reduce or remove impacts such as, but not limited to:
   - Fencing,
   - Modification of season of use, or
   - Provision of alternate water sources at a sufficient distance.

**Brewer’s Sparrow**

**Standards**

1. For management activities in sage grouse and Brewer’s sparrow habitat, retain or enhance existing habitat by:
   - Managing for native vegetation
1. Retaining a minimum of five percent of sagebrush over 48 inches in height where site characteristics allow, and
2. Maintaining a minimum of 20 percent canopy cover of sagebrush.

2. Restrict activities that have the potential to impact Brewer’s sparrow breeding activities from April 1 to July 31 in areas where breeding is known or suspected in order to minimize any negative impacts to reproductive success or survival.

Guidelines

3. When implementing vegetation management activities in Brewer’s sparrow sagebrush habitat:
   ♦ Design and implement the activities so that a mosaic distribution of open and closed canopy areas will result.
   ♦ Incorporate actions to remove invading conifers in order to maintain and expand the sagebrush cover type.
   ♦ Incorporate actions to reduce or eliminate non-native plant species and promote the re-establishment of native plant species.
   ♦ Limit the use of herbicides in sagebrush areas to direct application when eliminating or reducing non-native plants in sagebrush areas in order to minimize impacts to sagebrush.

4. Limit the installation of new fences, power lines, and other structures in Brewer’s sparrow habitat to reduce possible raptor perches and maintain sagebrush.

6. Manage livestock activity in known or suspected Brewer’s sparrow nesting areas to reduce the likelihood of cowbird presence in Brewer’s sparrow nesting areas. Actions to consider include, but are not limited to:
   ♦ Rotating livestock use by alternating years or seasons
   ♦ Minimizing the intensity of number of livestock concentration areas.

Species Requiring More Baseline Inventory and Evaluation to Determine Status

Standards

4. Conduct surveys for the following butterfly species needing more baseline inventory and evaluation before implementation of projects that may result in not maintaining a viable population in occupied habitat: theano alpine, dark blue, white-veined arctic, indra swallowtail, and two-banded checkered skipper. Prohibit actions that may result in the extirpation of the species in an area that is occupied. Actions that may be restricted include but are not limited to (only those that apply to livestock grazing included here):
   ♦ Livestock grazing
   ♦ Vegetation treatments
Appendix D. Desired Conditions for Management Areas included in the Blanco Southside Allotment Planning Area including Standards and Guidelines that relate to livestock grazing.

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.31</strong></td>
<td><strong>Backcountry Recreation – Non-motorized (Seven Lakes)</strong>&lt;br&gt;<strong>Desired Condition:</strong> (statements not applicable to livestock grazing)</td>
</tr>
<tr>
<td><strong>2.1</strong></td>
<td><strong>Special Interest Areas – Minimal Use and Interpretation (Seven Lakes)</strong>&lt;br&gt;<strong>Desired Condition:</strong> The setting is natural but will vary depending on the area. Evidence of human activities, including interpretation and habitation, is consistent with the characteristics for which the area was established. Encounters between individuals or parties, as well as access to the SIA, depend on the objectives for designation. These areas are managed to maintain their special interest values. Vegetation, terrestrial and aquatic habitat, soil productivity, and water quality usually appear nearly natural.</td>
</tr>
<tr>
<td><strong>Biodiversity</strong></td>
<td><strong>Standard 1.</strong> Maintain or restore the natural (or near-natural) conditions and protect the habitat of threatened, endangered, or sensitive species as well as the values for which the special interest area was established.</td>
</tr>
<tr>
<td><strong>Domestic livestock grazing</strong></td>
<td><strong>Guideline 1.</strong> Allow livestock grazing and associated range improvements if they do not conflict with the purpose for which the area was proposed or established.</td>
</tr>
<tr>
<td><strong>4.3</strong></td>
<td><strong>Dispersed Recreation (Seven Lakes, North Elk, East Miller)</strong>&lt;br&gt;A wide variety of backcountry recreation opportunities exist as long as they do not interfere with maintaining a natural-appearing landscape. Resource management activities are compatible with and reduce impacts to, recreation resources and opportunities. Biological communities are maintained or improved to provide an attractive setting for visitors, complement the recreational values, and provide varied plant communities, structural stages, and associated wildlife. Habitat for sensitive species will be protected and maintained, and may also be enhanced where such opportunities exist.</td>
</tr>
<tr>
<td><strong>5.12</strong></td>
<td><strong>General Forest and Rangelands – Range Vegetation Emphasis (East Miller, Middle Miller, Salt Box, West Miller)</strong>&lt;br&gt;A variety of forested and non-forested plant communities and successional stages are maintained through a combination of human manipulations and natural processes. A diversity of desired plant and wildlife species is represented within the capability of the habitat. Nutrient cycling and energy flow are managed and enhanced in conjunction with the use of domestic livestock grazing. Soils exhibit infiltration and permeability rates that are appropriate for that soil type, climate, landform, and geologic processes. Evidence of rills, actively eroding gullies, and soil pedestals are minimal to non-existent. Ground cover is adequate to protect the soil and appropriate for the habitat type. Management activities are designed to simulate natural vegetation patterns and patch size.</td>
</tr>
<tr>
<td><strong>Vegetation Management</strong></td>
<td><strong>Guidelines</strong>&lt;br&gt;1. A full range of silvicultural and grazing practices may be applied to these lands.&lt;br&gt;2. Protect range improvements and mitigate impacts to natural barriers that serve as controls to livestock movements.</td>
</tr>
<tr>
<td><strong>Wildlife</strong></td>
<td><strong>Standard</strong>&lt;br&gt;1. Range improvements are designed to be compatible with wildlife needs.</td>
</tr>
<tr>
<td><strong>5.4</strong></td>
<td><strong>Forested Flora and Fauna Habitats (Seven Lakes, North Elk, East Miller, Middle Miller, Salt Box, West Miller, Hay Flat)</strong></td>
</tr>
</tbody>
</table>
These areas provide for a variety of forest and non-forest plant communities and successional stages, over the long term, through a combination of human manipulation and natural processes. Management activities are influenced by biological processes found in the area, and strive to replicate local natural vegetation patterns and patch size (HRV). Vegetation management is designed to simulate natural disturbances, thus silvicultural treatments may be larger than 40 acres in size. Vegetation composition and structure exist in a range of successional stages to meet wildlife and aquatic habitat, livestock forage, and forest product objectives.

Habitat for sensitive species will be protected and maintained, and may be enhanced where opportunities exist. Management activities provide for healthy aquatic ecosystems. Stabilization or restoration concepts are applied to areas of the forest in which natural disturbance or past management has reduced desired resource conditions. Range improvements are designed to be compatible with wildlife and aquatic life.

**Vegetation Management**

**Standard**
2. A full range of vegetation treatments including timber management and grazing strategies may be applied to these lands.

**Guideline**
1. Protect range improvements and mitigate impacts to natural barriers that serve as controls to livestock movement.

**Wildlife**

**Guideline**
1. Protect, enhance, and restore habitat for native fishes.

**5.41 Deer and Elk Winter Range (Seven Lakes, North Elk, East Miller, Middle Miller, Salt Box, West Miller, Hay Flat)**

Human activities are managed so that deer and elk can effectively use the area. Activities that may be managed or restricted include burning, rangeland management, timber harvest, habitat manipulation, recreation, minerals exploration and development, and road management. Population herd objectives are established in coordination with the Colorado Division of Wildlife.

Vegetation composition and structure are managed to meet the needs of deer, elk, and other species on their winter range. Quaking aspen, Gambel oak, serviceberry, antelope bitterbrush, sage, grasses, and forbs are common throughout the area. Openings are common and interconnected with networks of forested habitat that provide thermal and hiding cover. Management activities are designed to maintain or create habitat mosaic of various types, age classes, and structural stages.

