Department of the Interior
Bureau of Land Management
National System of Public Lands
Del Norte Field Office
Del Norte, Colorado

Environmental Assessment
Rock Creek Allotment

Finding of No Significant Impact
Proposed Decision

U.S. Department of the Interior
Bureau of Land Management
Del Norte Field Office
13308 W. Highway 160
Del Norte, CO 81132

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-500-06-010-EA

AUTHORIZATION NUMBER: 0505104

PROJECT NAME: Term Permit Renewal on the Rock Creek Allotment to John C. Noffsker and Linda Schoonhoven.

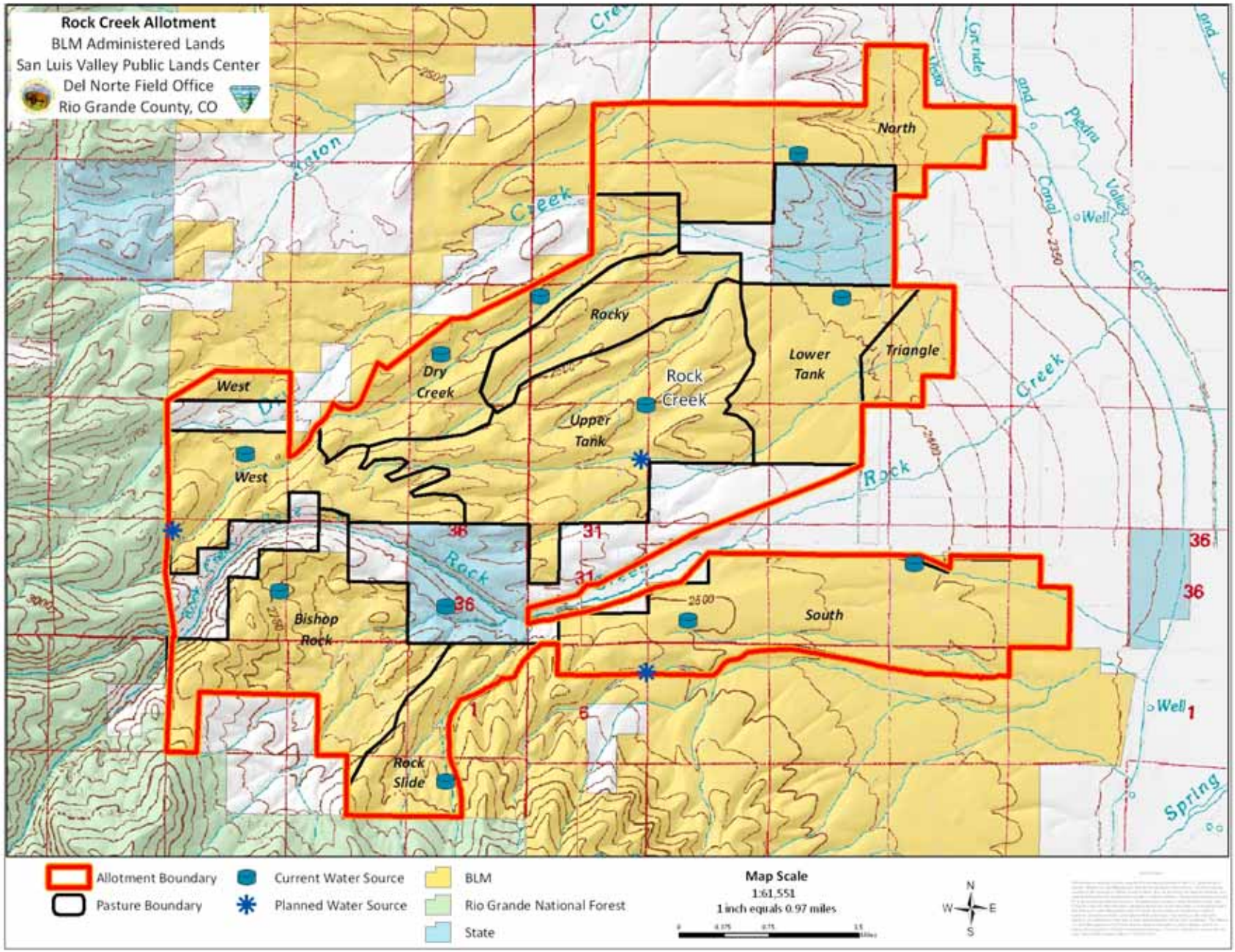
PLANNING UNIT: Southern Rio Grande Basin of the Great Plains-Palouse Dry Steppe.

LEGAL DESCRIPTION: T 38 N, R 7 E, sections 7-11, 15, 17-22, 28-35, T 38 N, R 6 E sections 12-15, 22-27, 34-36, T 37 N, R 7 E sections 2-6 and T 37 N, R 6 E, sections 1-3, 11, 12.

APPLICANT: John C. Noffsker and Linda Schoonhoven

INTRODUCTION: This Environmental Assessment (EA) is prepared to disclose and analyze the environmental consequences of re-authorizing a livestock grazing permit for 10-years as proposed on the Rock Creek Allotment. The EA is a site-specific analysis of potential impacts that could result with the implementation of one of the alternatives. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in compliance with other laws and policies affecting the alternatives. If the Decision maker determines the project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a grazing decision will be issued along with a Finding of No Significant Impact (FONSI) statement, documenting the reasons why implementation of the selected alternative would not result in "significant" environmental impacts.

ALLOTMENT DESCRIPTION/BACKGROUND: The Bureau of Land Management (BLM) Rock Creek Allotment is located approximately 5 miles southwest of Monte Vista, Colorado, and consists of an estimated 12,373 acres of federal public land. Two sections (1,280 acres) of Colorado State Land are included in the grazing system within the boundaries of the allotment under the jurisdiction of the Colorado Department of Natural Resources, State Land Board. The permittee holds a lease for 40 acres in a portion of the allotment near Rock Creek west of the southern section of State Land near Rock Creek. Approximately 995 acres of private lands occur within the allotment boundary. See next page for a map of the Rock Creek BLM Allotment.


Rock Creek Allotment
BLM Administered Lands
San Luis Valley Public Lands Center
Del Norte Field Office
Rio Grande County, CO
North
Rocky
Dry Creek
Rock Creek
Lower Tank
Triangle
West
West
Upper Tank
Bishop Rock
Rock Slide
South
Well
Well 1
Spring
Allotment Boundary
Pasture Boundary
Current Water Source
Planned Water Source
BLM
Rio Grande National Forest
State
Map Scale
1:61,551
1 inch equals 0.97 miles
N
W
E
S

The Rock Creek Allotment lies in the rain shadow of the Southern San Juan Mountains and foothills. The elevations range from about 7,600 feet to 9,200 feet. Precipitation ranges from 7-8 inches in the lower elevation sections and 15-20 inches in the higher elevation portion. Topography ranges from nearly level to very gently sloping with some steep terrain in the foothills area. Soil textures are primarily moderately coarse to moderately fine with areas of cobbly and stony soils. Drainage is excessive in some areas and poorly drained in others (Soil Survey of Rio Grande County Area, Colorado, USDA Soil Conservation Service, February 1980).

This allotment consists of very few pasture fences. The Triangle Pasture is fenced completely, and the rest of the allotment does not restrict livestock movement with fences, but is separated in areas by water, topography, and private land. This allotment has a management category of "I," improve. Monitoring studies on "I" allotments will receive the highest monitoring intensity to ensure that Rangeland Health Standards and Guides are being met. If monitoring studies show that livestock use changes are necessary to achieve established management objectives, corrective action will be taken by the BLM. Corrective actions can be changes in: season of use, stocking rate or the grazing management system including changes in pasture boundaries to reflect the use of the land by livestock.

There is a brief allotment historical index within the Rock Creek Allotment case file dated July 1, 1980. The summary states that on August 17, 1964 a short form was received from the Sangre de Cristo Cattle Co. for 1,148 AUM's on the Terrace Unit (Rock Creek Allotment) with a change in class of livestock from sheep to cattle. The application was approved on a temporary basis on August 26, 1964. On November 20, 1964 a transfer was approved within the Sangre de Cristo Cattle Co. and a license was issued for 1,148 AUM's for the Terrace Unit for all cattle, non-use. On May 11, 1966 a license was issued for 1,147 AUM's on the Terrace Unit for active sheep use through the 1976 grazing season. Active sheep use remained as the customary licensed grazing use until 1995.

On October 31, 1995, William Steffens applied to transfer grazing privileges on the Rock Creek Allotment to John C. Noffsker and Linda Schoonhoven. At this time in 1995, 3,200 sheep from October 1 through December 4 were permitted for 1,147 AUMs, which was transferred to John Noffsker and Linda Schoonhoven. On September 30, 1997, an Environmental Assessment (EA) was requested by the permittee, cooperatively with the Colorado Division of Wildlife (CDOW) and BLM to determine the best livestock class to graze on the Rock Creek allotment. The 1997 EA was completed to convert the allotment from sheep to cattle use starting with a capacity of 350 AUMs and 797 AUMs suspended voluntarily by the permittee, due to the lack of livestock numbers to fill the permitted 1,147 AUMs. Analysis was considered only on a small portion of the allotment with increases contingent upon development of water sources allotment wide designed to assist with improvements in distribution and utilization. Rangeland improvements were proposed including wells, pipelines, and fencing. Water sources have been identified which were previously not accounted for prior to the 1997 EA. No carrying capacity calculations were completed for that assessment to analyze the change from sheep to cattle and winter to spring/summer grazing, and 350 AUMs remained the carrying capacity. No increase was offered or considered as an allotment wide carrying capacity analysis was never completed. Continued suspension was without specific rationale.

PURPOSE AND NEED FOR THE ACTION:
The purpose of this action will be to consider whether to authorize grazing on the Rock Creek Allotment, and complete the requirements for Term Permit Renewal (TPR) in accordance with 43 CFR 4100 and consistent with the provisions of the Taylor Grazing Act, Public Rangelands Improvement Act, and Federal Land Policy and Management Act. The purpose of the action is also to ensure that all authorizations implement provisions of, and is in conformance with, the San Luis Resource Area Record of Decision and Approved Resource Management Plan (RMP), 1991, is in conformance with the Secretary Approved Rangeland Health Standards, and meets other applicable goals and objectives, including:

Allotment Specific Objectives:

a. Manage livestock to maintain/improve present ecological status and trend. Key species will vary at each key area due to differing range sites.
b. Provide forage to sustain 1,147 AUMs for livestock grazing.
c. Annual adjustments in AUM level may be applied for until a maximum of 1,147 AUMs are reached.
d. Proper use levels of key perennial grass species is a maximum of 50% and browse (shrub) species is 40% of current year's leader growth by livestock.

Lastly, this EA will be the basis for completing an Allotment Management Plan (AMP) as well as defining the Terms and Conditions of the permit. A Coordinated Resource Management Plan (CRMP – see Appendix D) will be described to discuss how monitoring will be included and implemented to ensure that the Colorado BLM Standards and Guidelines for Rangeland Health are being met through the life of this document (see pp 16-17). This Environmental Assessment will evaluate an estimated carrying capacity to meet the standards for rangeland health and analyze forage production on a range site basis with regard to cattle, and length of season.

Analysis for this TPR has been ongoing since 2004. In 2006 an EA/Proposed Decision was published. As a result of protests received, a final decision document (FONSI) was never completed. This current EA document incorporates updated, relevant information and corrects inconsistencies with the previous 2006 document. A CRMP was formed consisting of the permittees and cooperating agencies in part to address the protests and to develop a monitoring protocol for land management concerns.

ISSUES AND CONCERNS: This document will renew a 10-year Term Grazing Permit and will amend the June 16, 2006 TPR Terms and Conditions on the Rock Creek Allotment. Upon the approval of the Standards and Guidelines for Rangeland Health in 1997, five standards described conditions needed to sustain public land health, and relate to all uses of federal public lands. Significant progress continues to be made on the attainment of these guidelines (see Table 6, p. 17). Therefore, data has been analyzed and interpreted, and conclusions were made and documented to determine if significant progress is being made toward the attainment of each standard for rangeland health.

Several respondents have commented on the issue of the BLM or the permittee fencing the private land within the Rock Creek Allotment. Several conflicts concerning incidental livestock grazing on private land has occurred between the permittee and private landowners. The BLM

has no authority over a BLM grazing permittee's livestock on private land, nor does the BLM authorize any construction, labor, or materials of any fence on private land or private land bordering BLM land for the purpose of keeping livestock off of the private land. Federal laws governing public lands require individuals to have a permit authorizing livestock grazing on public lands. Though public land may not be separated from private land by a fence, individuals grazing public land without proper authorization are subject to penalties imposed by Federal statutes. Please note the summary from the State of Colorado Department of Agriculture website (*http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1176829292622*) in Appendix E.

Comments were received from some respondents regarding the use of shared water between Forest Service land and BLM land near the BLM Rockslide Pasture. The current conflict over the use of water and timing of pasture use is being engaged by Forest Service, BLM and affected permittees. Additionally, fencing issues near the Val Verde Campground between Forest Service and BLM are being addressed. These conflicts will be addressed during early planning in the 2009 grazing season.

Carrying Capacity and Stocking Rate

Carrying capacity (see Table 1.) was calculated using the Rio Grande County Area, Colorado Soil Survey, USDA Soil Conservation Service (February 1980). Range site and range condition in the 1980 Soil Survey provides the most current forage production values available on the Rock Creek Allotment. Range site data was estimated using ArcMap computer software and the forage production values based on a below average precipitation year according to range site for each pasture (see Appendix B-Range Site Map and Carrying Capacity Tables). Calculations include adjustments for percent of plant species that provide forage for cattle from range site descriptions in the soil survey.

Computer software (ArcMap 9.2) was used to estimate the suitable grazing acres on each range site for each pasture. Suitable grazing was determined by a distance to water of one and one half miles (see Appendix A, Rock Creek Water Distribution Map), and discounting any acres with a slope of greater than thirty percent. This was accomplished for each range site in each pasture for total corrected suitable grazing acres. Once all suitable acres were calculated it was possible to calculate forage production based on below average precipitation values. The rationale for using below average precipitation values in calculations is due to the nature of climate in this area. The Rock Creek allotment lies in the rain shadow of a portion of the eastern foothills of the Southern San Juan Mountains and Continental Divide. Potential drought is a recurrent phenomenon which is a limiting factor for plant health and vigor on associated rangelands. Additionally, a daily forage intake of 26 pounds per day per cow with one calf (1 AUM, or Animal Unit Month) were used and an allowable use of 40% (.40) taken from the most current San Luis Resource Area Record of Decision and Approved Resource Management Plan (RMP), December 1991.

Stocking rate is determined by calculating the number of allowable AUMs multiplied by a factor of 30.42 then divided by the total number of days in the grazing season.

As an example, assume:

Allowed AUMs = 700
Constant = 30.42 (*days per month by calculating 365 days in a year divided by 12 months*)
Number of days on allotment during grazing season = 139; calculated from on date to off date. *The first day on the allotment being May 15 (136th day of the year) and the last day September 30, being the 274th day of the year, thus: 274-136+1 = 139 days. One day is added to the formula because the first day on the allotment must be included.*

Therefore: **Stocking Rate** = (700 AUMs x 30.42) ÷ 139 days = 153 head of livestock

In cases where a permittee desired to graze a greater number of livestock the number of days in the grazing season would be shortened. For example:
Allowed AUMs = 700
Constant = 30.42
Number of Days = unknown (**X**)
Number of Livestock = 200 head

X = 700 AUMs x 30.42 ÷ 200 head of livestock = 106 days

The following carrying capacities are summarized in the following table (Table 1.) and estimated from suitability per the explanation and process noted above.

Table 1. Summary of Estimated Potential Carrying Capacity.

Pasture	Suitable Acres	Allowable Use of Forage (%)	Total Available Forage/Pasture (lbs.)	Forage/Animal Unit (lbs/day) Cow/calf basis	Total AUs/Pasture (lbs.)	Total AUMs
Bishop Rock	1,156	40	275,584	26	10,599	348
*Dry Creek	961	40	94,048	26	3,617	119
*Lower Tank	1,026	40	104,358	26	4,014	132
*North	1,468	40	145,866	26	5,610	184
*Rock Slide	459	40	125,908	26	4,843	159
Rocky	656	40	56,858	26	2,187	72
*South	1,995	40	232,128	26	8,928	294
*Triangle	359	40	37,236	26	1,432	47
*Upper Tank	1,697	40	192,004	26	7,385	243
*West	387	40	86,260	26	3,318	109
Totals	**10,164**					**1,707**

** Denotes Base AUM Pastures-Pastures that contain established water resources and are either permanently or temporarily maintained and are estimated at 1,537 AUMs. Administrative AUMs will not exceed 1,147 consistent with the original permit.*

Note: Total AUMs are calculated by dividing Total AUs by 30.42 (days per month). The estimated 1,537 AUMs are summed Total AUMs from pastures (*) with already established seasonal, permanent or temporary water haul sites.

The 1,537 AUMs are considered the available AUMs for the Rock Creek Allotment defined by current available water resources from seasonal, permanent or water haul sites in Dry Creek, Lower Tank, North Pasture, Rockslide, South Pasture, Triangle, Upper Tank and West Pastures. These AUMs were estimated by discounting slopes greater than 30% for each pasture and if consistent water is present at a distance of 1.5 miles whether it is natural, hauled, or developed. The following pastures are considered to have permanent water available, but additional water may be necessary to improve livestock distribution: Bishop Rock Pasture, South Pasture, Lower Tank Pasture, Triangle Pasture, Upper Tank Pasture. The Dry Creek, Rocky, Rockslide, North, and West Pastures may have seasonal water or water developments, but have not been consistent, may not provide enough water for long duration, or need maintenance. Possible water developments and water haul locations have been identified and will be surveyed for cultural/heritage resources as required before installation of pipelines or water tanks occur. The permittee has demonstrated the ability and willingness to effectively haul water to improve distribution and utilization in areas. The base *administrative* AUMs will not exceed 1,147 AUMs as is consistent with the original permit.

Proper utilization should not exceed 50% within a desired range of 40-50%. Distribution of livestock will be dependant upon water resources, salt and mineral supplement management and herding management. Using United States Department of Interior (USDOI) Bureau of Land Management (BLM) Rangeland Health Standards (H-4180-1) and sound range management principles, it is important to note that utilization standards should not exceed a maximum of 50% utilization in any pasture in order to allow opportunity for recovery and re-growth of grazed herbaceous species and 40% maximum for browse species. Therefore, because this allotment is also managed as winter habitat for populations of mule deer (*Odocoileus hemionus*) and elk (*Cervus elaphus*) along with smaller populations of pronghorn antelope (*Antilocapra americana*) carrying capacity may be adjusted annually on an incremental basis considering recovery from past drought conditions in 2002 and 2003, favorable growing seasons for 2004 through 2008, abundant precipitation, and abundant forage. These calculations are estimates developed from the best available data and sources, through professional judgment and are summarized below as Utilization by Year (Table 2.) and Maximum % Utilization by Pasture and Year for 2001 – 2008 (Table 3.). Cattle numbers ranged between 150-200 head. In years 2001, 2003, 2004, 2007 and 2008, 548 AUMs were authorized to graze by the deciding officer and the permittee volunteered to graze less than the amount granted.

Table 2. Utilization by Year.

Year	AUMs Utilized (from Actual Use and Bills)
1996	0
1997	0
1998	56
1999	348
2000	295
2001	469
2002	548
2003	171
2004	520
2005	565
2006	593
2007	349
2008	352

Table 3. Maximum % Utilization by Pasture and Year 2001 - 2008

Pasture	2001	2002	2003	2004	2005	2006	2007	2008
Bishop Rock		60/67		56	20	30	27/49	35
Dry Creek					32		29/40	34/41
Lower Tank		60		12				49
North								21
Rockslide				16			21/27	44
Rocky								
South					30	37		40/52
Triangle		50/75						13 (shrub)
Upper Tank	32/36			39		32		46
West							44	

Note: Pairs of numbers indicate that two transects in the pasture were completed and the highest utilization was recorded per transect.

Grazing Durations and Pasture Rotation

The recommended grazing season is 139 days from May 15 to September 30, and two weeks before or after those dates depending on resource conditions and water availability. This range allows a window which provides flexibility in the early part of the grazing season to utilize natural water resources and cool season native forage species in certain pastures, and if needed, delay livestock entry onto the allotment until the early part of June if conditions are not optimum for earlier turnout. The permittee could increase the number of livestock given a shorter season, but not graze with less livestock for a longer season. See Table 4 for a sample alternating grazing schedules and an explanation for Best Pasture practice. Some pastures can be combined such as the Rocky, Dry Creek and West Pastures to maximize distribution and follow livestock patterns of use.

The proposed adjustment in 2009 is 700 AUMs with approximately 153 head of cattle for 139 days. The following schedule is based on this adjustment. Actual rotation dates and days in a pasture will be variable according to forage abundance, climatic fluctuations, pasture readiness, water availability and logistical needs.

The permittee may graze a greater number of livestock for a shorter season. For example, 175 head of livestock could be grazed for a period of 122 days depending on forage resources and adequate precipitation. Pasture movements will occur when allowable utilization (40-50%) has taken place and livestock should be removed when 700 AUMs have been reached for the allotment. Livestock numbers may vary according to herd management needs through the grazing season as long as authorized total AUMs are not exceeded for the allotment.

Table 4. Proposed Grazing Schedule Year 1

Pasture	# Head	On date	Off date	Total Days
South Pasture	153	5/15		
Bishop Rock	153			
Rock Slide	153			
West Pasture	153			
Dry Creek	153			
Upper Tank	153			
Rocky	153			
North Pasture	153			
Lower Tank	153			
Triangle	153		9/30	
Totals	**153**			**139**

Best Pasture Practice

Grazing the following year (Year 2) may be reversed (Table 4 above) as a means of following the Best Pasture practice. In Best Pasture grazing the permittee would be allowed to use any pasture in the system as long as proper utilization is met and with the understanding that once 50% maximum utilization has been reached that the pasture cannot be grazed again. Also, the timing of the pasture will be integrated to defer the season according to cool season and warm season species of forage grasses. For example, if a pasture in 2009 is entered on May 15 to graze cool season species, then the following year that pasture should be used later, after late June or July, to graze warm season species. Best Pasture practice is very common in arid rangelands of the Southwest (Holechek, *Range Management*, Prentice-Hall, 1989 p. 223).

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

TABLE OF ALTERNATIVES, PROPOSED ACTION AND NO ACTION

Parameter	Proposed Action	Alternative A	Alternative B	No Action
AUMs	**700 in 2009**	**548 in 2009**	**1,147 in 2009**	**350**
Season of Use	**5/15 to 9/30**	**5/1 to 10/15**	**5/1 to 10/15**	**7/10 to 10/1**
AUM Adjustment	**Adjusted to 1,147 applied for annually, consistent with original permit**	**Adjusted to 1,147 – increase 20% every two years**	**None**	**None**
Stipulations	**Proper distribution, utilization, available water, range improvements as needed, frequent range rider**	**Proper distribution, utilization, available water, range improvements as needed, frequent range rider**	**Proper distribution, utilization, available water, range improvements as needed, frequent range rider**	**Proper distribution, utilization, available water, range improvements as needed, frequent range rider**

Proposed Action: The permittee and the BLM will meet prior to turnout each year to determine a recommended grazing rotation. Grazing use will occur between May 15 and September 30 or two weeks before and after those dates depending on resource conditions and forage availability. No pasture will be grazed during the same growing season more than two years in a row if practical. Livestock will be removed from any pasture on the allotment once 50% (maximum) use on herbaceous species or 40% use on current years leader growth of woody species is met, especially in riparian areas and near springs, or the allocated AUMs have been met on the allotment for all pastures. If proper utilization, livestock distribution, and watering guidelines are satisfied, then additional AUMs may be granted within the current grazing season given a season with sufficient precipitation and forage availability to livestock. Other factors to consider for granting extension within season include wildlife needs, resource conditions and meeting or moving toward meeting Rangeland Health Standards

Livestock numbers identified in the term grazing permit are a function of season of use and the total number of animal unit months (AUMs) that may be utilized on the allotment. Deviations from these livestock numbers and seasons of use may be authorized on an annual basis, where such deviations would not prevent attainment of the multiple use objectives for the allotment as well as standards and guidelines for grazing on Bureau of Land Management (BLM) allotments in Colorado. Annual and long-term adjustments in the grazing system may be made depending on progress in meeting resource objectives. Livestock numbers and periods of use will be applied for on an annual basis.

The Proposed Action will start with an adjustment in AUMs beginning with 700 AUMs for 2009. Livestock numbers will be 150-200 head depending on resource conditions. More livestock could graze for a shorter period of time in good years of precipitation and forage availability, calculated and scheduled at the beginning of the season. Further adjustment in AUMs will be considered based on proper utilization, development of adequate water resources as needed and proper distribution of livestock frequently monitored by a full time range rider. A past history of grazing pressure causing resource concerns regarding utilization in the eastern

most pastures prior to the 1995 transfer currently calls for corrective actions to meet Colorado BLM Rangeland Standards and Guidelines. This corrective action has been implemented as a change resulting in temporary suspension of 797 AUM's from the 1,147 AUM's on the original 1995 permit. By reducing the number of AUM's it was anticipated that time would allow for development of water resources and adjustment in management to provide changes in livestock distribution and proper utilization. Following 2003, and to the 2008 grazing season, distribution and development of hauled water sites has demonstrated positive results in plant production and health. A trend in precipitation increases from 2006 through the winter of 2007 has been favorable for increased production in plant communities and an observed (ocular estimates and professional judgment) decline in bare ground. Cool season grasses such as Western Wheatgrass (*Pascopyrum smithii*) and Indian Ricegrass (*Achnatherum hymenoides*) are showing signs of increase as well. Current management trends are positive based on ocular estimates. Annual adjustments in AUMs will be considered based on utilization and monitoring. The maximum adjustment in AUMs will not exceed 1,147 consistent with the original permit.

Alternative A: This alternative proposes to start at 548 AUMs in 2009 with an adjustment of approximately 20% every two years until 1,147 AUMs are reached consistent with the original permit. The grazing season offered would be May 1 to October 15. Appropriate distribution of livestock would be met using a full time range rider to frequently monitor livestock. Utilization would not exceed 50% in any pasture and water would be available to satisfy livestock needs. Mineral or salt would be used as a strategy to ensure good livestock distribution, appropriate water use and utilization in areas that tend to be under utilized.

Alternative B: Under this alternative 1,147 AUMs would be reinstated in the 2009 grazing season consistent with the original permit. No more adjustments would be allowed and the grazing season would begin on May 1 and end October 15. Appropriate utilization, proper distribution and available water to satisfy livestock needs would be required. A range rider would be required to frequently monitor movements of livestock and to properly disperse salt and mineral supplements.

No Action: The No Action alternative is considered the baseline alternative. No action means that the conditions under the first suspension of AUMs would be implemented. The number of AUMs would be held at 350 AUMs with no further adjustments awarded in the future. The grazing dates would be from July 10 to October 1. All previous stipulations and conditions in Alternatives A, B and the Proposed Action would be required for continued use of the permit.

Monitoring

Monitoring will be a large part of ensuring that Standards for Public Land Health (pp. 17-18) are met, or moving toward meeting standards, in order to authorize or not authorize any future adjustment. This will include yearly utilization monitoring in all pastures using the "Key Species Method," which is an ocular estimate of key herbaceous and browse species as per the "Utilization Studies and Residual Measurements, Interagency Technical Reference." Key areas will be developed in coordination with the permittee. Utilization data will be collected each year within each pasture utilized that grazing season. Long-term monitoring will include continuing Daubenmire Frequency Transects on existing key areas, and developing new key areas for frequency transects within the Rockslide, South, Upper Tank, Lower Tank, Triangle, Rocky and

Dry Creek Pastures. These key areas will be developed in coordination with the permittee. Frequency trend monitoring will be conducted once every 10 years at each key area. Data from the new key areas will be collected to provide baseline data at each location immediately after they are developed. Use Pattern Mapping will also be established to determine what areas are being utilized and to what extent. This study method does not require a key area location site, but does involve taking ocular utilization estimates throughout the allotment to be able to record the utilization in each area of the allotment on a map. Use Pattern Mapping will be conducted at the same time the Key Species Utilization Method is recorded, which is annually. The permittee and Natural Resources Conservation Service (NRCS) will be asked to facilitate and help monitoring to assist with the BLM's responsibilities and ensure the permittee understands what the stipulation criteria looks like on the ground. Those monitoring methods will comply with the BLM monitoring standards.

Coordinated Resource Management Plan (CRMP)
As part of the monitoring process a Coordinated Resource Management Plan (CRMP) has been established. This is a voluntary association between the Rock Creek BLM permittees, Colorado State Land Board, Colorado Division of Wildlife (CDOW), Natural Resources Conservation Service (NRCS) and BLM (see Appendix D).

The goal of this voluntary group is to share expertise and collaborative decision making based on monitoring results both in the short-term and in the long-term. All final decisions reside with the BLM Authorized Officer. Monitoring results will be shared among members of the CRMP and all aspects of allotment resources including grazing, wildlife, water/air quality (erosion), riparian, vegetation, soil, view-shed and recreation are considered. Each party will contribute time to the monitoring effort and/or analysis, then meet once a year before the next grazing season to review monitoring results and discuss resource issues that will aid in making any changes necessary in order to meet BLM Rangeland Health Standards and Guidelines on BLM Federal Lands within the Rock Creek BLM Allotment.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: Conversion back to a sheep allotment for the entire preference of 1,147 AUMs was considered, but according to the 1998 Revised Guidelines for Domestic Sheep and Goat Management in Native Wild Sheep Habitats, the Bureau of Land Management desires progressive native wild sheep management compatible with appropriate grazing on public lands by domestic sheep and free-ranging goats and recognizes the following guidelines:

Domestic sheep or goat grazing and trailing should be discouraged in the vicinity of native wild sheep ranges. Native wild sheep and domestic sheep or goats should be spatially separated to reduce the potential of interspecies contact. Extraordinary precautions will be followed to protect special status subspecies, e.g., federally listed threatened, endangered, proposed and candidate subspecies, State listed subspecies and BLM sensitive subspecies.

No Grazing Alternative
Temporary closure and a No Grazing Alternative of this allotment was examined, but dropped from further consideration as other alternatives were available, impact to the permittees livelihood was too great, and closure is not in conformance with the San Luis Valley Resource

Management Plan and the Federal Land Policy and Management Act (FLPMA, 1976) *Section 102, [43 USC 1701] (a) 7, 8 and 12*. When the Resource Management Plan (RMP) was approved, it analyzed the No Grazing Alternative and determined that livestock grazing was an appropriate use of this land. Eliminating grazing is not analyzed further because no new data or information has been identified through analysis that would warrant further review of the No Grazing Alternative.

STIPULATIONS, TERMS AND CONDITIONS:

The following Stipulations are common to all alternatives and will be included as the Terms and Conditions for the Rock Creek BLM grazing permit.

Stipulations, Terms and Conditions Common to all Alternatives:

1. Livestock grazing will be in accordance with this Environmental Assessment # CO-500-06-010-EA.
2. The terms and conditions of this permit will be modified if additional information indicates that revision is necessary to conform to 43 CFR 4180.
3. The permittee and the BLM will meet prior to turnout each year to determine the grazing rotation. Grazing use will occur between May 15 and September 30 or two weeks before and two weeks after those dates depending on resource conditions and forage availability. No pasture will be grazed during the same growing season more than two years in a row if practical.
4. Utilization levels on all key forage species identified on the allotment will not exceed 50% on herbaceous species or 40% use on current year's leader growth of woody species. This standard will not be exceeded outside 1/4 of a mile from water sources. Key sites will be considered by the BLM and permittee/CRMP team.
5. Proper distribution and utilization shall be consistent and monitoring will determine that BLM Rangeland Health Standards and Guidelines are being met, or moving toward meeting standards, in all pastures used. The CRMP may be consulted to discuss monitoring data and recommendations. An application for a requested adjustment in AUMs will be submitted before the next grazing season. The Authorized Officer will determine whether the adjustment shall be approved based on current monitoring/utilization data.
6. In all pastures, water resources shall be available to support livestock numbers. If water sources go dry, changes in the grazing rotation will be made.
7. Any pastures can be used, but a rotation will be agreed upon by the BLM and the permittee prior to turnout. Adjustments can be made in the middle of the rotation/grazing season agreed upon by the BLM and the permittee. AUMs will not exceed the authorized AUMs for the allotment.
8. Actual Use Reports shall be submitted by the permittee within 15 days after completing grazing and will include the number of animals by pasture and date.
9. All range improvements within the Assignment of Range Improvements will be maintained and in good working order prior to turnout on any pasture as per 43 CFR 4120.3.
10. The operator shall provide sufficient herding of livestock throughout each pasture to ensure reasonable livestock distribution and avoid excessive trailing between water sources.

