United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Colorado River Valley Field Office
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ENVIRONMENTAL ASSESSMENT

1. Introduction

NUMBER: **DOI-BLM-CO-040-2013-0016 EA**

CASEFILE NUMBER: 0504747

PROJECT NAME: Reissue two grazing permits on the Clough-Alber allotment.

LOCATION: Garfield County, North of Rifle, CO

LEGAL DESCRIPTIONS: Clough-Alber Allotment #18909, T5S R94W portions of sections 7-10, 15-18, 20-22, 28-29 & T5S R95W portions of sections 12-13 (see attached allotment maps)

APPLICANT: Grazing Permittee

PURPOSE AND NEED FOR ACTION:
These permits/leases are subject to renewal or transfer at the discretion of the Secretary of the Interior for a period of up to ten years. The U.S. Bureau of Land Management has the authority to renew the livestock grazing permits/leases consistent with the provisions of the Taylor Grazing Act, Public Rangelands Improvement Act, Federal Land Policy and Management Act, and Glenwood Springs Field Office's Resource Management Plan/Environmental Impact Statement. This Plan/EIS has been amended by Standards for Public Land Health in Colorado.

Consideration of renewing the grazing permit is needed for the following reasons: (1) to meet the livestock grazing management objective of the Resource Management Plan of providing 56,885 animal unit months of livestock forage commensurate with meeting public land health standards, (2) to continue to allow livestock grazing on the specified allotment, (3) to meet the forage demands of local livestock operations, (4) to provide stability to these operations and help preserve their rural agricultural lands for open space and wildlife habitat, and (5) to allow use of native rangeland resource for conversion into protein suitable for human consumption.

Decision to be made: To reissue permits with revised grazing schedules and amend the AMP to reflect new management.

SCOPING AND PUBLIC INVOLVEMENT AND ISSUES:

This action was scoped internally with the NEPA Interdisciplinary Team on January 9, 2013. Issues raised during the internal scoping are itemized in table 3-1 and analyzed in Section 3 Affected Environment and Environmental Effects.

A notice of public scoping was posted on the Colorado BLM's Internet web page on September 1, 2011 regarding grazing permits and associated allotments scheduled for renewal in 2011-2012. A news release was posted on September 8, 2011. The public was provided an opportunity to offer any information or concerns, or to be considered as an interested public on a permit or allotment scheduled for renewal. The Colorado River Valley Field Office Internet NEPA Register also lists grazing permit renewal NEPA documents that have been initiated. They are generally posted approximately one month prior to the estimated completion date.

2. Proposed Action and Alternatives

DESCRIPTION OF PROPOSED ACTION

The Proposed Action is to reissue two grazing permits on the Clough-Alber Allotment. The number of livestock and season of use will be altered on the new permits. The permits will be issued for a 10-year period, unless the base property is leased for less, but for purposes of the EA we are assuming 10 years of grazing by this or another applicant (in case of transfer). The proposed action is in accordance with 43 CFR 4130.2. Scheduled grazing use, grazing preference, and terms and conditions for the proposed grazing permit are summarized below.

Table 2-1 Proposed Grazing Schedule:

Operator Name	Auth. No.	Livestock Number	Livestock Kind	Begin Date	End Date	Public Land %	AUMs
James Craig Bair Ranch CO.	0503994	1000 1000	Sheep Sheep	5/16 9/25	7/6 11/15	80 80	274 274
James Craig Bair Ranch CO.	0504747	1000 1000	Sheep Sheep	5/16 9/25	7/5 11/15	80 80	268 274

Table 2-2 Grazing Preference AUMS:

Auth. No.	Allotment Name & No.	Active	Suspended	Total
0503994	Clough-Alber #18909	550	422	972
0504747	Clough-Alber #18909	540	0	540

Allotment Management Plan:

The proposed action results in the modification of the Allotment Management Plan (AMP). Modifications include: 1) A new grazing schedule and permittee 2) bands of sheep from both permits may be grazed together or separately as long as objectives of the AMP are achieved and 3) Objectives of the AMP have been updated. All other parts of the AMP remain in place.

Other Terms and Conditions:
Grazing management on the Clough-Alber allotment will be in accordance with the Clough-Alber Allotment Management Plan (AMP).

An Actual Use report for the Clough-Alber allotment shall be submitted to the BLM office no later than July 20 for the spring use and no later than November 30 for the fall use.

Adaptive management will be employed on this allotment. The Mandatory Terms and Conditions on this grazing permit show the maximum allowable flexibility. The permittee may use the allotment when the range is ready but not earlier than the beginning dates described in the permit. The range will be considered ready when there is a minimum of 4 inches of new growth on grasses. AUM usage may not exceed active preference.

Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout. Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed. The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment. Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site.

A herder will be present on the allotment each day of the grazing season. Sheep camps will be moved every 5-7 days and sheep will not be brought back to the same area once it has been used that grazing season. The herder will minimize grazing use by sheep on the creek bottoms. Sheep can be herded to creek bottoms for brief periods for watering purposes only. Once sheep have been watered they will be herded away from the creek bottoms.

Trailing use through the Hubbard Mesa (#18903) and JQS (#18908) allotments will take place in the spring-summer for 2 days (1 day up and 1 day down) and in the fall for 2 days (1 day up and 1 day down). A majority of the trailing use will be on county roads.

Supplemental feed such as salting blocks should be placed at least ¼ mile from water developments and riparian areas and, where applicable, up to a ½ mile. This will encourage livestock distribution and give permittees more control over what areas are being used.

The following use levels are considered to be the maximum allowed use to sustain or improve resource conditions in the Clough-Alber allotment. Once any of these levels have been reached livestock will be moved to another portion of the allotment, moved to the next scheduled pasture, or removed immediately from the allotment.

Riparian Key Areas:			
Maximum allowable utilization levels on key riparian forage species	Maximum allowable streambank alteration	Maximum allowable browse of current year's growth on key woody species	Minimum greenline stubble height
40%	**25%**	**40%**	**4-inches**

Upland Key Areas:		
Maximum allowable utilization levels on key upland forage species	Minimum stubble height on uplands and terraces adjacent to riparian areas	
40%	**4-6 inches**	

The allotment will be divided into two pastures. The West pasture and the East pasture. Use in each pasture will be rotated to achieve objectives.

Administrative access on routes identified as "Foot/Horse Trail" will be allowed from June 1 to August 25 and should only be utilized for the maintenance of assigned range improvement projects. Motorized administrative access on "Foot/Horse Trail" routes for grazing operation after August 25th will require the permit holder to seek and receive prior authorization from an authorized BLM officer.

The permittee and all persons associated with grazing operations must be informed that any person who injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until further notified in writing to proceed by the authorized officer.

New range improvements, maintenance of existing range improvements, or additional feeding areas may require cultural resource inventories, monitoring, and/or data recovery.

NO ACTION ALTERNATIVE

This alternative would involve maintaining the current level of use on the allotment. Under this alternative the existing AMP would not be modified and the existing grazing use would continue. Scheduled grazing use, grazing preference, and terms and conditions for the proposed grazing permit are summarized below.

Table 2-3 Current Grazing Schedule:

Operator Name	Auth. No.	Livestock Number	Livestock Kind	Begin Date	End Date	Public Land %	AUMs
James Craig Bair Ranch Co.	0503994	1000 1000	Sheep Sheep	5/16 9/10	7/6 10/31	80 80	274 274
Keven Jensen	0504459	1785	Sheep	5/16	6/30	100	540

Table 2-4 Grazing Preference AUMS:

Auth. No.	Allotment Name & No.	Active	Suspended	Total
0503994	Clough-Alber #18909	550	422	972
0504747	Clough-Alber #18909	540	0	540

The following other terms and conditions are included on the existing permits:

Grazing use shall be in accordance with the current Clough-Alber Allotment Management Plan (AMP). Any deviations must have prior approval from the BLM.

The permittee and all persons associated with grazing operations must be informed that any person who injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until further notified in writing to proceed by the authorized officer.

Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout. Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed. The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment. Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site.

The following other terms and conditions would only be attached to one existing permit; Authorization Number 0503994.

Adaptive management will be employed on this allotment. The BLM will allow up to 14 days of flexibility in the start and end dates on this permit depending on range readiness. The range will be considered ready when there is a minimum of 4 inches of new growth on grasses. AUMs may not exceed Active Preference. Use different than that shown in the Mandatory Terms and Conditions of the permit must be applied for in advance.

Average utilization levels by livestock should not exceed 50% by weight on key grass species, and 40% of the key browse species current year's growth. Grazing in riparian areas should leave an average minimum 4-inch stubble height of herbaceous vegetation. Once these levels are reached, livestock should be moved to another portion of the allotment, or removed from the allotment entirely for the remainder of the growing season. Application of this term may be flexible to recognize livestock management that includes sufficient opportunity for regrowth, spring growth prior to grazing, or growing season deferment.

A herder will be present on the allotment each day of the grazing season. The herder will minimize grazing use by sheep on the creek bottoms. Sheep can be herded to creek bottoms for brief periods for watering purposes only. Once sheep have been watered they will be herded away from the creek bottoms.

Trailing use through the Hubbard Mesa (#18903) and JQS (#18908) allotments will take place in the spring for 2 days (1 day up and 1 day down) and in the fall for 2 days (1 day up and 1 day down). A majority of the trailing use will be on county roads.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

The "No Grazing Alternative" has been eliminated from further consideration. The No Grazing Alternative has been reviewed in previous EAs, DOI-BLM-CO-N040-2011-0066-EA and DOI-BLM-CO-N040-2012-0021 EA. The decision record has supported the continuation of grazing on the Clough-Alber allotment.

PLAN CONFORMANCE REVIEW

The proposed action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Roan Plateau Resource Management Plan Amendment.

Date Approved: June 2007 – Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment; amended in March 2008 - Record of Decision for the Designation of Areas of Critical Environmental Concern for the Roan Plateau Resource Management Plan.

Decision Number/Page: The action is in conformance with Livestock Grazing Management identified in the Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment (pg. 38).

Decision Language: General Management Decisions are: Goal: Provide livestock forage while maintaining or enhancing healthy landscapes. Objective: Ensure grazing management conforms to the BLM grazing regulations (43 CFR 4180) and the BLM's Colorado Standards for Public Land Health and Guidelines for Livestock Grazing Management.

Note: Plan guidance was to manage livestock grazing to less than 10 percent streambank alteration within the ACECs. The management guidance for alteration was modified in the proposed action of this NEPA EA. A permanent exemption to this stipulation would be granted, based on the existing monitoring data, demonstrating that a less restrictive measure would adequately protect the resource. This action would fall under the waiver criteria identified in the impact analysis of the FEIS, page 4-6.