All activities should limit disturbance so that deer and elk may use the area during the winter and spring.

Livestock and related range improvements, such as ponds and fences, may be present. Range improvements should be designed to be compatible with deer and elk. This includes, but is not limited to, proper design and location of fences and the planting of native vegetation such as shrubs that deer and elk favor. Water developments benefit big game and livestock by improving distribution and reducing the use of riparian areas.

**Biodiversity**

**Standard**
1. Vegetation composition and structure are managed to meet the needs of deer, elk, and other species on their winter ranges within the constraints of the conservation of biological diversity and the maintenance and enhancement of sensitive habitats.

**Domestic Livestock Grazing**

**Standard**
1. Establish stocking levels for livestock to ensure adequate forage is available for deer and elk.

**Guideline**
1. Develop livestock grazing systems in cooperation with federal agencies and private landowners to
ensure that all lands are considered when determining vegetation management objectives for the area.

**Vegetation Management**

**Standard**

2. Vegetation management will be designed to maintain or improve deer and elk habitat objectives.

**Wildlife Guidelines**

1. Where trees and shrubs are sparse, and terrain is the primary factor providing cover, minimize human activity during periods when elk and deer are concentrated in the area.

2. Habitat management goals are developed in coordination with the Colorado Division of Wildlife and the owners of intermingled and adjacent private land to minimize resource conflicts on and off National Forest System lands.

<table>
<thead>
<tr>
<th>5.43 Elk Habitat (North Elk, East Miller, Middle Miller, West Miller, Hay Flat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation is managed to provide healthy plant communities with a variety of species present for food and cover. Forested areas may appear managed without much evidence of damage by insects and disease. Natural and created openings or meadows of various sizes and shapes occur as well. Large patches of late-successional structure, including trees of many different heights, occur. Scattered dead trees appear in openings and in older stands. Most of the local road surfaces are covered with grasses or other vegetation unless they have been recently used to haul logs. In such cases, the vegetation may be worn down.</td>
</tr>
</tbody>
</table>

**Domestic Livestock Grazing Guideline**

1. Design livestock management strategies, including distribution and stocking rates, to be compatible with elk habitat objectives.

**Vegetation Management**

**Standard**

2. Vegetation management practices will be used to maintain or improve elk habitat.

**Guidelines**

1. Provide adequate forage to sustain elk populations.

2. The following dates may be used for restrictions of activities, depending upon the objectives for which the area was established.

  - **Calving** - May 15 to June 20
  - **Migration** - Fall October 15 to November 30
    - Spring April 15 to June 20
  - **Winter** – December 1 to April 14
  - **Summer** – June 16 to October 14
### 11. HYDROLOGIC FUNCTION

**11.1 - Management Measure**  Manage land treatments to conserve site moisture and to protect long-term stream health from damage by increased runoff.

**11.2 Management Measure:**  Manage land treatments to maintain enough organic ground cover in each activity area to prevent harmful increased runoff.

- a. Maintain the organic ground cover of each activity area so that pedestals, rills, and surface runoff from the activity area are not increased. The amount of organic ground cover needed will vary by different ecological types and should be commensurate with the potential of the site.

- b. Restore the organic ground cover of degraded activity areas within the next plan period, using certified local native plants as practicable; avoid persistent or invasive exotic plants.

### 12. RIPARIAN AREAS AND WETLANDS

**12.1 Management Measure:**  In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those actions that maintain or improve long-term stream health and riparian ecosystem condition.

- a. Allow no action that will cause long-term change to a lower stream health class in any stream reach. In degraded systems (that is At-risk or Diminished stream health class), progress toward robust stream health within the next plan period.

- b. Allow no action that will cause long-term change away from desired condition in any riparian or wetland vegetation community. Consider management of stream temperature and large woody debris recruitment when determining desired vegetation community. In degraded systems, progress toward desired condition within the next plan period.

- f. Manage livestock use through control of time/timing, intensity, and duration/frequency of use in riparian areas and wetlands to maintain or improve long-term stream health. Exclude livestock from riparian areas and wetlands that are not meeting or moving towards desired condition objectives where monitoring information shows continued livestock grazing would prevent attainment of those objectives.

- g. Keep stock tanks, salt supplements, and similar features out of the WIZ if practicable and out of riparian areas and wetlands always. Keep stock driveways out of the WIZ except to cross at designated points. Armor water gaps and designated stock crossings where needed and practicable.

- h. Manage dry meadow and upland plant communities, including Kentucky bluegrass types, that have invaded into wetland/riparian areas in a manner that will contribute to their replacement over time by more mesic native plant communities to the extent practicable. Develop site-specific riparian stubble height standards or use the following default levels for carex and juncos species: 3-4 inches in spring-use pastures and 4-6 inches in summer or autumn use pastures; to leave adequate residual stubble height to retain effective ground cover.

---

2 These management measures also serve as design criteria to be applied in implementing the action alternatives.
i. Do not allow livestock grazing through an entire growing season in pastures that contain in riparian areas and wetlands. Apply short-duration grazing as practicable (generally less than 20 days) to minimize re-grazing of individual plants, to provide greater opportunity for regrowth and to manage utilization of woody species and reduce soil compaction. During the hot season (mid-to-late summer) manage livestock herds to avoid concentrating in riparian areas and wetlands. Apply principles of the Grazing Response Index to livestock management (USFS, 1996a).

j. Design grazing systems to limit utilization of woody species. Where woody species have been historically suppressed, or where the plant community is below its desired condition and livestock are a key contributing factor, manage livestock through control of time/timing, intensity, and duration/frequency of use so as to allow for riparian hardwood growth extension and reproduction. Manage woody species in riparian areas to provide for stream temperature, bank stability and riparian habitat.

k. Maintain the extent of stable banks in each stream reach at 74% or more of reference conditions. Consider degree of livestock trampling and riparian vegetation utilization on or immediately adjacent to stream banks when timing livestock moves between units.

l. Adjust management in riparian areas and wetlands to improve detrimental soil compaction whenever it occurs.
### Appendix F. Rangeland Health Evaluation Form (Rangeland Analysis and Training Guide 1994; Form R2-2200-RH).

#### RANGELAND HEALTH EVALUATION MATRIX

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>HEALTHY</th>
<th>AT RISK</th>
<th>UNHEALTHY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1: Abiotic Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-horizon</td>
<td>Present and distribution unfragmented</td>
<td>Present but fragmented distribution developing</td>
<td>Absent, or present only in association with prominent plants or with other obstructions</td>
</tr>
<tr>
<td>Pedestaling</td>
<td>No pedastaling of plants or rocks</td>
<td>Pedestals present, but on mature plants only; no roots exposed</td>
<td>Most plants and rocks pedestaled; roots exposed</td>
</tr>
<tr>
<td>Rills and gullies</td>
<td>Absent, or with blunted and muted features</td>
<td>Small, embryonic, and not connected into a dendritic pattern</td>
<td>Well defined, actively expanding, dendritic pattern established</td>
</tr>
<tr>
<td>Scouring or sheet erosion</td>
<td>No visible scouring or sheet erosion</td>
<td>Patches of bare soli or scours developing</td>
<td>Bare areas and scours well developed and contiguous</td>
</tr>
<tr>
<td>Sedimentation or dunes</td>
<td>No visible soil deposition</td>
<td>Soil accumulating around plants or small obstructions</td>
<td>Soil accumulating in large barren deposits or dunes or behind large obstructions</td>
</tr>
</tbody>
</table>