11. All mineral supplements shall be placed at least 1/4 mile from open water sources (springs, streams, and troughs), wet or dry meadows, main roads, aspen stands and cultural heritage sites. All supplement containers shall be removed from the allotment by the end of the grazing season unless biodegradable containers are used.

Range Improvements

The Board of District Advisors for the San Luis Valley has paid for half of the materials ($5,000) to build a fence on the south end of the South Pasture between the Rock Creek Allotment and the McMahon/Greenie Allotment. Construction of the South Pasture fence is tentatively planned for 2009. The BLM has contributed $ 5,000 and the permittee has offered to construct the entire fence if materials were provided.

Construction/reconstruction of several water developments is proposed. A large dirt reservoir in the northwest portion of the allotment may be sealed with a satisfactory sealing material, and fenced. This is fed by runoff that flows into the reservoir and piped to 2 troughs, one near the reservoir, and the other about a mile to a mile and a half to the east to provide water to the area. If cost effective and mechanically feasible, instead of sealing the reservoir, a 50,000 gallon storage facility may be placed south-southeast of the reservoir or on a high point at an alternative site for improved water distribution to troughs in the Rocky/Dry Creek area. In addition to the storage facility, additional pipelines, livestock water tanks and any other supporting water facilities may be considered to assist in the efficiency of water storage and distribution on the allotment. Culture resource surveys will be conducted to ensure clearance of sites for development if heritage resources are present and may be affected, including any temporary water storage (water haul) sites prior to construction or placement.

A pipeline originating on the Forest Service in the Rockslide Pasture in the southwest portion of the allotment is located on the adjacent Rock Creek Forest Service allotment. The BLM trough is connected to the overflow on the Forest Service trough, but if the pipeline has been disconnected due to disturbance from recreational traffic or heating and expansion on the Forest Service side, then the BLM side will not work. Therefore, maintenance must occur in order to utilize this area of the allotment. Plans exist to consider burying this aboveground pipeline to prevent further disturbance. The BLM, Forest Service, and permittees will work in conjunction to coordinate maintenance of this pipeline. A water haul site is also proposed on the northern end of the pasture south of the Rock Creek Road. This would provide water throughout the pasture and is fairly easy to access for the permittee.

Water may be piped from Rock Creek on adjacent private land in the South Pasture near the Goat Ranch Spring to utilize a large area that is currently used with the permittees private land. If a pipeline cannot be constructed and water rights are not obtained, permanent water hauling sites will be established. One trough would be placed on the east end and one on the west end. Water hauling would be very feasible because of the easy access near their private land and flat topography to access the troughs with a water truck.

The North Pasture must also have permanent water haul sites just north of the state land. This would allow livestock access to the North Pasture. The upper tank may be moved slightly further west out of the drainage about ½ mile if the current pump can move water that far. If not,

a solar pump may be placed where the upper tank is currently located and the tank moved further west and out of the drainage. If possible, the pipeline would extend beyond and another tank would be placed. The Upper or Lower Tanks could be moved to facilitate water distribution.

The Rocky Pasture would have water nearby on the Dry Creek Pasture, but few livestock move south into this drainage, therefore, a permanent water haul site will be established. The West Pasture has some water in springs early in the spring and during run-off, but very limited. A storage tank and livestock tanks on the eastern portion of the pasture would be placed if adequate water is available.

If funding is available, a well may be drilled on the east end of the West Pasture on BLM land. Water would be pumped from the well, piped, and gravity fed to several areas on the lower end of the allotment. Troughs would be placed in several drainages from the North Pasture to Rock Creek, down-slope to the east end of the allotment. More information has not been collected due to the possible cost of the well and depth of the water. This project would be a long-term solution to water availability in the allotment. Project feasibility and cost-effectiveness will be analyzed prior to construction of this project.

In all cases with improvements, appropriate cultural and heritage surveys will be performed by qualified BLM personnel prior to any new ground disturbing activities. Concurrence with the Colorado State Historical Preservation Office (SHPO) will be required before installation. All roads/routes will be accessible by the permittee during the grazing season and a period two weeks before and after the season begins/ends.

Table 5. Assignment of Range Improvements

Priority	Project Name	Location	Materials	Labor	Cost	*Contributors
1	Dry Creek Reservoir Maintenance/Reconstruction	Dry Creek Pasture	Bentonite ($8.00 x 20 = $160), Pipe (5,280 ft. x $0.53/ft = $2,800), Troughs ($600 x 2 = $1,200)	Permittee - Backhoe ($80/hr x 8 hr = $640	$4,800	BLM, Permittee,
2	South Pasture Boundary Fence	South Pasture	Fencing materials (4 mi. x $2,500/mi = $10,000	Permittee – install ($2,500/mi. x 4 mi. = $10,000)	$20,000	GAB - $5,000, BLM - $5,000,
3	Rockslide Pasture Pipeline	Rockslide Pasture	Pipe (300 ft.)	Permittee	$0.00	Permittees, BLM, USFS - maintenance
4	South Pasture Pipeline	South Pasture	Pipe (10,560 ft x $0.53/ft = $5,600) Troughs ($1,000 x 2 = $2,000)	Permittee	$7,600	BLM, Permittee, NRCS
5	North Pasture Water Tank	North Pasture	Trough ($1,000 x 1)	Permittee	$1,000	BLM, Permittee, NRCS
6	Upper Tank/Lower Tank Movement	Upper Tank Pasture	Pipe (2,640 ft x $0.53/ft = $1,400	Permittee	$1,400	BLM, Permittee, NRCS
7	Rocky Pasture Water Haul	Rocky Pasture	Trough ($900 x 1)	Permittee	$7,000	BLM, Permittee
8	West Pasture Water Development	West Pasture	Pipe (5,280 ft x $0.53/ft = $2,800) Troughs ($600 x 2 = $1,200), Storage Tank ($3,000 x 1 = $3,000)	Permittee	$7,000	BLM, Permittee, NRCS

No contributors are final until further discussion and agreement. This is just preliminary funding.

A desired fencing project that would be located adjacent to County Road 28 between the Lower Tank Pasture and Triangle Pasture would entail building 1-2 miles of fence and consideration would include placement of a cattle guard with a cattle gate to manage livestock presence on the highway. Cost and materials will be analyzed before any construction would occur as well as rights of way and archeological concerns.

PLAN CONFORMANCE REVIEW: The Proposed Action is tiered to the following plan:

Name of Plan: San Luis Area Resource Management Plan

Date Approved: December 18, 1991
Date Amended: November 4, 1996

Page or Decision Number: Livestock Grazing Management, Land Use Allocation Decision 1-6 and Management Action Decision 1-7 (pages 9, 10, and 14 of the Record of Decision for the San Luis Resource Area).

The Proposed Action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3, and 40 CFR 1502.20).

PREVENTION OF UNNECESSARY OR UNDUE DEGRADATION: In addition to the management prescriptions discussed in this EA, including all terms and conditions, the BLM may use its authority to close an area of the allotment to grazing use or take other measures to protect resources at any time, if needed. Therefore, issuance of a grazing lease with appropriate terms and conditions is consistent with the BLM's responsibility to manage the public's use, occupancy, and development of the public lands and prevent unnecessary or undue degradation of the lands. (43 USC 1732(b)).

Standards for Public Land Health: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. The Standards are addressed in the appropriate Affected Environment/Environmental Consequences. The following table is a summary of those two sections. Project areas have been assessed for all Standards, however, not all Standards necessarily apply to all acres in the project area. "NA" denotes where a Standard does not apply and does not influence overall land health. A description of each Standard is outlined below.

Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

Table 6. Standards for Public Rangeland Health Standards Summary

	Current Situation			**With Proposed Action**	
	Achieving or Moving Towards Achieving	**Not Achieving**	**Causative Factors**	**Achieving or Moving Towards Achieving**	**Not Achieving**
Standard 1	X			X	
Standard 2	X			X	
Standard 3	Plants – X Animals – X			Plants – X Animals – X	
Standard 4	Plants – N/A Animals – X	Animals – isolated areas	Recreation	Plants – N/A Animals – X	Animals – recreation
Standard 5	X			X	

Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. The analysis and interpretation of these findings are located in specific elements listed as follows.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

CRITICAL ELEMENTS

AIR QUALITY: The initiation of the Proposed Action or alternatives will not have a significant negative impact on air quality.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: There are no Areas of Critical Environmental Concern within the Rock Creek Allotment.

CULTURAL RESOURCES: A cultural resource literature review and assessment was conducted for the Rock Creek Allotment. A number of cultural resource sites have previously been recorded within and adjacent to the allotment. Seven of the previously recorded sites are rock art sites that are considered highly significant and eligible to the National Register of Historic Places. These sites are monitored regularly because of their historic significance and because most have been vandalized in the past. Impacts related to grazing activity have not been noted at any of the sites. Other cultural sites located on the allotment consist of prehistoric stone structures and open lithic sites with a variety of artifacts fashioned from stone. Other sites consists of a small cemetery and the remains of a cabin/sawmill.

Monitoring of the seven previously recorded rock art sites is done regularly. Other cultural sites should be monitored on a periodic basis to determine if there are grazing related impacts occurring.

Additional cultural resource inventory, focusing on locating any additional rock art sites, is needed along intermittent drainages and wherever there is exposed bedrock or boulders. There are no present-day permanent water sources within the allotment therefore; additional inventory other than along areas where rock surfaces are found is not warranted. Proposed range improvements are subject to compliance with Section 106 of the NRHP and will undergo standard cultural inventory and evaluation procedures.

ENVIRONMENTAL JUSTICE: Grazing authorizations (permits and leases) were initially adjudicated to the livestock operators grazing a general area (allotment) prior to the Taylor Grazing Act. These operators received preference for use based on qualifications in the regulations. There was a base property requirement, which meant that an operator had to own sufficient base property to support the livestock for a portion of the year. Anyone purchasing base property may receive the attached term grazing permit within the guidelines of 43 CFR. An operator may acquire a grazing permit should one become vacant based on meeting the regulations and owning or leasing qualified base property. The San Luis Valley Public Lands Center (SLVPLC) has permittees from diverse nationality backgrounds, which reflect that of the make up of the general population of the San Luis Valley.
According to the Council on Environmental Quality "1997 Socioeconomic Profile of Colorado by County," counties in the San Luis Valley are listed as low income counties. The permits should continue under current regulations in 43 CFR. The system under the Taylor Grazing Act

can change only through the change of ownership of base property. This action will not cause impacts to minority or low-income populations from health or environmental effects.

FARMLANDS, PRIME AND UNIQUE: Impacts are not anticipated since the allotment does not meet the criteria in the USDA Ag Handbook 436.

FLOODPLAINS: Pertains to any low areas on the Rock Creek Allotment subjected to flooding from time to time. This includes areas in or approximate to Rock Creek, as well as intermittent or ephemeral channels and springs within the Bishop Rock pasture.

Upon assessment of the Rock Creek Allotment, there are no floodplain resource values associated with Rock Creek, intermittent channels, ephemeral channels and springs on this allotment. Rock Creek is heavily fortified with large boulders and rocks, providing tremendous bank stability, and leaving little available space for a floodplain. Within the Bishop Rock pasture, intermittent/ephemeral stream and spring annual flows are relatively small and the duration of flows are very short, providing no floodplain resource values to the areas. The Proposed Action and alternatives would have no direct, indirect or cumulative impacts on this resource. No mitigation is needed for this resource on the Rock Creek Allotment.

INVASIVE, NON-NATIVE SPECIES: There are a few known noxious weeds within the Rock Creek Allotment. Canada thistle is present on the Dry Creek Reservoir, and was treated in 2006. Black henbane is also present on the county roads that go through the allotment. Monitoring for invasive species and past treatments continues. Due to the nature of invasive, non-native species, the anticipated direct and indirect effects to the proposed range improvements would be an invasion of these species if soils were exposed to invasive, non-native species. Immediate and proper re-vegetation techniques and the requirement of all groundbreaking equipment to be pressure washed prior to using on the site will reduce the risk of the invasion of noxious weeds. Cumulative impacts should be negligible, but if noxious weeds are noted within the allotment, they will be treated to reduce the spread of weed infestations to adjoining private land, agricultural areas, and other federal and state lands.

There are significant safeguards stated in the Proposed Action to reduce the likelihood of noxious weed infestations. Washing of all equipment and immediate seeding of all ground disturbances will help ensure the re-establishment of native vegetation. Monitoring by range personnel will assist in the implementation of objectives to identify and document problem areas.

MIGRATORY BIRDS: An Executive Order (EO 13186) enacted in 2001 requires Federal agencies to consider the effect of projects on migratory birds, and directs agencies to review the list of Birds of Conservation Concern (USFWS 2002) developed for the Bird Conservation Regions (BCRs) of the United States when assessing species that may occur within a project area. Land administered by the San Luis Valley Resource Area occur within the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR 16), which encompasses portions of Colorado, New Mexico, Arizona, Utah, and Wyoming. The table below identifies the list of Birds of Conservation Concern for BCR 16, their associated habitat types as defined by Partners-In-Flight, and their status within the project area.

Table 7. FWS Birds of Conservation Concern for BCR 16 and their status within the project area.

Species	Associated Habitat Types(s)	Occurrence in Analysis Area
Northern Harrier	Agricultural, Grassland, Wetlands	Possible (year round resident)
Swainson's Hawk	Agricultural, Grassland, Mountain Shrub, Semi-Desert Shrubland, Pinyon-Juniper, Mixed-Conifer, Spruce-Fir, Low Elevation Riparian	Possible
Ferruginous Hawk	Grassland, Mountain Shrub, Semi-Desert Shrubland, Sagebrush Shrublands	Possible (year round resident)
Golden Eagle	Agricultural, Grassland, Cliff/Rock/Talus	Possible (year round resident)
Peregrine Falcon	Agricultural, Pinyon-Juniper, Spruce-Fir, Ponderosa Pine, Cliff/Rock/Talus, Wetlands	Possible (year round resident)
Prairie Falcon	Agricultural, Grassland, Semi-Desert Shrubland, Cliff/Rock/Talus	Possible (year round resident)
Gunnison's sage-grouse	Mountain Shrub, Sagebrush Shrubland, Low Elevation Riparian	No
Snowy Plover	Wetlands	No
Mountain Plover	Agricultural, Grassland, Semi-Desert Shrubland, Sagebrush Shrubland	Possible
Solitary Sandpiper	Wetlands	No
Marbled Godwit	Wetlands	No
Wilson's Phalarope	Wetlands	No
Yellow-billed Cuckoo	Low Elevation Riparian, Wetlands	No
Flammulated Owl	Aspen, Ponderosa Pine, Mixed-Conifer, Spruce-Fir	Possible
Burrowing Owl	Grassland, Semi-Desert Shrubland, Sagebrush Shrubland	Possible
Short-eared Owl	Agricultural, Grassland, Low Elevation Riparian, Wetlands	Possible (year round resident)
Black Swift	Cliff/Rock/Talus, High Elevation Riparian	No
Lewis's Woodpecker	Ponderosa Pine, Low Elevation Riparian	Possible (year round resident)
Williamson's Sapsucker	Aspen, Mixed-Conifer, Ponderosa Pine	Possible
Gray Vireo	Oak woodlands/scrub	No
Pinyon Jay	Pinyon-Juniper, Ponderosa Pine	Year round
Bendire's Thrasher	Semi-Desert Shrubland	Possible
Crissal Thrasher	Desert Scrub	No
Sprague's pipit	Shortgrass Prairie	No
Virginia's warbler	Mountain Shrub, Pinyon-Juniper, Ponderosa Pine, Low Elevation Riparian	Possible
Black-throated gray warbler	Pinyon-Juniper	Possible
Grace's warbler	Ponderosa pine	No
Sage sparrow	Sagebrush Shrubland	No
Chestnut-collared longspur	Shortgrass Prairie	No

A review of the Birds of Conservation Concern (BCC) list for BCR 16 indicates that sixteen of the twenty nine species identified in the list could breed in or migrate through the analysis area. Five species with potential habitat do not occur in the San Luis Valley area, so they are not expected to be affected by management actions; these include the gray vireo, Grace's warbler, chestnut collared longspur, Sprague's pipit, and Crissal thrasher. There are eight species that do not have habitat present in the Rock Creek Allotment and will not be affected by project activities; these include the Gunnison's sage grouse, sage sparrow, snowy plover, solitary

sandpiper, marbled godwit, Wilson's phalarope, yellow billed cuckoo, and black swift. The remaining sixteen species (see table above) have habitat present in the analysis area and may be affected by project activities.

The FWS was mandated in 1988 to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions are likely to become candidates for listing under the Endangered Species Act of 1973". Neotropical migrants are not covered in the BLM San Luis Resource Area Resource Management Plan or on the Determination of NEPA Adequacy checklist. SLRA RMP and DNA do not adequately cover the requirements of EO 13186, so they would be inappropriate documents to tier from and use as a checklist for conservation of migratory birds. Therefore, in accordance with the Executive Order 13186, BLM must address the BCC list to determine potential effects on bird species. Operating outside the breeding, nesting and fledgling periods will minimize or eliminate ground disturbing activities that may result in nest destruction or abandonment.

Impacts of the Proposed Action, Alternative A, Alternative B and the No Action Alternative: The project area includes habitat for sixteen species of conservation concern, including eight species that may be present year round. The Proposed Action, Alternative A, Alternative B, and the No Action alternative may affect species present during the grazing season due to the overlap of livestock grazing (May 1 to October 15) and the critical migratory bird courting and nesting period (May 15 to July 15). Species that utilize riparian or ground/low shrub habitats may be influenced by livestock through disturbance, habitat modification, destruction of nests, eggs, or individuals. The activities authorized under this EA for each alternative will pose some risk for disturbance to individuals, habitat modification, and destruction of nests of any species that may be present during the breeding/nesting/brood rearing season when grazing occurs in the spring and summer.

Regardless of "pasture" rotation, many of the pastures will be used multiple years in a row during the migratory bird breeding and nesting periods. Since the migratory bird period overlaps spring and summer time, pastures may be used in consecutive years (spring one year, summer the next year) without "rest" for migratory bird habitat during the breeding, nesting, and brood-rearing period.

Potential direct effects to individuals include flushing, nest destruction, or nest abandonment due to the presence of cattle. Potential indirect effects to habitat include reduction of cover, nesting, and roosting habitat through grazing, trampling, and rubbing. Habitat is likely not to be measurably affected as long as utilization standards are met and monitoring/adaptive management occurs. Habitat will remain available and suitable for breeding, nesting, foraging, and roosting as long as appropriate rangeland health standards (Standards 2, 3, and 4) are met and utilization standards are enforced.

Use of the allotment by livestock outside the time period of May 15 to July 15 will not result in disturbance and/or nest loss/abandonment during the nesting season. Fall grazing actions occurring outside of the breeding period pose no risk of disturbance to individuals, but wintering species may be affected if residual utilization standards are exceeded and degradation/loss of foraging and cover habitat occurs.

Analysis of the Proposed Action and Alternative A will be similar, because the affects of the actions will be similar. Implementation is different but both actions will achieve the same results that should meet BLM Colorado Land Health Standards: better distribution of livestock and desired utilization across the landscape within the same grazing period. The Proposed Action and Alternative A both use short-duration pasture rotation grazing regimes that should minimize the re-grazing of pastures within one year and will help alleviate heavy livestock grazing use of the habitat by allowing for re-growth and/or retention of adequate stubble height for nesting, foraging, and cover. Implementation of the Proposed Action and Alternative A should leave sufficient cover and foraging habitat for migratory birds that use the allotment during the fall and winter, such that habitat is likely not to be measurably affected.

The no action alternative is the best alternative for migratory birds because it has the least impact from livestock with fewer animals using the rangelands. Under this alternative, fewer livestock that are appropriately distributed across the allotment will remove less nesting cover and will have a lesser chance of disturbing nesting birds than allowable AUMs under the other alternatives. The No Action alternative has, in the past during the drought seasons, caused more concentrated use in a few areas surrounding water developments/haul sites (within 1 mile of these sites). These areas of high use are more likely to be degraded and are more likely to affect migratory birds through loss of habitat and disturbance. However, livestock use is usually limited to these heavy use areas. Since 2004, shorter duration grazing under the no action alternative has not degraded the habitat for migratory birds (removal of cover, destruction of nests), utilization standards have not been exceeded. Disturbance to migratory birds has been minimal outside of the water haul sites since birds use the remainder of the pastures for habitat and likely avoid the heavy use areas where habitat is degraded. Under the No Action alternative, most of the allotment does meet Colorado Land Health Standards with the exception of the heavy use areas which are limited in area and scope.

Alternative B has the potential to have the most impact to migratory birds of the four alternatives. With the full 1,147 AUMs, the allotment will be at carrying capacity and current water sources will likely be limiting. Therefore, more herding and traveling greater distances to water to adequately utilize the available vegetation may impact migratory bird habitat by increasing the chances of interactions between livestock and migratory birds. The main difference between this alternative and the proposed action and alternative A is that the carrying capacity of the allotment is granted immediately versus over time. The other two alternatives allow for progression to 1,147 AUMs over time and allow management to address issues that may occur such as utilization, distribution, available water, through monitoring rangeland resource conditions.

All alternatives are expected to maintain existing stable or upward vegetation trends or improve those areas of the Rock Creek Allotment that are in a slightly downward trend. Implementation of the Proposed Action, the no action alternative, or Alternative A should ensure the Rock Creek Allotment will be consistent with the Colorado Land Health Standards. Even with an increase in numbers of cow/calf pairs, the allotment's vegetative trend will be maintained or improved with better distribution of livestock, more water haul sites, and shorter duration use of each pasture. In general, continued livestock grazing at appropriate stocking rates that adhere to prescribed

grazing management should not have any detrimental effects to the bird populations noted above. Suitable habitat conditions for resident and migratory birds are expected to be improved and/or maintained and species will not be measurably affected. Some risk to individuals is possible due to livestock presence but the risk to the populations of the bird species listed above is negligible.

Under alternative B and eventually alternative A, grazing would occur from May 1 through October 15 and would improve distribution and prevent overuse. Longer duration grazing under both alternatives may degrade the habitat for migratory birds by removing cover and directly disturbing birds, especially if utilization standards are exceeded. Possible reduction of cover and nesting habitat as well as potential disturbance to migratory birds may occur under these alternatives unless utilization standards are strictly enforced. However, under Alternative B, Colorado Land Health Standards will likely be met if grazing of grasses and shrubs does not exceed allowable utilization levels.

In general, impacts to migratory birds occur when livestock or wildlife disturb nest sites where birds are tied to the area during brooding and nesting periods. All alternatives allow for grazing during the "critical" nesting period. Direct affects that can occur through livestock presence include nest destruction, disturbance of individuals, or nest abandonment. Avoidance of riparian areas and forested areas where most nesting birds are found can reduce direct impacts to migratory birds. Birds that nest in grasslands and shrublands are generally adapted to nesting with grazing ungulates and often nest away from trailing areas and areas of high use. These ground nesting birds tend to place nests under mature shrubs or have distraction techniques that they use to help lead animals away from nest sites. Indirect affects that can occur include loss of ground cover or nesting cover through foraging grasses, hydric plants, and browse plants, and loss of riparian foraging habitat that harbors large numbers of insects. Grazing rangelands can be compatible with migratory bird nesting and foraging when adequate cover is maintained and disturbance to nest sites is minimal.

Cumulative impacts (past, present, and reasonably foreseeable activities, in addition to proposed grazing) may negatively affect migratory birds. Recreation use including archery and rifle hunting is a popular activity in the area. Dispersed recreation such as horseback riding, motorized access, camping and hiking occurs in the area as well. The cumulative effects of these activities, in addition to livestock grazing, on migratory birds are minimal due to dispersed use of the area by these species and the adequate habitat conditions for the BCR 16 species. By following design criteria (surveys and timing of implementation) described below, the actions authorized by this EA are consistent with the MTBA and therefore minimal cumulative impacts are anticipated.

Design Criteria for Species Conservation for Alternatives A and B, the No Action alternative, and the Proposed Action:
1) During the spring grazing season, which coincides with the May 15 beginning of the nesting season, the allotment will be monitored in sensitive areas such as riparian woodlands or upland nest sites to ensure utilization standards are being met.
2) Areas with known nests or good quality habitat are subject to surveys and monitoring to ensure protection of nests and individual birds.

NATIVE AMERICAN RELIGIOUS CONCERNS: The BLM Quarterly Scoping document, issued with an entry for the Rock Creek Allotment, was sent to designated Tribal representatives. No comments were received from any of the Tribes contacted. The concentration of rock art sites in the area indicates that the allotment may have sites important to Native American groups. Rock art is a site type that Native American groups have identified as having the potential to be of religious concern.

Continued regular monitoring of known rock art sites within the Rock Creek Allotment is needed to help assure protection of area rock art sites.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES: **Plants** - Based on reports from BLM inventories, Colorado Natural Heritage program, San Luis Valley inventory and personal observations there are no threatened, endangered or BLM sensitive plant species located on the Rock Creek Allotment. Due to the absence of known species in this category and because the habitat of the Rock Creek Allotment is not likely to decline under the Proposed Action and alternatives, there are no direct, indirect or cumulative effects to federally threatened, endangered or BLM sensitive plant species.

There are no threatened, endangered or sensitive plant species on the Rock Creek allotment, therefore public land health Standard 4 is not applicable (N/A) to the Rock Creek Allotment.

Animals - Twenty four species may occur in the San Luis Resource Area (Table 8) based on reports from the Colorado Natural Heritage Program (CNHP), Natural Diversity Information Source (NDIS), Bureau of Land Management, and personal observation on threatened, endangered, and sensitive plant and animal species. Eight of these species (1 Federally Threatened, 1 Federal candidate, and 6 sensitive), Canada lynx (Federally Threatened), Gunnison prairie dog (Candidate), bald eagle, mountain plover, Northern goshawk, peregrine falcon, ferruginous hawk, burrowing owl have been recorded on nearby allotments, but only burrowing owl and prairie dogs have been observed regularly on the Rock Creek Allotment. The milk snake, Northern leopard frog, Yuma myotis, Townsend's big-eared bat, and big free-tailed bat are BLM sensitive species that may occur in the area but no occurrences have been recorded.

AFFECTED ENVIRONMENT

Canada lynx habitat in the form of winter foraging/denning habitat and other (low quality and summer foraging habitat) habitat exists on the Rock Creek Allotment in a few limited areas adjacent to National Forest and along the riparian corridor of Rock Creek. Lynx tend to augment their diet of snowshoe hares with red squirrels and to a lesser extent mice, squirrels, and grouse in southern Colorado. Denning habitat consists of large woody debris in mature conifer or mixed conifer-deciduous forests. Mesic mixed conifer with greater than 40% canopy cover, aspen and conifer with >40% canopy cover, and willow riparian make up winter foraging habitat. Other habitat includes mesic mixed conifer, aspen with >40% canopy cover and >40% conifer, willow riparian, and upland mountain shrub communities (RGNF Lynx Habitat Mapping Criteria and Rationale for the Designation of Lynx Analysis Units as Revised March 2006).

Public Lands encompass two small corners of Rock Creek with alder/willow and one section of stream with a conifer and alder riparian vegetative component (east of the Girl Scout Camp).

The corners with alder and a few interspersed willow bushes are in a steep rock walled canyon and do not contain suitable or potential habitat for southwestern willow flycatcher. These corners do not have access for cattle to water so they are not affected by livestock use. The stream sections on Public Lands are too restricted by rock walls with a narrow willow stringer to support breeding and nesting habitat but may afford occasional roosting and foraging habitat, especially due to its proximity to private land with suitable habitat. Water is persistent through the breeding season on private land and may support breeding, nesting and foraging habitat for southwestern willow flycatcher. Cottonwoods, alders, and willows provide suitable habitat on nearby private land.

Yellow-billed cuckoos may use the private land with extensive cottonwood galleries and an understory willow component. However, this habitat component does not exist on the minimal riparian sections of Public Lands. Mexican spotted owls use steep narrow rock canyons with oaks, pinyon/juniper and ponderosa woodlands, or mid-elevation and mixed conifer/deciduous habitat. Habitat for yellow-billed cuckoos and Mexican spotted owl does not occur on the BLM managed Public Lands in the Rock Creek allotment, no effects to these species will occur under all four alternatives, and therefore will not be further discussed in this document.

Gunnison prairie dogs have active colonies that occur on the allotment and the allotment provides prime habitat conditions for this species of prairie dogs. They are a currently listed candidate species as the "Montane" Gunnison prairie dog which is being considered for federal threatened/ endangered listing by the US Fish and Wildlife Service. This species is colonial and serves as a keystone prey species for a variety of predators including hawks, coyotes, burrowing owls, and bobcats. They use agricultural lands and low shrublands/ grasslands for foraging and burrowing habitat. Prairie dogs are often removed from agricultural lands by poisoning, gassing, trapping, or shooting because they are considered to be an agricultural pest.

Bald eagles are present during winter and use the area primarily for foraging. Cottonwood trees are available for roosting. Bald eagles are known to roost and forage on the adjacent Monte Vista National Wildlife Refuge and nearby agricultural lands with cottonwood stands. Bald eagles potentially use the Rock Creek Allotment for foraging. There are a few cottonwood stands on private lands along Rock Creek that would make good roost sites. Foraging would be limited to winter kills of ungulates on Public Lands or occasional hunting and capturing of small mammals.

Suitable habitat for ferruginous hawks, mountain plovers, and western burrowing owls is present on the Rock Creek Allotment. Ferruginous hawk habitat is made up of shortgrass to midgrass grasslands or shrublands that have varied topography. Ferruginous hawks nest in trees or on the ground and they forage on small to medium sized mammals. They have been recorded on nearby allotments and likely use this allotment for foraging purposes. Mountain plovers are known to inhabit allotments south of the Rock Creek Allotment in the spring and summertime. Mountain plovers require habitat with limited cover and topography, including stunted shrublands of widely spaced rabbitbrush, heavily grazed tall grass, fragmented prairie, or short grass prairie. Burrowing owls nest in burrows of prairie dogs or other ground squirrels. These owls are commonly found in grasslands, shrublands, and deserts.

Habitat for peregrine falcons and northern goshawks is also present on the Rock Creek Allotment. Peregrine falcons use open areas near water for foraging mainly on small birds and nest on cliff ledges. Northern goshawks may use the allotment for roosting, foraging, and nesting in mature conifer and aspen stands adjacent to National Forest.

The milk snake inhabits arid river valleys, pinyon/juniper woodlands, shortgrass prairie and shrubby hillsides that are present on this allotment. The northern leopard frog uses habitat associated with reservoirs, streams, and irrigation ditches, of which reservoirs and streams are found on the Rock Creek Allotment.

Yuma myotis, Townsend's big-eared bats, and big free-tailed bats have suitable habitat on the Rock Creek Allotment. Yuma myotis occur in habitat with open water and relatively treeless rangelands including riparian woodlands, pinyon/juniper woodlands, and semi-desert shrub. These bats forage over ponds and streams for beetles and soft-bodied insects. Townsend's big-eared bats use semi-desert scrub and pinyon-juniper woodlands and generally roost in abandoned mines or caves. These bats forage for moths and other insects along forest edges. Big free-tailed bats occur on rocky landscapes and in open country at moderate elevations and forage on moths, crickets, and stinkbugs.

ENVIRONMENTAL CONSEQUENCES

Use of the allotment by livestock during the spring/ summer/ fall may indirectly impact lynx through temporary displacement of foraging individuals or change daily use patterns of lynx that may den in the vicinity. Snowshoe hares, prey for Canada lynx, may have dietary overlap with livestock on vegetation such as aspen, mountain shrubs, and willows. Browsing or grazing can have a direct effect on snowshoe hare habitat if it reduces winter browse (LCAS, August 2000). Under all alternatives, indirect effects to lynx may occur because grazing has potential to impact snowshoe hare habitat and populations through competition in aspen stands and riparian willow communities.