RELATIONSHIP TO STATUTES, REGULATIONS, OTHER PLANS

- Taylor Grazing Act of 1934 as amended;
- Federal Land Policy and Management Act of 1976;

- Public Rangelands Improvement Act of 1978;
- Title 43 of the Code of Federal Regulations Subpart 4100 – Grazing Administration;
- Noxious Weed Act of 1974;
- Endangered Species Act of 1973;
- National Environmental Policy Act of 1969;
- Migratory Bird Treaty Act of 1918;
- National Historic Preservation Act (16 USC 470f);
- Archeological Resources Protection Act;
- Native American Graves Protection and Repatriation Act;
- Indian Sacred Sites – EO 13007; and
- Consultation and Coordination with Indian Tribal Governments – EO 13175
- Colorado Public Health Standards and Livestock Grazing Management Guidelines - March 1997

STANDARDS FOR PUBLIC LAND HEALTH

In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The five 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.

A Formal Land Health Assessment was conducted in the Roan Cliffs Watershed in 1999 which included the Clough-Alber allotment. The allotment was considered to be meeting all the standards or making progress towards meeting all the standards at the time of the assessment. The current conditions of each resource are discussed in the analysis below.

The impact analysis addresses whether the proposed action or any alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions for each of the five standards. These analyses are located in the program-specific analysis in this document.

3. Affected Environment & Environmental Effects

DIRECT AND INDIRECT EFFECTS, MITIGATION MEASURES

This section provides a description of the human and natural environmental resources that could be affected by the proposed action and alternatives. In addition, the section presents comparative analyses of the direct and indirect effects on the affected environment stemming from the implementation of the various actions.

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain environmental elements. Not all programs, resources or uses are present in the area, or if they are present, may not be affected by the proposed action and alternatives (Table 3-1). Only those elements that are present and potentially affected are described and brought forth for detailed analysis

Table 3-1. Programs, Resources, and Uses (Including Supplemental Authorities)	***Potentially Affected?***	
	Yes	**No**

Access and Transportation		X
Air Quality		X
Areas of Critical Environmental Concern	X	
Cadastral Survey		X
Cultural Resources	X	
Native American Religious Concerns	X	
Environmental Justice		X
Farmlands, Prime or Unique		X
Fire/Fuels Management		X
Floodplains		X
Forests		X
Geology and Minerals		X
Law Enforcement		X
Livestock Grazing Management	X	
Noise		X
Paleontology		X
Plants: Invasive, Non-native Species (Noxious Weeds)	X	
Plants: Sensitive, Threatened, or Endangered	X	
Plants: Vegetation	X	
Realty Authorizations		X
Recreation	X	
Social and/or Economics	X	
Soils	X	
Visual Resources		X
Wastes, Hazardous or Solid		X
Water Quality, Surface and Ground	X	
Water Rights		X
Wetlands and Riparian Zones	X	
Wild and Scenic Rivers	X	
Wilderness/WSAs/Wilderness Characteristics		X
Wildlife: Aquatic / Fisheries	X	
Wildlife: Migratory Birds	X	
Wildlife: Sensitive, Threatened, and Endangered Species	X	
Wildlife: Terrestrial	X	

Areas of Critical Environmental Concern

Affected Environment

The Clough-Alber allotment includes Yellowjacket and Raspberry Creeks and borders Trapper and Northwater Creeks which are all part of the Trapper/Northwater Creek ACEC. The relevant and important values associated with this ACEC are fisheries and botanical. Trapper and

Northwater Creeks support habitat for core conservation populations of the Colorado River cutthroat trout. Seeps within the lower segments of these creeks also support several occurrences of the hanging garden sullivantia. Indian ricegrass shale barren communities occur on dry, south-facing slopes within these drainages. The BLM sensitive plant species, Cathedral Bluffs meadowrue is known to occur on south-facing slopes near the headwaters of Yellowjacket Creek.

Environmental Effects

Proposed Action

Objectives for the fisheries values in the Trapper/Northwater Creek ACEC include protecting the Colorado River cutthroat trout and its habitat from direct and indirect impacts and minimizing impacts to stream health (streambank damage, water quality, riparian vegetation loss, etc.) caused by livestock grazing. The objectives for managing the botanical/ecological values within the Trapper/Northwater Creek ACEC include protecting rare plants and significant plant communities from direct and indirect impacts and managing these communities to retain mid-to-late seral stage conditions.

Livestock grazing can have direct and indirect effects on the relevant and important values of the ACEC. Grazing can negatively affect fisheries habitat by reducing streambank vegetation and raising stream temperatures; trampling of streambanks can lead to increased sediment deposition; and defecating in streams can lead to reductions in water quality that are necessary for maintenance of fisheries habitat. Cathedral Bluffs meadowrue and the Indian ricegrass shale barrens could be directly impacted by grazing or trampling or indirectly impacted by changes in plant community composition or introduction of noxious weeds. Direct grazing impacts to the hanging garden sullivantia are not anticipated as this plant is located within seeps along the cliffs which are inaccessible to livestock.

The 2008 ROD for the Designation of Areas of Critical Environmental Concern for the Roan Plateau RMP Amendment and EIS (page ROD-6) prescribed protective measures, such as No Surface Occupancy and Controlled Surface Use to preserve the values of the ACEC. The overall objective is not to allow surface disturbing activities that might impair the identified values and to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions.

In addition, specific management actions will be applied that will protect relevant and important values in the Trapper/Northwater Creek ACEC including Colorado River cutthroat trout habitat and botanical resources.

Management Actions affecting livestock grazing in these ACECs include:

1. Allow No Ground Disturbance (NGD/NSO) within high and moderate risk habitat areas for Colorado River cutthroat trout. Allow no loss or degradation of fish habitat that supports Colorado River cutthroat trout high risk habitat.
2. Manage livestock grazing within the ACECs so that streambank alteration does not exceed 25 percent of the stream length.
3. Apply NGD/NSO within occupied habitat for rare plants.
4. Manage livestock grazing within habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall

watershed functions, as defined in the Colorado Livestock Grazing Management Guidelines.

5. Manage significant grassland and shrubland communities to retain mid-to late-seral stage condition.

Under the proposed action, the Clough-Alber allotment would be grazed from 5/16 to 7/6 and from 9/25 to11/15. The allotment would be grazed by sheep only and the sheep would be accompanied by a herder who is to ensure that sheep are moved frequently (camps moved every 5-7 days) and sheep would not be brought back to the same area once it has been used in a grazing season. This grazing management strategy incorporates more than 2 months of grazing rest during the critical growing season and the provisions in the AMP to move the sheep herds every 5 to 7 days would allow sufficient time for plant recovery and regrowth following grazing which should maintain or improve riparian and upland conditions for cutthroat trout habitat, rare plants and significant plant communities. Continuation of livestock grazing, with implementation of the management actions outlined in the AMP, should maintain or improve the values for which the ACEC was designated.

No Action Alternative

Under the No Action alternative, the allotment would continue to be grazed by sheep only, but there would be an additional 785 sheep grazing the allotment from 5/16-6/30 and 1000 fewer sheep grazing in the fall. The effects would be similar to the Proposed Action except that the added spring grazing may have greater impacts on herbaceous vegetation and less browsing of shrubs as sheep tend to prefer herbaceous vegetation when it is actively growing in the spring. Sheep grazing in the spring would be less likely to spend time grazing in riparian areas and less likely to browse on riparian shrubs which may benefit fisheries and riparian habitat. Effects on the botanical and ecological values of the ACEC would be very similar to the Proposed Action.

Cultural Resources

Affected Environment

Grazing authorization renewals are undertakings under Section 106 of the National Historic Preservation Act. During Section 106 review, a cultural resource assessment (CRVFO#1013-15) was completed for the Clough-Alber allotment on January 30, 2013 by Erin Leifeld, Colorado River Valley Field Office Archaeologist. The assessment followed the procedures and guidance outlined in the 1980 National Programmatic Agreement Regarding the Livestock Grazing and Range Improvement Program, IM-WO-99-039, IM-CO-99-007, IM-CO-99-019, and IM-CO-01-026. The results of the assessment are summarized in the table below. Copies of the cultural resource assessments are available at the Colorado River Valley Field Office archaeology files.

Data developed here was taken from the cultural program project report files, site report files, and GIS data located at the Colorado River Valley Field Office as well as information from General Land Office (GLO) maps, BLM land patent records, and the State Historic Preservation Office (SHPO) site records, report records, and GIS data.

The table below is based on the specific analysis for the allotment in this EA. The table shows known cultural resources, the potential of Historic Properties, and Management recommendations.

Table 3-2. Cultural Resources Assessment Summary						
Allotment Name and Number	**Acres Inventoried at a Class III level**	**Acres NOT Inventoried at a Class III Level**	**Percent Allotment Inventoried at a Class III Level** (%)	**Number of Cultural Resources known in Allotment**	**High Potential of Historic Properties** (yes/no)	**Management Recommendations** (Additional inventory required and historic properties to be visited)
Clough-Alber #18909	4042.1	1893.8	68%	33	Yes	Monitor sample of eligible/potentially eligible sites (see paragraph); No additional inventory necessary

The previous grazing permit was renewed in 2012 and since that analysis no new inventory or cultural resource recordation has occurred. A total of 4042.1 acres have been inventoried at a Class III level within the Clough-Alber allotment through 12 cultural resource inventories. Thirty-three cultural resources were documented within the allotment, of which, eight are eligible or potentially eligible for the National Register of Historic Places (NRHP). All eight sites (5GF41, 5GF44, 5GF45, 5GF51, 5GF55, 5GF57, 5GF94, and 5GF97) are prehistoric open lithic scatters or open camp sites. Looking at historic General Land Office (GLO) maps, there are some historic roads but much of the area has been inventoried.

Environmental Effects

Proposed Action

The direct impacts that occur where livestock concentrate during normal livestock grazing activity can include trampling, chiseling, artifact breakage, and churning of site soils, cultural features, and cultural artifacts. Indirect impacts could include soil erosion and gullying, which can lead to increased ground visibility which has the potential to increase unlawful collection and vandalism.

Changes in the grazing schedule and a shift in the number of livestock per season will have little effect on cultural resources. Essentially the same number of animals will be grazing for a similar amount of time and the schedule is flexible per the management plan. The use of this adaptive management technique might be beneficial to cultural resources by lessening ground disturbance through changing the season of use and allowing a flexible schedule.

Samples of the sites listed in the affected environment as eligible or potentially eligible are recommended to be monitored within the Clough-Alber allotment within the term of this permit. No additional inventory is required.

No Action Alternative

Potential livestock impacts are similar to the proposed action. The use of adaptive management on authorization #0503994 will have little change on cultural resource impacts. The use of this management technique might reduce ground disturbance because it requires four inches of new growth on grasses and therefore livestock will not be grazing when soils are more exposed or when the area is more susceptible to erosion. In contrast, not issuing adaptive management for the second authorization #0504747 and having a short season of use has the potential to cause adverse impacts to cultural resources through increased ground disturbance from grazing activities.

Samples of the sites listed in the affected environment as eligible or potentially eligible are recommended to be monitored within the Clough-Alber allotment within the term of this permit. No additional inventory is required.

Mitigation
Grazing permit terms and conditions cover modification or mitigation needed if new information determines cultural resources may be adversely impacted.