| **Phase 2: Rangeland Vegetation Conditions** | | | |
| Dominant native perennial grasses and forbs | Present and well distributed across site | Present only in protected areas (under shrubs), or suppressed | Absent or only in very minor amounts |
| Native plants that normally occur in minor amounts (<5%) | Present in normal amounts (e.g., junegrass or American vetch) | Plants tending to occur in more than normal amounts | These species dominate the site: mule’s ear, golden banner, or senecio |
| Shrubs | Present in normal amounts, often in mosaic pattern | Normal, lightly hedged, twigs available, vigorous | Dominating the site to the exclusion of other species |
| Shrub growth form and hedging | Normal, lightly hedged, twigs available, vigorous | Branches becoming clubbed, ragged looking, less vigorous | Plants clubbed, unavailable, twig vigor low |
| Fire history (if appropriate) | Fire present in recent years | Minimal fire evidence | Fire has been excluded for a long time (beyond normal parameters) |
| Age-class distribution | Distribution reflects all species | Seedlings and young plants missing | Primarily old or deteriorating plants present |

| **Phase 3: Recovery mechanisms** | | | |
| Litter distribution and incorporation | Uniformly distributed across site, replaced annually, and present in spring | Litter largely absent | |
Appendix G – Table 1. Existing condition of plant communities within the Seven Lakes C&H grazing allotment.

<table>
<thead>
<tr>
<th>General description</th>
<th>Grasslands/Forblands (1,485 acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field analysis indicates that the grassland communities in the Seven Lakes Allotment are generally dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. One Parker 3 step transect was previously established in this allotment but could not be located. The Rangeland Health Evaluation Sites and Cover-Frequency transects (two transects in one cluster) were established on benchmark areas and will show trends in the plant communities over time.</td>
<td></td>
</tr>
</tbody>
</table>

The benchmark area supported a higher level of *Poa pratensis* than the majority of sites visited on the allotment. This is a highly competitive and grazing resistant species. While ground cover is high, forage production is relatively low, especially in low moisture years. Rooting depth can be shallow and the incorporation of organic matter into the soil is limited in areas of heavy use. *Poa pratensis* communities are difficult to change through normal management practices. While total recovery of these areas to native grasses, free of *Poa pratensis*, is not considered an achievable goal with or without domestic livestock grazing, the desired condition is to produce conditions favorable for native species reestablishment.

### Rangeland Health Evaluations

**North Pasture** = 100% Healthy  
**Southeast Pasture** = 100% Healthy

Rangeland health evaluations indicated healthy marks in the three categories (abiotic characteristics, rangeland vegetation communities, and recovery mechanisms).

The North Pasture rangeland health evaluation site was dominated by native perennial grasses and forbs with shrubs present in adequate amounts. Topsoil was in place and undisturbed. No pedastaling was present. Litter/duff content appeared adequate to shield the site from erosion.

The Southeast Pasture rangeland health evaluation site had a diversity of grass and forb species with scattered sagebrush. Litter/duff was abundant with no sign of erosion visible.

### Cover-Frequency Index Transects

**Spray Pasture**

CFI Native Grasses = 522  
CFI *Poa pratensis* = 1048  
CFI Bare Ground = 865

This site represents the *Artemesia tridentata/Festuca idahoensis* plant association described in Hess and Wasser (1982). There were 19 species documented in the Seven Lakes cover-frequency transects (two transects in one cluster), providing a mosaic of plants with species diversity. *Stipa spp.* and *Festuca idahoensis* were abundant at this site. *Poa pratensis* was present and had the highest average canopy cover (ACC). *Poa pratensis*, when present, has the ability to withstand grazing pressure and persist in a variety of ecosystems (see discussion under general description). *Linaria vulgaris* was documented at this site, but is treated annually (see Noxious Weed Specialist Report). The relatively low amount of bare ground at this site would indicate resistance of the site to naturally occurring erosion.

**Need for Change** - Produce conditions favorable for native species reestablishment on the benchmark area in the Spray Pasture.
### Existing Condition – Seven Lakes

#### Sagebrush

**General description (625 acres)**
Sagebrush communities in the Seven Lakes allotment showed vigorous growth and adequate regeneration of native grasses and forbs present in the understory.

**Brewer’s Sparrow**
Brewer’s sparrows were documented in the Seven Lakes Allotment, with the majority of habitat occurring in the Spray Pasture. In this area, sagebrush over 48 inches in height is maintained where site characteristics allow, and sagebrush canopy cover exceeded 20% overall.

### Riparian and Wetland Resources

**General description (willow 14 acres, blue spruce 300 acres)**
There are no large stream systems within this allotment, however there are numerous small, intermittent streams associated with the wetlands present. Within these narrow riparian areas, shrub cover exceeds 35% and is comprised of willow species, blue spruce and occasionally alder. Mixed age classes of shrub species are present. There are six developed stock ponds recorded in this allotment.

The Seven Lakes Allotment contains a unique wetland complex, which includes Balloon and Sterry Lakes, and several other small wetlands. This wetland complex supports one of two known breeding populations of northern leopard frogs on the Blanco Ranger District. This wetland complex is in the north-central portion of the allotment.

Burro Mountain Lake, previously a pond supporting waterfowl (and historically fish species), is now classified as a fen based on hydrologic and soils sampling completed in 2005.

The livestock permittee on this allotment has supported the measures taken to protect the leopard frog habitat within this allotment (below) and also the exclosure fence constructed. He has shown diligence in moving cattle through the allotment in a rotation system and has cooperated with range personnel on electric fencing (multiple years in the 1990s) as a means of separating pastures to more effectively manage cattle.

Riparian and wetland resources within the Seven Lakes Allotment are meeting or moving toward desired condition as described in Table 1.

**Canada lynx habitat**
Riparian transects were not established within the Seven Lakes allotment due to the lack of a large stream system. Emphasis within this allotment has been on improving the condition of the wetlands in the Burro Mountain area (see below under *northern leopard frog habitat*).

**Northern leopard frog habitat**
The wetland complex including Sterry, Balloon and several smaller ponds supports one of two breeding northern leopard frog populations on the Blanco Ranger District.

Impacts to the area around Burro Mountain Lake and the associated stream draining north into the lake from Harker Park Reservoir, as well as impacts to the banks of Balloon Lake and a wet meadow to the north of the lake, were identified by District biologists between 1992 - 2006. Impacts were associated with both livestock use and recreation use (ATV use in the wet meadow to the north and west of Balloon Lake). Projects were developed to improve these areas and address impacts due to livestock including: 1) fencing, 2) bank armor at Balloon Lake with felled trees, 3) diligent riding within the North Pasture by permittee to further alleviate livestock impacts to wetlands (included electric fencing experimental project to create smaller pastures in this area during the mid-1990s).

Currently, there is a wildlife exclosure fence around Burro Mountain Lake (fen) and the associated small
**Existing Condition – Seven Lakes**

Stream, which is maintained each year by district wildlife personnel (completed in 2005). This has improved the wetland and riparian area within the exclosure, which was historically used extensively by ‘loafing’ cattle. The heightened awareness of the values associated with this wetland complex has also led to more diligent riding by the permittee and a cooperative effort to provide an interpretive site at the exclosure for forest users.

District biologists also completed a bank armor project at the north end of Balloon Lake to deter livestock from trampling the pond’s exposed north bank. Trees were felled with a chain saw in the area and piled along the exposed bank in 2006. Monitoring over the next two years documented increased sedge growth in this area and fewer impacts from livestock to this bank. The majority of the Balloon Lake shoreline is protected from trampling by livestock by narrow, deep beaver tunnels, logs along the banks, and forest.