Direct impacts to Canada lynx are not anticipated, these cats are secretive, elusive, and are likely to avoid livestock. Lynx will probably remain at higher elevations and in more densely forested habitat than occurs on Public Lands within the Rock Creek Allotment during the late spring, summer, and fall because their prey species are more abundant and the habitat is more mesic. Summer foraging of lynx is possible in the low elevation riparian areas where displacement of lynx may temporarily occur due to livestock presence. However, use of these riparian areas by lynx in the summer is unlikely due to human presence through recreation and more contiguous and less disturbed habitat at higher elevations. Lynx are likely to use the fringes of the Rock Creek Allotment during the winter, when livestock are not present, for foraging and possibly denning when snow pack is high or when conditions are crusted on the National Forest. Indirect impacts to lynx may occur through competition for forage with snowshoe hare for browse plants including regenerating aspen and willow. Competition between livestock and snowshoe hares is unlikely due to limited habitat overlap and enough residual browse vegetation leftover after grazing has occurred. Under these circumstances direct and indirect effects are not anticipated for the No Action Alternative, Alternative A, Alternative B, and the Proposed Action.

Gunnison prairie dogs use the allotment and have habitat through out the allotment. This species has adapted to large ungulates using the landscape and are tolerant to livestock presence. Direct effects may include crushing of burrows by livestock. Cattle generally avoid prairie dog colonies because there is reduced forage available from prairie dog vegetation clipping and many burrows with unstable soils. When animals crush burrows, prairie dogs quickly repair the damage and active burrows are usually deep enough to prevent permanent damage or crushing of individuals. Indirect effects from livestock presence may be reduced vegetative cover through grazing which generally is beneficial to prairie dogs because they require sight distance for predator avoidance. Under these circumstances direct and indirect effects are not anticipated for the No Action, A, B, and Proposed Action alternatives.

Bald eagles may use the allotment in winter when cattle are not present under all alternatives so disturbance by livestock is not an issue. If Colorado Land Health Standards are met, indirect impacts such as reduction of cover and foraging habitat for prey species of bald eagles are not anticipated. Livestock grazing at proper levels will promote healthy rangeland conditions including cover and foraging habitat for prey species (ungulates and small mammals) preventing adverse indirect impacts to eagles.
Suitable foraging habitat for sensitive bird species occurs on this allotment. Direct impacts such as temporary displacement, nest site disturbance, crushing of nests, trampling of burrows of mountain plover, burrowing owl, and ferruginous hawk may occur from the presence of livestock in the spring and summer. As ground nesters, mountain plovers have adapted to nesting and foraging in conjunction with large ungulates and direct impacts to individuals are unlikely but may be beneficial because plovers use stunted shrublands and grasslands. Ferruginous hawks are large hawks that are unlikely to abandon a nest due to livestock presence. Burrowing owls nest in small mammal burrows that livestock generally avoid. Peregrine falcon nest on cliff ledges and goshawks nest in mature aspen and conifer trees where nests and individuals are not impacted by grazing practices.

Seasonal rest of the native plants will improve cover, nesting, and foraging habitat for bald eagles, peregrine falcons, ferruginous hawks, Northern goshawk, and burrowing owls. Pasture rest will allow more time for recovery from grazing since no pasture will be re-grazed within a grazing season and no pasture will be used at the same time more than two years in a row. Birds may be affected during the spring/ summer grazing season due to nest disturbance, trampling, or flushing. However, with proper livestock grazing management and adequate cover, these birds will unlikely be adversely affected by livestock presence. Grazing that meets land health standards are unlikely to crush a nest or permanently displace these species under all alternatives. No direct or indirect effects are anticipated.

Direct impacts on the three bats, northern leopard frogs, and milk snakes are not anticipated. Indirect impact from livestock grazing may alter the insect community due to removal of plant matter which in turn limits bat foraging. Indirect impacts include reduction of cover and degradation of the plant community through selection of certain plants (use of winterfat, browse shrubs, riparian grasses, aspen) over others and concentration in specific areas over others (shade, riparian areas). Crushing of burrows and trampling of individual amphibians and reptiles is unlikely if land health standards are not exceeded, riparian conservation and management is encouraged, and distribution of livestock away from water is successful. Foraging and

burrowing habitat will be maintained for Northern leopard frog at Rock Creek and the reservoirs that are operable and across the landscape for milk snakes. Bats will not be directly impacted by livestock presence because they will not be crushed or displaced by cattle. Foraging habitat for bats will be promoted through water and riparian management and maintaining forest edge or open rangeland integrity for the three bat species. The No Action Alternative will promote healthy native rangelands with the most residual cover to enhance bug habitat which will improve foraging habitat for bats, frogs, and snakes.

Direct impact including crushing of nests, trampling of burrows, and directly displacing individual sensitive species are not anticipated under the No Action Alternative, Proposed Action and Alternative A. Direct impacts will also be possible under Alternative B but are not anticipated with proper rangeland management. This alternative is just an acceleration of reaching carrying capacity compared to a graduated increase under the Proposed Action and Alternative A. Indirect impacts continue to improve from the past "current use" over the past four years, due to better livestock distribution, increased water hauling, and less cover removal through prevention of re-grazing. Better livestock distribution is continuing to improve cover, nesting, and foraging habitat for bald eagles, peregrine falcons, ferruginous hawks, Northern goshawk, and burrowing owls and will allow more time for recovery from grazing since no pasture will be re-grazed within a grazing season and no pasture will be used at the same time more than two years in a row.

Past practices within the allotment, including domestic sheep grazing, and problems with livestock distribution have been changed and rangeland management has improved in the last four years. Past concentration around water sites and limited distribution across the landscape has affected the native plants by creating high impact areas that if left unaddressed, might eventually change the insect component in some areas of the allotment and may affect bat, reptile, and amphibian foraging opportunities. Under all alternatives the improved habitat trend will continue to improve habitat for wildlife.

The Proposed Action and Alternative A are graduated versions of Alternative B, the carrying capacity alternative. The proposed action and alternative A will likely reach carrying capacity after monitoring and best management practices show improving trends and will allow for increases in AUMs over a period of time. The allotment is in good condition with the exception of a few areas in conjunction with water resources which will likely improve with additional rangeland water improvements over time. The preferred alternative for threatened, endangered, candidate, and sensitive species is the current management alternative. This alternative has the least impact on wildlife habitat, leaves more residual vegetation for nesting and hiding cover, allows for more browse vegetation to be available during the winter during critical periods for wildlife when they are most stressed, and is more likely to improve range conditions from past management practices on a faster trajectory than the other alternatives. However, the other alternatives will likely leave adequate habitat for wildlife and through best management practices, mitigation measures, land health standards, and increased monitoring efforts, the land managers will be able to use adaptive management to improve allotment trends.

Cumulative impacts for all actions (past, present, and reasonably foreseeable activities, in addition to proposed grazing) may affect threatened and sensitive species. Recreation use

(archery and rifle hunting; dispersed recreation such as horseback riding, motorized access use, and hiking) occurs. Public Lands in the Rock Creek area have less snow than the adjacent Rio Grande National Forest at higher elevations and afford year-round recreational use. The close proximity to Del Norte, Monte Vista, and Alamosa for local people and tourists to recreate makes this area highly accessible for hunting, fishing, snowshoeing, skiing, camping, hiking, target shooting, horseback riding, and mountain biking. There is also an archery range/cross country ski network of groomed trails for enthusiasts. Timber harvest, firewood cutting, livestock grazing, campgrounds, road and trail use and maintenance all occur on adjacent Forest lands.

Bald eagles may temporarily leave the area during the winter if human presence causes disturbance but permanent affects to this species are unlikely. Human presence associated with livestock management may temporarily directly affect eagles during the winter through displacement. Bald eagles use the Monte Vista National Wildlife Refuge, adjacent to the Rock Creek Allotment for winter roosting and foraging habitat. Eagles may use the allotment for foraging during the winter (November through March) on winter killed small mammals and ungulates. Eagles are generally habituated to humans and spend much time in agricultural areas and around reservoirs where recreation activities occur. The infrequent presence of humans during the wintertime when the allotment is not being used is not expected to alter eagle foraging and roosting behavior enough to negatively affect individual birds.

Canada lynx may be affected by recreation activities because “packed trails created by snowmobiles, cross country skiers, snowshoe hares, and other predators may serve as travel routes for potential competitors and predators of lynx, especially coyotes” (LCAS 2000). However, the Rock Creek Allotment tends to have less snow than at higher elevations on Forest and has coyotes present year-round since the area is accessible to high foot loading (ratio of body mass to foot area) species. Therefore, competition with coyotes, mountain lions, bears, and bobcats is possible regardless of recreation activities. Factors that may influence the effects of recreation on lynx include: 1) Type and quality of lynx habitat in which an activity occurs; 2) Time of year activity occurs; 3) Time of day activity occurs; 4) Type of activity; 5) Pattern of activity; and 6) Intensity and frequency of activity (LCAS 2000). Since habitat on the Rock Creek Allotment is marginal at best, and because activities tend to be variable in frequency and intensity, lynx are unlikely to use the allotment for cover, denning, or foraging during high levels of recreation or livestock management. There is connectivity between Public Lands and National Forest through riparian corridors (Rock Creek and Dry Creek) and stringers of mixed conifer and aspen to allow movement. Recreation or other cumulative impacts will not compromise these movement corridors. Snow compaction is probably not an issue in the Rock Creek Allotment due to the limited amount of snow at this low elevation (most years) and year round use by competitors.

To address issues with competition between livestock and snowshoe hares, the BLM requires Colorado Land Health Standards be met and utilization standards not be exceeded. If the allotment remains in good condition and no more than 40% use of the current year’s growth on shrubs, aspen, and willow occurs, then livestock use is unlikely to affect snowshoe hare foraging habitat. Residual vegetation left from grazing should leave cover to maintain hare habitat in the

presence of recreation. If the allotment can support snowshoe hare populations every year then lynx individuals will not be affected by livestock use as well as winter recreation.

Gunnison prairie dogs, mountain plovers, bald eagles, burrowing owls, ferruginous hawks, peregrine falcons, Northern goshawks, milk snakes, Northern leopard frogs, and the three bats tend to be relatively tolerant of humans or can escape human activities. Most sensitive species in this area will be habituated to human presence due to the consistent levels of recreation year-round. However, Northern goshawks are relatively tolerant of humans except during the courtship and incubation (of eggs) periods when they are more sensitive to disturbance and may abandon the area or nest due to disturbance. Ground nesters such as ferruginous hawks, burrowing owls, mountain plovers, milk snakes, and Northern leopard frogs are more likely to be disturbed by recreation activities as well as grazing. Peregrine falcons nest and tend to roost on rock walls and outcroppings and may be affected by sport climbing or bouldering, but are less affected by other recreation activities.

The cumulative effects of these activities, in addition to livestock grazing, on threatened and sensitive species are minimal due to limited use of the area by these species. Under all alternatives, sensitive and threatened species are unlikely to be affected by grazing and recreation activities.

Table 8. Direct, Indirect, and Cumulative effects on threatened, endangered, and sensitive species for the Rock Creek Grazing Permit.

Species, Status	Species Habitat	Rationale	Proposed Action	Alternative A	Alternative B	No Action
Canada Lynx, FT	Early successional mixed conifer forests and also aspen/willow/shrub-steppe are used for foraging. Late-successional forests are used for denning and winter foraging.	Winter foraging and other habitat present, possible competition for foraging and cover habitat for snowshoe hares, and possible displacement for lynx from livestock presence.	NLAA	NLAA	NLAA	NLAA
Southwestern Willow Flycatcher, FE	Riparian habitats along rivers, streams or other wetlands, where dense growths of willows or other shrub and medium sized trees are present, often with a scattered overstory of cottonwood.	No known occurrence; Not suitable habitat	NE	NE	NE	NE
Mexican Spotted Owl, FE	Steep cañons with a Douglas-fir, white fir, ponderosa pine/pinyon-juniper component.	No known occurrence; Not suitable habitat	NE	NE	NE	NE

Species, Status	Species Habitat	Rationale	Proposed Action	Alternative A	Alternative B	No Action
Gunnison prairie dog FC	Shrubland, grassland, agricultural land	Suitable habitat, colonies present on allotment	NI	NI	NI	NI
Yellow-billed cuckoo, FC	Cottonwood and willow woodlands with a dense under story and large blocks of riparian habitat	No known occurrence; Not suitable habitat	NI	NI	NI	NI
Ripley's Milkvetch, SS	Sagebrush/Pinyon Juniper	No known occurrence	NI	NI	NI	NI
Slender Spiderflower, SS	Edges of Wetlands	No known occurrence	NI	NI	NI	NI
Rock Loving Neoparrya, SS	Igneous and Limestone Rock Outcrops	No known occurrence	NI	NI	NI	NI
Bald Eagle	Nests and roosts are usually found in open-branched trees near larger lakes, streams, rivers and reservoirs.	No nest sites; species forages in area during winter, allotment has suitable habitat, eagles habituated to human presence.	NI	NI	NI	NI
Great Basin Silverspot Butterfly, SS	Wet meadows near streams, permanent spring-fed meadows, and seeps	No known occurrence, suitable habitat is marginal during very wet years	None	None	None	None
Northern Leopard Frog, SS	Wet meadows, banks and shallows of marshes, ponds, beaver ponds, reservoirs, lakes, streams, irrigation ditches	No known occurrence; Suitable habitat at reservoirs	NI	NI	NI	NI
Milk Snake, SS	Shortgrass prairie, sandhills, shrubby hillsides, cañons, ponderosa pine savannas , pinyon-juniper woodlands,	No known occurrence; suitable habitat	NI	NI	NI	NI
Texas Horned Lizard, SS	Grasslands, plains with large patches of bare ground, loamy or sandy soils	No known occurrence, suitable habitat	None	None	None	None
Big Free-tailed Bat, SS	Rocky landscapes, cliff faces, tree cavities or buildings for day roosts, open country for foraging	No known occurrence; suitable habitat in pinyon/juniper and sagebrush/rabbit brush steppe	NI	NI	NI	NI

Species, Status	Species Habitat	Rationale	Proposed Action	Alternative A	Alternative B	No Action
Yuma Myotis, SS	Open water, streams or ponds, semidesert shrubland, pinyon-juniper woodlands, riparian woodlands	No known occurrence	NI	NI	NI	NI
Townsends' Big-eared Bat, SS	Caves, mines, buildings for roosting, sagebrush, semidesert shrublands, pinyon-juniper woodlands, ponderosa pine woodlands and montane forests	No known occurrence; Allotment has suitable habitat	NI	NI	NI	NI
American White Pelican, SS	Shallow sheltered marshes, lagoons, rivers, roosts on sandbars	No known occurrence; Not suitable habitat	None	None	None	None
Barrow's Goldeneye, SS	Lakes and rivers, nests in tree cavities around shallow, marshy lakes and beaver ponds	No known occurrence; Not suitable habitat	None	None	None	None
White-faced Ibis, SS	Wetlands, marshes, agricultural areas, nest in low trees or reeds	No known occurrence; Not suitable habitat	None	None	None	None
Northern Goshawk, SS	Mature mixed conifer forests with clearings or wetlands	No known occurrence; unlikely to forage in area	NI	NI	NI	NI
Ferruginous Hawk, SS	Open grasslands, stunted semi-desert shrubland, agricultural lands	No known occurrence; Likely use area for foraging, may nest nearby	NI	NI	NI	NI
Peregrine Falcon, SS	Open areas, near water, nest on cliff ledges	No known occurrence; may forage in the area, may nest nearby	NI	NI	NI	NI
Mountain Plover, SS	Open grasslands, stunted semi-desert shrubland, agricultural lands	No known occurrence; Suitable habitat; birds require impact grazing regimes and shortgrass prairies or stunted widely spread shrubs	BI	BI	BI	BI
W. Snowy Plover, SS	Sandy beaches, shallow inland lakes and playas	No known occurrence, Not suitable habitat	None	None	None	None

Species, Status	Species Habitat	Rationale	Proposed Action	Alternative A	Alternative B	No Action
Black Tern, SS	Sandbars, marshy ponds or wetlands	No known occurrence, Not suitable habitat	None	None	None	None
Burrowing Owl, SS	Open grasslands, stunted semi-desert shrubland, agricultural lands	Nest site of adjacent private land, has suitable habitat	NI	NI	NI	NI
Gunnison Sage Grouse, SS	Sagebrush shrubland, semi-desert shrubland, riparian	No known occurrence; Not suitable habitat	None	None	None	None

***Species Status:**
***Species Status:**
FE = Federally Endangered
FT = Federally Threatened
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SS = BLM Sensitive Species
*Federally listed T&E species Calls:
NE = No Effect
NLAA = Not Likely to Adversely Affect
LAA= Likely to Adversely Affect
None= Species habitat is not present or species is known not to be present
*State Sensitive Species Calls:
NI = No Impact
MI= May Impact (May Impact Individuals, but is not likely to cause a trend towards Federal listing or loss of viability in the planning area)
BI= Beneficial Impact
LI= Likely Impact (Likely to result in a trend towards Federal listing or a loss of viability in the planning area)
None= Species habitat is not present or species is known not to be present

I have determined that with the Proposed Action and the rangeland condition in the Rock Creek Allotment, the Term Permit Renewal would have the effects listed below on threatened, endangered, and candidate species.

1) Canada lynx: "may effect, not likely to adversely effect" on Canada lynx, marginal winter foraging and other habitat is present including mixed conifer, aspen stands, and riparian stringers that may support lynx. A BA/BE will be consulted on with the US Fish and Wildlife Service for Canada Lynx.

2) Mexican spotted owl: "no effect" on Mexican spotted owl because suitable habitat does not occur in the analysis area.

3) Southwestern willow flycatcher: "no effect", suitable habitat not present on the allotment, in two small sections where potential habitat occurs there is no access for livestock to reach the riparian area due to rock walls bordering the stream and constricting the riparian vegetation. Riparian vegetation is mostly alder and currant, some interspersed willows.

4) Yellow-billed cuckoo: "no effect" on cuckoos because suitable habitat does not exist in the analysis area on Public Lands.

Implementation of the Proposed Action and due to the rangeland condition in the Rock Creek Allotment, the Term Permit Renewal would have a "beneficial impact" on mountain plover, and would have "no impact" on other sensitive species. Ferruginous hawks, peregrine falcons, Northern goshawks, bald eagles, Gunnison prairie dogs, and burrowing owls forage in the area, nest/ burrow sites and foraging habitat are unlikely to be impacted by livestock presence. Mountain plovers live concurrently with livestock and are well adapted to livestock presence. Determinations for "no impacts" on Yellow-billed cuckoo (Federal Candidate), Gunnison prairie dog (Federal Candidate), peregrine falcons, Northern goshawk, ferruginous hawks, burrowing owls, northern leopard frog, milk snake, Yuma myotis, Townsend's big-eared bat, and big free-tailed bat, and "beneficial impacts" on mountain plover are based on 1) the lack of, or low use of the area by these species, 2) no known change in forage base in the area, and 3) the lack of known crucial habitat. Mitigation, with regard to threatened, endangered, and sensitive species is not necessary.

This allotment is in a slightly disturbed (recreation impacts) mid-seral to late-seral stage that has native plant species. In most areas, especially the uplands, the shrub, grass, and forb bases are diverse and provide adequate wildlife habitat for bald eagle (winter foraging and roosting), Gunnison prairie dog, peregrine falcon, Northern goshawk, burrowing owl, mountain plover, ferruginous hawk, Townsend's big-eared bat, big free-tailed bat, Yuma myotis, Northern leopard frog, and milk snake. The grasses, shrubs, and forbs are available to wildlife in the summer (growing season) and early fall (young are learning to forage and becoming more independent) when livestock are present on the allotment. Cover and forage is available to wildlife due to adequate or better rangeland conditions. In the disturbed sites there is more bare ground due to watering areas where livestock tend to settle but those areas are limited in area and scope. The vegetation on this allotment is in an upward or static trend and currently provides cover, forage, and nesting/birthing habitat for threatened and sensitive species. The impoundments and streams provide adequate habitat in the spring and summer for northern leopard frog and foraging for the three sensitive bats. Therefore, Standard 4 is met for these species in conjunction with adequate water or non-drought conditions.

I have determined that parts of the TES habitat are meeting Public Land Health Standards for Standard 4. Thus, the uplands and some of the altered areas are providing adequate habitat for threatened and sensitive species. Some of the areas along roads and near water where livestock tend to aggregate are not meeting Public Land Health Standards. These areas may never meet these standards due to heavy recreation use and water management. Use of mineral supplements, development of water, and better livestock distribution, including more short duration intensive grazing will likely improve some of the altered rangeland and move it towards meeting the standards for threatened and sensitive species.

Reference:

(LCAS) Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, and A. Williamson. 2000. Canada Lynx Conservation Assessment and Strategy. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula, MT 142 pp.

WASTES, HAZARDOUS OR SOLID: Hazardous materials or creation of hazardous or solid waste from the Proposed Action or alternatives are not anticipated.

WATER QUALITY, SURFACE AND GROUND: Figure W-1, in the Hydrology section (pp. 50-59), shows the location of the allotment within 6th level watersheds. Locations of stream channels and water sources are shown in Figure W-2 and W-3. Most streams in the allotment pastures are ephemeral or intermittent with the exception of Rock Creek, which is perennial. Most reaches of Rock Creek and Dry Creek within the allotment are on private and State lands, not on BLM. Water sources for livestock in the eastern part of the allotment are a major issue due to lack of perennial sources and impacts the way the allotment is managed.

ID team members visited the allotment on 5-21-02, 5-28-04, 8-10-04, and 5-10-06. The hydrologist made more detailed assessments on 8-18/19-03, 5-28-04 and 5-12-05. Due to drought conditions in this area during much of the early evaluation period, range and riparian vegetation had been negatively impacted. With more normal precipitation in the last three years, conditions have improved greatly.

Standard 5 requires water bodies to meet or exceed State Water Quality Standards.

On ephemeral tributaries within the Rock Creek Allotment pastures, sediment is the biggest potential source of pollution. Sediment is delivered to these streams as part of natural erosion. Channel sediments are moved downstream with each runoff event, the amount depending on the magnitude of flow. Some additional sediment is delivered from bank erosion and roads that run along the channels and from off-road recreational disturbances.

Intermittent springs are present on the allotment. During drought conditions in 2001 and 2002, duration of flow was shortened. However, precipitation improved somewhat in 2003 and 2004. In 2007 and early 2008, above average snowfall was received in the area. Watershed and stream channel conditions are described in more detail in the Hydrology section, below.

Precipitation falling on the allotment provides some recharge to shallow ground water system, but this is likely to be minor, given the low amount of precipitation that this area normally receives (9-23 inches annually). Precipitation is greater to the west in higher elevation areas. Heavy livestock use in the distant past and associated impacts to watershed condition may also have reduced infiltration rates and groundwater recharge.

Some impacts to water purity occur when livestock add bacteria to water through defecation. Urine can also enrich water with nutrients. These are normally not a problem in flowing streams. However, at springs and impoundments the impacts can be concentrated and detrimental if these areas are not protected. Recreation users need to purify water before it is consumed. Water would need to be purified for drinking even if livestock were not in the area, because other sources of pathogens and bacteria exist naturally that could cause health problems. This impact is common to any action alternative.

The direct, indirect and cumulative effects of the Proposed Action to watershed and stream health are described below in the Hydrology section. When watershed and stream health

improve, there are indirect benefits to water quality, because less sediment is delivered to channels.

Affects from alternatives on watershed, stream health and (indirectly) water quality will not be restated here. The reader is referred to the Hydrology section with the understanding that everytime an improvement to watershed and stream health is described, there is a corresponding, indirect, benefit to water quality.

No violations of water quality standards have resulted from current management. The Clean Water Act (CWA) requires that chemical, physical, and biological integrity of all waters, stream channels, and wetlands be protected. To comply with the CWA, the State of Colorado designated beneficial uses for streams within this analysis area and they include agriculture, recreation 1, cold-water aquatic life 1, and water supply. The State of Colorado assesses stream water quality throughout the State periodically to determine whether stream segments are supporting designated uses. In their 2008 assessment report, Rock Creek and its tributaries are not listed on the 303(d) list, therefore supporting designated uses (State of Colorado's "Status of Water Quality" report, Water Quality Control Division 305(b) report). These uses have not been impaired but do not exist on all streams within the area because of their ephemeral or intermittent nature.

Based on the more detailed description of affects in the Hydrology section (pp. 50-58), the following can be concluded:

With implementation of the Proposed Action with stipulations, vegetation and riparian habitat within the watershed should improve slowly over time, especially some riparian areas that have been over-utilized in the past. Since current watershed health overall is good and the Proposed Action should result in slow improvement in some localized problem areas, no violations of water quality standards are expected.

WETLANDS & RIPARIAN ZONES: The Rock Creek Allotment contains several riparian vegetative communities that support water, cover and forage to wildlife and livestock species. Factors that contribute to riparian vegetative diversity include elevation, ecological range sites, topography, annual precipitation, geology, climatic changes, daily temperature fluctuations, and human influences. Plant communities imitate the variations in the water table, ranging from communities that require perennial saturated areas (obligate species), to those communities that survive in intermittent (facultative) and ephemeral (upland) runoffs. Resources dependant on riparian and wetland assets include drinking water sources, fisheries and terrestrial wildlife habitat, migration corridors, flood protection, commercial ranching, irrigational practices, and recreational resources.

The BLM monitored approximately 0.38 miles of Rock Creek for Proper Functioning Condition (PFC) within the Rock Creek Allotment and also monitored riparian vegetative conditions along small intermittent springs and water channels. Rock Creek is classified as a B channel stream type (Rosgen classification), which includes a moderate width/depth ratio (>12), moderate sinuosity, slope range of 0.02 to 0.039, and channel material consisting of bedrock, boulders, cobble, gravel, and sand. Vegetative cover along Rock Creek includes alder, spruce, pinyon

juniper, fir, birch, raspberry, bluegrass, rosehip, current, clover, yarrow, coyote willow, water plantain, and strawberry. Intermittent springs and water channels are present on the Bishop Rock pasture and vegetation consists of willow, aspen, etc. These intermittent springs flow for a short period of time early in the spring, and stop flowing by mid to late summer.

Periodic PFC monitoring on riparian systems are performed in order to understand conditions and determine if management objectives are being met. These assessments determine whether riparian habitat is in PFC, Functional-at-Risk (FAR), or Non-Functional (NF). The PFC analysis aids decision-making processes aimed at meeting Standard 2 for the Public Land Health Standards. A stream in PFC and most streams in FAR condition are meeting Standard 2. In 2004, a PFC was performed on Rock Creek on two segments defined as Upper Rock Creek Reach (UTM: N4149574 E384202) and Lower Rock Creek Reach (UTM: N4151026 E386378). According to an Interdisciplinary team, the Upper Rock Creek Reach and Lower Rock Creek Reach were in Proper Functioning Condition. Due to the rocky topography, livestock can not access the creek for water. The closed canopy is inaccessible by livestock, and large rocks and boulders on both sides of the creek solidifying the stream banks.

Rock Creek Lower Reach

Rock Creek Upper Reach

Implementation of the Proposed Action, no action, or alternative actions will not lead to heavy impacts by livestock grazing on riparian resources. Based on the 2004 PFC monitoring, Rock Creek is currently rated as meeting the Proper Functioning Condition of a riparian system. Access by livestock to the creek is inaccessible due to the topography of the area. Riparian success is not impacted by livestock use, and degradation of the habitat is dependant on environmental conditions. The intermittent spring and water channels in the Bishop Rock pasture contain low water levels in the early spring and usually do not contain water late in the summer months. Due to low water flow and unavailable water, livestock use has never been documented to exceed 50% use on herbaceous species or 40% use on current year's leader growth of woody species during summer grazing in this riparian area. The largest threat to this area includes erosion and deposition caused by heavy recreational and camping use during the summer months. With implementation of the Proposed Action and stipulations, vegetation and riparian habitat within the watershed should improve slowly over time, especially minor riparian areas that have been over-utilized in the past. Since current watershed health overall is acceptable, the Proposed Action should result in moderate to high improvement in some minor localized problem areas. Sustaining the health, diversity, and productivity of riparian resources on the Rock Creek Allotment is a high priority for the BLM, and regular monitoring of riparian

resources will ensure that the appropriate criteria is sustained and met on the Rock Creek Allotment. Based on the proposed action, there would be no direct, indirect or cumulative negative impacts to this resource on the Rock Creek allotment.

Based on Proper Functioning Condition monitoring, the riparian resources on the Rock Creek allotment are currently meeting Standard 2 for the Colorado Public Land Health Standards.

WILD AND SCENIC RIVERS: No Wild and Scenic Rivers occur within the Rock Creek Allotment.

WILDERNESS: No Wilderness is present within the Rock Creek Allotment.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health.

SOILS: BLM resource protection standards require that soils be protected in management activities. Soil features such as rills, gullies, pedestals, surface litter and plant cover are important indicators of Standard 1. The presence of these indicators may lead to land health problems including a loss of soil productivity.

An example of Limy Bench range site in good condition.

On-site soil investigations were conducted on the Rock Creek Allotment by the soil scientist in order to determine soil health. The main objective is to compare the current conditions and determine if they are meeting land health standards. Another objective was to evaluate the range sites as determined by soil mapping and classification.

On May 28, June 18, June 25, and July 20, 2004, field trips were made to examine the Rock Creek Allotment. Areas reviewed included Bishop Rock, Dry Creek, Burnt Gulch, and most of the water developments.

On August 10, 2004, a group of FS and BLM specialists went to the Rock Creek Allotment to view the current use patterns. In the canyon northwest of Bishop Rock on Colorado State Land, we observed where cattle had exposed soil and caved streambanks due to this site being the only water in this pasture at this time. In the meadows south of Bishop Rock, use was light. There seemed to be ample forage in the uplands that was not being grazed. We observed about 100

head of livestock in the canyon that day. The team concluded that a water development was needed in the Bishop pasture to keep stock from concentrating in the canyon.

Team review of water developments June 2004

I was able to inspect the allotment on October 21, 26, 27, and 28, 2005. Both alluvial (dry gulches) and upland soil conditions on the allotment were analyzed. Overall allotment use was light. The rockslide water development was functional on this visit but had not been functional on a 2004 inspection.

The following conclusions are based on all site visits and included soil pit examination, range site correlation, and comparison of soil health conditions to the BLM standards for rangeland health.

The majority of the upland and alluvial soils in the allotment have properly functioning soil health. This means that vegetative cover is adequate; there is little evidence of rills; gullies are not prominent; and there is little soil compaction that would reduce infiltration. Soil Standard #1 is being achieved.

In 2005, there were no erosion problems in the canyon near Bishop Rock, likely due to an absence of water there at the time. The only other soil health concerns are a few small areas near water developments where soil compaction and erosion concerns exist. These areas are small and localized and are not excessive from an area-wide standpoint.

Much of the allotment is on Garita and Luhon soils, which have a Limy Bench Range Site. On-site soils investigations show that many areas are near potential natural community, with winterfat, blue grama, Indian-ricegrass, and western wheatgrass are the predominant species. For a good reference area, the Rock Creek cemetery is a Limy Bench Range Site. The soil mapping and range site identification shown in the Rio Grande County Soil Survey mapping is reasonable based on soil pit examinations and traverses.

Table 6 shows that, in general, land health standards are being met over a majority of the allotment under current management No Action alternative. Land health standards would also be met with the Proposed Action, provided that livestock are properly distributed and utilization standards are not exceeded. Some water developments would be necessary to ensure good livestock distribution. Alternative A proposes increases in livestock numbers at a gradual rate of increase, every two years. This alternative would likely result in healthy soils. As long as sufficient soil and vegetative monitoring occurs, and adjustments are granted only if standards are achieved, soil health is expected to increase. Alternative B grants an increase as a one-time increase and may or may not meet soil and land health standards. With Alternative B, numbers

are increased and there is little time to monitor to see how the range is responding to animal use. There is increased risk that soil health standards might be exceeded. Soil quality monitoring would be important in any of the analyzed alternatives.

Cumulative Effects
Cumulative effects on soils include some localized impacts to soils from livestock grazing and water developments. Soil erosion and compaction would occur from vehicle use on motorized travel routes. Some routes may be closed and reclaimed depending on the BLM travel decision which is expected in 2009. Some illegal travel may continue to occur which could also result in localized damages to soils and wet areas within the allotment. Dispersed camping would also have small impacts to traditional camp areas, resulting in some erosion and compaction.

Livestock grazing, when properly managed, can maintain soil health. In order to keep soil health properly functioning, proper utilization of shrubs and grasses is necessary so that sufficient organic litter remains on the soil. Without adequate litter returns, the site may become drier and thus affect the following spring growth and health of the plant. Erosion may also become a concern if utilization is beyond allowable limits.

VEGETATION: There are currently 3 key areas within the Rock Creek Allotment that are monitored for frequency trend using the Daubenmire Cover-Frequency method. Please see Appendix C for the location of each key area and for trend data and charts. Two key areas are located near Bishop Rock and one key are is located south of Dry Creek on the northeast end of the allotment.