Native American Religious Concerns

Affected Environment

American Indian religious concerns are legislatively considered under the American Indian Religious Freedom Act of 1978 (PL 95-341), the Native American Graves Environmental Assessment Protection and Repatriation Act of 1990 (PL 101-601), and Executive Order 13007 (1996; Indian Sacred Sites). These require, in concert with other provisions such as those found in the National Historic Preservation Act and Archeological Resources Protection Act, that the federal government carefully and proactively take into consideration traditional and religious Native American culture and life. This ensures, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to "historic properties" and "archaeological resources". In other cases, elements of the landscape without archaeological or other human material remains may be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation.

The Ute have a generalized concept of spiritual significance that is not easily transferred to Euro-American models or definitions. The BLM recognizes that the Ute have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands. The cultural resource evaluation of these allotments describing known cultural resources and their condition was sent to the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, and the Uinta and Ouray Agency Ute Indian Tribe. The letter, sent on March 2, 2012, requested the tribes to identify issues and areas of concern within the allotments. No comments were received at that time. Changes made between the 2012 permit and these permits are not significant enough to impact cultural resources. Therefore, tribal consultation is sufficient for this permit.

Environmental Effects

Proposed Action
No traditional cultural properties, unique natural resources, or properties of a type previously identified as being of interest to local tribes, were identified during the overview of the cultural resources inventory of the project area. Therefore, areas of concern to Native American tribes will not be affected.

No Action Alternative
Same as Proposed Action.

Mitigation

Grazing permit terms and conditions cover modification or mitigation needed if new information has determined cultural resources or areas of Native American religious concern may be adversely impacted.

Livestock Grazing Management

Affected Environment

The Clough-Alber allotment consists of 5,323 acres of public land and 643 acres of private land ranging in elevation from 8000-9000 feet. Grazing use on this allotment is managed through an allotment management plan. Sheep tend to use all areas of the allotment. Sheep are intermediate grazers and use is spread evenly among available grasses, forbs, and shrubs. There are 18 water developments providing sufficient water sources across the allotment. Concentrated use occurs around these water developments. There is public access to the allotment. Most public use occurs during the hunting seasons. The area has been leased for oil and gas development in accordance with the Roan Plateau Resource Management Plan Record of Decision June 2007, but there are no drilling activities currently affecting this allotment

Environmental Effects

Proposed Action

Under this action sheep grazing would be authorized on two permits in the spring and fall. Sheep would be herded frequently to prevent over-use in any one area. Grazing utilization would be expected to be light to moderate. Both permits may be grazed together which would increase the flexibility in operations and grazing rest on the allotment. Allotment management would be improved while dealing with only one grazing permittee.

No Action Alternative

Under this alternative, grazing use would continue at previously authorized levels. This would allow for a much larger amount of sheep use in the spring but less use during the fall. No changes would be made to the existing AMP and no additional terms and conditions would be included on the permits. This alternative would have less flexibility and would be challenging to the new permittee. This alternative would have a more negative impact to vegetation resources than the proposed action, which may degrade the quality of livestock forage in the long-term.

Plants: Invasive Non-Native Species (Noxious Weeds)

Affected Environment

A landscape-wide weed inventory has not been completed on the Clough-Alber allotment. However, monitoring and other inventories have shown that Canada thistle and houndstongue are common in the riparian areas. Houndstongue is also present in some of the upland sagebrush/mixed mountain shrub sites. Kentucky bluegrass, an invasive, introduced perennial grass, is relatively common at many riparian and upland sites.

Environmental Effects

Proposed Action

Weeds generally germinate and become established in areas of surface disturbing activities. Livestock grazing can contribute to the establishment and expansion of noxious weeds through various mechanisms. In addition, noxious weed seed can be transported and introduced to new areas by fecal deposition or by seed that clings to the animal's coat. However, this effect is minimal as compared to other weed seed dispersal vectors such as vehicle routes and ground disturbing activities.Grazing as proposed should not create areas of bare ground and should

maintain the vigor and health of native plant species, particularly herbaceous species, thus, the proposed action should not cause a substantial increase in noxious weeds. Noxious and invasive plant species are not expected to radically increase as a result of the continuation of livestock grazing practices and most infestations will be isolated to watering facilities, salting areas, and other livestock high concentration locations.

No Action Alternative
The No Action alternative would entail more grazing use in the spring and substantially less use in the fall. Impacts would be similar to the Proposed Action except that the additional sheep use in the spring may result in some utilization of Canada thistle flowers which would reduce seed production. The No Action alternative would not have significantly different impact on the spread or control of invasive non-native species.

Plants: Sensitive, Threatened and Endangered

Affected Environment

Table 3-3 lists the threatened, endangered, proposed, and candidate plant species with potential to occur in the Clough-Alber allotment or be affected by the proposed action based on the U.S. Fish and Wildlife Service's IPAC website: http://ecos.fws.gov/ipac/wizard/trustResourceList!prepare.action. Table 3-4 lists all BLM Sensitive plants that may occur in the allotment or be impacted by the proposed action.

Table 3-3. Federally Listed, Proposed or Candidate Plant Species

Species	Habitat/Range	Occupied/Potential Habitat Present /Absent
Ute ladies'-tresses (*Spiranthes diluvialis*)	Listed as threatened. Habitat for this threatened species is found below 7,200 feet along streams, lakes or in wetland areas with seasonally saturated or subirrigated soils.	**Absent**: The streams and wetlands on the Clough-Alber allotment are well above the elevation for potential habitat for Ute ladies'-tresses.
Parachute penstemon (*Penstemon debilis*)	Listed as threatened. Endemic to steep, talus slopes on the southern escarpment of the Roan Plateau in Garfield County, Colorado. The plants are found only on the oil-shale rich Parachute Creek Member of the Green River Formation between 8,000 to 9,000 feet in elevation.	**Potential:** Parachute penstemon is found along the southern rim of the Roan Plateau approximately 2.5 miles south of the allotment. Some potential habitat exists within this allotment.

Table 3-4. Colorado BLM Sensitive Plant Species

Species	Habitat	Occupied/Potential Habitat Present/Absent
Cathedral Bluffs meadowrue (*Thalictrum heliophilum*)	Known from 18 occurrences in Garfield, Mesa and Rio Blanco Counties. The meadowrue is a narrowly endemic plant found in dry, shale barren communities between 6,200 and 8,800 feet in elevation.	**Present:** Documented from dry, south-facing slopes above Yellowjacket Creek in the Clough-Alber allotment.

Piceance bladderpod (*Lesquerella parviflora*)	A Colorado endemic known only in Garfield, Mesa, and Rio Blanco Counties. It occurs on shale outcrops of the Green River Formation, on ledges and slopes of canyons in open areas at elevations ranging from 6,200 to 8,600 feet.	**Potential:** Some potential habitat is found on the Clough-Alber allotment; however, no occurrences of this species have been documented here.
Roan Cliffs blazing star (*Mentzelia rhizomata*)	Found only on steep talus slopes of the Green River Formation in Garfield County. The species occurs on eroding oil shale at elevations from 5,800 to 9,000 feet. In the GSFO, the Roan Cliffs blazing star is known to occur on the cliffs of the Roan Plateau, along Parachute Creek drainage and in Main Elk Creek, near New Castle, Colorado.	**Potential:** This species occurs on steep, talus slopes of the Green River Formation. No documented occurrences, but some potential habitat exists.

Recent surveys for Cathedral Bluffs meadowrue have not been conducted on the Clough-Alber allotment. However, one occurrence has been documented on the open slopes above Yellowjacket Creek. Parachute penstemon and Roan Cliffs blazing star are known to occur along the southern rim of the Roan Plateau, approximately 2.5 miles from the Clough-Alber allotment. Parachute penstemon, Piceance bladderpod and Roan Cliffs blazing star all occur on open talus slopes of the Green River Formation shale. Potential habitat for Parachute penstemon, Piceance bladderpod, and Roan Cliffs blazing star is found along the lower reaches of Northwater Creek in the Clough-Alber allotment, but no plants of these species have yet been documented within the Clough-Alber allotment.

Environmental Effects

Proposed Action

Parachute penstemon generally occurs on steep, nearly barren slopes of Green River formation shale or in alluvial outwash derived from Green River shale. Due to the lack of forage present in Parachute penstemon habitat, it would likely receive very little grazing use or trampling damage. Livestock grazing, as proposed, would have "**No Effect**" on the federally-listed Parachute penstemon or its habitat. Piceance bladderpod and Roan Cliffs blazing star occur in similar habitats to Parachute penstemon. The proposed action would not likely impact these species.

Cathedral Bluffs meadowrue occurs on dry, moderately steep shale slopes. No monitoring of the known population in Yellowjacket Creek has occurred, so impacts are unknown. Sheep do tend to graze on open slopes so there is potential that they would graze in occupied habitat for this species. The proposed grazing management requires the sheep herder to move sheep to fresh feed every 5 to 7 days and not to utilize the same area more than once in a grazing season, so anticipated levels of utilization and trampling damage would be light. The proposed action is unlikely to cause more than negligible impacts on individual plants of the meadowrue and is unlikely to have an effect on the long-term viability of the population.

No Action Alternative

The No Action alternative would entail more grazing use in the spring and substantially less use in the fall. Impacts would be similar to the Proposed Action except that the additional sheep use in the spring may result in more utilization of herbaceous species (including rare plants) since sheep tend to prefer herbaceous forage in the spring when it is actively growing and higher in protein levels. The requirements to move sheep to fresh feed frequently and not to return to the same area twice in the same grazing season should ensure that impacts would be minimal.

Mitigation
Periodic monitoring of the Cathedral Bluffs meadowrue population will be conducted to determine whether any trampling or grazing of plants is occurring. If damage to the meadowrue population is noted, the permittee will be instructed to avoid herding sheep into the occupied meadowrue habitat. The proposed action would have no impact or very minimal impact on this BLM sensitive species.

Analysis on the Public Land Health Standard 4 for Special Status Plant Species
The 1999 Roan Cliffs Land Health Assessment found no populations of special status plants within the Clough-Alber allotment. The population of Cathedral Bluffs meadowrue within the Clough-Alber allotment was not monitored during the land health assessment since it was not a special status species at that time. Potential habitat for Parachute penstemon, Piceance bladderpod and Roan Cliffs blazing star appeared to be in good condition. The Clough-Alber allotment was meeting Standard 4 for special status plants at the time of the assessment. In 2009, Cathedral Bluffs meadowrue was added to the BLM sensitive species list. Grazing by sheep is not anticipated to result in negative impacts to this BLM sensitive plant, provided sheep are moved to fresh feed every 5 to 7 days and that utilization levels do not exceed 40% in upland areas. The proposed action should not result in a failure to meet or maintain Standard 4 for special status plants.

Plants: Vegetation

Affected Environment

The Clough-Alber allotment lies above the rim of the Roan Plateau at elevations ranging from 7,700 feet to 9,000 feet. The allotment is dissected by Northwater, Raspberry, Yellowjacket and Trapper Creeks. North-facing slopes along these drainages are generally covered in mixed conifer forests of Engelmann spruce/subalpine fir or aspen woodlands on the gentler slopes. The south-facing slopes along the drainages support a mix of sagebrush/mountain mahogany/grasslands and shale barrens. Sagebrush/snowberry/serviceberry shrublands and mountain grasslands dominate along the ridgetops.