Future projects and protection measures for northern leopard frog habitat in this allotment include: 1) Spring developments including fencing and piping to provide alternate sources of water at a sufficient distance from spring/wetland areas in three locations, and 2) Permanent closure of the ATV trail that is located north of Sterry Lake, which travels through a wet meadow to the north and west of Balloon Lake and dead-ends at a forested area to the east of Balloon Lake.

*See Design Criteria developed by Wildlife Biologist within the Affected Environment – Wildlife Resources Section for more information on northern leopard frog habitat protection/enhancement.

**Aspen Regeneration**

*General description (aspen 998 acre, aspen/conifer mix 3,994 acres)*

All of the aspen stands visited in this allotment showed successful regeneration in the understory and on the edges of meadows. Aspen stands showed diverse age structure and healthy grass, forb and shrub growth in the understory. Many of the lower trunks in the mature aspen stands had been barked by elk which is typical of most aspen stands within the White River Plateau.

*Canada lynx habitat*

There were no aspen harvest areas within the Seven Lakes Allotment. Portions of the Langlas Draw Fire extend into the eastern boundary of the allotment. Aspen regeneration was healthy in the burn area, exceeding the Forest Plan Standard of 300 stems/acre for adequate restocking of aspen regeneration sites.
Appendix G – Table 2. Existing condition of plant communities within the North Elk C&H grazing allotment.

<table>
<thead>
<tr>
<th>General description</th>
<th>Grasslands/Forblands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Condition – North Elk Uplands - Native Grasslands and Forblands</td>
<td></td>
</tr>
</tbody>
</table>

Field analysis indicates that the grassland communities in the North Elk Allotment are dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. The rangeland health evaluation sites and cover-frequency transects (two transects in one cluster) were established on benchmark areas and will show trends in the plant communities over time.

**Rangeland Health Evaluations**

- **Middle Mountain Pasture = 100% Healthy**
- **Hiner Pasture** = Abiotic Characteristics and Recovery Mechanisms - 100% Healthy
  - Rangeland Vegetation Conditions – 2 of 6 indicators At Risk:
  - **Divide Pasture(#1) = Recovery Mechanisms 100% Health**
    - Abiotic Characteristics – 3 of 5 indicators At Risk
    - Rangeland Vegetation Conditions – 1 of 6 indicators At Risk

- **Divide Pasture(#3) = 100% Healthy**

The Middle Mountain Pasture supported a variety of grass, forb and shrub species and undisturbed topsoil. There was dense plant cover and sufficient amounts of litter/duff to help regulate naturally occurring erosion.

Forb species dominated the plant community in the Hiner Pasture, giving it an at risk rating in vegetation conditions. Plant species found at similar sites were present, but in unfavorable ratios. Topsoil was present and unfragmented in this pasture and erosion was minimal due to plant cover and the well-distributed litter. There were no signs of rills or pedestaling.

Pedestaling and small amounts of erosion placed the Divide Pasture rangeland health evaluation site (#1) in the at risk category. The spacing between plants was greater than in other areas within the allotment. Plant species diversity in the Divide Pasture was adequate. Native plants were abundant with scattered shrubs in varying patch sizes throughout the pasture. Recovery mechanisms such as litter/duff and plant vigor were healthy and litter was sufficient to regulate natural erosion.

**Need for Change** - Achieve 100% healthy on all indicators of rangeland health on the benchmark areas in the Hiner and Divide Pastures.

**Cover-Frequency Index Transects**

- **Divide Pasture**
  - CFI Native Grasses = 1216
  - CFI *Poa pratensis* = 184
  - CFI Bare Ground = 3890

This site represents the *Festuca thrurberi/Festuca idahoensis* plant association described in Hess and Wasser (1982). There were 26 species documented in the North Elk Cover-Frequency transects, providing a mosaic of plants with species diversity. *Festuca idahoensis* makes up the largest percentage of cover according to the ACC followed by *Festuca thrurberi*. The low percentage of *Poa pratensis* and moderately high percentage of *Bromus marginatus* suggests grassland community stability.

The forb content in this cluster shows a mix of species common to the area. *Achillea millefolium* and *Taraxacum officinale* have low ACC scores, indicating vegetation community stability.
Existing Condition – North Elk

The CFI for bare ground at this site was higher than desirable. Trend information will be collected on this benchmark area and will indicate if bare ground is decreasing.

Need for Change - Decrease in bare ground CFI score on the benchmark area in the Divide Pasture.

Sagebrush

General description (18 acres)
Very little sagebrush occurs in this allotment. The sagebrush that is present showed adequate growth and regeneration along with native grasses and forbs present in the understory.

Brewer’s Sparrow
Brewer’s sparrow were not documented in this allotment. Large blocks of sagebrush typically associated with Brewer’s sparrow habitat do not occur within this allotment.

Riparian and Wetland Resources

General description (229 acres)
The West, Middle and East Forks of North Elk Creek run through this allotment and join to form North Elk Creek within the allotment boundary. Approximately two miles of the flat riparian bottom of North Elk Creek is on private land within this allotment. Within the woody riparian systems of North Elk Creek, over 35% shrub cover is present, based on field reconnaissance by range and wildlife personnel. There are 26 developed stock ponds within this allotment.

Historically, willow growth was suppressed along this heavily utilized reach of North Elk Creek. Photos from the early 1990s and before indicate very little riparian shrub growth in this area. The permittee has shown diligence in attempting to keep cattle out of this riparian area for the past several years (10 or more) with the positive result of willow re-establishment. The permittee gathers in this area in the fall before moving cattle off of the Forest. The topography and layout of this allotment dictates gathering in this pasture or in the lower pasture of the West Fork of North Elk Creek.

A rest-rotation system within this allotment has allowed the riparian area in the West Fork of North Elk Creek to be rested every other year. On the years when use occurs, cattle gather in this drainage bottom before moving off of the Forest (see below under Colorado River cutthroat trout discussion).

Canada lynx habitat
Three riparian vegetation cross-section transects were established in 2007 below the confluence of East and Middle Forks of North Elk Creek within the Middle Mountain Pasture riparian benchmark area. Results of these transects illustrate the percentage of riparian vegetation in early, mid or late seral stage within the stream reach sampled. Because these transects were established in a high-use area and one of the most vulnerable areas to livestock over-use, it is considered to be a good indicator of riparian condition (i.e. if this area is in mid to late seral condition and stream banks are healthy, then more protected riparian areas should be in similar or better condition). Results were averaged between the three riparian vegetation cross-section transects.

Percent of riparian (from vegetation cross-section) in early seral stage = 30%
Percent of riparian (from vegetation cross-section) in mid seral stage = 70%
Percent of greenline riparian in late seral stage = 100%

These transects will be read every five to ten years to establish a trend in riparian condition.

Colorado River cutthroat trout habitat
North Elk Creek is the only stream that contains Colorado River cutthroat trout (CRCT) within the Project Analysis Area. A Forest Management Indicator Species (MIS) site was established on the East Fork of
Existing Condition – North Elk

North Elk Creek in 2007. A two-pass depletion electroshocking survey and physical habitat survey were completed at this time. This site will be repeated in five years to establish trend data for fish and habitat.

The open, flat area along the West Fork of North Elk Creek, just above the confluence with the East Fork, is fenced to allow for the gathering of cattle in the fall before removing them from the Forest. This area is managed on an every-other-year rotation and is rested on the off-years. In the fall of 2007, heavy use of this area by livestock was documented. Stream banks showed trampling by livestock and big game, which could lead to sediment transport along these forks of the creek.