The two key areas near Bishop Rock are in a Loamy Park Range Site. A general description of the range site is as follows: this site occurs on alluvial and colluvial fans, hillsides, plains, side slopes, terraces, valley side slopes, and upland drainage ways and depressions. Slopes are from 0 and 30% and elevation ranges from 7,000 to 9,700 feet. Elevation limits depend to some extent on exposure but principally on storm patterns and air movement. Average annual precipitation is 16 to 22 inches, with about 40-50% of the moisture falling as snow and 30-50% of the moisture falling between May 1 and September 1. Cool season plants dominate the site. The native plant community is about 80% grasses, 10-15% forbs, and 3-5% shrubs. Grasses present include Arizona fescue, mountain muhly, Parry oatgrass, western wheatgrass, slender wheatgrass, bearded wheatgrass, praire junegrass, needleandthread, Columbia needlegrass, letterman needlegrass, and nodding brome. A variety of forbs are present within this range site, and a few shrubs comprise the rest of the annual production.

Data from Key Area BR #1 was collected in 2000, 2001, 2003, and 2005. The key species used to determine the cover-frequency trend from 2000 to 2005 was western wheatgrass, praire junegrass, and winterfat. After analyzing the data, the trend is slightly upward at this key area, which suggests that the amount of cover from these key plant species has increased from 2000 to 2005. Bare ground was also decreasing, which is a positive indicator, especially when key species are increasing. Bare ground can lead to runoff, increased evaporation, and sites for invasive species to establish.

Data from Key Area BR #2 was collected in 2001, 2003, and 2005. The key species used to determine the cover-frequency trend from 2001 to 2005 was western wheatgrass, praire junegrass, and needleandthread. After analyzing the data, the trend is slightly downward at this key area, which implies that the amount of cover from these key plant species has decreased from 2001 to 2005. Livestock use is usually slightly higher at this area, due to the meadow the key area is located in, and the close proximity to a water haul site used in the past. Recreation use is very heavy in this area and is the most highly used camping area in the San Luis Valley on BLM lands. This site receives livestock use, foot traffic, and off road vehicle use. Bare ground has remained static; therefore, a downward trend at this key area is contributed to recreation and livestock use, but will be improved with implementation of the Proposed Action and alternatives through the stipulations noted.

Key Area #C occurs within the Basalt Hills Range Site. A general description of the range site is as follows: this range site occurs on low hills, mesas, ridges, escarpments, and broken land formed by lava flows. Topography is mostly rugged;.rock outcrops are common. High winds and low humidity is normal. Snow cover is light. Climax cover is mostly grasses with scattered forbs and shrubs. Indian ricegrass is the major grass in most areas with blue grama, bottlebrush squirreltail, sand dropseed, spike dropseed, Fendler threeawn, needleandthread, Scribner needlegrass, and Colorado four-o'clock is the most prominent forb. Greene and rubber rabbitbrush, gooseberry, skunkbush sumac, fringed sage, hedgehog cactus, Apache plume, Bigelow sagebrush, and big sagebrush are the prominent shrubs. Approximate ground cover of trees is 15%. Invading species include Russian thistle and tumble mustard. Decline in range condition results in an increase in blue grama and three-awn. Bare ground, Greene rabbitbrush, prickly pear (*Opuntia* sp.), and big sagebrush become dominant as seral stage declines.

Data from Key Area #C was collected from 2000, 2001, 2003, and 2005. The key species used determine the cover-frequency trend from 2000 to 2005 was bottlebrush squirreltail and winterfat. Cover-frequency trend at this key area is static and bare ground is slightly decreasing. A decrease in bare ground is very important and improves soil moisture, decreases evaporation, and decreases erosion.

Utilization of the key herbaceous species was collected in 2001, 2002, 2004, and 2005. Utilization of key species was well below the utilization criteria of 50% use on herbaceous species in 2001. Use did not exceed 36% use on any species within the Lower Tank Pasture, which was the only pasture data was collected. During 2002, data was collected on the Triangle, Lower Tank, and Bishop Rock Pastures. That year was a severe drought, and vegetative growth was well below normal and there was no re-growth following livestock removal. Use in the Bishop Rock Pasture reached 58% on Arizona fescue, use in the Lower Tank Pasture reached 58% on western wheatgrass, and use reached 75% on western wheatgrass in the Triangle Pasture. Utilization data was collected in the Bishop Rock and Upper Tank Pastures in 2004. Use did not exceed 39% on any key species within the Upper Tank Pasture and use within the Bishop Rock Pasture reached 56% on western wheatgrass at Key Area #2. Utilization data within the South, Dry Creek, and Bishop Rock Pastures was collected in 2005. Utilization at most only reached 20% on any key species within the Bishop Rock Pasture, and 44% on any key species within the Dry Creek Pasture. In 2005, the South Pasture was used in conjunction with the Noffsker's

private land. Utilization reached 40% on Indian ricegrass, which was the highest utilization in that pasture.

Utilization data should be collected regularly each year in every pasture grazed to determine if stipulations have been met or exceeded. This will determine if an adjustment may be authorized. Although utilization exceeded 50% in some areas, a majority of the exceeded utilization occurred during 2002, a severe drought year. Through implementation of the Proposed Action or alternatives, if 50% use on herbaceous species is exceeded, corrective action will be taken to adjust grazing management.

Direct impacts to vegetation from the Proposed Action and alternatives would continue to improve vegetative conditions to key species and will ensure significant progress towards the standards for rangeland health. No new indirect impacts would occur from the implementation of the Proposed Action or alternatives due to the stipulations that must be met prior to any increase in carrying capacity. Cumulative impacts are not anticipated at this time. Therefore, the Proposed Action or alternatives with the stipulations provided will continue to meet the standards for rangeland health.

WILDLIFE, AQUATIC:
AFFECTED ENVIRONMENT

Most of the streams on BLM lands within the allotment are ephemeral although some reaches may be intermittent, with watersheds receiving 9-23 inches of precipitation per year. Rock Creek is the only perennial stream that occurs on this allotment, drainages are all overland flow washes. All water available to wildlife and livestock is hauled, or contained in a few impoundments for livestock and a well that is managed by the permittee. In a reach of upper Dry Creek, an impoundment provides water for livestock. This impoundment and the stream above it have healthy riparian vegetation with cottonwood and some willow, although grass is the main vegetation along the banks. This impoundment is emphemeral and relies on snowpack. The stream and impoundment would support amphibians and reptiles during wet years including Great plains toads, Plains spadefoot, Woodhouse's toads, Western chorus frogs, and tiger salamanders. There may be amphibians and insects in the ephemeral impoundments, but there are no known northern leopard frog populations.

Rock Creek is the only perennial stream within the Rock Creek Allotment and lies in Rock Creek, Dry Creek, Monte Vista Canal, and Raton Creek (small part) watersheds. Rock Creek is a perennial stream that flows through the allotment, mainly on private or state land. The Rock Creek drainage is a recreational fishery of Eastern Brook Trout. In the early 1980's the lower reaches of Rock Creek supported a Rio Grande Chub fishery but surveys from 1992-2002 have not been successful in locating chub and they are assumed to be extirpated from the creek (Alves et al. 2003). Rock Creek mainly runs through private land and State sections. There are resource concerns on the Colorado State land section adjacent to the Bishop Rock Pasture, BLM. Cumulative effects due to unrestricted recreation, heavy late summer rainfall events, and trailing of livestock have produced conditions that have destabilized vegetation on ephemeral and intermittent channel banks. Access to water on the State land is the primary reason for trailing livestock in this area. An alternate water haul point in the Bishop Rock Pasture further north and west in the pasture would reduce the need to trail livestock when grazing is scheduled on the

BLM. This mitigation to provide sufficient water and avoid excessive trailing is incorporated into the permit Terms and Conditions to assist in improving distribution and reduce excessive trailing between water points for livestock.

ENVIRONMENTAL CONSEQUENCES

Direct impacts of the actions within this EA are possible. Fewer impacts will occur under all alternatives because additional water haul sites are incorporated, distribution of livestock will improve, and grazing pressure will be abated in the riparian areas throughout this allotment. Livestock will go to water in the ephemeral channels when they have standing or flowing water because it is cooler under the tree canopy and the cattle can wallow in the less constricted areas. Livestock may trample amphibians in these ephemeral channels when moving through the channels and concentrating time in the shaded areas. Livestock use of the BLM section of Rock Creek is minimal due to inaccessibility in the canyon areas and the far proximity of the grasslands to the forested area surrounding the creek. The State Land provides the most accessible water sources on Rock Creek. Therefore, the upstream fishery on Public Lands will remain in good condition regardless of the chosen alternative.

Indirect impacts to aquatic species within the Rock Creek Allotment include riparian vegetation degradation due to hoof sheer of banks, hummocking, wallowing, and concentrated grazing which degrades habitat conditions for burrowing and foraging amphibians. Also livestock or wild ungulate urinating/defecating in non-flowing water causes a change in water quality for amphibians. Under the four alternatives, livestock use of the riparian areas will be closely monitored using utilization standards to ensure that degradation of the riparian habitat does not occur within any one year.

Cumulative impacts of the Proposed Action, Alternatives A and B, and the No Action alternative include private land management, unforeseen future projects, travel management planning, State and private land practices, and recreation. Recreation, such as hunting, horseback riding, fishing, camping, snowmobiles/motorized use, and hiking, may contribute to degradation of aquatic habitat because users are not currently restricted to designated trails and routes. Through a travel management plan the BLM is currently trying to manage recreation and prevent resource damage by vehicles by designating routes and not permitting off road travel by vehicles. Currently, damage to riparian areas due to recreational vehicles within the Bishop Rock area is present and being monitored.

Effects on local amphibian populations, fisheries, and downstream water quality due to siltation from cumulative impacts may have long-term negative consequences if no mitigation is implemented. Colorado State Lands are under the jurisdiction of the Colorado Department of Natural Resources, Colorado State Land Board. The resource concerns addressed here are outside the control of the BLM, but measures to assist with an alternate watering strategy will help to minimize the potential impacts on BLM land in the future, and may reduce impacts for State Land as well.

Habitat for aquatic wildlife exists on this allotment. Because precipitation is variable in this area with porous soils, aquatic habitat can be greatly affected by the Proposed Action, Alternatives A and B, and the No Action alternative. The impoundments and ephemeral streams contain water

in May and June in most years and provide habitat for aquatic species (frogs, toads, salamanders and insects). These artificial impoundments do meet Public Land Health Standards for animal communities when they are functional during wet years. The short reaches of Rock Creek managed by the BLM also currently meet Public Land Health Standards for animal communities. By implementing utilization standards and monitoring riparian vegetation closely, aquatic habitat can continue to meet these land health standards (Standards 2 and 3) under all alternatives.

Reference: Alves, J.E., K.R. Bestgen, R.I. Compton, K.A. Zelasko. 2003. Distribution and Status of Rio Grande Chub in Colorado. Larval Fish Laboratory Contribution 135.

WILDLIFE, TERRESTRIAL: The grazing permit provides habitat for many terrestrial wildlife species including small mammals, pronghorn antelope, mule deer, American elk, raptors, and songbirds that are adapted to dry, upland conditions, rimrock, mixed conifer/aspen, pinyon/juniper, and riparian habitat types (Table 9, p. 47 for summary).

AFFECTED ENVIRONMENT

Big Game: Critical winter and overall habitat for big game occurs in the term grazing permit area. Habitat for bighorn sheep is located on the Rock Creek Allotment. Winter range for pronghorn is located at lower elevations in grassland/shrubland environments and includes 50% of the allotment and two winter concentration areas occur within this allotment (see Appendix D for Wildlife Habitat Maps). Winter range habitat for elk and deer occurs across 85% of the allotment. The Rock Creek Allotment has winter habitat for mule deer and is adjacent to a winter concentration area. This allotment is adjacent to an elk production area and a winter concentration area. Bighorn sheep habitat occurs in the rock formations in the Bishop Rock pasture and along the cliffs throughout the allotment. No bighorn have been recorded using the allotment in recent history, but they use the Alamosa Canyon area, the adjacent allotment.

Browse species such as winter-fat, four-wing saltbush, and skunkbrush sumac are considered important year-round and critical winter forage for pronghorn. Browse species comprise the greatest part of an antelope's diet regardless of the season. Mule deer utilize browse year round; shrubs such as mountain mahogany, currant, and winter fat are heavily used during winter. Elk and bighorn sheep are considered mixed feeders foraging on shrubs, grasses, and forbs. During winter months with deep snow, elk and bighorn may exclusively utilize browse species. Foraging on grasses increases during spring green-up for pronghorns, deer, and elk. Grasses are succulent and easily digested. During summer, forb use increases for the same reasons. Browse becomes more dominant in the diets of antelope, mule deer, and elk as summer progresses and fall begins.

Adjacent cultivated lands managed for alfalfa and other types of hay production are utilized during all seasons by antelope and mule deer, and by elk during winter and spring months. These areas are typically irrigated and provide succulent forage for big game. Antelope damage to alfalfa crops in the area has been an important issue for ranchers and the Colorado Division of Wildlife. Water is not a critical element for antelope; forage, especially succulent forage, provides the necessary water for metabolic activities. Mule deer and elk come to water on a regular basis. Low, rolling, open topography with a mixture of forage types (grass, forbs, and

shrubs) characterize the allotment. These are key factors, providing cover and forage, for big game, small mammals, and birds.

Raptors and Small Mammals: Nest sites are not known for northern harriers, red-tailed hawks, Swainson's hawks, and American kestrels which may nest on the allotment. During various seasons golden eagles, accipiters, rough-legged hawks, merlins, and prairie falcons, may hunt for prey on the allotments. Small mammals are present on the allotment and use the habitat to meet various ecological needs. Gunnison prairie dogs inhabit grasslands and semi-desert and montane shrublands where they forage on mostly grasses, forbs and sedges. Gunnison prairie dogs are currently found on private land nearby and active colonies exist on the Rock Creek Allotment (Attachment 8). Suitable habitat available for prairie dogs occurs throughout the allotment but the area is heavily used for recreation and they may be subjected to sport shooting. Carnivores, or small mammal predators, also occur on the allotment and rely heavily on small mammal abundance for survival.

Songbirds: Numerous songbird species common to grassland/shrubland nest on the allotment. These species represent a combination of resident and Neotropical migratory birds. Resident songbirds are present year round; Neotropical migratory birds are present from March through November. Songbirds are ground nesters, shrub nesters, tree nesters, or snag nesters; nesting activities begin in March and end in late June. Disturbance during summer can negatively affect the nestling and fledgling period. Juvenile birds are developing and growing during at this time. Songbirds exhibit a variety of foraging strategies: ground gleaners; bark gleaners, foliage gleaners, and aerial foragers.

ENVIRONMENTAL CONSEQUENCES

Direct Impacts

Big Game: Direct impacts of the Proposed Action, Alternatives A and B, and the No Action alternative consist of possible displacement of pronghorn, mule deer, and possibly elk when cattle are present during the grazing season. Peak fawning and calving occurs during the spring livestock grazing season of use on the allotment. Under the Proposed Action, Alternatives A and B, and the No Action alternative big game displacement may occur due to presence of livestock during the sensitive fawning/calving and rearing seasons. Pronghorn and mule deer are likely affected more during this time due to overlap in range whereas, elk spend these months at higher elevations on the Forest, and bighorn are generally along cliff-like habitat and generally do not come into contact with livestock due to the nature of the terrain.

Negative effects to big game species based on livestock using the allotment may occur during drought years.

Raptors and Small Mammals: Under all actions listed in this Term Permit Renewal for Rock Creek Allotment, abandonment or destruction of nests of ground nesting raptors, such as red-tailed hawks, kestrels, and ferruginous hawks may occur due to livestock presence. Cattle grazing during the spring may discourage nesting or cause displacement of ferruginous hawks nesting in short trees in open country. Extended livestock grazing in riparian areas may cause displacement of tree nesting raptors such as red-tailed and Swainson's hawks. Small mammals may be affected by trampling of burrows by livestock. Carnivores may be affected by recreational shooting. Gunnison prairie dogs are not generally disturbed by livestock grazing, especially at these low stocking rates.

Songbirds: Direct impacts of the Proposed Action and the current management alternatives on songbirds may include 1) overall reduction or alteration of vegetation structure, cover or composition (grasses, shrubs, and young trees) used for nesting and foraging; and 2) trampling of ground nesting birds and young, or disturbance leading to nest abandonment. Overlap between livestock grazing and the primary nesting season occurs on most pastures within the allotment every year under all action alternatives with spring and summer grazing. However, grazing occurs on a seasonal basis using pasture rotation with short durations and impacts would be low. Livestock presence in the wintertime is less of an issue because birds are not confined to a nesting area. During the spring grazing period there is more of a chance to displace birds or damage nests.

Indirect Impacts

Big Game: Indirect impacts of the actions proposed in this EA would have some effect on big game due to competition on preferred vegetative habitat. Livestock and big game tend to select similar vegetation at the same time of year. If livestock exceed utilization standards, winter forage and cover habitat for big game is likely to be degraded. The No Action Alternative would be the most beneficial to big game, even though livestock would compete for forage during the fall and spring calving/fawning period, the native vegetation would not be grazed at the same time more than two years in a row and fewer livestock numbers would allow for a more vigorous native plant community and more forage and cover in the future. Also the permittee will use water and supplements to improve livestock distribution which will likely improve rangeland conditions and thus wildlife habitat conditions.

Raptors and Small Mammals: Indirect impacts of the actions may contribute to poorer habitat conditions for small mammals, which are the primary prey for many raptors. Habitat loss would include trampled burrows, compressed soils making burrowing more difficult, and reduction in cover due to grazing. Small mammals and carnivores (small mammal predators) could easily coexist with livestock during the growing season with improved grazing practices listed under the Proposed Action and Alternatives A and B. Foraging opportunities for raptors may improve through improved livestock distribution and forage utilization with the use of a pasture rotation. Carnivores are affected by small mammal abundance (based on habitat and ecological requirements) and by displacement due to human presence in conjunction with herding, maintenance, and hauling water. Increasing abundance of the main prey base, small mammals, will improve raptor and carnivore foraging opportunities. Under all alternatives, rangeland recovery will occur with an upward trend in upland habitat improving small mammal cover and foraging habitat and thus carnivore and raptor foraging habitat.

Songbirds: Indirect impacts of the alternatives are minimal if utilization standards are met (no more than 40% use of shrubs and 50% use of grasses). Short duration intensive management during the grazing season promotes healthy plant communities. Birds have adapted to the native plants and will thrive if enough cover and nesting habitat are maintained through livestock management. Habitat deterioration occurs by diminishing nest cover and foraging conditions with continual grazing pressure on the native plant community. Habitat alteration due to grazing may lead to reduced nesting and foraging opportunities, causing decreases in species abundance and distribution. Such effects would have long-term displacement of birds. The No Action

Alternative distributes livestock in fewer numbers across the allotment and provides better habitat for all bird species as long as utilization standards area not exceeded and rangeland health standards are met. Brood parasitism from brown-headed cowbirds (associated with livestock presence) may contribute to nest abandonment and nestling mortality. Cowbirds can fly several miles to public rangeland and parasitize songbird nests.

Cumulative Impacts

Big Game: Cumulative impacts of the Proposed Action, Alternatives A and B, and the No Action alternative include private land management, unforeseen future projects, travel management planning, and recreation. Recreation, such as hunting, horseback riding, camping, snowmobiles/motorized access, and hiking, may contribute to displacement of big game. Hunting contributes to big game mortality and ultimately leads to Division of Wildlife big game population objectives under managed conditions. Fewer impacts to the big game occur under the No Action alternative in which livestock are present for a shorter grazing season and in fewer numbers. The combination of grazing with recreation may displace wildlife and can lead to loss of habitat.

Raptors and Small Mammals: Cumulative impacts may have negative effects to raptor nesting and foraging activities. All actions would maintain current raptor foraging habitat and are likely to facilitate the recovery of range conditions. The No Action Alternative has less disturbance possibilities due to better livestock distribution and movement across the pastures with fewer AUMs for shorter periods and is more likely to improve range conditions by not re-grazing and meeting utilization standards. Recreation use may contribute to cumulative effects by displacing nesting or foraging raptors.

Songbirds: Cumulative impacts may have negative effects on songbird nesting and foraging activities. Alternative B may diminish nesting and foraging opportunities and may slow the recovery of range conditions resulting from grazing more AUMs at the present time. Recreation use may contribute to cumulative effects by displacing nesting or foraging songbirds. Trampling of burrows, loss of hiding cover and foraging habitat may displace songbirds during the breeding season. Displacement could negatively affect the songbirds during the breeding and rearing period. Songbird displacement is a problem but little information is available on bird abundance, nest sites, or use of these pastures.

Mitigation Measures/ Design Criteria for Species Conservation for Alternatives A and B, the no action alternative, and the proposed action: Use levels should not exceed 40% of the new growth of shrubs such as mountain mahogany, currant, snowberry, oceanspray, skunkbush, four-wing saltbush, winterfat, aspen, willow, cottonwood, and alder. Removal of livestock must occur when this threshold has been met. Loss of these important winter browse species that support wildlife during winter months can be detrimental to wildlife because it reduces the availability for winter forage during critical winter periods. Removal of the cattle from the allotment tracts after 40% utilization has occurred would leave residual plant growth available to wildlife for foraging, nesting, and cover. Grazing these allotments in the winter-time can adversely impact mule deer and elk winter range, especially during drought years or harsh winters. A 50% utilization limit on native grasses and forbs is another threshold of which the Permittee must remove livestock if it is reached during the grazing season. The combination of

elk, pronghorn, mule deer, and cattle would be detrimental to the rangeland if livestock are not removed from the permit area when these utilization thresholds of vegetation have been reached.

Table 9. Habitat issues for small mammals/carnivores, bighorn sheep, pronghorn antelope, mule deer, American elk, raptors, and songbirds, Rock Creek grazing permit.

Species	Habitat Availability	No Action	Proposed Action and Alternative A	Alternative B
Small Mammals/ Carnivores	Suitable burrowing, cover, and foraging habitat available	With better distribution and shortest duration grazing, there will be rare effects to burrowing and cover habitat and diminished foraging habitat in riparian and uplands.	With better distribution and short duration grazing there will be rare effects to burrowing (hoof impacts) and cover habitat (reduced vegetation) and diminished foraging habitat (less food and cover for prey items) in riparian and uplands.	With better distribution there but longer grazing periods there will be some effects to burrowing (hoof impacts) and cover habitat (reduced vegetation) and diminished foraging habitat (less food and cover for prey items) in riparian and uplands.
Pronghorn Antelope	Winter range habitat and winter concentration areas.	Possible effect on spring, summer, fall habitat due to competition for resources or displacement. Beneficial effect on overall habitat	Possible effect on spring, summer, fall habitat due to competition for resources or displacement.	Possible effect on spring, summer, fall habitat due to competition for resources or displacement.
Mule Deer	Winter range, adjacent to deer concentration (winter).	Possible effect on spring, summer, fall habitat due to competition for resources or displacement. Beneficial effect on overall habitat	Possible effect on spring, summer, fall habitat due to competition for resources or displacement.	Possible effect on spring, summer, fall habitat due to competition for resources or displacement.
American Elk	Winter habitat and adjacent to winter concentration area.	Possible effect on spring, summer, fall habitat due to competition for resources or displacement. Beneficial effect on overall habitat	Possible effect on spring, summer, fall habitat due to competition for resources or displacement.	Possible effect on spring, summer, fall habitat due to competition for resources or displacement.
Bighorn Sheep	Overall Habitat	Effects would be minimal due to little overlap in range based on topography	Effects would be minimal due to little overlap in range based on topography	Effects would be minimal due to little overlap in range based on topography
Raptors	Suitable nesting and foraging habitat available. Nest sites not present.	Some effects to ground nesting and foraging habitat	Some effects to ground nesting and foraging habitat	Some effects to ground nesting and foraging habitat
Songbirds	Suitable nesting and foraging habitat available. Common species present	Minimal cumulative grazing effect on nesting and foraging habitat. Displacement or nest abandonment due to livestock presence or trampling in spring.	Minimal cumulative grazing effect on nesting and foraging habitat. Displacement or nest abandonment due to livestock presence or trampling in spring.	Minimal cumulative grazing effect on nesting and foraging habitat. Displacement or nest abandonment due to livestock presence or trampling in spring.

DOW = Colorado Division of Wildlife

This allotment is in a slightly disturbed (recreation-wise) mid-seral to late-seral stage that has native plant species. In most areas, especially the uplands, the shrub, grass, and forb bases are diverse and provide adequate wildlife habitat for terrestrial wildlife species. The grasses, shrubs, and forbs are available to wildlife in the summer (growing season) and early fall (young are learning to forage and becoming more independent) when livestock are present on the allotment. Cover and forage is available to wildlife due to adequate or better rangeland conditions. In the disturbed sites there is more bare ground due to watering areas where livestock tend to settle but those areas are limited in area and scope. The vegetation on this allotment is in an upward or static trend and currently provides cover, forage, and nesting/ birthing habitat for wildlife. The

impoundments and streams provide adequate habitat in the spring and summer for small mammals and songbirds. Therefore, Standard 3 is met for these species in conjunction with adequate water or non-drought conditions.

I have determined that parts of the native plant community are meeting Public Land Health Standards for Standard 3. Thus, the uplands and some of the altered areas are providing adequate habitat for animal communities. Some of the areas along roads and near water where livestock tend to aggregate are not meeting Public Land Health Standards. These areas may never meet these standards due to heavy recreation use and water management. Use of mineral supplements, development of water, and better livestock distribution, including more short duration intensive grazing will likely improve some of the altered rangeland and move it towards meeting the standards for terrestrial wildlife species.

OTHER NON-CRITICAL ELEMENTS: For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access		X	
Cadastral Survey		X	
Fire		X	
Forest Management		X	
Geology and Minerals	NA		
Hydrology/Water Rights			See Write-up Below
Law Enforcement		X	
Paleontology		X	
Noise		X	
Range Management			See Write-up Below
Realty Authorizations		X	
Recreation			See Write-up Below
Socio-Economics		X	
Transportation		X	
Visual Resources		X	

HYDROLOGY/WATER RIGHTS:

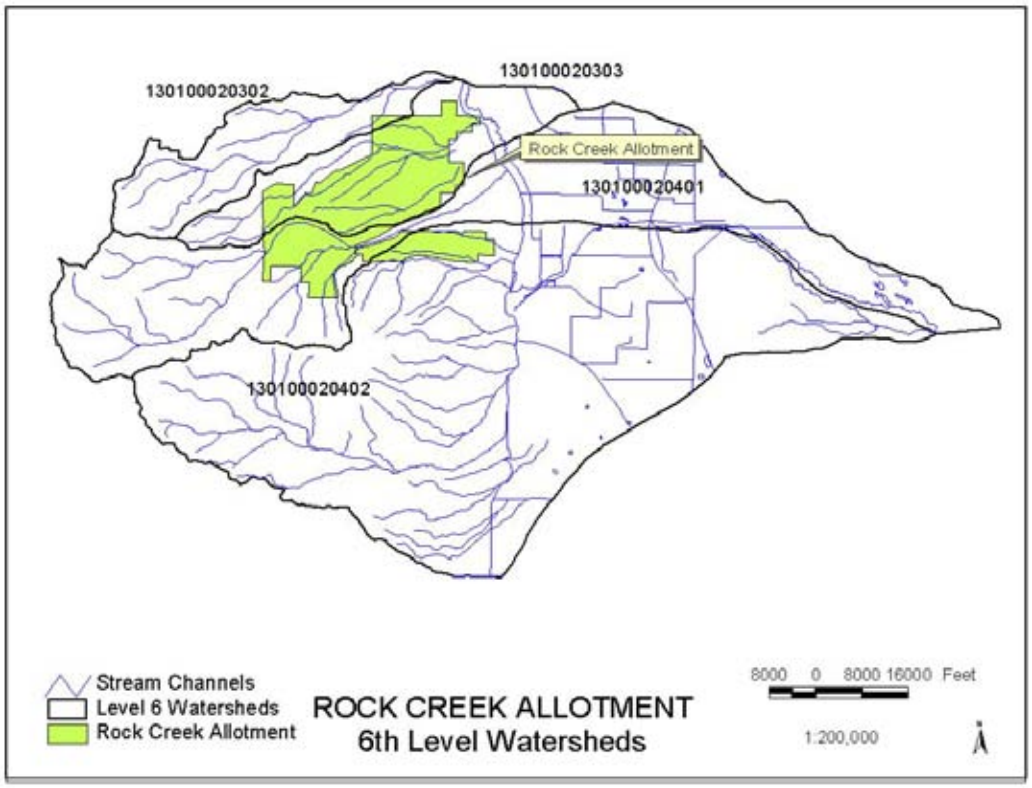


Figure W-1: Location of Rock Creek Allotment within 6th Level Watersheds

The Rock Creek Allotment lies in the Rock Creek, Dry Creek, Monte Vista Canal, and Raton Creek (small part) watersheds (Figure W-1). Rock Creek is a perennial stream that flows through the allotment, mainly on private or state land. The streams on BLM lands within the allotment are ephemeral although some reaches may be intermittent, with watersheds receiving 9-23 inches of precipitation per year. These streams do not provide reliable drinking water for livestock. Intermittent and perennial springs are important water sources, although flow and duration are affected during years of lower than average precipitation.Details of stream and spring conditions in each pasture follow in this section.

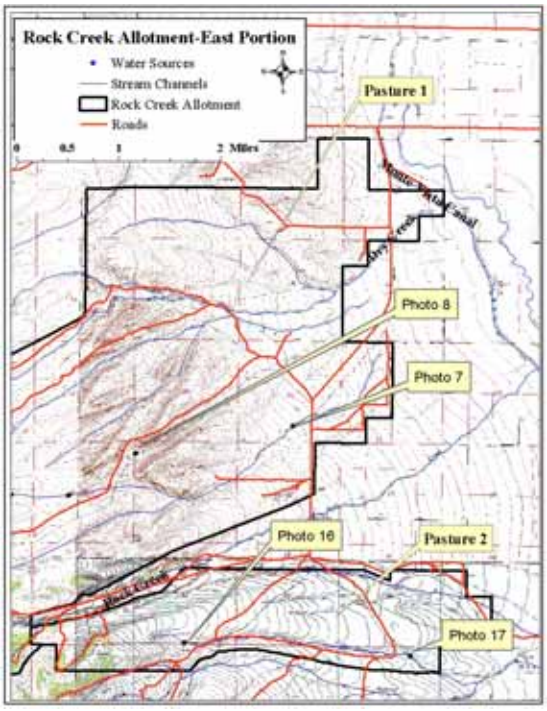


Figure W-2: Stream channels, roads, and photo points: Eastern Rock Creek Allotment

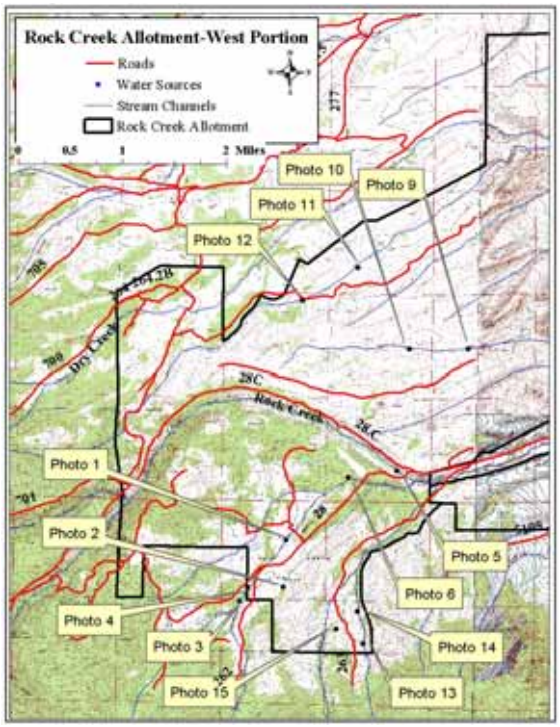


Figure W-3: Stream channels, roads, and photo points: Western Rock Creek Allotment

Stream channels and adjacent areas in Rock Creek Park vary widely in form and vegetation cover. Vegetation types along stream reaches include mixed conifer, willow/cottonwood/currant, sagebrush/currant, and aspen. A typical stream channel within areas with cottonwood/willow is shown in Photo 1. Channel form varies from grass/brush lined

swales to more incised B or well-healed G-type, depending on local topography. Vegetative cover within and adjacent to channels is good overall, consisting of cottonwood, currant, and willow.