The shrublands are generally dense with a productive grass understory. The gentler gradient of upper Northwater Creek supports primarily sedges, rushes and riparian grasses. The lower portions of Northwater Creek and Trapper Creek are steeper and are predominantly aspen with some mixed conifers intermingled. Canada thistle and houndstongue are common in the riparian areas. Houndstongue is also present in some of the upland sagebrush/mixed mountain shrub sites. Kentucky bluegrass, an invasive, introduced perennial grass, is relatively common at many upland sites and in the areas immediately adjacent to riparian habitat.

Significant Natural Plant Communities:

The Roan Plateau Final RMP (BLM, 2006) identified the hanging garden sullivantia (*Sullivantia hapemanii*) as a significant plant community within the Clough-Alber allotment. Hanging garden sullivantia is a Colorado endemic plant that is restricted to calcareous seeps on steep canyon walls. The hanging gardens are found in the Clough-Alber allotment along lower Northwater Creek. The hanging gardens receive no grazing use due to their location on cliff faces above the creeks and the communities are in excellent condition.

Monitoring on Clough-Alber Allotment:

Upland utilization levels were monitored in the Clough-Alber allotment at four different study sites in 2001, 2005, 2007, 2009, and 2010. Average utilization levels exceeded 50% at one site in 2001 and one site in 2007. Typical utilization each year was in the "Slight-Light" range (6-20%). Initial trend monitoring studies (Daubenmire) were established at four sites in 2005 (Raspberry Ridge, Cook Ridge, upland terrace along upper Northwater Creek, and ridge between Raspberry and Yellowjacket Creeks) but repeat trend monitoring to assess long-term trends in vegetative condition is only available from one site. It is difficult to draw conclusions regarding the whole allotment from one study and additional trend monitoring is needed to determine vegetation composition trends over time.

Photo monitoring of riparian area trends indicates concerns with utilization levels and the condition of riparian areas. The photos also provide evidence of heavy utilization of the adjacent upland terraces (Figure 3-1) when cattle were grazed on the allotment. The uplands immediately adjacent to the creeks have more bare ground than is expected for the ecological sites and the vegetation is dominated by Kentucky bluegrass; and weedy species such as houndstongue and coneflower have replaced some of the native grasses. Ridge tops and upland slopes farther away from the creeks appear to receive less grazing use and vegetation in these areas is more diverse and productive. However, lack of fire or other disturbance and disproportionate grazing of grasses instead of shrubs has led to a decrease in grass cover and an increase in shrub and weed density and cover.

Prior to 2010, the Clough-Alber Allotment was grazed by both cattle and sheep. Cattle tend to prefer to graze in flatter areas and particularly in riparian areas, so cattle use often concentrated in the riparian areas and may be the primary cause of the streambank damage and poor vegetative conditions of the riparian areas and adjacent uplands. Since 2011, the allotment has been grazed by sheep only.

Figure 3-1. Heavy grazing use of upland terraces next to Yellowjacket Creek

Environmental Effects

Proposed Action

Direct impacts to vegetation from livestock grazing include removal of vegetation and trampling damage. Indirect impacts may include increased plant mortality (increased bare ground), changes in species composition and increases in noxious weeds and other undesirable species. Grazing can also remove old or dead growth that allows for an increase in photosynthesis and green matter (re-growth). The proposed grazing regime should allow adequate time for plant regrowth and seed set following grazing or prior to grazing.

The proposed action includes the use of a herder to move sheep to ungrazed areas every 5-7 days. The use of a herder provides considerable control over the location, timing, degree and duration, and frequency of use. Also sheep prefer hillsides to the confining nature of riparian bottoms. The herder can easily move sheep to uplands or ridge tops rather than bedding them in a riparian area meadow (Glimp and Swanson 1994).

The proposed action to issue a grazing permit to a new permittee would reduce the total number of sheep on the allotment in the spring (5/16-6/30), but would extend the grazing until 7/6 and add more fall use from 9/25-11/15. The allotment would be rested during the summer when grasses are actively growing and setting seed. Sheep diets are typically about 50% grass, 30% forbs, and the rest browse although the specific dietary preference varies seasonally and by plant community. (Van Dyne, et. al. 1980). Grazing by sheep in the fall would likely include more browsing on shrubs, as grasses and forbs would be dormant and low in protein. Light browsing on sagebrush, snowberry and other upland shrubs would likely be beneficial in thinning overall

shrub density and stimulating new leader growth as shrubs are currently in a late seral stage and may be less productive. Current shrub density may also be impeding herbaceous growth so thinning of the canopy may improve the cover of grasses and forbs. However, if sheep graze on riparian shrubs in the fall this is likely to be detrimental to maintaining or improving riparian health.

No Action Alternative
The No Action alternative would entail more grazing use in the spring and substantially less use in the fall. Impacts would be similar to the Proposed Action except that the additional sheep use in the spring may result in more utilization of herbaceous species and less use of shrubs since sheep tend to prefer herbaceous forage in the spring when it is actively growing and higher in protein levels. Less use of shrubs would not result in a thinning of the dense shrub canopy and greater use of herbaceous vegetation would not improve the cover of herbaceous species. However, the requirements to move sheep to fresh feed every 5-7 days and not to return to the same area twice in the same grazing season should ensure that overall impacts would be minimal.

Land Health Standards
A formal Land Health Assessment was completed for the Clough-Alber allotment in 1999. The plant communities on the Clough-Alber allotment were generally in good condition. The allotment was being grazed solely by cattle at that time. Kentucky bluegrass was noted on over 25% of the assessment sites but was rarely a dominant component. Noxious weeds and undesirable species were present, but were minimal in the overall landscape. Plant communities were present in mixed age classes sufficient to sustain recruitment and mortality fluctuations. However, excessive utilization was noted in many of the uplands immediately adjacent to the drainages. Plant communities in these areas were in an early seral stage and invasive species, such as houndstongue and coneflower, were common.

Farther away from the creeks, the vegetative communities in the uplands were predominantly in mid to late-seral stage. Lack of disturbance and disproportionate grazing of grasses instead of shrubs had led to a decrease in herbaceous cover and an increase in shrub density and cover.

Many aspen stands were beyond late-seral stage and some elevated mortality was noted. However, at most sites, numerous aspen sprouts and saplings were noted and livestock grazing did not appear to be inhibiting aspen regeneration. Conifer stands were also healthy at the time of the assessment.

In recent years, cattle have concentrated along the creeks in the flatter riparian areas and immediately adjacent uplands. The condition of the riparian areas and adjacent uplands has begun to decline in these locations since the land health assessment was conducted.

Sheep will utilize steep slopes and prefer to bed on open upland areas. Sheep also tend to browse on shrubs as well as herbaceous vegetation, so sheep grazing in the brushy uplands may serve to reduce the dominance by shrubs and improve herbaceous undergrowth. On the other hand, sheep in riparian areas may cause heavy browsing of willows and prevent achievement of riparian objectives. The terms and conditions of the permit require the herder to move the sheep to fresh feed every 5 to 7 days and not to use the same area more than once in a grazing season.

Repeated defoliations of upland plant species would be infrequent and there would be adequate rest and recovery times. Under the proposed action, the cover and diversity of upland herbaceous plant communities would be expected to improve and Standard 3 for plant communities would be maintained or improved.

Recreation

Affected Environment

The Clough-Alber allotment is within the Roan Plateau Extensive Recreation Management Area (ERMA), which was designated in the Glenwood Springs Field Office Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment and Environmental Impact Statement, 2007. The Roan Plateau ERMA is managed to ensure that custodial outcomes for the purpose of addressing identified stewardship needs associated with recreation-tourism activity participation include: visitor health and safety; use and user conflicts; and resource protection.

Environmental Effects

Proposed Action

The change in livestock number and dates may directly impact visitor experiences. Expanding sheep operations further into hunting season, and creating a new additional use of 1000 sheep during hunting season may create conflicts with hunters in the area. Additionally, administrative use on roads that are closed to the general public during hunting season could create potential misunderstandings and negatively impact recreational experiences, which would indirectly impact recreational benefits that the users take home with them when they leave public lands. However, the proposed action includes a specific stipulation regarding administrative use after August 25th which would mitigate this potential negative impact.

No Action Alternative

The No Action Alternative keeps livestock on public lands a shorter amount of time during hunting season and has a fewer number of sheep on public lands during hunting season (1000 fewer sheep) than the Proposed Action. This would create fewer conflicts between the recreational public and grazing use during hunting season.

Socio-Economics

Affected Environment

The majority of CRVFO grazing permits are issued to individuals and businesses within the following counties of Colorado. The median household income within those counties is identified in the following table.

Table 3-5

Local Counties	**Median Household Income (2010 US Census)**
Garfield	$62,716
Pitkin	$69,352
Eagle	$74,220
Routt	$64,892

Local communities throughout rural areas in the western United States are often integrally tied to ranching and agriculture. Livestock grazing has been a significant part of the Colorado River

valley and surrounding area for more than 100 years. Cattle companies began moving into western Colorado in the early 1870s, using the open range as winter feeding grounds for their herds (Church et al. 2007: 113). By the late 1880s, a more sedentary life of livestock raising became prevalent as ranchers established access to leased lands and irrigated pastures and were able to establish more permanent ranches (Church et al. 2007: 113-114). Many of these ranches, cattle companies, and homesteading families retain their long-standing social and economic ties to the area.

Benefits that local ranches and livestock companies bring to the surrounding communities include jobs, local business revenue, and locally produced meat (Huntsinger and Hopkinson 1996: 167-168). Additionally, reserving tracts of land for livestock grazing can preserve large expanses of contiguous property which are not open to development and segmentation. In combination, these large tracts of ranch land and public land can be beneficial to wildlife, recreation, watersheds, and aesthetics (Huntsinger and Hopkinson 1996: 168). In the West, "49.6% of all public land ranchers" are greatly dependent on ranching as a primary source of their income (Gentner and Tanak 2002: 11). Maintaining historic ties to the land through livestock grazing also preserves traditional family and community land uses. Studies show that ranchers are not only in the livestock business to make a profit, but place great value in the quality of life that comes with the ranching lifestyle (Bartlett et al. 2002).

Challenges to livestock grazing can include financial hardship, over-utilization, limitations from land development, and conflicts with other land users. Encroachment by land developers can raise property taxes and values which can create economic incentive for ranchers to fragment or sell off their lands (Huntsinger and Hopkinson 1996: 167). Livestock price fluctuations can increase the challenge for ranchers to maintain a profit (Smith and Martin 1972: 224). Livestock owners who use public lands feel pressures from other land users, such as recreationists or oil and gas development, for access and use of land. For example, tension can occur when livestock are startled by mountain bikers or pasture gates are left open. Some public land users, such as hunters, can be affected by poor grazing practices and the resulting impacts to local wildlife and environmental quality. However, the multiple use mission of the Bureau of Land Management requires that the traditional land uses, such as grazing, are managed in a way that accommodates other public land users.