The lower reach of the West Fork of North Elk Creek (within the Middle Mountain Pasture) experienced a damaging high-water event, sometime in the 1960s (based on interviews with local residents and 40-50 year old blue spruce trees growing on the silt bars). This event caused downcutting of the creek resulting in steep, cut banks. Some areas have recovered and support dense willow and riparian growth, especially where silt collected to form islands within the stream channel. In other areas, banks remain cut and devoid of stabilizing vegetation. Due to this situation, any over-utilization by livestock in this area could contribute to the poor condition in some areas.

Permanent photo points were established in 2008 on both sides of the stream channel to document any changes to the banks and stream. A small number of cattle were observed within this pasture in June 2008 during a time when they should not have been present.

Need for Change – Improve bank stability and increase vegetation on banks within the Middle Mountain Pasture of this allotment.

Aspen Regeneration

General description (aspen 904 acres, aspen/conifer 3,368 acres)
Aspen stands below the confluence of East and Middle Forks of North Elk Creek were visited as well as aspen stands in the West Fork of North Elk Creek. All of the aspen stands visited in this allotment showed successful regeneration in the understory and on the edges of meadows. Aspen stands showed diverse age structure and healthy grass, forb and shrub growth in the understory. Many of the lower trunks in the mature aspen stands had been barked by elk which is typical of most aspen stands within the White River Plateau. The aspen stands below the confluence of East and Middle Forks showed dense regeneration and a variety of age classes in the understory.

Canada lynx habitat
There were no post-harvest or post-burn areas within this allotment thus no stocking rates were quantified. Regeneration within existing aspen stands was present and healthy with age classes above the browse height for livestock and big game.
Appendix G – Table 3. Existing condition of plant communities within the East Miller C&S grazing allotment.

<table>
<thead>
<tr>
<th>Existing Condition – East Miller</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uplands - Native Grasslands and Forblands</strong></td>
</tr>
</tbody>
</table>

**General description (2,657 acres)**

**Grasslands/Forblands**

Field analysis indicates that the grassland communities in the East Miller Allotment are generally dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. There were several old Parker 3-step transects on this allotment, however, the stakes for these could not be located based on original directions and passage of time. The rangeland health evaluation sites and cover-frequency transects (two transects in one cluster) were established on benchmark areas and will show trends in the plant communities over time.

The benchmark area supported a higher level of *Poa pratensis* than the majority of sites visited on the allotment. This is a highly competitive and grazing resistant species - while ground cover is high, forage production is low, especially on low moisture years. Rooting depth can be shallow and incorporation of organic matter into the soil is limited in areas of heavy use. *Poa pratensis* communities are difficult to change through normal management practices. While total recovery of these areas to native grasses, free of *Poa pratensis*, is not considered an achievable goal with or without domestic livestock grazing, the desired condition is to produce conditions favorable for native species reestablishment.

**Rangeland Health Evaluations**

*East Miller Pasture #1 (one pasture) = 100% Healthy*

*East Miller Pasture #2 (one pasture) = 100% Healthy*

Rangeland health evaluations indicated healthy marks in the three categories (abiotic characteristics, rangeland vegetation communities, and recovery mechanisms).

The East Miller Pasture #1 rangeland health evaluation site supported a well-established and diverse plant community. Native plants were distributed across the site with vigorous shrub growth in desirable amounts. Litter was well-distributed across the site which should help regulate naturally occurring erosion.

The East Miller Pasture #2 rangeland health evaluation site was comprised of mostly grass species with some forbs. Native grasses were present and well-distributed across the site. Litter was well-distributed across the site which should help regulate naturally occurring erosion. Noxious weed treatments at this site contributed to the predominance of grass species.

**Cover-Frequency Index Transects**

*East Miller Pasture (one pasture)*

- CFI Native Grasses = 293
- CFI *Poa pratensis* = 1175
- CFI Bare Ground = 2722

This site represents the *Festuca thurberi/Festuca idahoensis* plant association described in Hess and Wasser (1982). There were 25 species documented in the East Miller cover-frequency transects (two transects in one cluster), providing a mosaic of plants with species diversity. *Festuca idahoensis* was abundant at this site. *Poa pratensis* was present and had the highest average canopy cover (ACC). *Poa pratensis*, when present, has the ability to withstand grazing pressure and persist in a variety of ecosystems (see discussion under general description). *Wheat spp.* and *Brome spp.* were present but with low ACC. The single stock growth of these grasses lead to lower values than the sod-forming *Poa pratensis* or bunch grasses with the large tufted growth formation.

The CFI for bare ground at this site was higher than desirable. Trend information will be collected on this benchmark area and will indicate if bare ground is decreasing. This would improve the area’s ground cover.
Existing Condition – East Miller

and resistance to erosion.

Need for Change - Decrease in bare ground; produce conditions favorable for native species reestablishment on the benchmark area in the Spray Pasture.

Sagebrush

General description (323 acres)
Sagebrush communities in the East Miller Allotment showed vigorous growth and adequate regeneration of native grasses and forbs present in the understory.

Brewer’s Sparrow
Brewer’s sparrows were not documented in the East Miller Allotment. Suitable habitat exists along the northern edge of the allotment. In this area, sagebrush over 48 inches in height is maintained where site characteristics allow, and sagebrush canopy cover exceeded 20% overall. Sagebrush in this area extends north onto private land, where it is much more extensive than the acreage occurring on Forest.

Riparian and Wetland Resources

General description (35 acres)
East Miller Creek runs along the western boundary and supports the largest riparian area within this allotment. Other riparian habitat occurs along Dry Creek and there are several ponds and springs, including 71 documented stock ponds. The East Miller drainage is easily accessed along FSR 215 and has a history of heavy use by campers, hunters and other recreationists. Livestock utilization was high along the creek bottom in the past, due to the steep topography and cattle moving to lower elevations late in the year (August and September). Cattle historically gathered in this creek bottom late in the grazing season and were not been moved off of the Forest or driven back to higher pastures in a timely manner. This extended, late season use resulted in severe hedging of riparian shrub species and trampling of banks.

In 2006, efforts were increased to improve this riparian area. A new permittee assumed management of the allotment and several changes, including a marked increase in administration, began at that time. An additional cross-fence was constructed to allow better control along the riparian corridor. Photos along the riparian area of East Miller Creek show a substantial increase in the growth and vigor of riparian shrubs including willow and alder. The vegetation cross-section and greenline transects established in this area will quantify the trend of riparian condition within the East Miller Pasture.

Canada lynx habitat
Three riparian vegetation cross-section transects and one greenline transect were established along East Miller Creek, on a benchmark area that is used by recreationists and historically received heavy use by cattle. Because these transects were established in a high-use area and one of the most vulnerable areas to livestock over-use, it is considered to be a good indicator of riparian condition (i.e. if this area is in mid to late seral condition and stream banks are healthy, then more protected riparian areas should be in similar or better condition). Results were averaged between the three riparian vegetation cross-section transects.

Percent of riparian (from vegetation cross-section) in early seral stage = 36%
Percent of riparian (from vegetation cross-section) in late seral stage = 64%
Percent of greenline riparian in early seral stage = 34%
Percent of greenline riparian in late seral stage = 66%

These transects will be read every five to ten years to establish a trend in riparian condition.

Aspen Regeneration

General description (aspen 1,781 acres, aspen/conifer mix 3078 acres)
The majority of the aspen stands visited in this allotment showed successful regeneration in the understory and on the edges of meadows. Aspen stands showed diverse age structure and healthy grass, forb and
Existing Condition – East Miller

shrub growth in the understory.

*Canada lynx habitat*

Walk-through surveys of post-harvest sites within the East Miller Allotment estimated the restocking level to be well above the Forest Plan standard of 300 stems/acre. This regeneration was above the 7’ browse height and well-established with little hedging.