Photo 1: UTM 386500/4148170

Photo 2: UTM 386769/4148644

Near the Forest and private land boundaries, channels are more incised with a higher gradient. Channel substrate is variable, but is predominantly cobble and coarse sand with some small boulder. A typical channel within aspen is shown in Photo 2 and one within mixed conifer and heavy shrub cover is shown in Photo 3. Steep banks and thick vegetation limit livestock impact, which appears light overall, and wildlife sign (elk and deer) is abundant. Trailing of livestock and wildlife appears to be the main impact to stream banks in these stream reaches. Spring discharge is indicated by vegetation conditions within the reach of channel that lies to the north of Bishop Rock (Photo 4). Willows are mainly small, young plants, suggesting some recovery from previous drought. Some erosion within the grassed swale in this area is occurring, in part due to poor vegetative condition and by direct impact of livestock and wildlife in this heavily used area.

Photo 3:UTM 385860/4148000

Photo 4: UTM 385976/4148160

Below the spring, the channel is more incised and dominated by cobble and coarse sand. Heavy currant and some tree cover protect channel banks.

Rock Creek is a perennial stream located within Colorado State Land to the north and east of Rock Creek Park. However, stream incision within the rocky topograpohy severely limits any access by livestock (Photo 5). The rock ledge above the creek is approximately 20-25 feet above the stream. In general, riparian and stream condition on state land appears healthy, although not analyzed in detail.

One area that was visited in August of 2004 included an intermittent tributary to Rock Creek (Photo 6). Cattle were present and had negatively impacted stream bank and riparian vegetation. This particular stream segment is a high use area and that cattle tend to drift back into. This cool, wet stream reach is located primarily on State lands.

Photo 5: UTM 388290/4149980

Photo 6: UTM 387555/4149863

Stream channels in the east part of Pasture 1 are ephemeral in nature and are tributary to either Dry Creek or Monte Vista Canal (Figure W-2). Channel morphology is dependent on slope, watershed area, surrounding topography, and alluvium/bedrock materials. In lower reaches, the channel is somewhat trapezoidal shape with a gravel/sand substrate. Channel bottom width is approximately 10 feet and channel depth 8-10 feet. Vegetation is much less vigorous on banks having southern sun exposure (Photo 7). Shrub and grass vegetation is present on channel sideslopes and channel bottoms. These channels are probably larger and more incised than existed prior to overgrazing that occurred in the late 1800s and early 1900s, but have recovered as shown by the vegetation on sideslopes that are usually at the angle of repose or less. Direct livestock impact appears to be low, since vegetation within channels is similar to that outside and does not attract attention to animals as would a riparian zone in a intermittent or perennial channel.


Photo 7: UTM 13S 392919/4152947


Photo 8: UTM 13S 390442/4152512

Vegetation up stream and below water tanks fed by a water pipeline has flowing water from tank overflow (Photo 8). The channel in this location is more v-shaped and has good vegetation due to availability of water. A short distance upstream of the tanks, the channel morphology changes to a wide swale in a valley area with low slope. Upstream where valley slope increases, channels are again incised with sideslope angle depending on topography (Photo 9). In Photo 9, the left bank is formed by a steep hillslope and has sparse vegetative cover. Channel width is about 6 feet and substrate consists of gravel and coarse sand.

As shown in Photo 9, the left bank is defined by valley slope and is somewhat steep, whereas right bank slope is much less towards the valley center and has better vegetative conditions. Direct livestock impacts are limited to some trailing across the channels. In upper reaches of these ephemeral channels, bedrock defines the channels and livestock use in these areas appears limited (Photo 10).


Photo 9: UTM 389373/4151859


Photo 10: UTM 388484/4151858

In a reach of upper Dry Creek, an impoundment provides water for livestock, although this area has not been grazed for the last few years (Photo 11). Stream health in this reach above the impoundment is robust and provides good bank stability (Photo 12). Riparian vegetation above the impoundment appears to be limited to cottonwood and some willow, although grass is the main vegetation along the banks. This area will require careful management once cattle are allowed to graze here again, since the streambank and immediate adjacent area are sensitive and

could be quickly degraded. However, this source is dependent on snowpack and in May of 2006 was found to be dry.

Photo 11: UTM 38767/4153123

Photo 12: UTM 386820/4152614

Burnt Gulch is located one mile southeast of Bishop Rock. Watershed conditions on BLM lands are healthy. In the upper channel areas, channels are swalelike with good brush and grass cover (Photo 13).

Substrate is coarse cobble and gravel with some bedrock outcrop. In intermediate reaches on the eastern tributary to Burnt Gulch, grass and some willow growth suggest that during normal water years there may be some intermittent stream flow conditions (Photo 14).

Photo 13: UTM 387749/4147284

Photo 14: UTM 387679/4147802

On hillslope areas within this watershed, gullies created by historic overgrazing in the past have healed well, with good vegetation in gully bottoms and on sideslopes that have been reduced over the years (Photo 15).

Photo 15: UTM 387344/4147496

The main stem of Burnt Gulch receives a large amount of sediment from sparsely vegetated steep slopes to the west.

Overall, watershed health on BLM lands within the North, Triangle, Lower Tank,Upper Tank, Rocky, Dry Creek, West, Bishop Rock, and Rockslide Pastures are in good condition. Riparian areas at spring sources located within channels have been negatively impacted by drought, and congregating cattle and wildlife have impacted the channel and adjacent areas at those locations, notably in Rock Creek Park (Bishop Rock area). Most ephemeral channels have similar vegetation to adjacent lands, and livestock do not tend to congregate there due to lack of shade or extraordinary food source.

Ephemeral channels within upper watershed areas in the South Pasture are similar to those described for all of the other pastures, being bedrock controlled. In reaches within middle parts of this pasture, somewhat entrenched swale-like channels convey runoff (Photo 16). Small shrub and grass vegetation is present in channel bottoms and on sideslopes, but aspect to hot summer sun plays a large part in determining percent cover. Channel width and depth are approximately 4 feet in this reach. Vegetation on channel bottom suggests sediment movement is limited. Poorer vegetation is present on southern aspects of these channels.

Photo 16: UTM 391227/4149489

Photo 17: UTM 394784/4149299

Near the lower BLM boundary, channels have a gravel, coarse sand substrate with less vegetation due to flow and sediment deposition during runoff events (Photo 17). These sediments are moved partially downstream and new sediment is deposited in a natural cycle.

Watershed condition in the South Pasture is good, with no accelerated erosion features such as gullies or significant rills noted. The only notable headcut seen was where an incised ephemeral channel morphology begins and large wide swale ends within a channel reach (Photo 18). The transition zone between channel types is immediate as seen in the downstream view in this photo. Depth of the headcut is only about 1 to 1.5 feet and this headcut is not migrating upstream. Vegetation on and just downstream from the headcut indicates very slow if any movement upgradient.

Photo 18: UTM 393873/4150168

No Water rights are held by BLM on this allotment. However, several diversions from Rock Creek and Dry Creek with private water rights are present.

Livestock grazing could alter natural hydrology if upland vegetation is reduced to a point where water runs off the land surface rather than into the soil. This should not happen with implementation of the Colorado Livestock Grazing Management Guideline to "maintain sufficient residual vegetation on both upland and riparian sites…" Natural hydrology would also change if riparian conditions deteriorated. Riparian vegetation is needed to keep floodplains intact so they can capture surface flows and slowly release the water over time. Hydrology is also effected when channel shape is altered. Damaged banks can cause the channel to widen, producing shallow flows with more lost to evaporation.

The following table briefly describes basic components of the Proposed Action and alternatives.

PARAMETER	Proposed Action	Alternative A	Alternative B
AUMS	700	548	1,147
Season of Use	05/15 – 9/30	05/01 – 10/15	05/01 – 10/15
Potential Adjustments	To 1,147	To 1,147-increase 20% every 2 years	None
Stipulations	Distribution-utilization, adequate water sources, range improvements, rider	Distribution-utilization, adequate water sources, range improvements, rider	Distribution-utilization, adequate water sources, range improvements, rider

Cumulative Effects
Through implementation of the *Proposed Action*, AUMs for 2009 would be 700. Livestock numbers can increase from this base if stipulations regarding utilization, adequate water, range improvements, and distribution are met. Construction of new and upgrading of existing water sources discussed in the Description of Proposed Action and Alternatives section should improve livestock distribution and take pressure off existing water sources. This will have a positive effect to riparian areas that have been heavily utilized at times. Timing restrictions on grazing should also improve riparian vegetation in the Bishop Rock Pasture. Minor surface disturbances would occur where new water developments are placed. Stream hydrology and watershed conditions will improve over the long-term with the Proposed Action.

Cumulative effects in the three sixth-level watersheds where Rock Creek allotment is located include roads, recreation activity impacts, and timber harvest. These activities cause localized impacts to stream health where disturbances are connected to stream channels. Closing of user-created and travel routes that are not needed is currently being undertaken on BLM lands and will benefit watershed condition. Timber salvage on Forest Service lands in upper Rock Creek watershed is planned, and with proper implementation of standards and management measures impacts to stream health will be kept to acceptable levels. Current overall disturbance levels in these watersheds are low and stream channels have recovered well from historic heavy use.

Alternative A is the most conservative action alternative, with fewer livestock numbers initially and incremental increases over a ten year period. Under this alternative, negative impact to stream and overall watershed health is not likely with implementation of stipulations. Isolated heavy use areas would improve under this alternative since there are fewer numbers initially and increases are only allowed after monitoring demonstrates success.

Alternative B would increase AUMs to 1,147 immediately. This increase would also have stipulations regarding distribution, range improvements, etc., but would not have the incremental aspect of the Proposed Action or Alternative A. With this large increase, potential for negative impact to watershed resources is higher since effectiveness of range improvements and management changes would not be known immediately. Similar stipulations to the Proposed Action would also apply with this alternative. Thus, overall impacts would be similar, but any improvement in localized problem areas would be slower.

Under the *No Action Alternative*, grazing would be continued as conducted over the last few years with range improvement stipulations. The grazing time frame would be 7/10 to 10/01. With range improvements, watershed condition would improve over time due to better livestock distribution. Recovery of vegetation in localized heavy use areas would be similar to the action alternatives.

RANGE MANAGEMENT: Current livestock management within the Rock Creek Allotment is from July 10 through October 1 with 150 head (pairs) of cattle for 350 AUMs. Another 797 AUMs is in Temporary Suspended Nonuse until such time the authorized officer issues an adjustment over the 350 AUMs. The authorized officer approved livestock grazing in 2001, 2002, 2004, and 2005-2008 over 350 AUMs due to meeting utilization standards, fair distribution, abundant forage, and the ability and willingness for the livestock operator to haul

water. In years 2001 through 2008, 548 AUMs were authorized by the deciding officer. In years 2001, 2003, and 2004, plus 2007-2008 the permittee voluntarily grazed less than the authorized 548 AUMs (see Table 2, Utilization by Year p. 8) The Proposed Action or alternatives do not state a set grazing rotation, which will allow the permittee the flexibility to plan each years grazing rotation prior to turnout, and to move livestock to/from areas during the grazing season that may have better water and forage resources dependant upon resource conditions due to climate and other factors such as needs for logistical relocation of livestock, which differ yearly and seasonally (see Appendix B - Best Pasture Practice). It will also allow the BLM and the permittee to make changes to the rotation in the middle of the grazing season to effectively use water and forage when available.

The proposed carrying capacity adjustment in the Proposed Action and both alternatives will allow the permittee to operate with more livestock on their current BLM livestock grazing permit, 350 AUMs, which has occurred five out of the last seven years. Most areas have met utilization criteria and are maintaining or improving the frequency of key vegetative species, but there is an area (between the Upper and Lower Tanks) and near the Bishop Rock Pasture on State Land that has received heavier utilization and trailing due to past historic grazing use and has been brought to the permittee's attention. The permittee has rested this area between the Upper and Lower Tanks and utilized a rider to improve distribution and reduce impacts, which has shown improvement since 2004. Implementation of the Proposed Action or alternatives will require more intense grazing management and monitoring. The permit stipulations will ensure significant progress towards meeting the standards for rangeland health, while providing the opportunity for permittee to increase his livestock operation. If range health standards (*BLM Manual H-4180-1*) are not being met then the BLM will make management changes that will meet standards.

The proposed range improvements will significantly improve water distribution throughout the allotment and provide improved livestock distribution. In addition, any new construction/development of water sources and water haul sites will improve the livestock management within the Rock Creek Allotment. The completion of all range improvements will be analyzed for cost. The permittee, BLM, and other sources, such as the Natural Resource Conservation Service, Colorado Division of Wildlife, etc. will be considered for potential funding on various projects stated in Table 5. No timeline is outlined due to uncertain funding issues and no contributor to the project will be final until further discussion and agreements are made. As stated in the stipulations, "all range improvements within the Assignment of Range Improvements must be maintained and in good working order prior to turnout on any pasture as per 43 CFR 4120.3" and "water sources, in all pastures used, must be adequate to support livestock numbers – If water sources go dry, changes in the grazing rotation may be made." This will ensure maintenance and functionality to any project that the BLM or any other entity has provided any funding to.

Implementation of the Proposed Action or alternatives would improve grazing management on the Rock Creek Allotment. The stipulations, terms and conditions plus water developments will ensure proper distribution and utilization levels on herbaceous and woody species. Allotment specific objectives will be developed and amended as needed.

RECREATION/TRAVEL MANAGEMENT: The Rock Creek Allotment has high recreation use, especially within the Bishop Rock area. Camping, hunting, mountain biking, ATV use, OHV use, hiking, and fishing all occur within the allotment. User created roads and ATV trails are increasing throughout the allotment and are causing excessive erosion near Bishop Rock. This heavily used area attracts many different recreational groups due to the close proximity to Monte Vista, Colorado.

Livestock use within the Bishop Rock area during high recreation seasons (i.e. 4th of July, Memorial Day, etc.) may have conflict, but should be minimal during this time of the year. Indirect impacts may result when livestock add bacteria to water through defecation. Urine can also enrich water with nutrients. These are normally not a problem in flowing streams. However, at springs and impoundments the impacts can be concentrated and detrimental if these areas are not protected. Recreation users need to purify water before it is consumed. Water would need to be purified for drinking even if livestock were not in the area, because other sources of pathogens and bacteria exist naturally that could cause health problems. This impact is common to any action alternative. No new cumulative impacts will occur through the implementation of the Proposed Action or alternatives. Grazing in this allotment has occurred for a number of years. This results in a majority of recreationists being accustomed to the possible presence of livestock. The initiation of the Proposed Action or alternatives will not significantly impact the use of this area for recreation purposes.

A new travel management decision is in progress as of 2008 affecting routes on the Rock Creek Allotment. Travel restrictions have been revised for motorized access use. BLM allotment permittees who need motorized access for distribution of mineral supplements for livestock or maintenance projects for fencing, water developments, or other grazing season needs will be granted a permit by the BLM Authorized Officer. The authorization will grant motorized access to closed areas for permittee purposes from two weeks before and two weeks after the grazing period. The purpose will be for grazing management. Any other use not included in the permit and within the stated range of dates and purposes will be considered unlawful. No travel management document has been signed incorporating any other changes.

CUMULATIVE IMPACTS SUMMARY: A summary of Cumulative Impacts is included as part of this Environmental Assessment within each respective Element. Those impacts will not be re-stated in this summary section.

PERSONS / AGENCIES CONSULTED: Starting in the fall of 2004, a scoping process requested information and comments concerning the renewal for the Rock Creek Allotment. A public scoping meeting was also held on December 13, 2004, specifically for the Rock Creek Allotment, to request comments and issues from the interested public prior to the development of the Proposed Action and alternatives. The Field Office sent letters to the local office of the Colorado Division of Wildlife, Colorado State Land Board, U. S. Natural Resource Conservation Service, BLM Regional Solicitor, Colorado State Historical Society, U. S. Forest Service, BLM National Applied Resource Science Center, Colorado Counties, Inc., Colorado Environmental Coalition, Rocky Mountain Oil and Gas Association, Independent Petroleum Association of Mountain States, U. S. Fish and Wildlife Service, The Nature Conservancy, Sierra Club, SW Regional Club, and National Wildlife Federation.

The permittee was contacted informing him that his permit is expiring.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Thomas Malecek	Field Office Manager	Authorizing Official
Guy Blackwolf	Range Management Specialist	Writer/Editor, Vegetation, Range Management, Forest Management, Noxious/Non-native Species, Air Quality, Wilderness, ACECs, Wild & Scenic Rivers, Transportation, Noise, Recreation, Visual Resources, Environmental Justice, Farmlands - Prime and Unique, Fire, Law Enforcement, Socio-Economics,
Melissa Garcia	Wildlife Biologist	Threatened, Endangered, and Sensitive Species, Terrestrial Wildlife, Aquatic Wildlife, Migratory Birds
Jeremiah Martinez	Natural Resource Specialist	Threatened, Endangered, and Sensitive Species, Floodplains, Wetlands, & Riparian Zones
Vince Spero	Archeologist	Cultural Resources, Native American Religious Concerns, Paleontology
Philip Reinholtz	Hydrologist	Water Quality - Surface and Ground
Dianne Gese	Geologist	Geology and Minerals, Wastes – Hazardous or Solid
John Rawinski	Soil Scientist	Soils
William Miller	Realty Specialist	Cadastral Survey, Realty Authorizations, Access, Transportation

FONSI (Finding of No Significant Impact)

CO-500-06-010-EA

The environmental assessment and analyzing the environmental effects of the Proposed Action have been reviewed. The approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the Proposed Action.

RATIONALE: The data analyzed within this document reflects no significant impacts to the human environment.

PROPOSED DECISION RECORD

DECISION: It is my decision to modify the Rock Creek Allotment Grazing Permit to John C. Noffsker and Linda Schoonhoven, and implement the proposed grazing management to improve conditions throughout the allotment, achieve and move towards the Standards for Rangeland Health, and comply with multiple use objectives as described in the Proposed Action of CO-500-06-010-EA. Beginning with the 2009 grazing season, 700 AUMs will be available for grazing. The permittee may apply for annual adjustments in subsequent grazing seasons up to a maximum of 1,147 AUMs consistent with the original permit. The Authorized Officer may approve adjustments annually based on current monitoring/utilization data reflecting consistent achievement meeting or moving toward meeting range health standards. If proper utilization, livestock distribution, and watering guidelines are satisfied, then additional AUMs may be granted within the current grazing season given a season with sufficient precipitation and forage availability to livestock. Other factors to consider for granting extension within season include wildlife needs, resource conditions and meeting or moving toward meeting Rangeland Health Standards. If range health standards are not being met, BLM will take corrective action, which may include changes in season of use, stocking rate or the grazing management system including changes in pasture boundaries to reflect the use of the land by livestock.

Changes were identified in the environmental assessment and mitigation measures were developed which will become Terms and Conditions (stipulations) for the grazing permit. Issuance of the grazing permit will have no adverse effect on the long-term health of the Public Lands. Terms and Conditions to the Grazing Permit are noted below.

TERMS AND CONDITIONS

1. Livestock grazing will be in accordance with this Environmental Assessment # CO-500-06-010-EA.
2. The terms and conditions of this permit will be modified if additional information indicates that revision is necessary to conform to 43 CFR 4180.
3. The permittee and the BLM will meet prior to turnout each year to determine the grazing rotation. Grazing use will occur between May 15 and September 30 or two

weeks before and two weeks after those dates depending on resource conditions and forage availability. No pasture will be grazed during the same growing season more than two years in a row if practical.

4. Utilization levels on all key forage species identified on the allotment will not exceed 50% on herbaceous species or 40% use on current year's leader growth of woody species. This standard will not be exceeded outside 1/4 of a mile from water sources. Key sites will be considered by the BLM and permittee/CRMP team.
5. Proper distribution and utilization shall be consistent and monitoring will determine that BLM Rangeland Health Standards and Guidelines are being met, or moving toward meeting standards, in all pastures used. The CRMP may be consulted to discuss monitoring data and recommendations. An application for a requested adjustment in AUMs will be submitted before the next grazing season. The Authorized Officer will determine whether the adjustment shall be approved based on current monitoring data.
6. In all pastures, water resources shall be available to support livestock numbers. If water sources go dry, changes in the grazing rotation will be made.
7. Any pastures can be used, but a rotation will be agreed upon by the BLM and the permittee prior to turnout. Adjustments can be made in the middle of the rotation/grazing season agreed upon by the BLM and the permittee. AUMs will not exceed the authorized AUMs for the allotment
8. Actual Use Reports shall be submitted by the permittee within 15 days after completing grazing and will include the number of animals by pasture and date.
9. All range improvements within the Assignment of Range Improvements will be maintained and in good working order prior to turnout on any pasture as per 43 CFR 4120.3.
10. The operator shall provide sufficient herding of livestock throughout each pasture to ensure reasonable livestock distribution and avoid excessive trailing between water sources.
11. All mineral supplements shall be placed at least 1/4 mile from open water sources (springs, streams, and troughs), wet or dry meadows, main roads, aspen stands and cultural heritage sites. All supplement containers shall be removed from the allotment by the end of the grazing season unless biodegradable containers are used.

MITIGATION MEASURES: See Terms and Conditions above.

REMARKS: Grazing use is in accordance with district priorities and cost effectiveness of funds available to the Del Norte Field Office.

In accordance with the grazing regulations the Secretary of the Interior approved standards and guidelines for rangeland health for the Bureau of Land Management in the State of Colorado on February 3, 1997. These standards and guidelines reflect the stated goals of improving rangeland health while providing for the viability of the livestock industry.

Through this EA process, the BLM determined there would be no significant impact as a result of implementation of the Proposed Action. Copies of the EA (#CO-500-06-010-EA) along with

the "Finding of No Significant Impact" (FONSI) and "Decision Record" (DR) are available upon request at the Del Norte Field Office.

If you do not agree with the terms, conditions, or stipulations of the permit, or do not wish to accept this permit/lease, you have the right to protest and appeal as follows.

PROVISIONS FOR PROTEST, APPEAL, AND PETITION FOR STAY PROTEST: In accordance with 43 CFR 4160.2, any applicant, permittee, lessee or other interested public may protest the proposed decision under 4160.1 of this title, in person or in writing to the Bureau of Land Management, Tom Malecek, Field Office Manager for the Del Norte Field Office, 13308 W. Hwy 160, Del Norte, CO, 81132, within 15 days after receipt of this decision. The protest, if filed, must clearly and concisely state the reason(s) as to why the proposed decision is in error.

In accordance with 43 CFR 4160.3 (b), should a timely protest be filed with the Del Norte Field Office Manager, at the conclusion to his/her review of the protest shall serve his/her final decision on the protestant and the interested public.

In accordance with 43 CFR 4160.3 (a), in the absence of a protest, the Proposed Decision will become the final decision of the Del Norte Field Office Manager without further notice.

In accordance with 43 CFR 4160.3 (c) & (f), a period of 30 days following receipt of the Final Decision or 30 days after the date the Proposed Decision becomes final is provided for filing an appeal and petition for stay of the decision pending final determination on appeal.

APPEAL AND PETITION FOR STAY: In accordance with 43 CFR 4160.4, any person whose interest is adversely affected by a final decision of the Del Norte Field Office Manager may appeal the decision for the purpose of a hearing before an administrative law judge and may also petition for a stay of the decision pending final determination on appeal. The appeal and petition for stay must be filed within 30 days following receipt of the final decision or 30 days after the date the proposed decision becomes final. Appeals and petitions for a stay of the decision shall be filed at the office of the Del Norte Field Office Manager stated above in the Provisions for Protest.

In accordance with 43 CFR 4.470, the appeal shall state the reasons, clearly and concisely, why the appellant thinks the final decision of the Del Norte Field Office Manager is in error.

A petition for stay, if filed, must show sufficient justification based on the following standards (43 CFR 4.471(c)):

(1) The relative harm to the parties if the stay is granted or denied;
(2) The likelihood of the appellant's success on the merits;
(3) The likelihood of immediate and irreparable harm if the stay is not granted; and,
(4) Whether the public interest favors granting the stay.

The appellant requesting a stay bears the burden of proof to demonstrate that a stay should be granted.

Any person named in the decision from which an appeal is taken (other than the appellant) who wishes to file a response to the petition for a stay may file with the Hearings Division a motion to intervene in the appeal, together with the response, within 10 days after receiving the petition. Within 15 days after filing the motion to intervene and response, the person must serve copies on the appellant, the Office of the Solicitor and any other person named in the decision (43 CFR 4.472(b)).

COMPLIANCE/MONITORING: Monitor use levels, frequency, riparian conditions, periodic stock counts, and pasture inspections which contribute to Allotment Specific Objectives. Objectives will be amended as needed. Objectives will be designed to achieve rangeland health standards. Short term monitoring will occur annually.

NAME OF PREPARER: Guy Blackwolf

NAME OF ENVIRONMENTAL COORDINATOR: Bruce Rittenhouse

DATE:

SIGNATURE OF AUTHORIZED OFFICIAL: _____

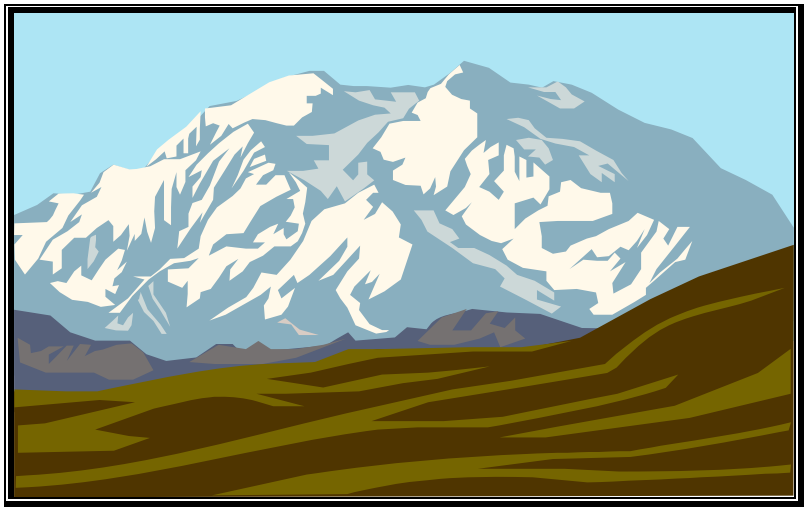
Del Norte Authorized Officer

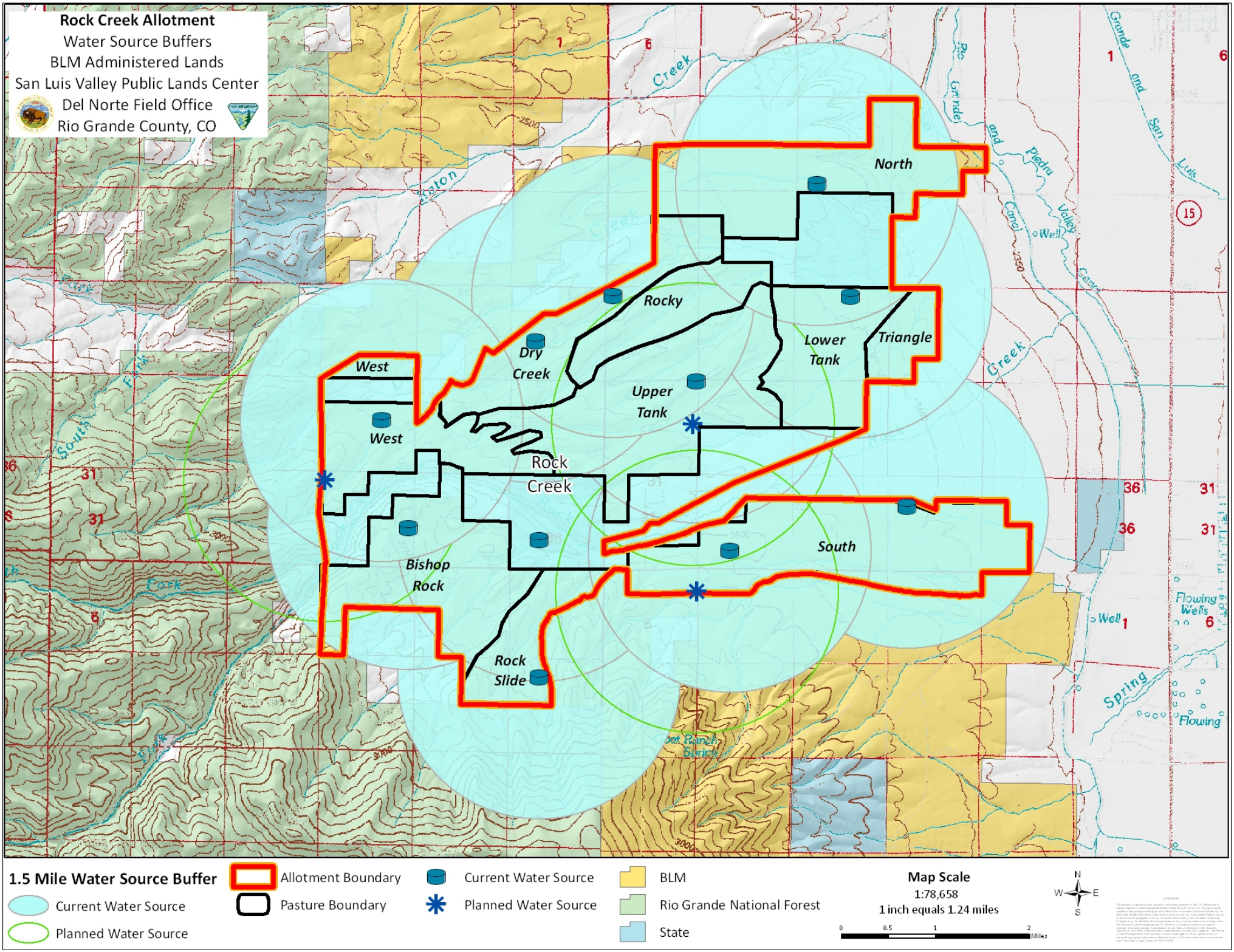
DATE SIGNED:

APPENDICES: Appendix A – Rock Creek Water Distribution Map, **Appendix B** – Range Site Map and Carrying Capacity Tables, **Appendix C** – Rock Creek Key Area Sites and Trend Site Data, **Appendix D** – Coordinated Resource Management Plan (CRMP), **Appendix E** – Colorado Fence Law

Appendix A

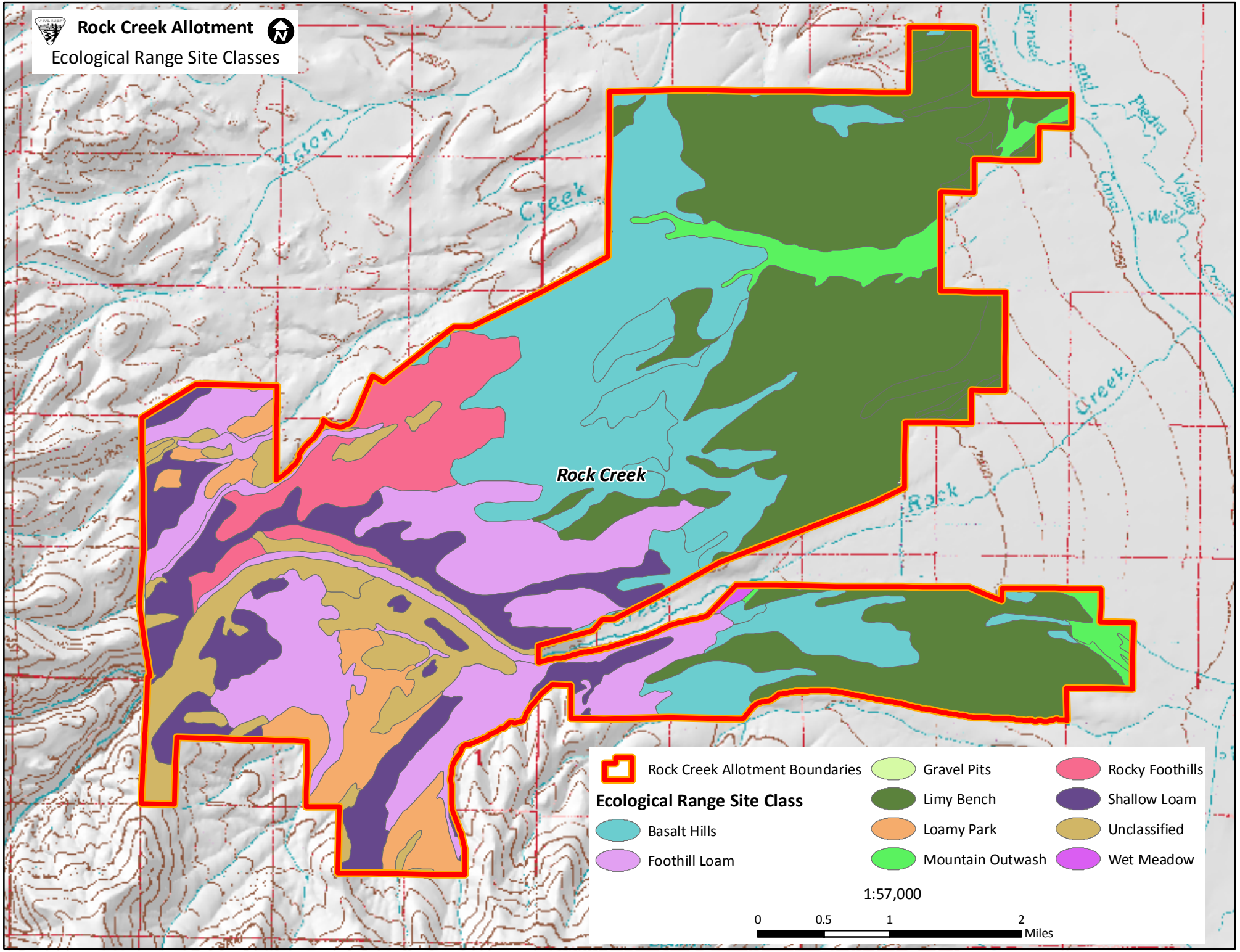
Rock Creek Water Distribution Map




Rock Creek Allotment
Water Source Buffers
BLM Administered Lands
San Luis Valley Public Lands Center
Del Norte Field Office
Rio Grande County, CO
North
Rocky
Lower Tank
Triangle
Dry Creek
West
West
Upper Tank
Rock Creek
Bishop Rock
Rock Slide
South
1.5 Mile Water Source Buffer
Current Water Source
Planned Water Source
Allotment Boundary
Pasture Boundary
Current Water Source
Planned Water Source
BLM
Rio Grande National Forest
State
Map Scale
1:78,658
1 inch equals 1.24 miles
0 0.5 1 2 Miles
N
W
E
S

Appendix B

Range Site Map and Carrying Capacity Tables


Rock Creek Allotment
Ecological Range Site Classes
Rock Creek
Rock Creek Allotment Boundaries
Ecological Range Site Class
Basalt Hills
Foothill Loam
Gravel Pits
Limy Bench
Loamy Park
Mountain Outwash
Rocky Foothills
Shallow Loam
Unclassified
Wet Meadow
1:57,000
0
0.5
1
2
Miles

Total Suitable Acres corrected for 30% slope and 1.5 miles distance to water.