Social and economic impacts of ranching and agriculture can bring both benefits and challenges to the local community. Sustainably managed grazing supports a way of life that has been established since the early twentieth century and can be an opportunity to preserve community tradition, identity, and land use patterns while accommodating other land uses and environmental protections.

Environmental Effects

Proposed Action

Under this alternative grazing would continue at a level similar to past levels on the allotment. The ranching livelihood, local economic benefit, and cultural settings of the area would continue to be supported and no net increase or loss to the permittee or county would be expected.

No Action Alternative

Environmental effects would be the same as or similar to the proposed action.

Soils

Affected Environment

According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (NRCS 1985), the Clough-Alber allotment contains five different soil map units. These soil map units are scattered throughout the allotment and have been identified as having slight to severe erosion hazards. In addition, some areas along drainages within the Clough-Alber allotment are mapped as CSU 4 (Controlled Surface Use) for erosive soils on slopes greater than 30% and NSO 15 (No Surface Occupancy) for slopes greater than 50% regardless of soil type. The following is a brief description of the five soil map units found within the Clough-Alber allotment:

Irigul channery loam (36) –This shallow, well drained, rolling to steep soil is found on upland ridges and mountainsides at elevations ranging from 7,800 - 8,700 feet and on slopes of 9 - 50 percent. It is derived from sandstone and marlstone. Surface runoff for this soil is medium and the erosion hazard is slight.

Northwater loam (48) – This deep, well-drained soil is found on mountainsides at elevations ranging from 7,600 - 8,400 feet and on slopes of 15 - 65 percent. The Northwater loam is derived from sedimentary rocks. Surface runoff for this soil is slow and the erosion hazard is slight.

Parachute loam (52) – This moderately deep, well-drained soil is found on mountainsides at elevations ranging from 7,500 - 8,700 feet and on slopes of 25 - 65 percent. Parent material for this soil is sandstone. Surface runoff for this soil is medium and erosion hazard is moderate.

Parachute-Rhone loams (53) – These gently sloping to steep soils are found on ridges and mountainsides at elevations ranging from 7,600 - 8,600 feet and on slopes of 5 - 30 percent. The Parachute soil is derived from sandstone and or marlstone while the Rhone soil is derived from fine-grained sandstone. Approximately 55 percent of this unit consists of the Parachute soil while approximately 30 percent is the Rhone soil. The Parachute soil is moderately deep, well drained, and has a moderate erosion hazard with medium surface runoff. The Rhone soil is deep, well drained, and has a slight erosion hazard with slow surface runoff.

Rhone loam (60) – This deep, well drained, gently sloping to steep soil is found on ridges and mountainsides at elevations ranging from 7,600 - 8,600 feet and on slopes of 5 - 30 percent. This soil is derived from sandstone and marlstone. Surface runoff for this soil is slow and the erosion hazard is slight.

Soil health was evaluated in the Clough-Alber allotment in 1999 as part of the Land Health Assessment. At that time, BLM staff concluded that soils were meeting land health standards overall, with slight to moderate departures from expected conditions (BLM 1999). It was noted that along the stream bottoms, site-specific soil impacts associated with heavy livestock utilization included topsoil loss, bare ground, and presence of noxious weeds (BLM 1999). The grazing management has changed since that time. However, in more recent field evaluations, the uplands adjacent to the creeks continued to have more bare ground than was expected for the

ecological sites. Soils along some segments of the stream channels were still being trampled and compacted, thereby creating the potential for sediment transport to streams.

Environmental Effects

Proposed Action

Livestock grazing can result in soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation, or where sheep congregate or trail. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms. Due to the close proximity of the proposed activities to area drainages, grazing practices would directly impact soils via stream bank shearing. Indirect effects of stream bank shearing and soil loss would include higher levels of turbidity to streams and increases in water temperature. In areas of heavier livestock utilization and trailing, direct impacts can include surface compaction and soil loss. Allowing for adaptive management may provide for better protection of upland and riparian vegetation and subsequently maintain soil and water quality conditions.

No Action Alternative

Direct and indirect impacts would be similar to the proposed action, but would allow for more sheep use in the spring and less use during the fall. No changes would be made to the existing AMP and no additional terms and conditions would be included on the permits. Thus, this alternative would restrict flexibility in the spring, by not making provisions for appropriate range readiness and soil moisture conditions and could result in greater impacts to soil health.

Analysis on the Public Land Health Standard 1 for Upland Soils

Soil health in the Clough-Alber allotment was evaluated in 1999. BLM staff concluded that soils were meeting land health standards overall (BLM 1999). The improved grazing practices in the proposed action will likely result in the allotment continuing to meet land health standards. BLM staff is scheduled to re-assess land health standards for this allotment in 2013. Results from that assessment will improve the understanding of current soil conditions and guide adjustments to grazing management practices if needed.

Water Quality, Surface and Ground

Affected Environment

The Clough-Alber Allotment is located within an unnamed 6th field watershed that includes several perennial streams (Northwater Cr, Tichner Draw, Raspberry Cr, and Yellow Jacket Cr). Along the northwest boundary of the allotment is the perennial Trapper Creek which converges with Northwater Creek at the western terminus of the allotment boundary to form East Middle Fork of Parachute Creek.

The State of Colorado has developed *Stream Classifications and Water Quality Standards* that identify beneficial uses of water and numeric standards used to determine allowable concentrations of water quality parameters (CDPHE 2010a). Drainages in the Clough-Alber allotment are within the Lower Colorado River Basin segment 8, which is classified as aquatic life cold 1, recreation N, water supply, and agriculture. Aquatic life cold 1 indicates that a stream segment is capable of sustaining a wide variety of cold water biota. Recreation N refers to stream segments with surface waters that are not suitable or intended to become suitable for primary contact recreation uses. Water supply and agriculture refer to stream segments that are

suitable or intended to become suitable for potable water supplies and suitable for irrigation or livestock use.

The State of Colorado has developed a *303 (d) List of Impaired Waters and Monitoring and Evaluation List* that identifies stream segments that are not currently meeting water quality standards with technology based controls alone or are suspected to have water quality problems (CDPHE 2010b). At this time, the drainages within the Clough-Alber allotment are not listed on either of these lists.

Historical water quality data has been collected on the Roan Plateau by various agencies and groups that include: continuous monitoring by the USGS from 1976-1983, data collected by the Department of Energy in 1981, data collected by the BLM in 1999 as part of the Roan Cliffs Land Health Assessment, data collected by Colorado Trout Unlimited in 2007, and BLM data collected in 2008 and 2009. A review of the existing data indicates that streams within the allotment maintain overall good water quality. However, exceptions were noted in Northwater, Raspberry and Yellow Jacket Creeks, in which elevated levels of fecal coliform were noted during the cattle grazing season of use.

The following are the water quality results of the most recent sampling events:

Table 3-6

2007 Colorado Trout Unlimited Water Quality Data							
Stream	**Date**	**E. coli**	**pH**	**Dissolved Oxygen mg/L**	**Ammonia NH3 mg/l**	**Nitrate NO3 mg/l**	**Hardness CaCO3 mg/L**
Northwater Creek	8/30/07	285	8.5	7.4	0	0.046	216
	11/07/07	325	7.0	8.9	0.05	0.132	188
Trapper Creek	6/06/07	13.4	7.8	8.1	0	0.414	214
	11/07/07	1986	8.5	8.8	0	0	220

Table 3-7

2008 BLM Water Chemistry Laboratory Results								
Stream Name	**Northwater**	**Northwater**	**Raspberry**	**Raspberry**	**Trapper**	**Trapper**	**Yellowjacket**	**Yellowjacket**
Date	6/11/08	10/23/08	6/11/08	10/23/08	6/10/08	10/23/08	6/11/08	10/23/08
pH	8.5	8.15	8.2	7.65	8.3	8.1	8.25	8.1
Conductivity (umhos/cm)	420	529	375	481	424	528	386	463
Sodium (mg/l)	25	27	25.5	28.5	26.5	37	26	30.9
Calcium (mg/l)	48	59	40	53	49	52	43	46
Magnesium (mg/l)	18	26	11	22	15	27	12	25
Potassium (mg/l)	0.6	0.4	0.6	0.5	0.8	0.5	0.6	0.5
Chloride (mg/l)	4	2	4	4	2	2	4	4
Sulfate (mg/l)	18	14	21	22	19	25	20	26
Phenol Alk (mg/l)	12	0	0	0	0	0	0	0
Total Alk (mg/l)	219	273	189	259	217	272	193	233

Bicarbonate (mg/l)	236	330	229	313	263	329	234	282
Carbonate (mg/l)	14	0	0	0	0	0	0	0
Dissolved Solids (mg/l)	240	332	218	296	244	314	244	282
Hardness (mg/l)	194	254	145	222	184	240	156	217
Hydroxide (mg/l)	0	0	0	0	0	0	0	0
Acidity (mg/l)	0	0	0	0	0	0	0	0
Fluoride (mg/l)	0.07	0.02	0.04	0.06	0.08	0.14	0.05	0.02
Total Suspended Solids (mg/l)	0	0	0	12	7	0	0	5
Fecal Coliform Bacteria (col/100ml)	4	39	1	484	0	117	1	242

Table 3-8

2008 BLM Water Quality Field Parameter Results								
Stream Name	**Date**	**Discharge (cfs)**	**Temp. (°C)**	**Cond. (µS\cm)**	**pH**	**Salinity ppt**	**Dissolved Oxygen**	
							%	**mg/l**
Northwater Creek	10/1/2008	1.05	11.6	362	-	0.2	77	8.7
Trapper Creek	8/21/2008	0.68	11.2	394-580	-	0.3	65	7.69
	10/1/2008	0.41	8.9	375	-	0.3	75	8.92

Table 3-9

2009 BLM Water Quality Field Parameter Results								
Stream Name	**Date**	**Discharge (cfs)**	**Temp. (°C)**	**Cond. (µS\cm)**	**pH**	**Salinity ppt**	**Dissolved Oxygen**	
							%	**mg/l**
Northwater Creek	8/14/2009	1.32	12.7	362	8.75	0.2	70	7.25
	10/20/2009	0.85	7.1	302	8.4	0.2	46	5.80
Trapper Creek	6/23/2009	1.35	10.3	343	8.64	0.2	83	8.92
	8/14/2009	0.74	12.2	395	8.67	0.3	71	7.46

While most of the water quality data results consist of basic parameters that cannot be directly correlated to grazing activities, data collected by Colorado Trout Unlimited in 2007 and the BLM in 2008 did show increased levels of *E. coli* bacteria and fecal coliform bacteria following the grazing season. These bacteria are present in the intestinal tracts of warm blooded animals and are measured in colonies per 100ml of water. The current *E. coli* standard for this segment based on Recreation N classification is 630 colonies per 100ml. One sample (11/2007) of the twelve samples collected showed *E. Coli* levels above state water quality standards.