Of the 13 harvested sites visited, one site located along Fourmile Rd. (FSR 214) did not support regeneration throughout the harvested area. Regeneration is occurring in small patches but at a slower rate than the other sites that were harvested during the same time frame (1995-2000). Forest managers determined that this was an ‘off-site’ for aspen regeneration and probably not a good site to harvest in the 1990’s. The current permittee is aware of this poorly regenerating site and an attempt is made to keep cattle from spending time in it. Site inspection in July of 2008 showed little use by cattle (see Wildlife Specialist Report regarding aspen surveys for more information on this site).
Appendix G – Table 4. Existing condition of plant communities within the Middle Miller C&H grazing allotment.

### Existing Condition – Middle Miller

#### Uplands - Native Grasslands and Forblands

**General description (2,678 acres)**

Grasslands/Forblands

Field analysis indicates that the grassland communities in the Middle Miller Allotment are generally dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. The majority of suitable acres for livestock on this allotment is located in Bar HL Park, a large rolling park comprised predominantly of snowberry (*Symphoricarpos albus*) and Thurber fescue (*Festuca thurberi*). The rangeland health evaluation sites and cover-frequency transects (two transects in one cluster) were established on benchmark areas and will show trends in the plant communities over time.

#### Rangeland Health Evaluations

*Unit 1 #1 = 100% Healthy*

*Unit 1 #2 = 100% Healthy*

*Unit 1 #3 = 100% Healthy*

Rangeland health evaluations indicated healthy marks in the three categories (abiotic characteristics, rangeland vegetation communities, and recovery mechanisms).

The Unit 1 #1 rangeland health evaluation site supported a diversity of well-distributed grass and forb species. Shrubs were present and showed no signs of hedging. Some erosion was evident but no pedestalings or soils were evident. Topsoil was undisturbed and litter/duff was uniformly spread over the area and at levels that shield the site from erosion events. Past heavy grazing was inferred from the higher than expected amount of annual plant species present and the amount of bare ground. Trends will be assessed as future monitoring continues on this benchmark area.

The Unit 1 #2 rangeland health evaluation site supported a diversity of well-distributed grass and forb species. Shrubs were present and showed no signs of hedging. Pedestaling was present on some of the species prone to pedestalings such as *Festuca thurberi*. Topsoil was undisturbed and litter/duff was uniformly spread over the area at levels that shield the site from erosion events.

#### Cover-Frequency Index Transects

*Unit 1*

CFI Native Grasses = 1010

CFI Kentucky Bluegrass = 259

CFI Bare Ground = 2564

This site represents the *Festuca thurberi/Festuca idahoensis* plant association described in Hess and Wasser (1982). There were 25 species documented in the Middle Miller cover-frequency transects (two transects in one cluster), providing a mosaic of plants with species diversity. Both *Festuca idahoensis* and *Festuca thurberi* were abundant. *Poa pratensis* was present but not at a high level. Forbs included *Achillea millefolium* and *Ericameria nauseosa* at a low CFI which would both increase with heavy grazing. Litter/duff was uniformly spread over the area and at levels that shield the site from erosion events.

The CFI for bare ground was higher than desirable. Trend information will be collected on this benchmark area and will indicate if bare ground is decreasing.

### Need for Change - Decrease in bare ground CFI score on this benchmark area in the Unit 1 Pasture.

### Sagebrush
**Existing Condition – Middle Miller**

**General description (701 acres)**
Sagebrush communities in the Middle Miller Allotment showed vigorous growth and adequate regeneration of native grasses and forbs present in the understory.

**Brewer’s Sparrow**
Brewer’s sparrows were documented in the Middle Miller Allotment, with the majority of habitat located along the northern boundary in the Unit A Pasture and in the Bar HL Park area in the Unit 1 Pasture. In this area, sagebrush over 48 inches in height is maintained where site characteristics allow, and sagebrush canopy cover exceeded 20% overall.

**Riparian and Wetland Resources**

**General description (no willow or blue spruce vegetation type mapped)**
The Middle Miller drainage supports the majority of the riparian type within this allotment. Red Canyon is a small tributary and there are 49 documented stock ponds within the allotment boundary.

Historically, the Middle Miller riparian area experienced heavy utilization and bank trampling by cattle. With improved administration in recent years and a permittee that is diligent about keeping cattle in designated pastures and moving them before maximum allowable use is reached, the Middle Miller riparian has experienced a marked improvement in condition.

Riparian and wetland resources within the Middle Miller Creek Allotment are meeting or moving toward desired conditions as described in Table 1.

**Canada lynx habitat**
Three riparian vegetation cross-section transects and one greenline transect were established along Middle Miller Creek, on a benchmark area that is used by recreationists and historically received heavy use by cattle. Because these transects were established in a high-use area and one of the most vulnerable areas to livestock over-use, it is considered to be a good indicator of riparian condition (i.e. if this area is in mid to late seral condition and stream banks are healthy, then more protected riparian areas should be in similar or better condition). Results were averaged between the three riparian vegetation cross-section transects.

Percent of riparian (from vegetation cross-section) in early seral stage = 16%
Percent of riparian (from vegetation cross-section) in late seral stage = 84%
Percent of greenline riparian in early seral stage = 5%
Percent of greenline riparian in late seral stage = 95%

These transects will be read every five to ten years to establish a trend in riparian condition.

**Aspen Regeneration**

**General description (aspen 1,511 acres, aspen/conifer mix 1,143 acres)**
The majority of the aspen stands visited in this allotment showed successful regeneration in the understory and on the edges of meadows. Aspen stands showed diverse age structure and healthy grass, forb and shrub growth in the understory.

**Canada lynx habitat**
Three aspen stands that were harvested from 1995-2000 were visited and regeneration surveys were completed in three representative plots by using an 11.8’ diameter circular plot. Results were calculated in stems per acre in these three stands. A summary of these results is listed below, along with UTM locations of the three sites.

Site 1: UTM location CONUS NAD 83; 13S 263773mE, 4408984mN
Site 2: UTM location CONUS NAD 83; 13S 266214mE, 4409954mN
   Plot 1: Stems per acre calculated from the 11.8’ diameter plot = 340 stems/acre
Site 3: UTM location CONUS NAD 83; 13S 266181mE, 4409956mN
Existing Condition – Middle Miller

| Plot 1: | Stems per acre calculated from the 11.8’ diameter plot = 350 stems/acre |
| Plot 2: | Stems per acre calculated from the 11.8’ diameter plot = 310 stems/acre |

These results indicate that aspen regeneration within these post-harvest sites exceeds the Forest Plan Standard of 300 stems/acre for adequate restocking of aspen regeneration sites. Many saplings were above the 7’ browse height for livestock and big game, well-established and with little hedging.
Appendix G – Table 5. Existing condition of plant communities within the Salt Box C&S grazing allotment.

<table>
<thead>
<tr>
<th>Existing Condition – Salt Box</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uplands - Native Grasslands and Forblands</strong></td>
</tr>
</tbody>
</table>

**General description (496 acres)**

**Grasslands/Forblands**

Field analysis indicates that the grassland communities in the Salt Box Allotment are generally dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. The rangeland health evaluation sites and cover-frequency transects (two transects in one cluster) were established on benchmark areas and will show trends in the plant communities over time.

**Rangeland Health Evaluations**

- Salt Box Pasture #1 (one pasture) = 100% Healthy
- Salt Box Pasture #2 (one pasture) = 100% Healthy

Rangeland health evaluations indicated healthy marks in the three categories (abiotic characteristics, rangeland vegetation communities, and recovery mechanisms).