Allotment	Pasture Name	Total Acreage	Acres within 1.5 Miles of Water	Suitable Acres Corrected for Slope and Water
Rock Creek BLM	*Bishop Rock*	1,585	1,585	1,158
	Dry Creek	1,055	1,055	962
	Lower Tank	1,030	1,026	1,026
	North Pasture	1,648	1,468	1,468
	Rock Slide	653	653	459
	Rocky	699	699	656
	South	2,088	2,014	1,995
	Triangle	359	359	359
	Upper Tank	2,141	1,855	1,697
	West	1,115	829	617
		12,373	**11,543**	**10,397**

This table represents the adjusted values for Total Annual Yield due to percentage of herbaceous plant species that contribute to cattle forage per range site (Rio Grande County Area, Colorado Soil Survey, 1980).

Adjusted Forage Production Per Range Site

Range Site	Total Annual Yield (lbs/acre)	% Cattle Forage	Adjusted Forage Production (lbs/acre)
Basalt Hills	300	70	**210**
Foothill Loam	800	90	**720**
Limy Bench	300	85	**255**
Loamy Park	1,000	85	**850**
Mountain Outwash	300	85	**255**
Rocky Foothills	400	70	**280**
Salt Flats	600	70	**420**
Salt Meadow	1,500	90	**1,350**
Shallow Loam	600	90	**540**
Wet Meadow	2,000	90	**1,800**

Carrying Capacity Estimates:

This carrying capacity analysis is based on the Soil Survey, Rio Grande County Area, Colorado USDA Soil Conservation Service, issued in February 1980, which is the most current available data documented on forage production for the Rock Creek BLM allotment. Carrying capacity estimates are based on a below average precipitation year. Suitable acres were corrected for 30% slope and 1.5 miles distance to water to determine suitable grazing acres on each range site listed in each pasture. Anything greater than 1.5 miles to water and anything over 30% slope was excluded. Total annual yield in pounds per acre of production was determined by field work by Soil Conservation Service (SCS-now Natural Resources Conservation Service, NRCS) staff using clipping and weighing of major native forage species. Allowable use of forage was set to 40% consistent with the current San Luis Resource Area Record of Decision and Approved Resource Management Plan (RMP), December 1991. In practice, range managers by convention use a "take half, leave half" rule in monitoring rangelands. This means that for the Rock Creek BLM allotment under normal or above average precipitation years utilization by livestock should not exceed 50% in each pasture allotment wide. In drier conditions or under below average precipitation years utilization should not exceed 40%. The remaining 60%, if needed, should be devoted to non-livestock uses such as wildlife, riparian, watershed, and soils. Annual yield data has been corrected to reflect the percentage of herbaceous plant species per range site that contribute to cattle forage.

The management of the Rock Creek BLM allotment will be conservative because the possibility of drought and generally drier conditions due to climatic effects and topography are present. Although the carrying capacity is estimated to be 1,707 AUMs using below average precipitation production levels the Del Norte Field Office is only recommending that the grazing level be adjusted up to 1,147 AUMs which was consistent with the original 1996 permit. The 1,147 AUMs are 67% of the potential 1,707 AUMs available at below average precipitation levels. Monitoring data should indicate that utilization, distribution of livestock and water availability support any desired increases in AUMs requested by the permittee. The final decision to increase AUMs will reside with the Field Office Manager (refer to Stipulations, Terms and Conditions p. 12 of this EA).

Please see the following tables and summary for data included used to determine an estimate of the carrying capacity for the Rock Creek BLM allotment.

Example Calculation of Data:

Pasture	Range Site	Suitable Acres	Total Annual Yield (lbs/acre)	Allowable Use of Forage (%)	Available Forage (lbs)	Forage/AU (lbs/day)	Total AUs (lbs)	Carrying Capacity/Total AUMs
Bishop Rock	Foothill Loam	394	720	40	113,472	26	4,364	143

394 x 720 x 0.40 = 113,472; 113,472 ÷ 26 = 4,364

AUMs = 4,364 ÷ 30.41666 = **143** where 30.41666 is from 365 ÷ 12 = estimated # of days per month

Pasture	Range Site	Suitable Acres	Annual Yield (lbs/acre)	Allowable Use of Forage (%)	Available Forage (lbs)	Forage/AU (lbs/day)	Total AUs	Carrying Capcity (AUMs)
Bishop Rock	Foothill Loam	394	720	40	113,472	26	4,364	143
	Loamy Park	344	850	40	116,960	26	4,498	148
	Rocky Foothills	2	280	40	224	26	9	0
	Shallow Loam	208	540	40	44,928	26	1,728	57
	Not In a Range Site	*208*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Totals		**1,156**			**275,584**		**10,599**	**348**
Dry Creek	Basalt Hills	385	210	40	32,340	26	1,244	41
	Foothill Loam	20	720	40	5,760	26	222	7
	Limy Bench	22	255	40	2,244	26	86	3
	Mountain Outwash	28	255	40	2,856	26	110	4
	Rocky Foothills	454	280	40	50,848	26	1,956	64
	Not In a Range Site	*52*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Totals		**961**			**94,048**		**3,617**	**119**
Lower Tank	Basalt Hills	5	210	40	420	26	16	1
	Gravel Pits	2	0	0	0	0	0	0
	Limy Bench	1,019	255	40	103,938	26	3,998	131
Totals		**1,026**			**104,358**		**4,014**	**132**
North	Basalt Hills	215	210	40	18,060	26	695	23
	Limy Bench	1,218	255	40	124,236	26	4,778	157
	Mountain Outwash	35	255	40	3,570	26	137	5
Totals		**1,468**			**145,866**		**5,610**	**184**
Rock Slide	Foothill Loam	157	720	40	45,216	26	1,739	57
	Loamy Park	163	850	40	55,240	26	2,132	70
	Shallow Loam	117	540	40	25,272	26	972	32
	Not In a Range Site	*22*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Totals		**459**			**125,908**		**4,843**	**159**

Pasture	Range Site	Suitable Acres	Annual Yield (lbs/acre)	Allowable Use of Forage (%)	Available Forage (lbs)	Forage/AU (lbs/day)	Total AUs	Carrying Capcity (AUMs)
Rocky	Basalt Hills	568	210	40	47,712	26	1,835	60
	Limy Bench	56	255	40	5,712	26	220	7
	Mountain Outwash	15	255	40	1,530	26	59	2
	Rocky Foothills	17	280	40	1,904	26	73	2
Totals		**656**			**56,858**		**2,187**	**72**
South	Basalt Hills	547	210	40	45,948	26	1,767	58
	Foothill Loam	165	720	40	47,520	26	1,828	60
	Limy Bench	1,125	255	40	114,750	26	4,413	145
	Mountain Outwash	125	255	40	12,750	26	490	16
	Shallow Loam	25	540	40	5,400	26	208	7
	Wet Meadow	8	1800		5,760	26	222	7
Totals		**1,995**			**232,128**			**294**
Triangle	Limy Bench	358	255	40	36,516	26	1,404	46
	Wet Meadow	1	1800	40	720	26	28	1
Totals		**359**			**37,236**		**1,432**	**47**
Upper Tank	Basalt Hills	1,026	210	40	86,184	26	3,315	109
	Foothill Loam	196	720	40	56,448	26	2,171	71
	Limy Bench	465	255	40	47,430	26	1,824	60
	Mountain Outwash	1	255	40	102	26	4	0
	Rocky Foothills	1	280	40	112	26	4	0
	Shallow Loam	8	540	40	1,728	26	66	2
Totals		**1,697**			**192,004**		**7,385**	**243**
West	Foothill Loam	176	720	40	50,688	26	1,950	64
	Loamy Park	73	850	40	24,820	26	955	31
	Rocky Foothills	96	280	40	10,752	26	414	14
	Not In a Range Site	*42*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Totals		**387**			**85,260**		**3,318**	**109**

This table is a summary of the carrying capacity calculations in the previous tables. The calculations were estimated using Microsoft Excel. Rounding errors may occur.

Total acres not included in carrying capacity calculations because they were not in a range site were approximately 326. These acres were included in suitable acres because they fell into a category that matched distance to water (1.5 miles), and were found to be less then 30% slope, but were not included in forage production estimates.

Carrying Capacity (total AUMs) is determined by dividing Total AUs (lbs) by 30.41666.

Summary of Potential Carrying Capacity Estimates

Pasture	Suitable Acres	Available Forage (lbs)	Total AUs (lbs)	Carrying Capacity (AUMs)
Bishop Rock	1,156	275,584	10,599	**348**
Dry Creek	961	94,048	3,617	**119**
Lower Tank	1,026	104,358	4,014	**132**
North	1,468	145,866	5,610	**184**
Rock Slide	459	125,908	4,843	**159**
Rocky	656	56,858	2,187	**72**
South	1,995	232,128	8,928	**294**
Triangle	359	37,236	1,432	**47**
Upper Tank	1,697	192,004	7,385	**243**
West	387	86,260	3,318	**109**
Grand Total	**10,164**			**1,707**

Note: 30.41666 is calculated by dividing 365 days in a year by 12 which then represents the estimated days per month, 30.41666

Best Pasture Practice

Because summer rainfall in the Southwest U. S. usually comes in the form of intense but isolated thunderstorms, summer moisture patterns are typically spotty and unpredictable. It is not uncommon for areas of a ranch separated by only a few miles to vary greatly in the amount of precipitation received from a storm event. The best pasture grazing system, as originally proposed by Valentine (1967), attempts to match cattle movements with irregular precipitation patterns and associated forage production without regard to a rigid rotation schedule. For instance, when a local rain event causes a flush of annual forbs in a particular pasture, cattle are moved to that pasture, and then moved back to the previous pasture once acceptable utilization levels of the ephemeral forb resource have been achieved. On the other hand, if a pasture that is tentatively scheduled for grazing continues to miss localized rainstorms while another pasture continues to receive moisture, the rotation schedule for the two pastures could be flip-flopped. Because livestock movements are not rigidly timed to a particular timetable, the best pasture system requires that land managers command a mindset of high flexibility. The best pasture system may also be timed to match seasonal forage quality changes across ecological sites, and thus, embraces some elements of the seasonal suitability system. For example, pastures containing black grama (*Bouteloua eriopoda*) as the primary forage species may be deferred until the dormant season when it is higher in protein compared to pastures dominated by blue grama (*Bouteloua gracilis*) or hairy grama(*Bouteloua hirsuta*). Because black grama is relatively less resistant to grazing than many other perennial grasses, winter grazing has less impact on this species than use during the growing season. This approach works best when some of the pastures in the "rotation" contain winter annuals and palatable shrubs. As with the seasonal suitability grazing system, the best pasture system may involve turning on (or shutting off) watering points in grazed (deferred or rested) pastures. Cattle learned within a year to follow active watering points on a 3,160-acre ranch in southeastern Arizona (Martin and Ward, 1970). Because localized heavy grazing around watering points was controlled during Martin and Ward's 8-year study, perennial grass forage production nearly doubled with the best pasture system compared to continuous grazing.

Source:

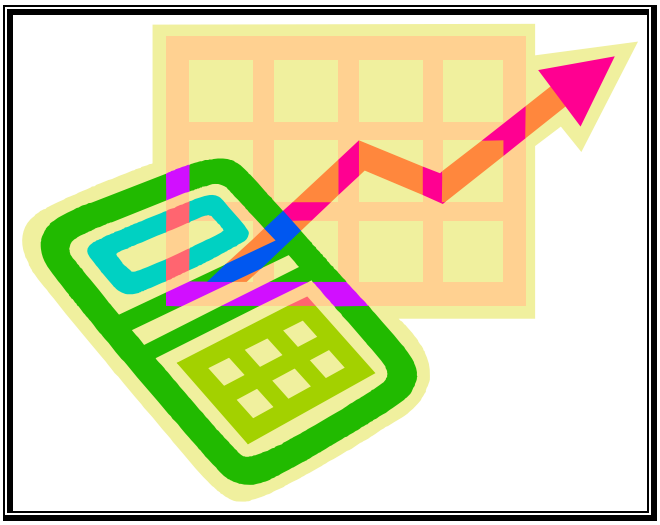
9/2000 AZ1184
THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE AND LIFE SCIENCES
TUCSON, ARIZONA 85721

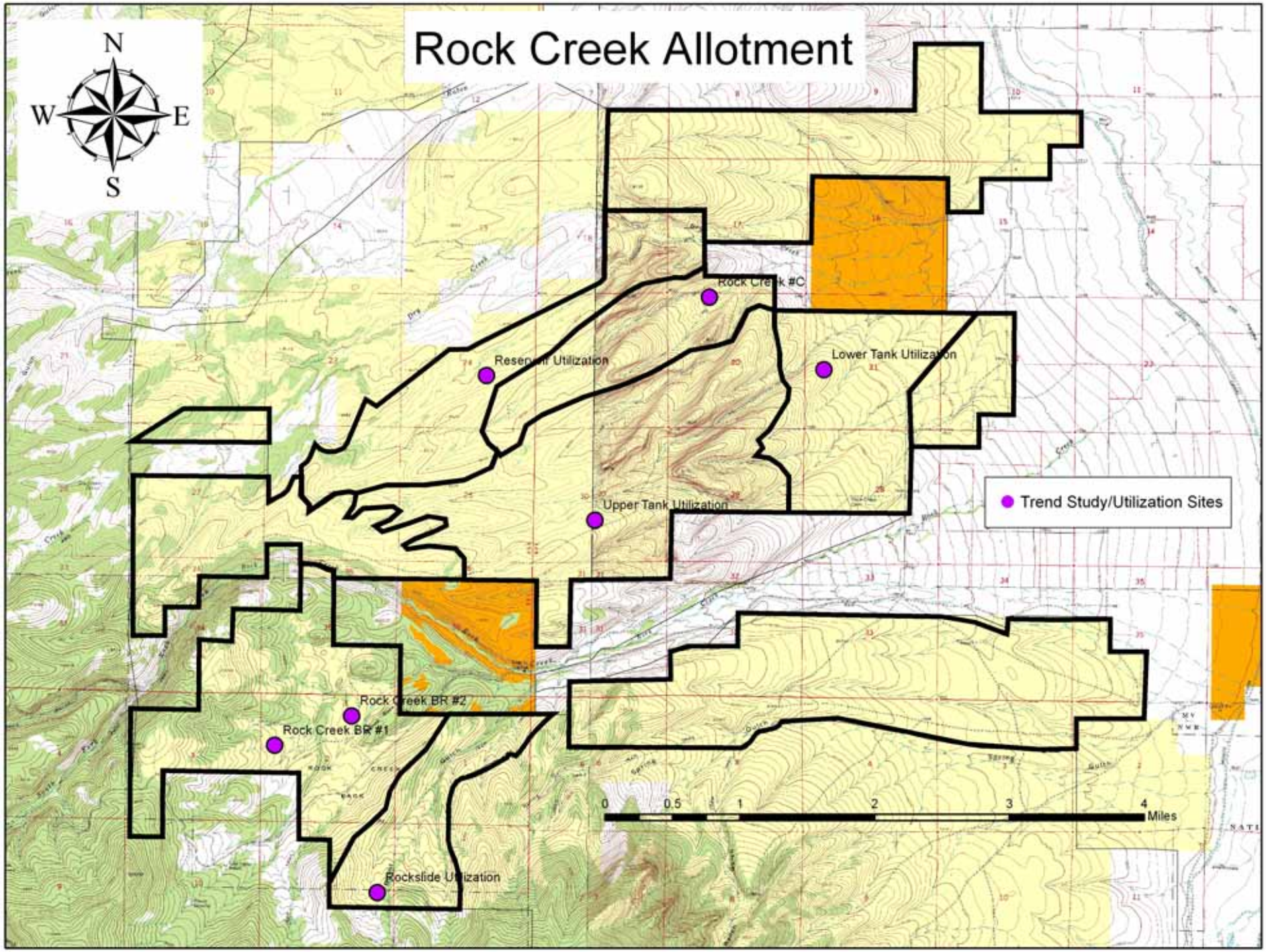
LARRY D. HOWERY[1], JAMES E. SPRINKLE[2], AND JAMES E. BOWNS[3,4]

1Assistant Rangeland Management Specialist, The University of Arizona Cooperative Extension Service; 2Assistant Area Extension Agent, Animal Science, The University of Arizona Cooperative Extension Service; 3Range Specialist, Utah State University
4*This article was inspired by a presentation made by Dr. Bowns at the Arizona/Utah Range Livestock Workshop held in St. George and Kanab Utah, April 9-10, 1996. Dr. Bowns' presentation was entitled, "Animal Response to Grazing Systems". We acknowledge Thomas DeLiberto, Robin Grumbles, Kim McReynolds, and George Ruyle for reviewing earlier drafts of this manuscript.*
This information has been reviewed by university faculty
ag.arizona.edu/pubs/natresources/az1184.pdf

Appendix C

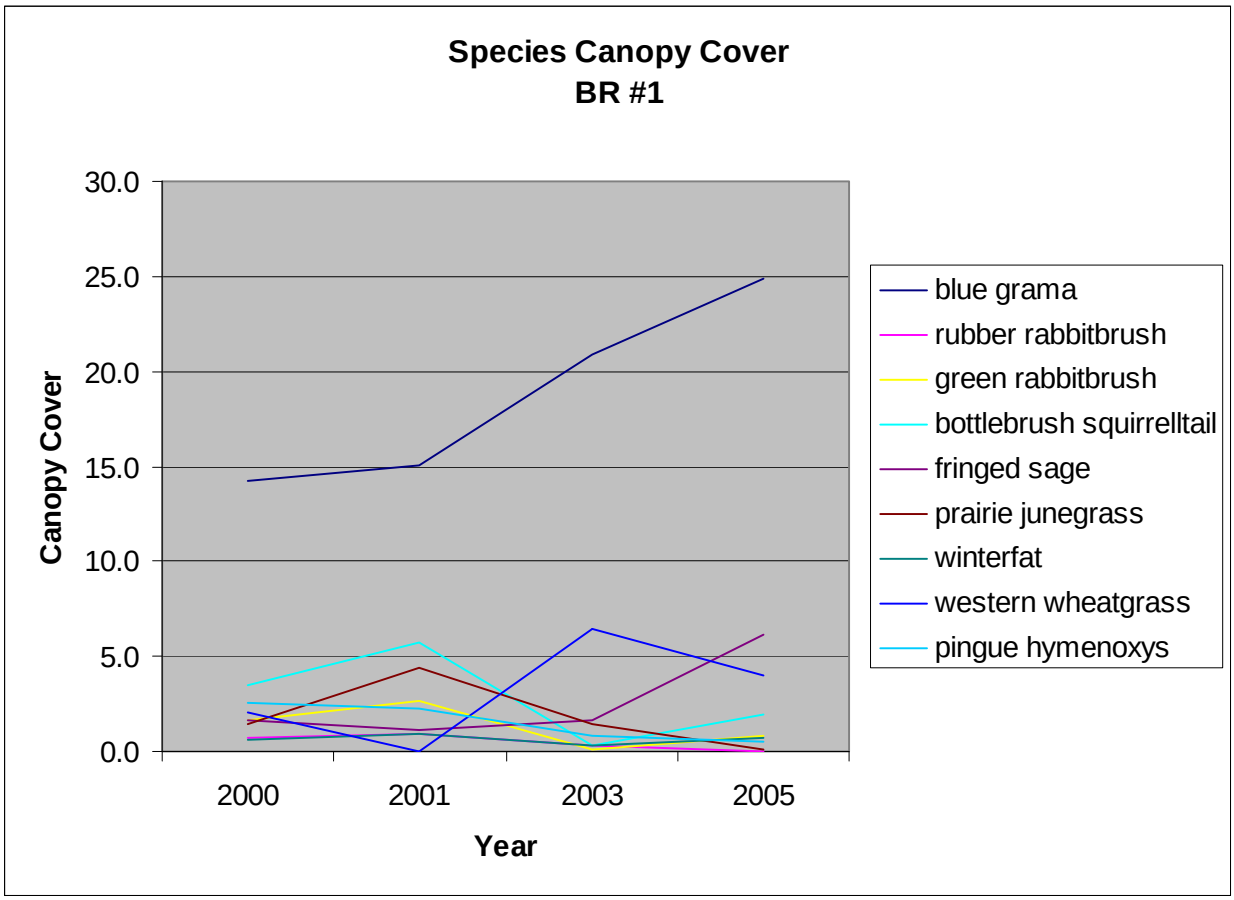
Rock Creek Allotment Trend Site Data

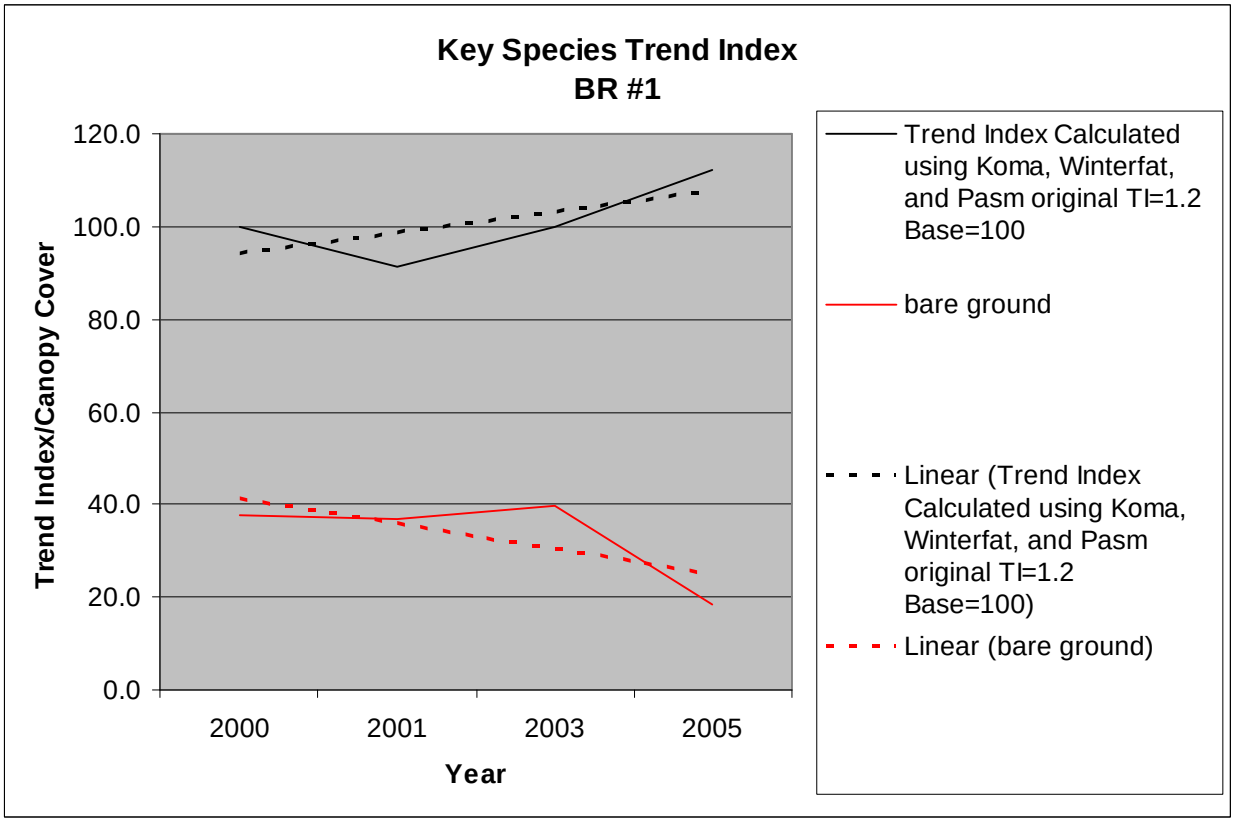



Rock Creek Allotment
N
W
E
S
Rock Creek #C
Reservoir Utilization
Lower Tank Utilization
Upper Tank Utilization
Trend Study/Utilization Sites
Rock Creek BR #2
Rock Creek BR #1
Rockslide Utilization
0
0.5
1
2
3
4
Miles

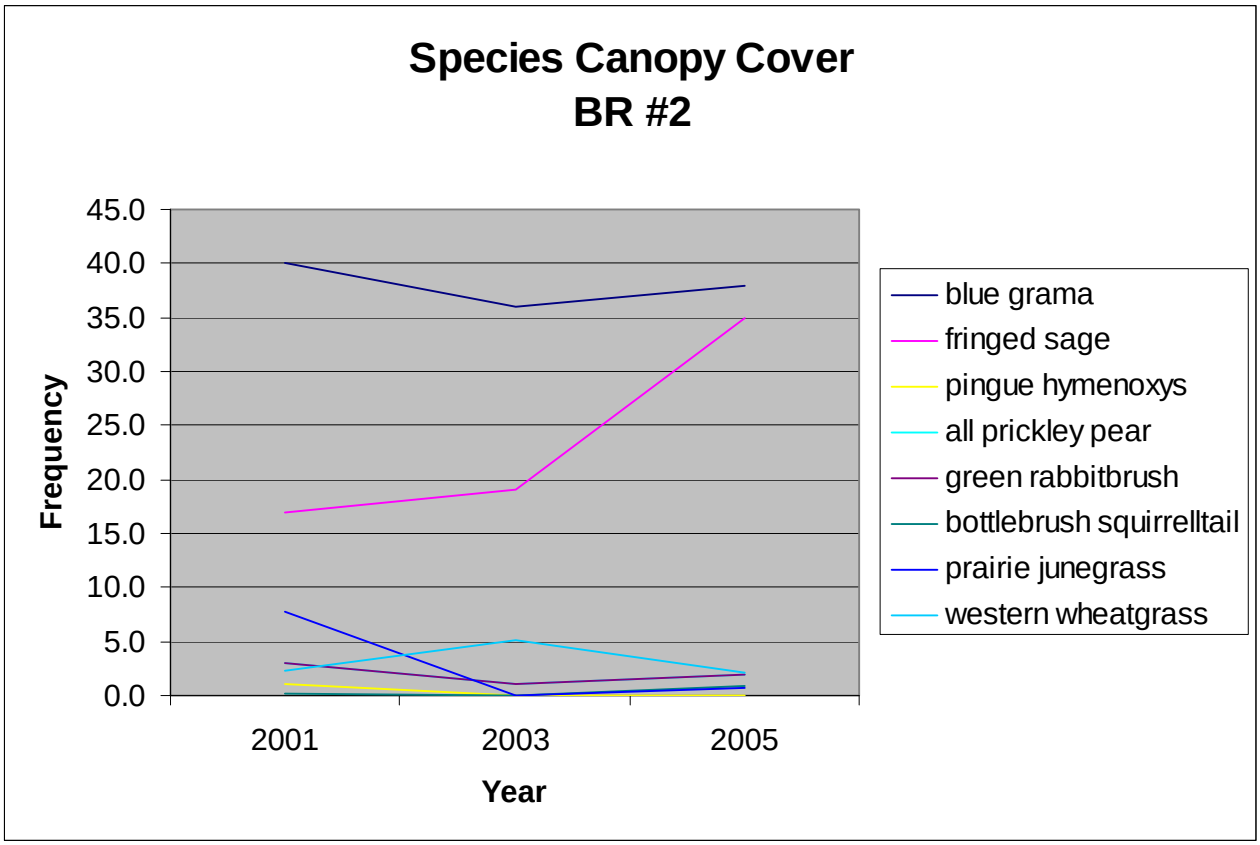
Trend Site Data

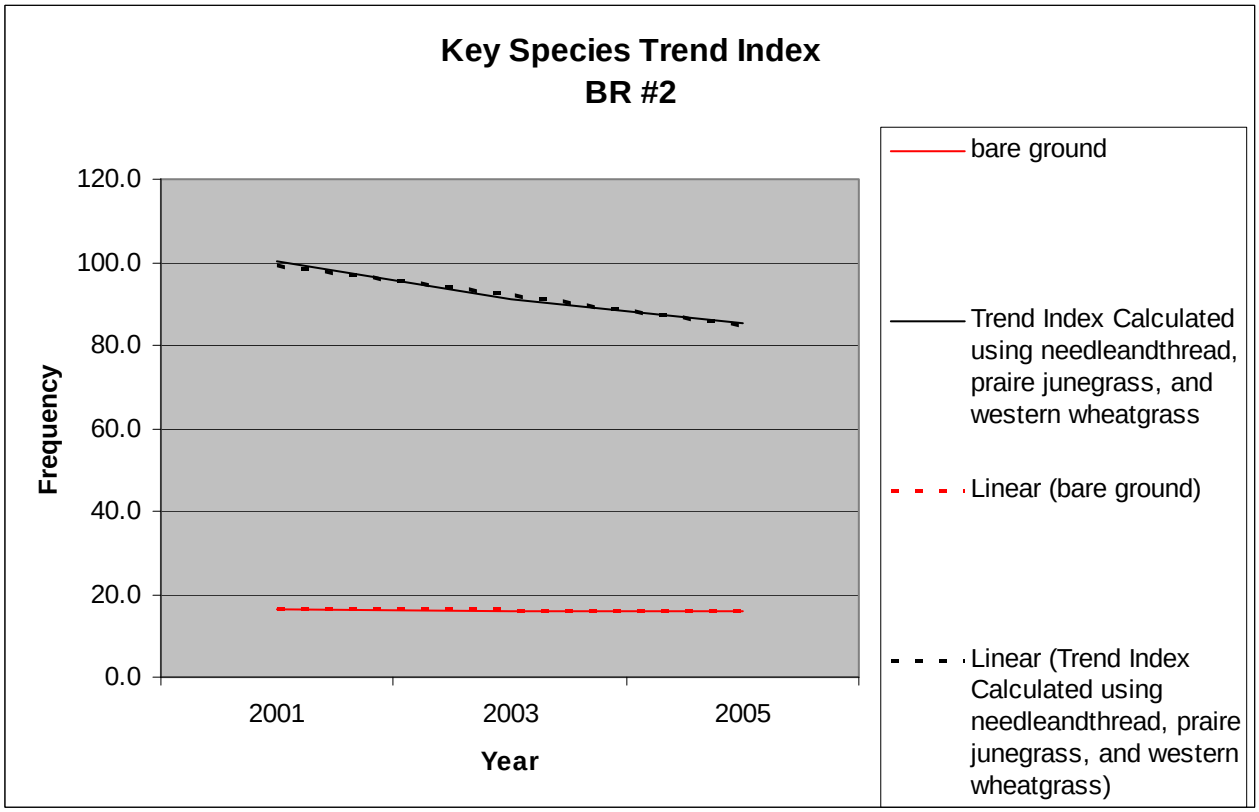
Allotment Name: Rock Creek						
Transect Name: Bishop Rock #1						
Range Site: Loamy Park			**Canopy**	**Canopy**	**Canopy**	**Canopy**
Scientific Name	**Common Name**	**NRCS Symbol**	**2000**	**2001**	**2003**	**2005**
Artemisia frigida	fringed sage	ARFR4	1.6	1.2	1.6	6.2
Artemisia ludoviciana	Louisiana sagewort	ARLU	0.1	0.3	0.0	0.1
Astragalus sp.	milkvetch	ASTRA	0.0	0.0	0.0	0.0
Aster sp.	aster	ASTER	0.0	0.0	0.0	0.0
Bouteloua gracilis	blue grama	BOGR2	14.2	15.1	20.9	24.9
Carex sp.	unknown carex	CARE	2.5	3.4	2.0	2.5
Castilleja sp.	indian paintbrush	CASTI2	0.0	0.0	0.0	0.0
Chenopodium sp.	lambs quarter, goosefoot	CHENO	0.0	0.0	0.0	0.4
Chrysothamnus vaseyi		CHVA	0.0	0.3	0.0	0.0
Chrysothamnus greenei	Greene's rabbitbrush	CHGR6	1.9	2.0	1.0	1.8
Chrysothamnus nauseosus	rubber rabbitbrush	CHNAN3	0.7	0.9	0.4	0.0
Chrysothamnus parryi	Parry' s rabbitbrush	CHPAP	0.0	0.0	0.3	1.3
Chrysothamnus viscidiflorus	green rabbitbrush	CHVI8	1.7	2.7	0.1	0.9
Clematis	Clematis		0.1	0.0	0.0	0.0
Elymus elymoides	bottlebrush squirrelltail	ELEL5	3.4	5.7	0.3	1.9
Erigeron sp.	fleabane	ERIGE2	0.2	0.4	0.3	0.4
Erigeron effusum	spreading buckwheat	EREF	0.4	0.4	0.4	0.3
Eriogonum umbellatum	sulphur wildbuckwheat	ERUM	0.1	0.0	0.0	0.0
Eriogonum sp.	eriogonum	ERIO6	0.0	0.0	0.0	0.0
Gutierrezia sarothrae	broom snakeweed	GUSA2	0.8	0.8	0.0	0.1
Heterotheca villosa	hairy golden aster	HEVI4	0.6	0.0	0.0	0.0
Hymenoxys richardsonii	pingue hymenoxys	HYRI	2.5	2.3	0.9	0.6
Koeleria macrantha	prairie junegrass	KOMA	1.4	4.4	1.5	0.1
Krascheninnikovia lanata	winterfat	KRLA2	0.6	0.9	0.3	0.7
Leptodactylon pungens	granite prickley gilia	LEPU	0.0	0.0	0.0	0.0
Lesquerella	bladder pod	LESQU	0.0	0.0	0.0	0.0
Liatris Aspera Michx.	tall blazing star	LIAS	0.1	1.4	0.0	0.0
Pascopyrum smithii (Agropyron smithii)	western wheatgrass	PASM	2.0	0.0	6.4	4.0
Penstemon sp.	penstemon	PENST	0.0	8.6	0.0	0.1
Pinus edulis	pinyon pine	PIED	1.4	0.0	1.4	1.0
Poa fendleriana	muttongrass	POFE	0.3	0.0	0.0	0.0
Psathyrostachys juncea	Russian wild rye	PSJU3	2.0	0.0	0.3	2.0
Pterogonum alatum	Winged buckwheat	PTAL	0.3	0.8	0.1	0.1
Ribes sp.	all currant	RIBES	1.4	1.5	1.3	0.3
Sphaeralcea coccinia	scarlet globemallow	SPCO	0.4	1.0	0.2	0.5
Stipa comata ssp. intonsa	needle-and-thread grass	STCOI2	0.4	0.8	0.3	0.0
Tragopogon dubius	yellow salsify	TRDU	0.0	0.0	0.3	0.0
Virgulus falcatus	Rough White Aster	VIFA	0.0	0.0	0.1	0.0
unknown 1	unknown 1	UNK 1	0.0	0.1	0.5	0.0
unknown 2	unknown 2	UNK 2	0.0	0.1	0.0	0.0
unknown 3	unknown 3	UNK 3	0.0	0.1	0.0	0.0
	bare ground	B	37.7	36.7	39.6	18.4
	large rock	6+	0.1	10.7	9.3	0.4
	small rock	S	5.0	0.8	0.5	3.9
	total litter	TL	40.5	15.5	20.2	19.0