Streambank monitoring occurred in summer 2008 by BLM staff on major drainages on the Roan Plateau. The results have shown that cattle were occupying the riparian areas for extended periods throughout the grazing season. These activities have resulted in decreased vegetative cover and loss of riparian function and streambank damage. Together these impacts typically lead to degraded aquatic habitat by increasing temperatures and sediment input.
Recent changes in grazing management have been implemented to replace cattle with sheep grazing which was intended to improve riparian conditions on this allotment.

Environmental Effects

Proposed Action

Direct impacts to water quality resulting from livestock grazing can be elevated nutrient levels (i.e. fecal coliform) if sheep congregate near water sources for extended periods of time. Hoof action can cause surface compaction, stream bank shearing, elevated erosion rates and subsequent deterioration of water quality. Indirect impacts may result from excessive utilization in upland watershed areas reducing effective vegetative cover, elevating erosion potential and increasing sediment delivery to streams, which could negatively impact water quality and increase stream temperature and turbidity.

The herding practices in the proposed action would minimize the amount of time sheep spend along drainages, and the proposed stocking rates and duration are not expected to degrade water quality. Allowing for adaptive management may provide for better protection of upland and riparian vegetation and subsequently maintain soil and water quality conditions.

No Action Alternative

Direct and indirect impacts would be similar to the proposed action, but would allow for more sheep use in the spring and less use during the fall. No changes would be made to the existing AMP and no additional terms and conditions would be included on the permits. Thus, this alternative would restrict flexibility in the spring, by not making provisions for appropriate range readiness, soil moisture conditions, and potential sediment transport to adjacent water bodies, which may result in greater impacts to water quality.

Analysis on the Public Land Health Standard 5 for Water Quality

Streams within the Clough-Alber allotment were evaluated as part of the Roan Cliffs Land Health Assessment in 1999. Water quality parameters collected at that time were limited, but showed no violation of the water quality standards established by the State of Colorado (BLM 1999). Since that time, Colorado Trout Unlimited and the BLM collected water quality data that showed elevated levels of *E. coli* and fecal coliform bacteria, some of which exceeded State standards and desired levels for salmonid bearing streams. Changes to grazing management

were implemented since this data was collected, and it is anticipated that the number of livestock, season of use, and implementation of mitigation measures would result in improvements in water quality and continued compliance with land health standards. BLM staff is planning to re-assess land health standards for this landscape in the summer of 2013.

Wetlands and Riparian Zones

Affected Environment

The table below displays the results from past Proper Functioning Condition (PFC) assessments for several riparian areas within the Clough Alber Allotment.

Table 3-10

Allotment	Year	Riparian Area Name	Miles	Condition Rating
Clough Alber	1994	Northwater Creek lower reach	2.1	Functioning at Risk, trend not apparent
		Northwater Creek middle reach	1.6	Functioning-at-risk, trending upward
		Raspberry Creek	-	Functioning-at-risk, trend not apparent
		Tichner Draw	0.6	Functioning at Risk, trending downward
		Yellowjacket Creek	1.9	Non-functioning
	1999	Northwater Creek middle reach (above and below the private lands)	1.6	Functioning at Risk, trending upward
		Yellowjacket Creek	1.9	Functioning at Risk, trending upward
		Raspberry Creek	2.0	Functioning at Risk, trending upward

Each of the Clough-Alber riparian areas were assessed for functioning condition in 1994. Stream assessments yielded functioning-at-risk with varying trends. During the 1999 land health assessment, most of the stream reaches were re-evaluated. As a result of the water developments in the uplands and an emphasis on improving livestock management and distribution, the condition of riparian zones had improved. ID Team assessments suggested that riparian areas were still functioning at risk. However all trends were upward. This was attributed to the improvement of riparian vegetation which was adequate to protect stream banks and soils from high water flows. In general, problem areas observed during the 1994 PFC assessment were found to be in better condition in 1999. Informal observations since the 1999 assessment have shown a decline in some of the riparian habitat.

Historical photos show badly degraded riparian areas that had improved in condition before the conversion to sheep. However current plant composition found on the riparian areas are still not what would be expected when compared with reference sites.

Environmental Effects

Proposed Action

The maximum number of sheep on the allotment as described in the proposed action at any one time is 2,000 head. This early season grazing is followed by rest beginning July 6 and ending Sept. 24 when 2,000 head of sheep return to graze from Sept. 25 to Nov. 15th. This grazing

schedule should benefit trees and shrubs, which are key species in riparian stabilization. Moreover, this rest period allows riparian vegetation regrowth and carbohydrate replenishment.

No Action Alternative
This alternative also contains rest, but no second or fall/winter grazing season, which would also benefit the riparian vegetation. However, the key difference between the proposed and the no action is that sheep numbers would be ~50% higher during the early season which directly increases grazing intensity and pressure on the allotment.

Analysis on the Public Land Health Standard 2 for Riparian Areas
Standard 2 for healthy riparian zones was being met in 1999. Virtually all the riparian zones assessed show definite signs of improvement over 1994 as evidenced by a widening zone. There was a noticeable decrease in bare soil and cut banks and recruitment of woody and herbaceous riparian species. Range developments and grazing management practices designed to draw livestock out of the riparian areas should be encouraged with livestock numbers adjusted accordingly with drought. Under the proposed action, this allotment should continue to meet land health standard 2.

Wild and Scenic Rivers

Affected Environment
Trapper Creek and Northwater Creek were found eligible for inclusion in the National Wild and Scenic Rivers System through the Roan Plateau Eligibility Report for the National Wild and Scenic Rivers System, Glenwood Springs Field Office, 2002.

Trapper Creek and Northwater Creek have the Outstandingly Remarkable Value (ORV) for fish. Known conservation populations of the Colorado River cutthroat trout are found in both Trapper and Northwater Creeks. The Colorado River cutthroat trout is a native trout species of the Colorado River Basin and is designated as a special status species by the states of Colorado, Utah, and Wyoming, and a Sensitive species by the BLM in Colorado and Utah. Trapper and Northwater Creeks are regionally and nationally important as producers of native, genetically pure, and naturally reproducing Colorado River cutthroat trout and provide an adequate diversity of quality habitats necessary to support and sustain this fish species.

In addition, Northwater Creek also has a botanical/ecological ORV. It contains cool, mesic mid-elevation plateaus and deep canyons characterizing the Utah High Plateau Ecoregion. Hanging garden seeps are most abundant on north-facing slopes along Northwater Creek and creates a hanging garden environment, which supports the Hanging garden sullivantia, a Colorado endemic plant. The occurrences in these drainages are outstandingly remarkable or nationally/regionally significant when contrasted with other areas within the ecoregion.

Environmental Effects
Proposed Action
Livestock grazing can have direct and indirect effects on the ORVs. Grazing can negatively affect fisheries habitat by reducing streambank vegetation and raising stream temperatures; trampling of streambanks can lead to increased sediment deposition; and defecating in streams can lead to reductions in water quality that are necessary for maintenance of fisheries habitat. The Utah High Plateau Ecoregion could be directly impacted by grazing or trampling or

indirectly impacted by changes in plant community composition or introduction of noxious weeds. Grazing impacts to the hanging garden sullivantia are not anticipated as this plant is located within seeps along the cliffs which are inaccessible to livestock.

In addition, specific management actions will be applied that will protect relevant and important values in the Trapper/Northwater Creek ACEC including Colorado River cutthroat trout habitat and botanical resources, which would indirectly benefit the Wild and Scenic River ORVs.

Management Actions affecting livestock grazing in these ACECs include:

1. Allow No Ground Disturbance (NGD/NSO) within high and moderate risk habitat areas for Colorado River cutthroat trout. Allow no loss or degradation of fish habitat that supports Colorado River cutthroat trout high risk habitat.
2. Manage livestock grazing within the ACECs so that streambank damage does not exceed 25 percent of the stream length.
3. Apply NGD/NSO within occupied habitat for rare plants.
4. Manage livestock grazing within habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the Colorado Livestock Grazing Management Guidelines.
5. Manage significant grassland and shrubland communities to retain mid-to late-seral stage condition.

Under the proposed action, the Clough-Alber allotment would be grazed by sheep from 5/16 to 7/6 and from 9/25 to 11/25. The allotment would be grazed by sheep only and the sheep would be accompanied by a herder who is to ensure that sheep are moved frequently (camps moved every 5-7 days) and sheep will not be brought back to the same area once it has been used in a grazing season. This grazing period incorporates grazing rest during the critical growing season and the provisions in the AMP to move the sheep herds every five-to-seven days would allow additional time for plant recovery and regrowth following grazing which should maintain or improve riparian and upland conditions for cutthroat trout habitat, rare plants and significant plant communities. Continuation of livestock grazing, as proposed, should indirectly maintain or improve the ORVs of the river segments.

No Action Alternative

Under the No Action alternative, the allotment would continue to be grazed by sheep only, but there would be an additional 785 sheep grazing the allotment from 5/16-6/30 and 1000 fewer sheep grazing in the fall. The effects would be similar to the Proposed Action except that the added spring grazing may have greater impacts on herbaceous vegetation and less browsing of shrubs as sheep tend to prefer herbaceous vegetation when it is actively growing in the spring. Sheep grazing in the spring would be less likely to spend time grazing in riparian areas and less likely to browse on riparian shrubs which may benefit fisheries and riparian habitat. Effects on the botanical and ecological ORV would be very similar to the Proposed Action.

Wildlife: Aquatic / Fisheries

Affected Environment

Aquatic wildlife includes animals, either vertebrate or invertebrate, which live in water for most or all of their life. Aquatic habitats include: lakes, ponds, springs, seeps, rivers and streams.

Aquatic wildlife species are vulnerable to grazing and other authorized land use activities due to the fragility of their aquatic environments.

Amphibians likely present in ponds, seeps and springs would include various species of frogs (e.g., western chorus frog (*Pseudacris triseriata*)), and toads (e.g., Great Basin spadefoot (*Spea intermontana)),* which are adapted to seasonal flow regimes in arid environments. Aquatic macroinvertebrates most likely to occur in the allotment include water striders, water boatmen, predaceous diving beetles, and the aquatic larvae of caddisflies and true flies.
Table 3-14 summarizes the latest: 1) species list (USFWS 2010) from the U. S. Fish and Wildlife Service for Federally listed, proposed, or candidate aquatic wildlife species and 2) Colorado BLM State Director's Sensitive Species List for aquatic species; that may occur within the CRVFO and be impacted by the proposed action.

Table 3-11. Special Status Aquatic Wildlife Species Potentially Present within the Allotments

Federally Listed, Proposed or Candidate Aquatic Wildlife Species	
None	
Colorado BLM Sensitive Aquatic Species	
Species	Habitat/Range
Colorado River cutthroat trout (CRCT) (*Oncorhynchus clarkii pleuriticus)*	CRCT are one of three subspecies of native trout found in Colorado. CRCT prefer clear, cool headwaters streams with coarse substrates, well-distributed pools, stable streambanks, and abundant stream cover. CRCT have been documented as occurring in Parachute Creek, Abrams Creek, Battlement Creek, Mitchell Creek, North Thompson Creek, Northwater Creek, Trapper Creek and Red Dirt Creek. It is likely that all of the perennial waters capable of harboring fish historically contained this native trout species. CRCT have hybridized with non-native salmonids in many areas, reducing the genetic integrity of this subspecies. Rainbow trout hybridize with cutthroat trout. Brook and brown trout tend to replace them in streams and rivers.