The Salt Box Pasture #1 rangeland health evaluation site was dominated by native grasses and shrubs. No sign of erosion was present and topsoil was unfragmented. The CFI for rabbitbrush (*Ericameria nauseosa*) was higher than desirable. Most plants were in a mature age class with few young plants present, indicating that this area was overgrazed in the past but is healing. Native grasses and forbs are beginning to fill the spacing between *Ericameria nauseosa*. Litter/duff was well distributed across the site and plants showed good vigor. As rangeland health and CFI data are collected, trend can be established on this site.

The Salt Box Pasture #2 rangeland health evaluation site was dominated by native grasses and forbs. Topsoil was unfragmented and no pedastaling, rills or gullies were observed. *Vicia spp* occurred in a slightly higher amount than expected. This could result from grass species being selectively grazed for many years leading to an increase in forb species. Shrubs were healthy and showed no signs of clubbing or hedging. Litter was well-distributed.

**Cover-Frequency Index Transects**

- Salt Box Pasture (one pasture)
  - CFI Native Grasses = 740
  - CFI Kentucky Bluegrass = 22
  - CFI Bare Ground = 1127

This site represents the *Festuca thurberi/Festuca idahoensis* plant association described in Hess and Wasser (1982). There were 28 species documented in the Salt Box cover-frequency transects (two transects in one cluster), providing a mosaic of plants with species diversity. Litter was uniformly spread over the area and at a high level as well as basal vegetation, leading to a relatively low bare ground CFI score. The high amount of litter/duff and low amount of bare ground help shield the site from erosion.

**Need for Change** - Increase in native grasses CFI score on this benchmark area in the Salt Box Pasture.

**Sagebrush**

**General description (123 acres)**

Very little sagebrush occurs in this allotment. The sagebrush that is present showed adequate growth and regeneration along with native grasses and forbs present in the understory.

**Brewer’s Sparrow**

Brewer’s sparrows were not documented in this allotment. Large blocks of sagebrush typically associated with Brewer’s sparrow habitat do not occur within this allotment. Small patches of sagebrush do occur,
Existing Condition – Salt Box

with the largest located along the eastern border of the allotment, adjacent to a larger patch of sagebrush within the Bar HL area of the Middle Miller Allotment (where Brewer’s sparrow were documented).

Riparian and Wetland Resources

General description (no willow or blue spruce vegetation type mapped)
There are limited areas of riparian vegetation within the Salt Box Allotment and no mapped willow or blue spruce habitat associated within riparian areas. The upper reaches of Middle Miller Creek and Sykes Gulch are located within this allotment but both have intermittent water flow. These areas were visited by field personnel in 2003-2008. There are several springs and ponds including 31 developed stock ponds recorded in this allotment.

Canada lynx habitat
Riparian transects were not established within the Salt Box Allotment and no riparian corridors were identified.

Aspen Regeneration

General description (aspen 1,217 acres, aspen/conifer mix 585 acres)
Aspen stands within this allotment showed diverse age structure and healthy grass, forb and shrub growth in the understory. Many of the lower trunks in the mature aspen stands had been barked by elk which is typical of most aspen stands within the White River Plateau. Aspen regeneration on the edges of meadows did not show a substantial browse line and a variety of age classes was noted in existing stands.

Canada lynx habitat
There were no post-harvest or post-burn areas within this allotment thus no stocking rates were quantified. All of the aspen stands visited in this allotment showed successful regeneration in the understory and on the edges of meadows.
Appendix G – Table 6. Existing condition of plant communities within the West Miller C&S grazing allotment.

<table>
<thead>
<tr>
<th>General description (161 acres)</th>
<th>Uplands - Native Grasslands and Forblands</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grasslands/Forblands</strong></td>
<td>Field analysis indicates that the grassland communities in the West Miller Allotment are generally dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. The rangeland health evaluation sites and cover-frequency transects (two transects in one cluster) were established on benchmark areas and will show trends in the plant communities over time.</td>
</tr>
<tr>
<td>The benchmark area supported a higher level of <em>Poa pratensis</em> than desirable. This is a highly competitive and grazing resistant species. While ground cover is high, forage production is low, especially on low-moisture years. The relatively high CFI of <em>Poa pratensis</em> could be a result of past heavy livestock grazing in this area. While total recovery of these areas to native grasses, free of <em>Poa pratensis</em>, is not considered an achievable goal, with or without domestic livestock grazing, the desired condition is to produce conditions favorable for native species reestablishment.</td>
<td></td>
</tr>
<tr>
<td><strong>Rangeland Health Evaluations</strong></td>
<td></td>
</tr>
<tr>
<td><em>Hay Flat Pasture</em> = 100% Healthy</td>
<td></td>
</tr>
<tr>
<td><em>Center Pasture</em> = Recovery Mechanisms 100% Healthy</td>
<td></td>
</tr>
<tr>
<td>Rangeland Vegetation Conditions – 1 of 6 At Risk</td>
<td></td>
</tr>
<tr>
<td>Abiotic Characteristics – 3 of 5 At Risk</td>
<td></td>
</tr>
<tr>
<td>The Hay Flat Pasture rangeland health evaluation site, located in the bottom of the West Miller Creek drainage, supported a healthy stand of grasses and intermixed forbs and shrubs. The topsoil was unfragmented with no signs of erosion. Native grasses were dominant and Litter/duff was well-distributed.</td>
<td></td>
</tr>
<tr>
<td>The Center Pasture rangeland health evaluation site was located near the western rim of West Miller Creek on a steep hillside. The topsoil was fragmented and sloughing. There was little to no pedastaling, rills or gullies, however, there was sheet erosion taking place and some signs of sediment build-up. Native grasses and forbs were well distributed and shrubs present showed no signs of hedging. Litter/duff was well-distributed, except on the bare ground of the sloughing hillside.</td>
<td></td>
</tr>
<tr>
<td><strong>Need for Change</strong></td>
<td>Achieve 100% healthy on all indicators of rangeland health on the benchmark area in the Center Pasture.</td>
</tr>
<tr>
<td><strong>Cover-Frequency Index Transects</strong></td>
<td></td>
</tr>
<tr>
<td><em>Center Pasture</em></td>
<td></td>
</tr>
<tr>
<td>CFI Native Grasses = 1043</td>
<td></td>
</tr>
<tr>
<td>CFI <em>Poa pratensis</em> = 772</td>
<td></td>
</tr>
<tr>
<td>CFI Bare Ground = 1917</td>
<td></td>
</tr>
<tr>
<td>This site represents the <em>Festuca thurberi/Festuca idahoensis</em> plant association described in Hess and Wasser (1982). There were 25 species documented in the West Miller cover-frequency transects (two transects in one cluster), providing a mosaic of plants with species diversity. <em>Festuca idahoensis</em> and <em>Festuca thurberi</em> were present in adequate amounts at this site. <em>Poa pratensis</em> was present and had the highest CFI score due to its growth habits, but does not indicate a problem in this area due to the amount of desirable native grass species present. Trend data collected every five years will indicate if <em>Poa pratensis</em> is increasing or decreasing at this site.</td>
<td></td>
</tr>
<tr>
<td>The forb species, <em>Achillea millefolium</em>, can be an indicator of heavy grazing though the moderately low CFI score recorded does not indicate a problem at this time.</td>
<td></td>
</tr>
</tbody>
</table>
Existing Condition – West Miller

The shrub species *Symphoricarpos spp.* and *Ericameria nauseosa* in the amounts present contribute to the mid to late seral stage description of this site.

Litter/duff and basal vegetation scores were very high, reducing the chance of erosion. The CFI for bare ground was higher than desirable, although the litter/duff and basal vegetation scores would indicate the site is well-shielded from erosion. Trend information will be collected on this benchmark area and will indicate if bare ground is decreasing.