Species Canopy Cover
BR #1
Canopy Cover
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2000
2001
2003
2005
Year
blue grama
rubber rabbitbrush
green rabbitbrush
bottlebrush squirreltail
fringed sage
prairie junegrass
winterfat
western wheatgrass
pingue hymenoxys

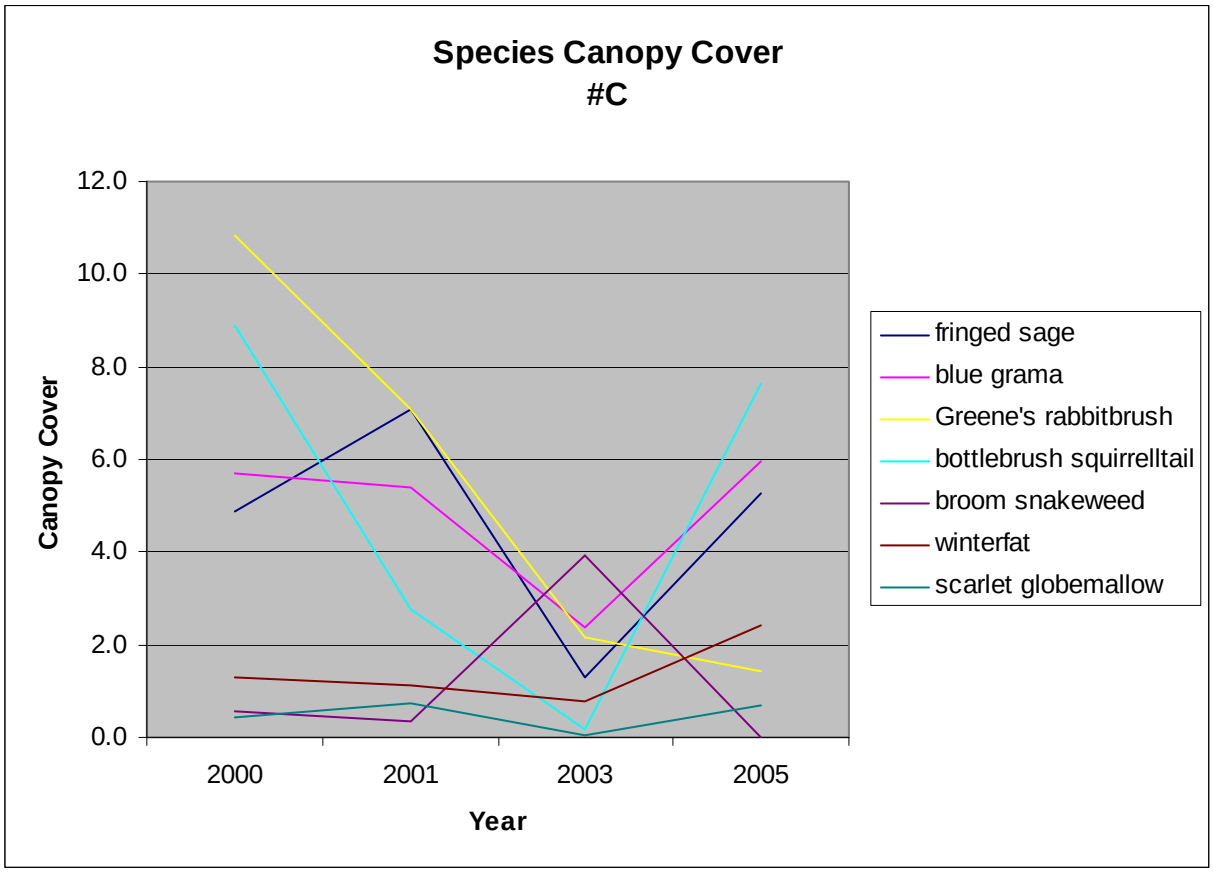

Key Species Trend Index
BR #1
Trend Index/Canopy Cover
120.0
100.0
80.0
60.0
40.0
20.0
0.0
2000
2001
2003
2005
Year
Trend Index Calculated using Koma, Winterfat, and Pasm original TI=1.2 Base=100
bare ground
Linear (Trend Index Calculated using Koma, Winterfat, and Pasm original TI=1.2 Base=100)
Linear (bare ground)

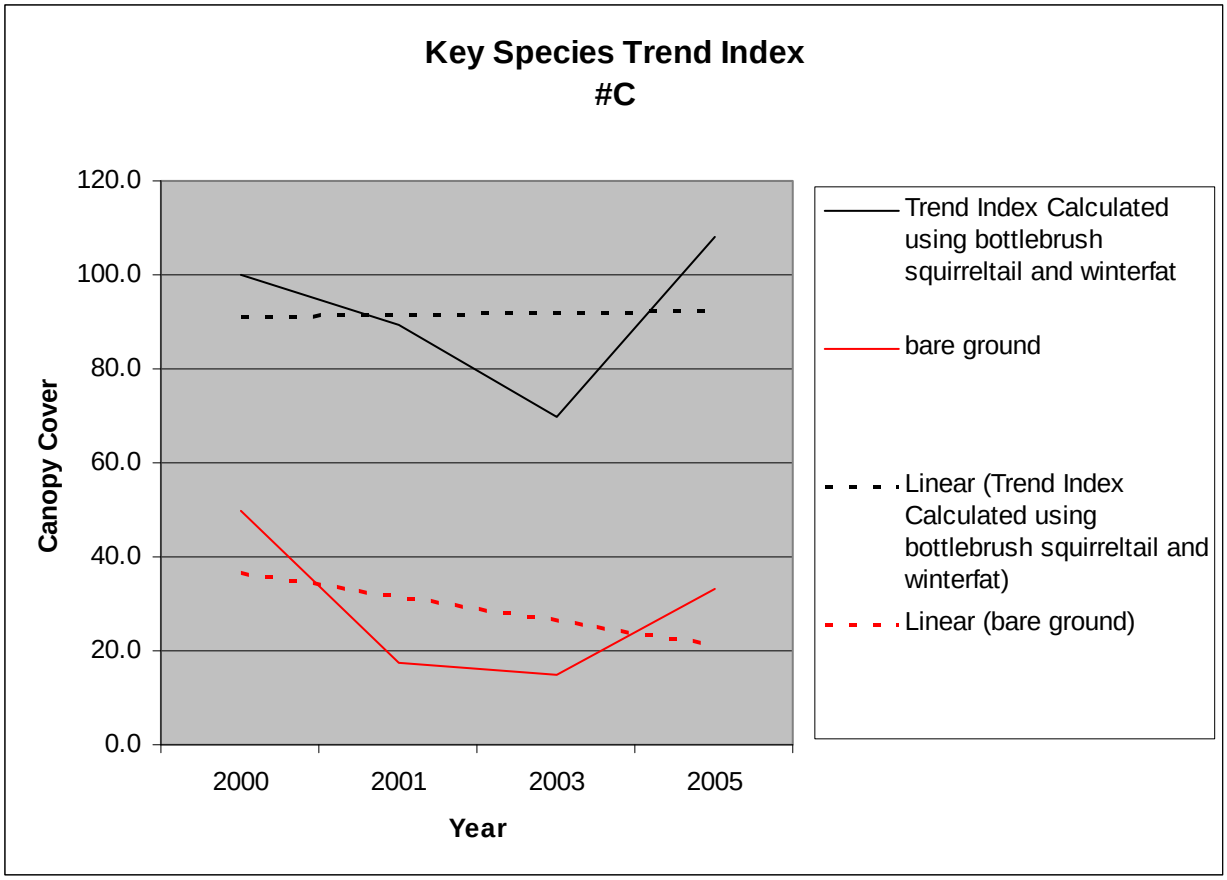
Allotment Name: Rock Creek					
Transect Name: Bishop Rock #2					
Range Site: Loamy Park			**Canopy**	**Canopy**	**Canopy**
Scientific Name	**Common Name**	**NRCS Symbol**	**2001**	**2003**	**2005**
Antennaria sp.	includes all pussytoes	ANTEN	0.1	0.0	0.0
Artemisia frigida	fringed sage	ARFR4	2.5	2.1	9.4
Artemisia ludoviciana	Louisiana sagewort	ARLU	2.9	2.1	0.0
Aster sp.	aster	ASTER	0.1	0.0	0.0
Bouteloua gracilis	blue grama	BOGR2	15.7	18.8	24.2
Carex sp.	unknown carex	CARE	4.5	4.2	4.3
Castilleja sp.	indian paintbrush	CASTI2	0.1	0.0	0.0
Cercocarpus montanus	true mountain mahogany	CEMO2	1.6	1.6	0.0
Chrysothamnus greenei	Greene's rabbitbrush	CHGR6	0.0	0.4	0.1
Chrysothamnus parryi	Parry' s rabbitbrush	CHPAP	0.1	0.1	0.1
Chrysothamnus viscidiflorus	green rabbitbrush	CHVI8	0.8	0.0	0.4
Elymus elymoides	bottlebrush squirrelltail	ELEL5	0.2	0.0	0.9
Erigeron sp.	fleabane	ERIGE2	0.4	0.4	0.3
Eriogonum sp.	eriogonum	ERIO6	1.6	0.6	1.7
Eriogonum umbellatum	sulphur wildbuckwheat	ERUM	0.0	0.0	0.0
Gutierrezia sarothrae	broom snakeweed	GUSA2	1.3	0.1	1.6
Heterotheca villosa	hairy golden aster	HEVI4	2.8	0.0	0.0
Hymenoxys richardsonii	pingue hymenoxys	HYRI	0.0	0.0	0.0
Koeleria macrantha	prairie junegrass	KOMA	7.7	0.1	0.8
Lupinus L.	lupine	LUPIN	0.0	0.1	0.0
Opuntia sp.	all prickley pear	OPUNT	0.0	0.1	0.2
Pascopyrum smithii (Agropyron smithii)	western wheatgrass	PASM	2.2	5.1	2.1
Penstemon sp.	penstemon	PENST	0.0	0.9	0.0
Pterogonum alatum	Winged buckwheat	PTAL	0.4	0.1	0.0
Rhus trilobata	skunkbush sumac	RHTR	2.1	0.0	2.4
Sphaeralcea coccinia	scarlet globemallow	SPCO	0.0	0.0	0.5
Stipa comata ssp. intonsa	needleandthread	STCOI2	0.6	0.1	0.2
Symphorcarpos albus	common snowberry	SYAL	0.0	1.4	0.0
Tetradymia canescens	spineless horsebrush	TECA2	5.3	2.8	2.9
Yucca glauca	yucca	YUGL	0.4	0.0	0.0
	unknown #1	UNK1	0.1	0.1	0.0
	unknown #2	UNK2	0.0	0.0	0.0
total litter	total litter	TL	30.8	39.9	34.8
	small rock	S	6.1	5.8	5.9
	large rock	L	5.0	7.0	5.8
	bare ground	B	16.3	15.7	15.9
	moss	moss	0.0	0.0	0.1
	lichen	lichen	0.0	0.0	0.2


Species Canopy Cover
BR #2
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Frequency
2001
2003
2005
Year
blue grama
fringed sage
pingue hymenoxys
all prickley pear
green rabbitbrush
bottlebrush squirrelltail
prairie junegrass
western wheatgrass


Key Species Trend Index
BR #2
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Frequency
2001
2003
2005
Year
bare ground
Trend Index Calculated using needleandthread, praire junegrass, and western wheatgrass
Linear (bare ground)
Linear (Trend Index Calculated using needleandthread, praire junegrass, and western wheatgrass)

Allotment Name: Rock Creek 2005						
Transect Name: Pasture C						
Range Site: Basalt Hills			**Canopy**	**Canopy**	**Canopy**	**Canopy**
Scientific Name	**Common Name**	**NRCS Symbol**	**2000**	**2001**	**2003**	**2005**
Achnatherum hymenoides	Indian rice grass	ACHY	0.5	0.0	0.0	0.0
Artemisia frigida	fringed sage	ARFR4	4.9	7.1	1.3	5.3
Artemisia ludoviciana	Louisiana sagewort	ARLU	0.0	0.0	0.0	0.0
Aristida purpurea	purple threeawn	ARPU9	0.0	0.0	0.0	0.0
Bouteloua gracilis	blue grama	BOGR2	5.7	5.4	2.4	6.0
Chenopodium sp.	lambs quarter, goosefoot	CHENO	0.0	0.0	0.0	0.1
Chrysothamnus greenei	Greene's rabbitbrush	CHGR6	10.8	7.1	2.2	1.4
Comandra umbellata	bastard toadflax	COUM	0.0	0.1	0.0	0.0
Descurainia sophia	tansy mustard	DESO	0.2	0.0	0.0	0.0
Elymus elymoides	bottlebrush squirrelltail	ELEL5	8.9	2.8	0.2	7.6
Gutierrezia sarothrae	broom snakeweed	GUSA2	0.6	0.3	3.9	0.0
Krascheninnikovia lanata	winterfat	KRLA2	1.3	1.1	0.8	2.4
Lappula redowski (occidentalis)	desert stickweed	LARE	0.0	0.0	0.0	0.0
Salsola kali	prickly Russian Thistle	SAKA	0.5	0.0	0.0	0.0
Sphaeralcea coccinia	scarlet globemallow	SPCO	0.5	0.7	0.0	0.7
Sporobolus cryptandrus	sand dropseed	SPCR	0.1	0.0	0.0	0.0
lichen	lichen	lichen	0.2	0.3	0.3	0.3
	bare ground	B	49.6	17.5	15.0	33.4
	large rock	L	0.5	0.9	0.5	0.9
	small rock	S	4.4	16.7	38.4	25.7
	total litter	TL	23.3	21.1	38.4	26.3


Species Canopy Cover
#C
Canopy Cover
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2000
2001
2003
2005
Year
fringed sage
blue grama
Greene's rabbitbrush
bottlebrush squirrelltail
broom snakeweed
winterfat
scarlet globemallow


Key Species Trend Index
#C
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Canopy Cover
2000
2001
2003
2005
Year
Trend Index Calculated using bottlebrush squirreltail and winterfat
bare ground
Linear (Trend Index Calculated using bottlebrush squirreltail and winterfat)
Linear (bare ground)

Appendix D

Coordinated Resource Management Plan (CRMP)

TWO CREEK RANCHES
COORDINATED RESOURCE MANAGEMENT PLAN

Two Creek Ranches
Colorado Division of Wildlife (CDOW)
Colorado State Land Board (CSLB)
Natural Resource Conservation Service (NRCS)
Bureau of Land Management (BLM)

This Coordinated Resource Management Plan (CRMP) is made and entered into by the signatories listed above, hereinafter referred to as the parties or party.

I. PURPOSE & GOAL

The purpose of this CRMP is to coordinate the cooperative ecological management activities on the landscape, including the forage base of the Two Creek Ranches in the southwest San Luis Valley of southcentral Colorado; to provide the best available science and information about on-the-ground application for the care and management of rangelands. Located 7 miles southwest of Monte Vista, in Rio Grande County, the Two Creek Ranches is currently comprised of private land (1905 owned and 310 leased acres), State Land (1280 acres) and 12,373 acres of Federal Land administered by the BLM (San Luis Valley Public Land Center), as the Rock Creek Allotment (#4406).

Additionally, to use the combined expertise of each of the team members to achieve the optimum management of the allotment - by using a scientific approach using grazing by domestic livestock to enhance ecological processes and grazing patterns. Through the use of consistent monitoring, sharing of information and coordination between the various members, maintain this landscape in a functional ecological condition and an economically viable manner.

The goal is to maintain a healthy working landscape which allows for land health, proper functioning ecological processes and is economically viable (a working landscape) while accommodating multiple use needs and activities on the Public Lands of the BLM Rock Creek allotment.

Inventoried data and management practices currently possessed by each party will be compiled and analyzed by the group. Additional data will continue to be gathered from the land, including data on soil, wildlife, water, vegetation, range and wildlife improvements, forage use trends and production. The efficient and effective gathering of this resource data between and among the parties will best facilitate defensible resource decisions and thus help ensure a healthy ecosystem.

Through the adaptive management process, will manage to achieve adequate distribution and utilization on the Rock Creek Allotment, based on monitoring compatible with BLM analysis methods.

II. STATEMENT OF MUTUAL INTERESTS AND BENEFITS

The intent is to maintain, protect and improve rangelands and, in doing so, the fisheries, wildlife, recreation, soil, vegetative and water quality resources of the lower Rock Creek and Dry Creek drainages of the southwestern San Luis Valley and into the lower slopes of the South San Juan mountains.

Within the grazing allotment boundary, Federal, State and private land* are all managed under this CRMP for the benefit of the ecological resources (see map attached as part of this CRMP).

*Two Creek Ranches land outside of the allotment boundary is utilized for grazing and ranching and is incorporated into this CRMP. However, it is noted here that the multiple use aspects of the allotment on Public Lands are not a factor in private land management and thus the private Two Creek Ranches land outside the allotment/permit boundary are solely managed by the owners of that property.

III. AGREEMENT

A. General:

1. Due to multiple land ownership in the area (private, state and federal), the BLM, Del Norte Field Office will provide a coordinator for management activities. The coordinator will be Guy Blackwolf, who is the Rangeland Management Specialist for the Del Norte Office (BLM and FS) as well as the Rock Creek permit administrator.

2. A core group chaired by the BLM coordinator will meet as often as is necessary to collect, review, analyze monitoring data, and assure management strategies are working towards the achievement of the goals. The group will share responsibility for follow-up on specific items listed in section B. These meetings should occur in the field, on the land, with office type meetings occurring infrequently.

3. The Two Creek Ranches CRMP core group will be made up of the following people and or their delegates: Two Creek Ranchers John Noffsker and Linda Schoonhoven, NRCS Area 4 Range Management Specialist Cynthia Villa, BLM Rangeland Management Specialist Guy Blackwolf, BLM Field Office Manager Tom Malecek, CSLB District Manager Kit Page and CDOW Area 7 District Wildlife Manager Dave McCammon.

B. Specific:

1. Monitoring in the area will continue with the following Team responsibilities:

   a. BLM will provide precipitation gauges to place at 3 different locations within the allotment, as determined by members of the core team. These gauges will be easily accessible so members of the team can collect and record precipitation events as they occur. BLM, with permittee and NRCS, will assess current long term study (cage) locations to determine adequacy and whether cages need to be moved or installed at additional locations. The Team will observe, monitor and record ecological site inventory (ESI) data, and vegetative data, both short term (utilization, ocular, weight studies) and long term trend analysis. Additional studies will be set up as necessary. See attached Appendix on monitoring.

   b. NRCS will collect Ecological Site Descriptions and make soil inventory verifications.

   c. BLM and NRCS will train other Team members (primarily permittees and range rider) in both ecological site inventory (ESI) work and range condition surveys.

   d. Colorado Division of Wildlife, in conjunction with BLM Wildlife Biologist Melissa Garcia, will monitor big game population dynamics and hunting trends in and around the area. CDOW and BLM biologists will work together to evaluate wildlife habitat on the allotment.

   e. Monitoring requirements and grazing management/strategies may change based on analysis of the data by the CRMP Team. All team members will be proactive in suggesting possible improvements that could enhance the range condition and multiple use benefits of lands within the allotment.

   f. All team members will be the recipients of monitoring data collected on the allotment. The team will receive copies of monitoring data collected and review all data yearly, with a summary and any recommendations provided and discussed at an annual year-end meeting. The summary will provide information to help evaluate management actions and assess the attainment of goals. BLM will keep the official monitoring file as part of the allotment files.

2. Each member of the core team will provide case file information, i.e., allotment boundaries, inventory data, preparation data, range improvements, etc. This will include maps showing locations of this data. All parties are responsible for marking important locations with a GPS receiver that should be included on an updated map.

3. BLM will collect and map case file data and submit to NRCS. NRCS will incorporate additions and updates within the electronic map file. The official map files will be maintained along with allotment files by the BLM.

4. NRCS will provide a plan map of the area and update when needed with electronic mapping data collected by the core team.

5. CSLB and CDOW will provide State Lands signs and install them along the Rock Creek Road at the eastern and western boundaries of State Land in section 36, informing the public of the state land holding along with restrictions imposed on the land.

6. A schedule of work load requirements will be made by the group indicating dates of activities and accomplishments.

7. Any adjustments in AUM's or decisions on the allotment will be made by the BLM Field Office Manager. Such adjustments or decisions should represent and be backed by monitoring data and recommendations from the core team.

IV. KEY OFFICIALS AND TECHNICAL STAFF/CONTACTS:

A. Officials.

This CRMP shall be between the following:

Colorado Department of Natural Resources

Colorado Division of Wildlife (CDOW)
Regional Wildlife Manager
Tom Speeze

Colorado State Land Board (CSLB)
District Manager
Kit Page

U.S. Department of Interior

San Luis Valley Public Lands
Rio Grande Forest Supervisor and BLM Center Manager
Dan Dallas

U.S. Department of Agriculture

Natural Resource Conservation Service
Area Conservationist, Area 4
Cathee Wilson

Private Land Owner/Ranchers
Two Creek Ranches
John Noffsker and Linda Schoonhoven

B. Technical Staff.

Colorado Department of Natural Resources

Colorado Division of Wildlife
District Wildlife Manager
Dave McCammon

Colorado State Land Board
District Manager
Kit Page

U.S. Department of Agriculture

Natural Resource Conservation Service
Monte Vista Field Office
District Conservationist
Cindy Crist

U.S. Department of Interior

Bureau of Land Management
San Luis Valley Public Lands
Del Norte Field Office Manager
Tom Malecek

Rangeland Management Specialist
Guy Blackwolf

Two Creek Ranches
Private Land Owners/Ranchers John Noffsker & Linda Schoonhoven

V. IT IS MUTUALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE SAID PARTIES THAT:

The parties will cooperate in carrying out activities to facilitate development and implementation of work projects that further the purpose of this CRMP. These activities may include but are not limited to the following:

A. Sharing and compiling of resource and management data.
B. Collecting monitoring data, including transects on Federal and State lands.
C. Timely submission of new data.
D. Formulation of ecosystem management practices.
E. Specific work projects or activities that involve the transfer of funds or services between the parties to this CRMP will require the execution of separate agreements or contracts.
F. Each subsequent agreement or arrangement involving the transfer of funds, services or property between the parties to this CRMP must comply with all applicable statutes and regulations, including those statutes and regulations applicable to procurement activities, and must be independently authorized by appropriate statutory authority. Nothing in this CRMP shall obligate any party to the CRMP to expend appropriations or to enter into any contract or other obligation
G. All activities agreed to must be within the scope of current NEPA regarding the Rock Creek Allotment. BLM will not give up decision authority to the CRMP Team. Rangeland health standards will be maintained.
H. During the performance of this agreement, the participants agree to abide by the terms of Executive Order 11246 on nondiscrimination and will not discriminate against any person because of race, color, religion, sex, age, disability or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex, age, disability or national origin.
I. This CRMP shall be effective from the date of execution and shall remain in full force and effect unless terminated with a 30-day written notice from any party to the other parties. This CRMP may be modified or amended upon written request of any party and the written concurrence of all parties.
J. Each and every provision of this agreement is subject to the laws of the State of Colorado, laws of the United States, and the regulations of the Departments of Agriculture and Interior.
K. The Disclaimer Policy is applicable to electronic records that are provided to anyone outside the BLM. No warranty is made by the BLM as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

IN WITNESS WHEREOF, the parties have executed this Two Creek Ranches CRMP as of the last written date below.

_____

Signature & Date
Regional Wildlife Manager

Colorado Division of Wildlife

_____

Signature & Date
District Manager

Colorado State Land Board

_____

Signature & Date
Forest Supervisor/Center Area Mgr.

San Luis Valley Public Land Center

_____

Signature & Date
Area Conservationist, Area 4

Natural Resource Conservation Service

_____

Signature & Date
John Noffsker

Private Land Owner/Rancher

_____

Signature & Date
Linda Schoonhoven

Private Land Owner/Rancher

APPENDIX A - Authority

A. Bureau of Land Management - The Federal Land Policy and Management Act of 1976, PL 94-579, 90 State. 2743, Section 307, 43 USC 1737.

B. Bureau of Land Management – San Luis Resource Area Management Plan (1991).

C. Colorado State Land Board - Title 36, Article 1, Section 36-1-141, Colorado revised statutes.

D. NRCS - Soil Conservation Act of 1935, PL 74-46 as amended.

E. Rio Grande Conservation District - Colorado Soil Conservation District Act, CRS 1973, Volume 14, Title 35, Article 70

F. Colorado Division of Wildlife - Colorado Revised Statutes, 1973, Title 33, Article 1, Section 112.

G. San Luis Valley Resource Conservation and Development Area - Section 102, Food and Agriculture Act of 1962 (PL87-703).

APPENDIX B – Monitoring Plan for the Rock Creek BLM Allotment

This plan is a follow up to the recent queries by BLM and FS staff regarding a specific monitoring protocol to be used in accord with the Coordinated Resource Management Program (CRMP) on the BLM's Rock Creek allotment. Specific methods are listed, with a brief rationale for their implementation in the protocol, as well as participants at the end of each method. Photo documentation will be utilized in most or all cases of all monitoring activity. In some cases permanent photo points will be established for long term data collection and analysis. All methods selected are from the *BLM/RS/ST-96/004+1730 Utilization Studies and Residual Measurements, Interagency Technical Reference 1996, Revised in 1997 and 1999, plus General Technical Report RMRS-GTR-47, April 2000, Monitoring the Vegetation Resources in Riparian Areas*. Additionally, the NRCS has remained an interested party in providing monitoring as part of the protocol.

As part of this plan, and in discussion with Cindy Villa (NRCS Rangeland Management Specialist), we propose using *Technical Reference 1734-6 Version 4, 2005 Interpreting Indicators of Rangeland Health* to help provide a baseline for assessing soil stability, hydrologic function, and biotic integrity. We also propose that as part of a long term monitoring program that *Volume 1 and 2 of the Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems* be used to help communicate ecological concepts and approaches to monitoring to the permittee as well as all participants in the CRMP process. These monitoring manuals also provide very good riparian monitoring protocols that are completely compatible in methodology with *General Technical Report RMRS-GTR-47, April 2000, Monitoring the Vegetation Resources in Riparian Areas and Riparian Area Management TR 1737-15 1998*. All of these literature sources on monitoring and interpretation of range health indicators are recognized by the BLM, Forest Service and NRCS among others.

It is critical that all participants share in not only the workload but in the interpretation of the data gathered from monitoring in order to have a well-rounded grazing program as well as understanding the ecology of the allotment and be able to adequately answer concerns of the public regarding the controversial issues surrounding the allotment. This interpretation should further lead to discussions regarding the management goals and objectives set forth by the BLM, permittee and the CRMP team.