The Clough-Alber allotment contains two perennial streams that contain brook trout (*Salvelinus fontinalis*) and CRCT.

Northwater Creek. Northwater Creek was surveyed on June 13, 2008. Northwater Creek is a tributary to East Middle Fork Parachute Creek, then Parachute Creek, and finally the Colorado River. Monitoring was done to observe effects of livestock grazing on the stream.

The survey found that the stream habitat condition was generally good on the creek. However, the BLM stream segment located above the private property was grazed heavily. A temporary electric fence was installed to keep cows out of an area where willows had been planted, but it did not work as intended. Willow plantings above the private property had ~60% survival through the winter. Many of the cages were not effective due to high spring flows.

The BLM segment located below the private property was in good condition with no recent livestock damage observed. What appeared to be natural bank damage was present possibly due to high spring flows. This segment had desirable riparian species and good vegetative cover. Houndstongue and Canada thistle were prominent adjacent to the stream particularly in disturbed

areas. A natural barrier which will prohibit upstream fish movement was noted and is about 9-10 feet in height.

Trapper Creek. Trapper Creek was surveyed in cooperation with Colorado Division of Wildlife to determine the success of fingerling CRCT stocking conducted in October of 2008. Trapper Creek was sampled using a backpack electroshocker on July 27, 2009. The riparian area within the lower exclosure was found to be lush with grasses. In some sub-reaches, grass provided an overstory that completely covered the stream. The stream channel tended to be narrow; ranging from approximately 1 to 4 feet in cross section. The survey concluded:

- The grazing exclosure seemed to be meeting its purpose and demonstrated what the upper reaches of Trapper Creek could look like in the absence of grazing.
- The stocked fingerlings seemed to have had excellent rates of survival and growth. The adult fish sampled were surprisingly large given the size of the stream, suggesting that Trapper Creek provides excellent habitat.

Environmental Effects

Proposed Action

Maintaining the current number of animal unit months and similar periods of use, along with application of proposed terms/conditions, should continue to maintain the current aquatic habitat conditions. Current aquatic habitat conditions are improving and must be maintained in both suitability and connectivity to ensure viable populations of aquatic species commensurate with the species and habitat potential. Annual monitoring and evaluation of the riparian areas for stubble height and bank alteration is recommended to ensure that the upward trend in riparian condition continues.

The terms and conditions of this permit combined with the ACEC stipulations would be sufficient to maintain or improve CRCT populations in the Northwater and Trapper creeks. Up to 25% stream bank alteration combined with 4" stubble heights would specifically maintain appropriate stream width to depth ratios and retain enough sediment for water quality requirements needed for the CRCT species. Also the $\leq$ 40% utilization criteria of all herbaceous and woody species would complement habitat and stream health requirements for this species.

No Action Alternative

Under this alternative the existing AMP would not be modified and the existing grazing use would continue. This would have little change if any to CRCT populations in and around the allotment area if ACEC management actions are upheld.

Analysis on the Public Land Health Standard 3 for Wildlife

Based on overall habitat condition within the landscape area, standard 3 was being achieved in the 1999 assessment and is still being achieved. The proposed action likely will not result in decreased flows or adverse modification of aquatic habitat and should have no measurable impact on the area's ability to continue to meet standard 3 for aquatic wildlife. If the results of future monitoring data indicate that conditions are failing to meet standard 3 or are trending away from meeting Standard 3, and livestock is a substantial contributing factor, action would be taken to ensure progress toward meeting the standard.

Wildlife: Migratory Birds

Affected Environment

The Migratory Bird Treaty Act (MBTA) provides protections to native birds, with the exception of certain upland fowl managed by state wildlife agencies for hunting. Within the context of the MBTA, "migratory" birds include non-migratory "resident" species as well as true migrants. For most migrant and resident species, breeding habitat is of special importance because it is critical for supporting reproduction in terms of both nest sites and food. In addition, because birds are generally territorial during the nesting season, their ability to access and utilize sufficient food is limited by the quality of the territory occupied. During non-breeding seasons, birds are generally non-territorial and able to feed across larger areas and wider ranges of habitat.

A variety of migratory bird species occupy, or have the potential to occupy, the geographic area. Migratory bird species that are federally listed under the Endangered Species Act of 1973, as amended, or classified by the BLM as sensitive species, are addressed under the section on Special Status Wildlife and Fish Species. The current section addresses migratory birds that may inhabit the proposed project area. Emphasizing the need to conserve declining species, the U.S. Fish and Wildlife Service (USFWS) has published a list of Birds of Conservation Concern (BCC) that warrant conservation attention to stabilize or increase populations or secure threatened habitats. This section also addresses species that are listed as BCC species (USFWS 2008). This analysis focuses on BCC species, on non-BCC species that are neotropical (long-distance) migrants, and raptors—three groups highly vulnerable to habitat loss or modification on their breeding grounds.

Species on the BCC list that are potentially present based on habitat preferences and known geographic ranges, include the flammulated owl (*Otus flammeolus*), Lewis's woodpecker (*Melanerpes lewis*), pinyon jay (*Gymnorhinus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), and Cassin's finch (*Carpodacus cassinii*). The flammulated owl and Brewer's sparrow are also listed as BLM sensitive species and addressed in the section on Special Status Wildlife. The potential for occurrence of Lewis's woodpecker is low due to its close association with riparian cottonwood woodlands and to pinyon-juniper habitats with a component of ponderosa pine—neither of which is a major habitat type within the project vicinity.

Cassin's finch nests at higher elevations in montane and subalpine coniferous forests but often disperses to lower elevations following the breeding season and may remain there until the following spring. Mixed mountain shrub habitats containing large, tree-like oak brush are among the vegetation types sometimes supporting winter use by Cassin's finch.

Brewer's sparrow prefer open contiguous big sage and to a lesser extent mountain shrub or salt brush communities for nesting. These sparrows use the plant or its understory for a nesting site. Nest failure will not usually necessitate re-nesting for this species, which makes habitat availability a key component for the successful conservation of this species.

Non-BCC species likely to occur in the geographic area of the allotment include several neotropical migrants associated with mixed mountain shrub habitats. These include the common nighthawk (*Chordeiles minor*)(not a raptor), common poorwill (*Phalaenoptilus nuttallii*), broad-tailed hummingbird (*Selasphorus platycercus*), dusky flycatcher (*Empidonax oberholseri*), western scrub-jay (*Aphelocoma californica*), Virginia's warbler (*Oreothlypis virginiae*), orange-

crowned warbler (*O. celata*), MacGillivray's warbler (*Oporornis tolmiei*), lazuli bunting (*Passerina amoena*), lesser goldfinch (*Spinus psaltria*), black-headed grosbeak (*Pheucticus melanocephalus*), and spotted towhee (*Pipilo maculata*).

Neotropical migrants such as the black-chinned hummingbird (*Archilochus alexandri*), mountain bluebird (*Sialis currucoides*), western bluebird (*S. mexicana*), plumbeous vireo (*V. plumbeus*), black-throated gray warbler (*Dendroica nigrescens*), and chipping sparrow (*Spizella passerina*). Two other Neotropical migrants, the ash-throated flycatcher (*Myiarchus cinerascens*) and gray flycatcher (*Empidonax wrightii*) are potentially present.

Raptors use the area for nesting and hunting. Species most likely to occur within or near the Clough-Alber Allotment include the American kestrel (*Falco sparverius*), sharp-shinned hawk (*Accipiter striata*), Cooper's hawk (*A. cooperi*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginiana*), long-eared owl (*Asio otus*), and northern pygmy-owl (*Glaucidium gnoma*).

Environmental Effects

Proposed Action

Decreasing numbers of sheep (2,000 head) during the migratory bird nesting timeframe of May 15-July 15 would be a benefit for all species present. Arboreal and cavity nesting species are not generally impacted by grazing activities. Brewer's sparrows typically nest under dense canopy cover or well within the selected shrub thus protecting them from short duration sheep browse behavior.

No intentional take of native bird species is anticipated under the proposed action. Grazing by sheep could result in the accidental disturbance or destruction of ground nests. This impact is expected to be negligible and would not influence populations of migratory birds on a landscape level. Pre-existing 4" new grass growth combined with moving sheep frequently would likely have beneficial effects for migratory birds.

No Action Alternative

More sheep numbers (2,785 head) and longer grazing durations during the migratory bird nesting timeframe of May 15-July 15 would likely result in more pressure on nesting behavior of these birds. Heightened pressure during breeding season could result in reduced nesting success. However, more grazing in the fall could result in decreased stem density and establishment of woody species needed for the following year's potential habitat.

Land Health Standards

Data from 1999 land health assessments showed the vegetative community to be in good condition, providing suitable and productive upland habitat. Some problems were noted in the Clough Alber allotment, mainly in riparian areas. The proposed action should result in improved riparian conditions and achievement of land health standards.

Wildlife: Sensitive, Threatened, and Endangered

Affected Environment

Greater Sage-grouse (*Centrocercus urophasianus*):
A candidate for Federal listing, GreaterSage-grouse are found only in areas where sagebrush is abundant. Sage-grouse prefer relatively open sagebrush flats or rolling sagebrush hills. In winter, sagebrush accounts for 100% of the diet for these birds. In addition, it provides important escape cover and protection from the elements. In late winter, males begin to concentrate on traditional strutting grounds or leks. Females arrive at the leks 1-2 weeks later. Leks can occur on a variety of land types or formations (windswept ridges, knolls, areas of flat sagebrush, flat bare openings in the sagebrush. Breeding occurs on the leks and in the adjacent sagebrush, typically from March through May. Females and their chicks remain largely dependent on forbs and insects for food well into early fall.

Within the CRVFO sage-grouse are still present in the northeast part of the Field Office in the Northern Eagle/Southern Routt population. Though small (<500 birds), this population probably has, or had, a relationship with the larger population in Moffat, Rio Blanco and western Routt counties, and probably with the Middle Park population to the east. The habitat in the Clough-Alber allotment area is part of the Parachute-Piceance-Roan (PPR) population which is part of a smaller sub-population (<200 birds) that is on the most southerly range of Greater Sage-grouse habitat.

The entire Clough-Alber allotment is within identified Greater Sage-grouse preliminary general habitat (PGH) and overall habitat. PGH represents sage-grouse habitat with small populations, facing current or imminent threats, or other factors that affect management and conservation opportunities. This habitat may be managed for habitat conservation and/or restoration based on needs for connectivity, potential for restoration, or other local issues. The BLM has cooperatively adopted this habitat delineation with state fish and wildlife agencies to enhance conservation efforts in these designated areas. Further delineation of habitat has been developed by Colorado Parks and Wildlife based on telemetry data and habitat selection models. These high resolution mapping models are used to help guide habitat management activities for sage grouse within the PPR population. (CPW website). Exact acreage has not been calculated but essentially the south facing uplands that are absent of trees, north of Northwater Creek along with the confluences of Northwater with Yellow Jacket creek to the riparian terrace north of Raspberry creek represent the best available habitat for Greater Sage-grouse within the Clough-Alber allotment.