Need for Change - Decrease in bare ground CFI score on this benchmark area in the Center Pasture.

### Sagebrush

**General description (212 acres)**

Very little sagebrush occurs in this allotment. The sagebrush that is present showed adequate growth and regeneration along with native grasses and forbs present in the understory.

**Brewer’s Sparrow**

Brewer’s sparrows were not documented in this allotment. Large blocks of sagebrush typically associated with Brewer’s sparrow habitat do not occur within this allotment.

### Riparian and Wetland Resources

**General description (willow 7 acres, blue spruce 8 acres)**

West Miller Creek is the main riparian corridor within this allotment. The lower reach of West Miller Creek, which extends onto private land, has been rested from livestock grazing for nine years. The non-use of this large riparian area was due to the current livestock permittee not using the bottom reach of the drainage due to topography. Because of this non-use, the area has been restored to dense willows and healthy riparian after heavy livestock use through the mid-1990s. There are seven developed stock ponds recorded in this allotment. Riparian areas within the allotment are in mid-seral or later conditions and are meeting desired condition as described in Table 1.

**Canada lynx habitat**

There were no riparian transects established in the West Miller Creek Allotment. Wildlife and range personnel established permanent photo points within the West Miller Creek late seral riparian during 2006. These locations and photos are included in the project file.

### Aspen Regeneration

**General description (aspen 2,019 acres, aspen/conifer mix 630 acres)**

Aspen stands within this allotment showed diverse age structure and healthy grass, forb and shrub growth in the understory. Many of the lower trunks in the mature aspen stands had been barked by elk which is typical of most aspen stands within the White River Plateau. The areas around the TI Cow Camp showed a variety of age classes in the aspen vegetation type with saplings above the 7’ browse height for livestock and big game. The lower West Miller drainage supported aspen saplings growing in open areas on the edges of spruce/fir and riparian habitats. Historic photos and reports from this drainage showed a substantial improvement in aspen sprouting after nine years of rest of this riparian area.

**Canada lynx habitat**

Aspen stands were examined for successful regeneration within the West Miller Allotment during October 2007 and June 2008. There were no post-harvest or post-burn areas within this allotment thus no stocking rates were quantified.

The majority of aspen stands visited in this allotment showed successful regeneration in the understory and on the edges of meadows.
Appendix G – Table 7. Existing condition of plant communities within the Hay Flat C&H grazing allotment.

<table>
<thead>
<tr>
<th>Uplands - Native Grasslands and Forblands</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Condition – Hay Flat</strong></td>
</tr>
</tbody>
</table>

**General description (314 acres)**

**Grasslands/Forblands**

Field analysis indicates that the grassland communities in the Hay Flat Allotment are generally dominated by native grass and forb communities with an adequate level of species diversity, a variety of vegetative structures and sufficient amounts of litter. The majority of the allotment is made up of a large park called Hay Flat. Composition of the park is mostly snowberry and a mix of needle and thread and fescues. The rangeland health evaluation sites and cover-frequency transects (two transects in one cluster) were established on benchmark areas of the allotment and will show trends in the plant communities over time.

The benchmark area selected for monitoring in this allotment supported a higher level of *Poa pratensis* than desirable. This is a highly competitive and grazing resistant species. While ground cover is high, forage production is low, especially on low moisture years. While total recovery of these areas to native grasses, free of *Poa pratensis* is not considered an achievable goal with or without domestic livestock grazing, the desired condition is to produce conditions favorable for native species reestablishment.

**Rangeland Health Evaluations**

*Unit 1 Pasture = 100% Healthy*

*Unit 2 Pasture = 100% Healthy*

Rangeland health evaluations indicated healthy marks in the three categories (abiotic characteristics, rangeland vegetation communities, and recovery mechanisms).

The Unit 1 Pasture rangeland health evaluation site was located near a drainage ditch designed to catch spring runoff from the Forest Service road. Topsoil was unfragmented and past erosion present in the ditch showed healing in recent years. There were no signs of pedastaling, rills or gullies.

This site was dominated by native grasses and shrubs. Shrubs were healthy with no signs of hedging or clubbing. Litter/duff was adequate and uniformly distributed, shielding the site from erosion.

The Unit 2 Pasture Rangeland Health Evaluation site also supported native grasses and forbs and unfragmented topsoil. There were no signs of pedastaling, rills or gullies. Shrub growth was vigorous, with shrubs occurring in slightly higher amounts and beginning to dominate the site in some places. Litter/duff was adequate and uniformly distributed, shielding the site from erosion.

**Cover-Frequency Index Transects**

*Unit 2 Pasture*

*CFI Native Grasses = 368*

*CFI Kentucky Bluegrass = 3389*

*CFI Bare Ground = 2041*

This site represents the *Festuca thurberi/Festuca idahoensis* plant association described in Hess and Wasser (1982). There were 23 species documented in the Hay Flat cover-frequency transects (two transects in one cluster), providing a mosaic of plants with species diversity. *Poa pratensis* dominated the site with the highest CFI score. *Poa pratensis* has the ability to withstand grazing pressure and persist in a variety of ecosystems (see discussion under general description).

Desirable species such as *Festuca idahoensis* and *Bromus marginatus* were present, and with proper management will increase and contribute to the overall plant community. Trend data collected from Cover-Frequency transects every five years will document this desired change over time.
**Existing Condition – Hay Flat**

Basal vegetation and litter/duff scores were high and will help to shield the area from erosion. The bare ground score was relatively low when compared to basal vegetation and litter/duff. A desirable trend would be for the bare ground score to decrease over time.

*Need for Change - Decrease in bare ground. Produce conditions favorable for native species reestablishment on the benchmark area in the Unit 2 Pasture.*

### Sagebrush

**General description (607 acres)**

Sagebrush communities in the East Miller Allotment show vigorous growth and adequate regeneration of native grasses and forbs present in the understory.

**Brewer’s Sparrow**

Brewer’s sparrows were documented in the Hay Flat Allotment. Suitable habitat exists in the Unit 1 and Unit 2 Pastures. Many of the sagebrush sites, mapped on the Forestwide vegetation mapping layer, were field verified and contained primarily snowberry. There was very limited sagebrush over 48 inches in height. Canopy cover of the sagebrush/snowberry mix exceeded 20% overall. On sites containing predominantly sagebrush, canopy cover of sage exceeded 20% overall.

### Riparian and Wetland Resources

**General description (no willow or blue spruce vegetation type mapped)**

There are limited areas of riparian vegetation within the Hay Flat Allotment and no mapped willow or blue spruce habitat associated with riparian areas. A small tributary to the East Fork of Flag Creek flows along FSR 211 within the allotment with intermittent water flows that support limited willow and sedge habitat. There are several springs and 17 developed stock ponds recorded within this allotment.

**Canada lynx habitat**

No riparian corridors were identified and no riparian transects were established within the Hay Flat Allotment.

### Aspen Regeneration

**General description (aspen  2,471 acres, aspen/conifer mix 119 acres)**

Aspen stands were examined for successful regeneration within the Hay Flat Allotment during October 2007 and June 2008. There were no harvested areas within this allotment. Mature stands occur on both sides of FSR 211 and surround much of the large sagebrush/snowberry meadow in the Hay Flat area. There are numerous smaller stands of sapling and pole-sized aspen on the edges of Hay Flat. Along FSR 211 to the south of Hay Flat, there are contiguous stands of large, mature aspen. Many of the lower trunks in the mature aspen stands had been barked by elk which is typical of most aspen stands within the White River Plateau.

**Canada lynx habitat**

There were no post-harvest or post-burn areas within this allotment thus no stocking rates were quantified. The majority of the aspen stands visited showed successful regeneration in the understory and on the edges of meadows.