Methods

Browse Removal Method:

Twig Length Measurement Method:

This method is primarily designed for wildlife winter range which is part of the management scope of the Rock Creek allotment. Utilization is determined by measuring twigs on 25-50 browse plants after full annual growth has occurred and again following period of use. This method addresses use made on browse species by livestock and wildlife. A disadvantage of this method is that measurements must be made twice per year. (BLM, Permittee as available)

Herbaceous Removal Method:

Key Species Method:

This method is a combination of the Landscape Appearance Method and Ocular Estimate Method. This method is useful in areas where perennial grasses, browse species and forbs occur. This method is a rapid assessment of the estimated percentage of forage removed on the ground compared to species of key forage in a protected cage nearby and is reasonably accurate. A walking transect is used by pacing out 10 steps and observing the key forage species nearest the toe of the sampler's boot and categorizing it in one of seven utilization classes. A disadvantage is the training time for employees unfamiliar with the procedure. (BLM, Permittee as available)

Qualitative Assessments:

Landscape Appearance Method:

This method although in part included in the Key Species method would be recommended on a 3-5 year basis because it is a qualitative rather than quantitative technique. Estimates are based on a range of utilization rather than a precise amount. Photos would aid in documenting observed conditions and compare over a long period of time. This would also correlate to changes or fluctuations in climatic phenomenon. We will also be installing rain gauges in several areas to monitor precipitation during the grazing season. A disadvantage is the differences in observations by different surveyors, but with photos this will be partly mitigated. Another disadvantage is that precision cannot be determined because the technique is qualitative rather than quantitative. Qualitative estimates are important because this is the primary way that public land visitors see the allotment. Because of this, this technique will be a part of the social, or public part of the monitoring. (BLM, NRCS, Permittee as available)

Riparian Monitoring:

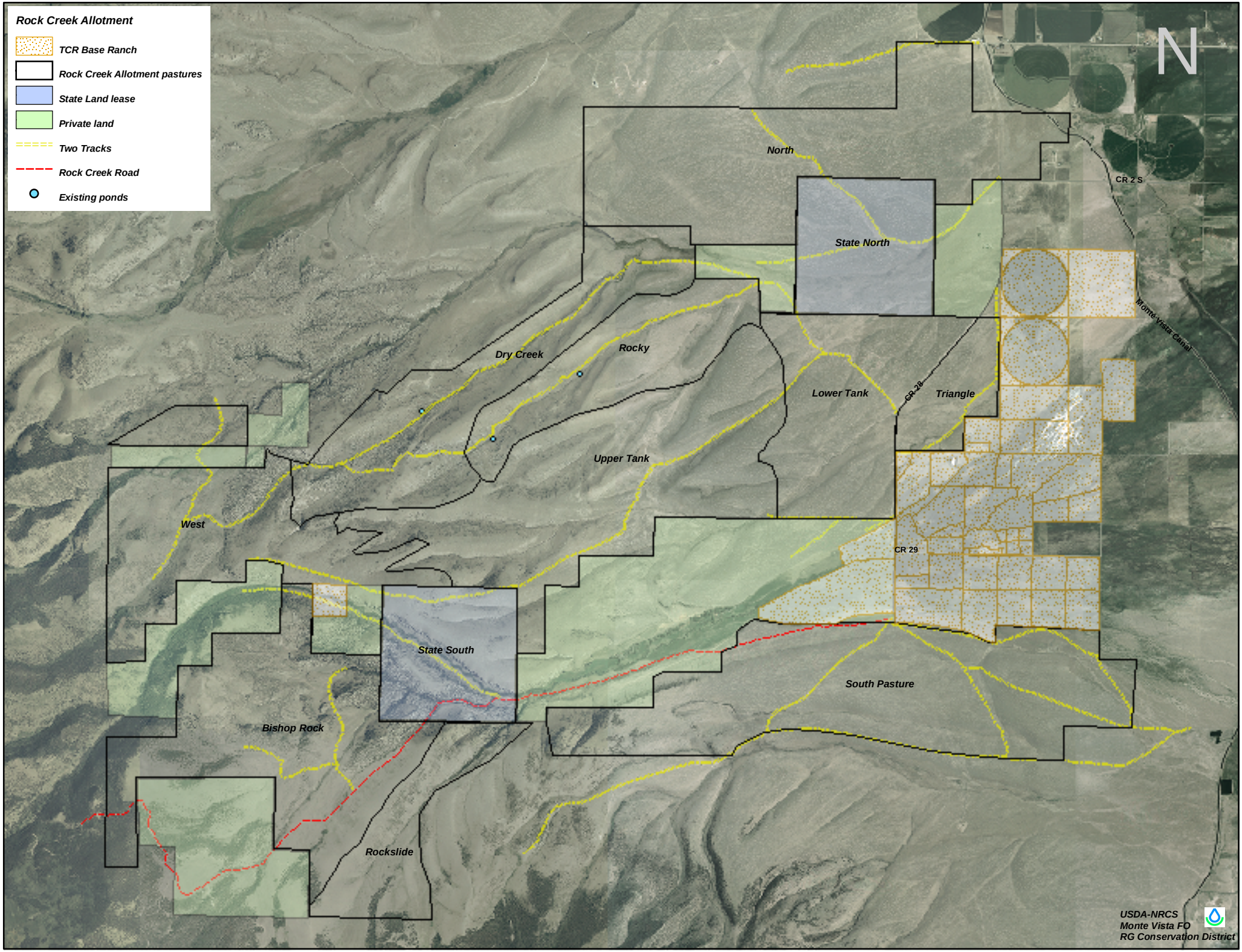
Proper Functioning Condition (PFC)

This method monitors changes in cover and composition across throughout the riparian zone. This monitoring will take into account the hydrologic, vegetative, soil erosion/deposition parameters as well as a functional rating and trend. Photo points will also be established to provide long term observation of conditions. A disadvantage includes training time, and an ID team should be assembled to perform the monitoring. The advantage of an ID team is the ability of specialists from other disciplines collaborating and assessing the attributes being monitored. (BLM/ID Team, NRCS and Permittee as available)

Public Monitoring:

In addition to the Landscape Appearance Method, we will also be documenting complaints, compliments or any other qualitative observations made by public land visitors as part of the management of the allotment. This may include comments from the public regarding view-shed quality, water quality/riparian issues, recreation information, grazing and travel management among other possible comments for analysis. (BLM, Permittee)

APPENDIX C – Rock Creek Allotment Map


Rock Creek Allotment
TCR Base Ranch
Rock Creek Allotment pastures
State Land lease
Private land
Two Tracks
Rock Creek Road
Existing ponds
N
North
State North
CR 2 S
Monte Vista Canal
Dry Creek
Rocky
Lower Tank
CR 28
Triangle
Upper Tank
West
CR 29
State South
South Pasture
Bishop Rock
Rockslide
USDA-NRCS
Monte Vista FO
RG Conservation District

Appendix E

Colorado Fence Law

Colorado Fence Law Reference:

- http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1176829292622
- http://www.michie.com/colorado/lpext.dll?f=templates&fn=main-h.htm&cp=

In Colorado, landowners have the inherent right to fence their land or leave it unfenced. In the early 1880's the Colorado legislature passed a "fencing" statute. This statute is commonly referred to as the "open range" or "fence out" statute. "Open range" is a definition of land, not a law.

Any person maintaining in good repair a lawful fence may recover damages for trespass from the owner of any livestock that break through such fence. Refer to CRS 35-46-102. Livestock invading fenced property is not a criminal offense, but civil recourse is available to the property owner.

Without a "lawful" fence, the landowner has no civil recourse for damage done to their property by trespassing livestock. Fencing your property, either as a good neighbor or in cooperation with the owner of the livestock, is a way to avoid future conflicts and problems. When property is protected by a lawful fence civil recourse is available to the landowner for damage caused by trespassing livestock. The burden of proof falls upon the landowner to prove the livestock broke through their legal fence and did not come through an open gate or an unfenced portion. It is legal to take custody of livestock found trespassing on your property. Keep in mind that when you do so, you become legally responsible for their care and feeding. Refer to C.R.S. 35-46-102. You must notify your local brand inspector and the sheriff's office when livestock is held for trespass damage.

"Open range" does not mean a stockman can simply allow their livestock to run at large without penalty. CRS 35-46-105 "Grazing on roads and in municipalities" and CRS 35-47-101 "Horses and mules running at large" are two statutes to deal with negligent livestock owners. These statutes can be used by local law enforcement to help curtail animals being allowed to run at large.

A livestock owner is not responsible for the accidental trespass of their livestock causing damage on another's property not protected by a "lawful" fence. A "lawful" fence is defined as a "well constructed three barbed wire fence with substantial posts set at a distance of approximately 20 feet apart, and sufficient to turn ordinary horses and cattle, with all gates equally as good as the fence, or any other fence of like efficiency." Fence law does not shield a livestock owner from an action of personal injuries caused by their livestock trespassing on the land of others. Most alarming is the fact that the "fence law" will not bar an action for escaped livestock involved in an accident on public highways.

Most livestock owners do not intend for their livestock to stray and will respond quickly to recover them. Be aware of who is running livestock in your neighborhood. If you find livestock running loose, try to notify the owner immediately. If you do not know who owns the livestock, contact the local brand inspector and the local sheriff's office. If the livestock are in danger and loose on a public road, try to contain the livestock and move

them away from the road. Call for help immediately from neighbors, the sheriff's office and the local brand office or inspector. Any thing you can do to avoid an accident will be greatly appreciated by the livestock owner and the general public traveling on the road.

Any person who owns livestock in Colorado should follow common sense in fence practices to minimize potential liability:

- livestock should have sufficient water and pasture
- quickly recover any strays or escapees
- inspect your fences regularly
- coordinate with your neighbors on building and maintaining partition fences
- always maintain proper insurance

The necessity to have a fence to protect your property in rural areas is no different than in urban areas. In urban areas you need to have a fence if you do not want the neighbor's dogs or kids in your yard, pool, etc. The same rule is applicable in rural or country settings. The difference is the critters trespassing and the volume of space requiring a fence. Protecting yourself is the main idea.

Colorado Fence Law Reference: http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1176829292622

35-46-101. Definitions.

As used in this article, unless the context otherwise requires:

(1) "Lawful fence" is a well-constructed three barbed wire fence with substantial posts set at a distance of approximately twenty feet apart, and sufficient to turn ordinary horses and cattle, with all gates equally as good as the fence, or any other fence of like efficiency. Railroad right-of-way fences constructed in compliance with the statute in force on the date of construction and maintained in good condition shall be considered legal fences.

(2) "Livestock" includes horses, cattle, mules, asses, goats, sheep, swine, buffalo, and cattalo, but does not include "alternative livestock" as defined in section 35-41.5-102 (1).

Source: G.L. § 1202. **L. 1879:** p. 68, § 1. **G.S.** § 1461. **L. 1885:** p. 220, § 1. **L. 1889:** p. 164, § 1. **R.S. 08:** § 2587. **L. 17:** p. 342, § 1. **C.L.** § 3153. **CSA:** C. 160, § 56. **L. 53:** pp. 587, 592, §§ 1, 10. **CRS 53:** §§ 8-13-1, 8-13-10. **C.R.S. 1963:** §§ 8-13-1, 8-13-10. **L. 94:** (2) amended, p. 1710, § 10, effective July 1.

35-46-102. Owner may recover for trespass.

(1) Any person maintaining in good repair a lawful fence, as described in section 35-46-101, may recover damages for trespass and injury to grass, garden or vegetable products, or other crops of such person from the owner of any livestock which break through such fence. No person shall recover damages for such a trespass or injury unless at the time thereof such grass, garden or vegetable products, or crops were protected by such a lawful fence. Even though such land, grass, garden or vegetable products, or other crops were not at such time protected on all sides by a lawful fence, if it is proved by clear and convincing evidence that livestock have broken through a lawful fence on one side of such land to reach such land, grass, products, or crops, recovery and the remedies under this section may be had the same as if such land, grass, products, or crops had been at such time protected on all sides by a lawful fence.

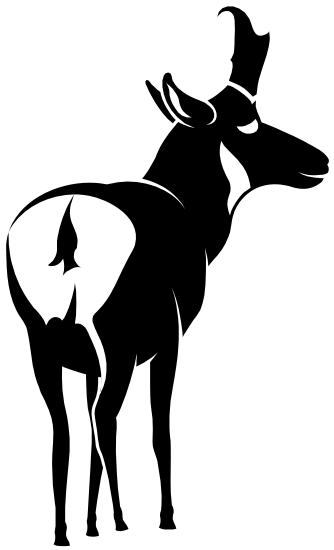
(2) Whenever any person stocks land, not enclosed by a lawful fence, on which such person has a lawful right to pasture or forage livestock, with a greater number of livestock than such land can properly support or water and any of such livestock pasture, forage, or water on the lands of another person, in order to obtain the proper amount of pasture, forage, or water or whenever any person stocks with livestock land on which such person has no lawful right to pasture or forage livestock and such livestock pasture, forage, or water on such land or on other land on which such person has no right to pasture or forage livestock, he shall be deemed a trespasser and shall be liable in damages and subject to injunction.

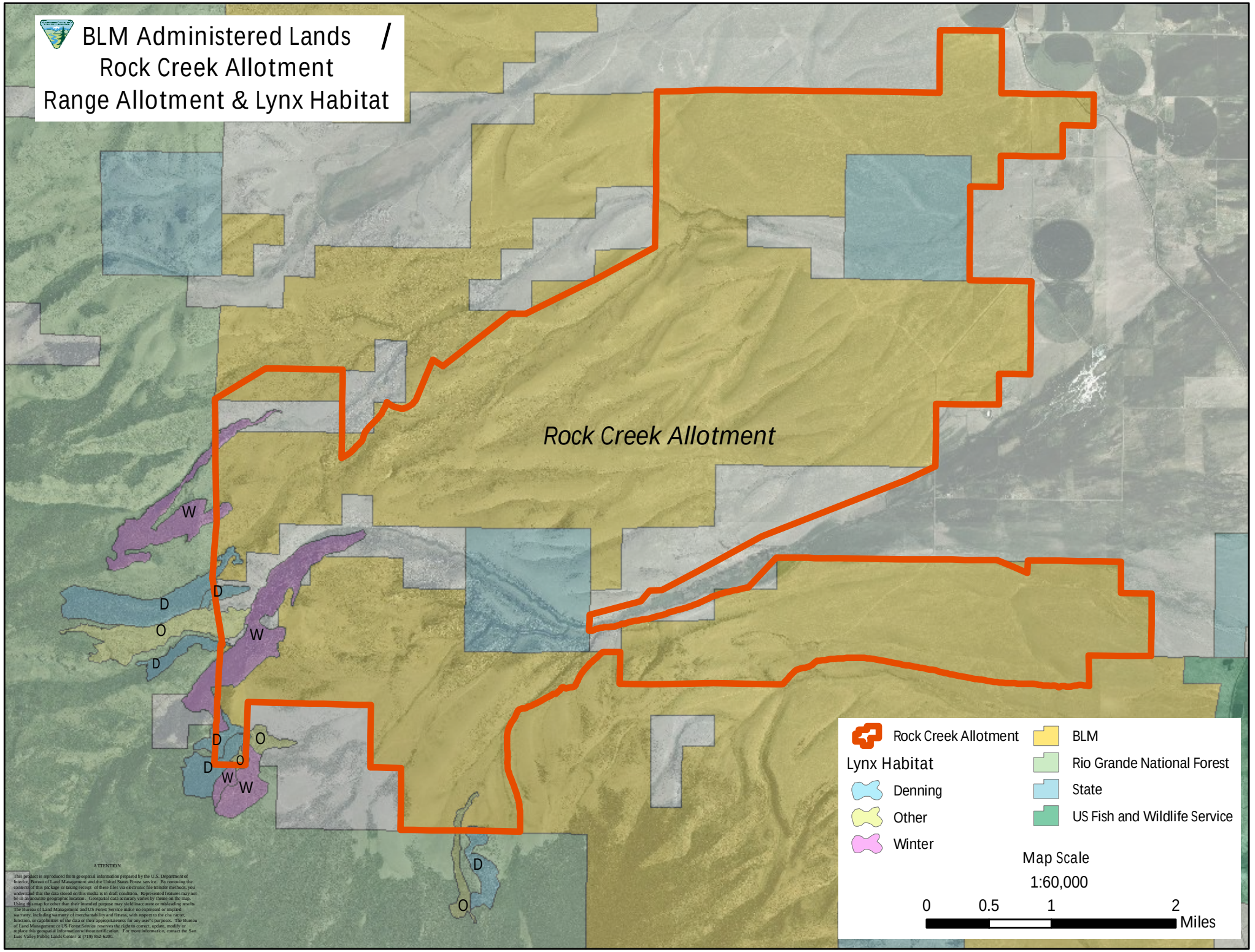
(3) All damages sustained on account of the foregoing trespasses may be recovered, together with costs of court and arbitration, and the livestock so trespassing may be taken up by the person damaged and held as security for the payment of such damages and costs. A court of competent jurisdiction in any proper case may issue an injunction to prevent further trespasses. In any action for trespass where the injury complained of has been aggravated and attended by a willful or reckless disregard of the injured person's rights, the board of arbitration, court, or jury may in addition to awarding actual damages include reasonable exemplary damages. Recovery may be had under this section either in a court of law or by arbitration as provided in section 35-46-103.

Source: L. 1885: p. 221, § 3**. R.S. 08**: § 2589**. L. 17**: p. 343, § 3**. C.L.** § 3155. **CSA: C. 160**, § 58**. L. 53**: p. 587, § 3. **CRS 53**: § 8-13-2. **C.R.S. 1963**: § 8-13-2.

Appendix F

Wildlife Habitat Maps




BLM Administered Lands /
Rock Creek Allotment
Range Allotment & Lynx Habitat
Rock Creek Allotment
W
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D
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W
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D
O
O
D
W
W
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O
Rock Creek Allotment
Lynx Habitat
Denning
Other
Winter
BLM
Rio Grande National Forest
State
US Fish and Wildlife Service
Map Scale
1:60,000
0
0.5
1
2
Miles
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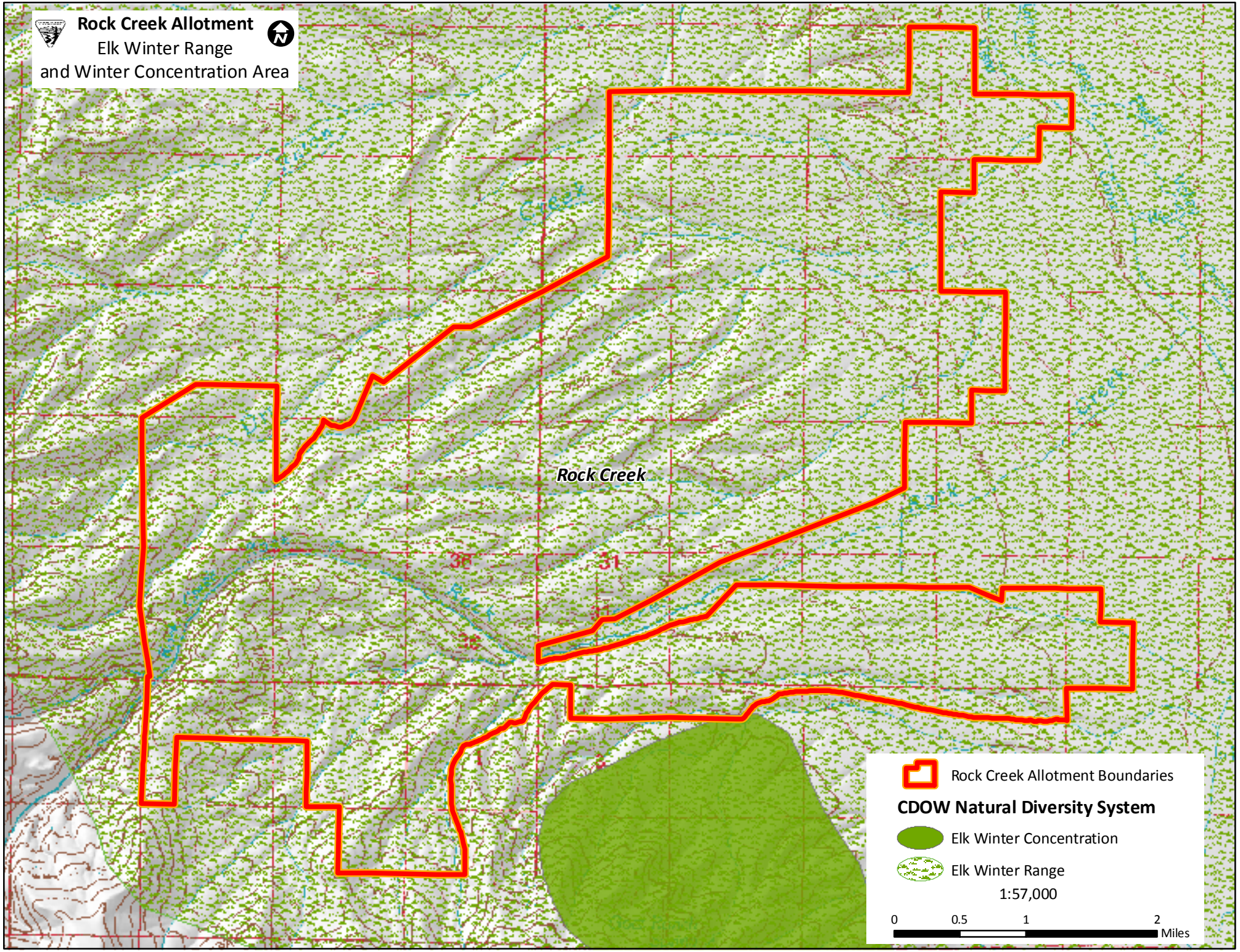
Rock Creek Allotment
Elk Winter Range
and Winter Concentration Area
Rock Creek
Rock Creek Allotment Boundaries
CDOW Natural Diversity System
Elk Winter Concentration
Elk Winter Range
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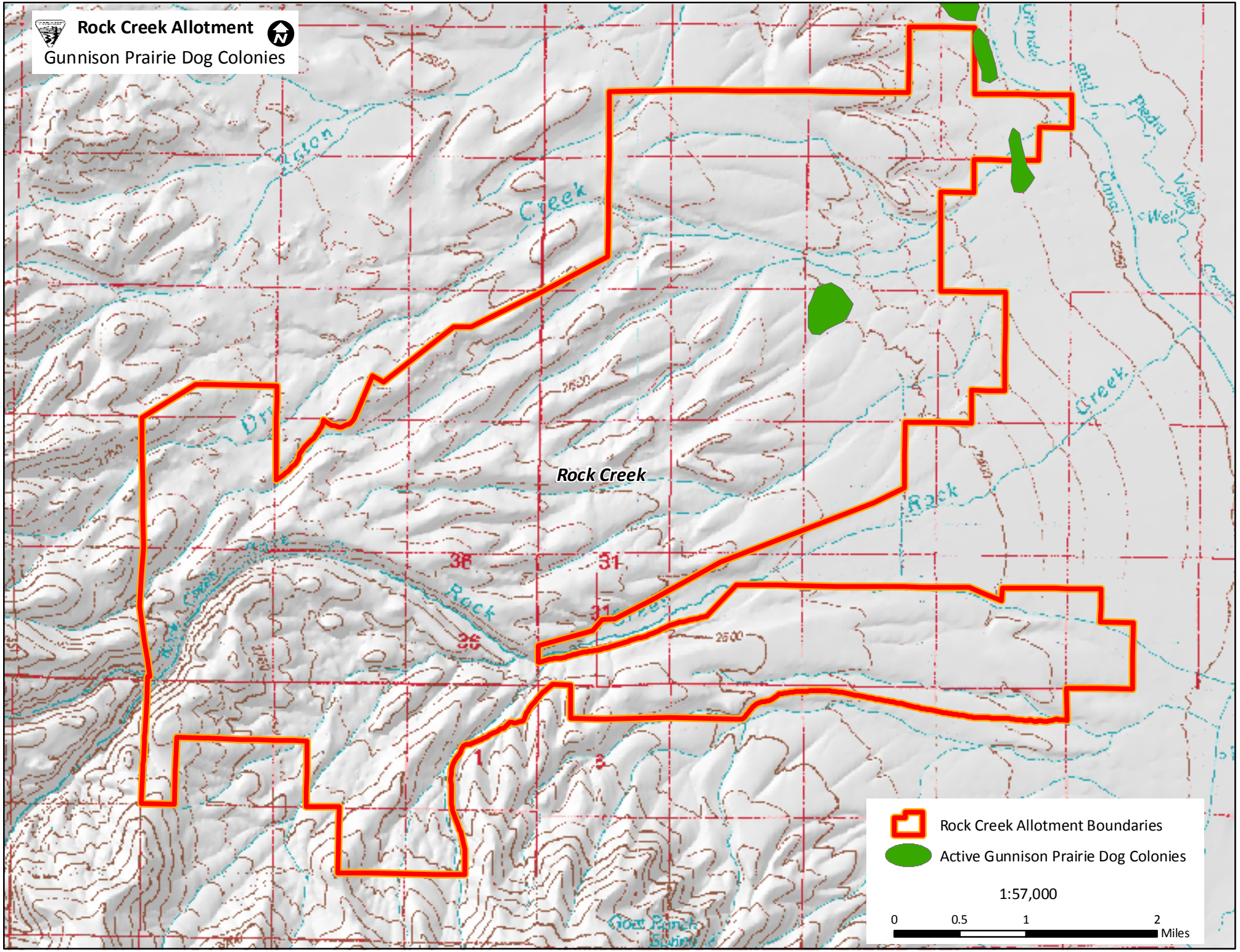
Rock Creek Allotment
Gunnison Prairie Dog Colonies
Rock Creek
Rock Creek Allotment Boundaries
Active Gunnison Prairie Dog Colonies
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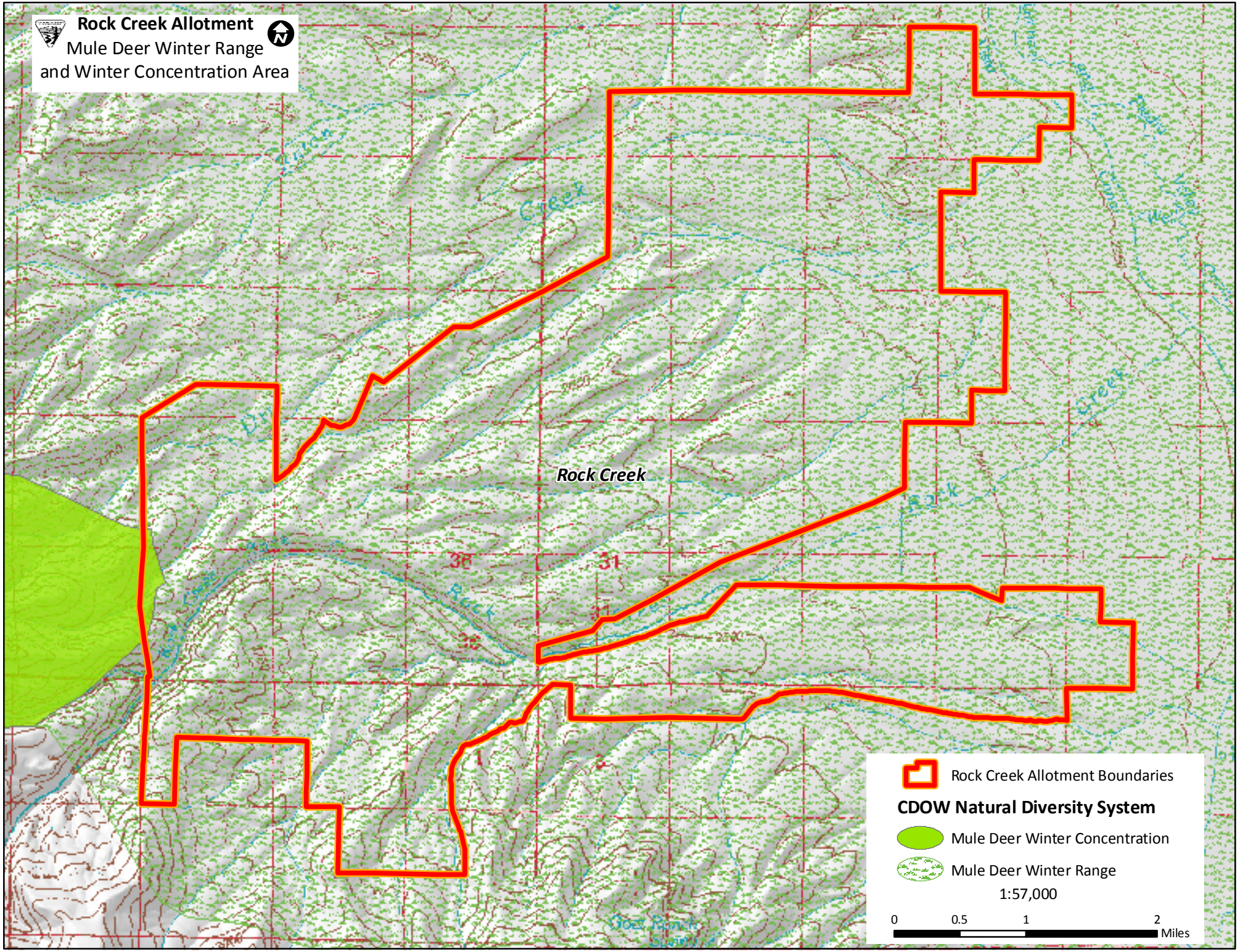
Rock Creek Allotment
Mule Deer Winter Range
and Winter Concentration Area
Rock Creek
Rock Creek Allotment Boundaries
CDOW Natural Diversity System
Mule Deer Winter Concentration
Mule Deer Winter Range
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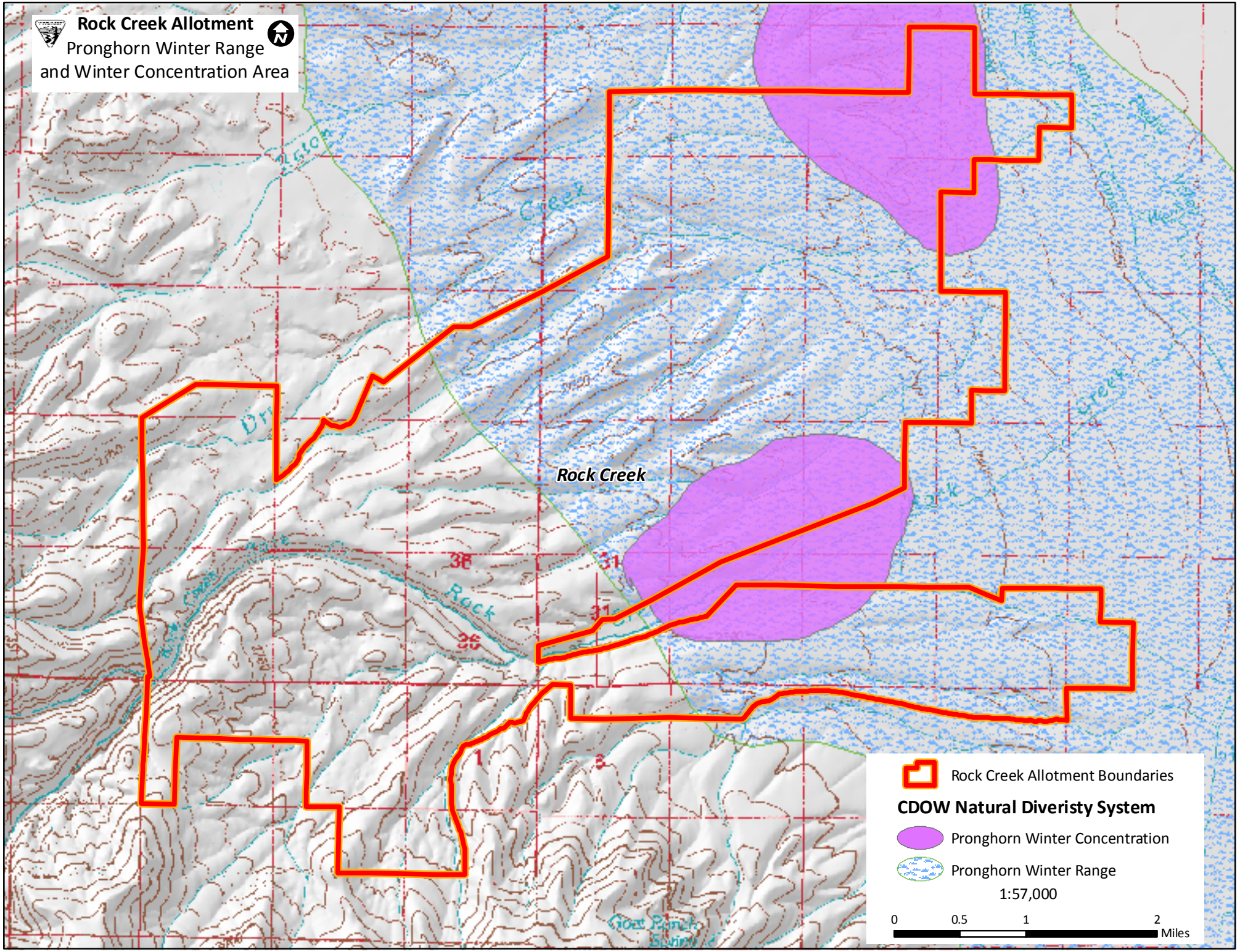
Rock Creek Allotment
Pronghorn Winter Range
and Winter Concentration Area
Rock Creek
Rock Creek Allotment Boundaries
CDOW Natural Diveristy System
Pronghorn Winter Concentration
Pronghorn Winter Range
1:57,000
0
0.5
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2
Miles