The allotment is approximately 8 miles from the nearest active lek site and approximately 2.25 miles from mapped brood rearing habitat. No radio-telemetry data has shown Greater sage-grouse specifically using this allotment but it is considered part of the occupied range and habitat exists that would benefit these birds. Given the mesic nature, available mountain big sagebrush (*A. tridentata pauciflora*) communities, transitional mountain shrub communities, windswept ridges, and riparian areas makes this allotment suitable for brood rearing, late summer-fall, and winter habitats for sage grouse (CCP 2008).

Environmental Effects
Proposed Action
Domestic sheep are intermediate feeders making high use of forbs, but also using a large volume of grass and shrub species like sagebrush. Sheep consume rangeland forbs in occupied sage-grouse habitat and, in general, forb consumption may reduce food availability for sage-grouse.

This impact is particularly important for pre-laying hens, as forbs provide essential calcium, phosphorus, and protein. A hen's nutritional condition affects nest initiation rate, clutch size, and subsequent reproductive success. Other effects of direct competition between livestock and sage-grouse depend on condition of the habitat and the grazing practices. Thus, the effects vary across the range of the Greater Sage-grouse. For example, Aldridge and Brigham (2003, p. 30) suggest that poor livestock management in mesic sites, which are considered limited habitats for sage-grouse in Alberta (Aldridge and Brigham 2002, p. 441), results in a reduction of forbs and grasses available to sage-grouse chicks, thereby affecting chick survival.

Other effects of grazing are related to livestock trampling of grouse and habitat. Although the effect of trampling at a population level is unknown, outright nest trampling has been documented (Rasmussen and Griner 1938) and the presence of livestock can cause sage-grouse to desert their nests (Patterson 1952), leading to increased potential for predation. Livestock also may trample sagebrush seedlings, thereby removing a source of future sage-grouse food and cover. Trampling of soil by livestock can reduce or eliminate biological soil crusts making these areas susceptible to *Bromus tectorum* and other weedy species invasion (USFWS 2010).

The BLM is signatory to the Colorado Greater Sage-Grouse Conservation Plan (CCP 2008) which identifies one of the greatest threats affecting sage grouse populations as chick survival. Brood rearing habitat is one of the most important habitats for sage grouse and historically impacted within the allotment based on the 1999 Land Health assessments. No areas in the Clough-Alber allotment fit the specific CCP definition for breeding habitat, and although undocumented in the permit area, females with broods may move large distances to find suitable habitat (Connelly 1982, Gates 1983) as exhibited in Clough –Alber riparian areas. The terms and conditions would complement sage grouse brood rearing habitat for food and concealment needs near riparian areas for early brood rearing activities. CCP standards for Summer-Fall habitats is generally being exceeded for sagebrush canopy cover, thus extended sheep grazing may improve sage grouse habitat by targeting sagebrush and other shrubs in the fall when they are highest in protein content. Other CCP criteria needed to maintain Late-summer/Fall sage grouse habitat is listed in the below mitigation section. The proposed action is expected to maintain winter habitat sagebrush criteria for sage grouse.

No Action Alternative
This alternative would allow for higher numbers of sheep in the spring with earlier timeframes in the fall. This alternative would have greater difficulty meeting Greater Sage-grouse standards due the likelihood of higher use to grasses and forbs in the spring when they are needed for brood rearing grouse and less use on upland shrub canopy covers which would continue to leave those vegetation communities largely unchecked thus not providing adequate understory cover.

Mitigation
See CCP criteria in the AMP under sage-grouse. These prescriptions would adequately address the mitigation needed for the proposed action.

Analysis on the Public Land Health Standard 3 for Wildlife
All Land Health Standards for TES wildlife species were meeting standard 4 in 1999. Greater Sage-Grouse was not part of the TES assessment at that time, but it is now considered a TES candidate species on the Roan Plateau. Condition descriptions used to analyze sage grouse

habitat in this section were largely pulled from riparian and upland vegetation health data since this species is so closely tied to its habitat. The proposed action contains conservation measures that should result in continued achievement of land health standard 3.

Wildlife: Terrestrial

Affected Environment

The allotment supports terrestrial wildlife species that summer, winter, or migrate through the region. The current condition of wildlife habitats varies across the landscape. Some habitat is altered by power lines, pipelines, fences, public recreation use, residential and commercial development, vegetative treatments, livestock and wild ungulate grazing, oil and gas development, and roads/trails. These factors have contributed to some degradation/fragmentation of habitat as well as causing disturbance to some species.

Mammals

Big Game. The mule deer (*Odocoileus hemionus*) is a recreationally important species that is common throughout suitable habitats in the region. Another recreationally important big game ungulate (hoofed animal), the Rocky Mountain elk (*Cervus elaphus nelsonii*), is also present. Mule deer and elk usually occupy higher elevations, forested habitat, during the summer and then migrate to sagebrush-dominant ridges and south-facing slopes at lower elevation in the winter. BLM lands provide a large portion of the undeveloped winter range available to deer and elk. Elk prefer higher elevation sagebrush communities to calf. The entire Clough-Alber allotment is within mapped Elk production habitat (calving grounds). The CRVFO's RMP allocated existing forage proportionately to livestock and big game, the criterion being active preference for livestock and 5-year average demand for big game.

Numerous small mammals may reside within allotment or the surrounding area including ground squirrels (*Spermophilus spp*.), chipmunks (*Neotamias spp*.), rabbits (*Sylvilagus spp*.), skunks (*Mephitis mephitis*), and raccoons (*Procyon lotor*). Many of these small mammals provide the main prey for raptors and larger carnivores. These species are most likely to occur along the drainages, near the margins of dense oakbrush, in pinyon-juniper woodland, or in the small area of aspen and spruce/fir. Larger carnivores expected to occur include the bobcat (*Lynx rufus*) and the coyote (*Canis latrans*). Black bears (*Ursus americanus*) make use of oaks and the associated chokecherries and serviceberries for cover and food, while mountain lions (*Felis concolor)* are likely to occur during seasons when mule deer (*Odocoileus hemionus*) are present.

Resident Raptors and Other Birds. Birds of prey (eagles, falcons, hawks, and owls) may migrate through the area or nest in cottonwoods, conifers, or very tall oaks, while the numerous songbirds and small mammal populations provide the primary prey base. Common raptor species in the CRVFO include the: red-tailed hawk (*Buteo jamaicenis*), golden eagle (*Aquila chrysaetos)* American kestrel (*Falco sparverius*), great horned owl (*Bubo virginanus*), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*A. striatus*).

Passerine (perching) birds commonly found in the area include the: American robin (*Turdus migratorius*), pinyon jay (*Gymnorhinus cyanocephalus*) western scrub-jay (*Aphelocoma californica*), and black-billed magpie (Pica pica). Two gallinaceous species, the wild turkey (*Meleagris gallopavo*) and the Dusky grouse (*Dendragapus obscures*), are found throughout the CRVFO.

Numerous streams, rivers, reservoirs, ponds, and associated riparian vegetation provide habitat for a wide variety of waterfowl and shorebirds. Common species include: great blue herons (*Ardea Herodias*), Canada geese (*Branta canadensis*), mallards (*Anas platyrhynchos*), pintails (*A. acuta*), gadwalls (*A. strepera*), and American wigeon (*A. americana*) are common.

Reptiles and Amphibians. Reptile species possible in the area include the western fence lizard (*Sceloporus undulatus*) and gopher snake (bullsnake) (*Pituophis catenifer*) in xeric shrublands or grassy clearings and the western terrestrial garter snake (*Thamnophis elegans*) along creeks/riparian areas. Other reptiles potentially present along creeks, although more commonly found at lower elevations than the site, are the milk snake (*Lampropeltis triangulum*) and smooth green snake (*Opheodrys vernalis*). Springs and stock ponds could provide habitat for species such as the Tiger Salamander (*Ambystoma tigrinum*), Great Basin Spadefoot Toad (*Spea intermontana*) or the Western Toad (*Bufo boreas*).

Environmental Effects

Proposed Action

Livestock grazing can alter vegetation structure, composition, and function. Livestock grazing can also have a beneficial effect on forage quality by removing the rough or dried seedheads and stems, while leaving or creating the more palatable leaves for deer or elk to graze later in the season. Effects on terrestrial wildlife are dependent on the species of interest and may be adverse or beneficial depending on livestock grazing numbers, timing, frequency, and intensity.

Riparian areas and species that inhabit riparian areas (e.g., nesting migratory birds) are especially vulnerable to disturbance because riparian areas are very limited and often fragmented. Year-long and summer grazing can be particularly damaging to riparian vegetation (Kauffman and Krueger 1984) whereas late fall and winter grazing occurs when water levels are low, stream banks are dry, and vegetation is dormant, thus minimizing the effects of grazing (e.g., trampling, soil compaction, erosion, and browsing).

The proposed action is to graze sheep during the spring and fall leaving an average minimum 4 inch stubble height of herbaceous riparian vegetation. In addition, the proposed livestock AUMs are estimated to not exceed 40% average utilization by weight on key upland grass species. Livestock grazing that maintains the above riparian and upland standards would: (1) be expected to maintain vertical and horizontal vegetative structure and complexity where it presently exists and (2) provide for adequate amounts of upland herbaceous vegetation necessary to continue to meet the needs of the various terrestrial wildlife species. The proposed grazing schedule has less potential to negatively impact riparian and upland vegetation, thus terrestrial wildlife.

Elk numbers in GMU 32 are currently exceeding CPW herd objectives by 2,760 animals (2009 population estimates). Management of big game numbers is the responsibility of the state and their populations are not directly manipulated by the BLM. Due to the fact that this allotment is entirely within calving grounds, it is anticipated that that forage competition would be a factor on range health conditions, primarily in grass production where livestock grazing and elk grazing overlap the most. Cow elk will be heavily dependent on spring grasses for milk production and post-partum/winter nutritional deficits.

Routine maintenance of fences, waters and other livestock operations should not negatively impact terrestrial wildlife or their habitats over the ten-year term of the permits. Such activities would be short term in duration and localized and would not result in new surface disturbances or loss of habitat.

No Action Alternative
Under this alternative the existing AMP would not be modified and the existing grazing use would continue. This alternative is expected to cause more competition with big game as current sheep numbers would have more impact in the spring thus leaving less palatable plant material throughout the growing season when deer and elk commonly use this allotment area.

Analysis on the Public Land Health Standard 3 for Wildlife
A formal Land Health Assessment was conducted on this landscape in 1999. It noted "There do not appear to be any limiting factors to the health and productivity of wildlife populations on the Roan Plateau. The vegetative communities on most of the upland assessment sites were in mid to late seral stage. Management actions designed to increase the distribution of age classes within and between communities may slightly improve wildlife habitat." Since this assessment elk numbers have increased and based on 2009 CPW game unit objectives, it is expected that inflated elk numbers compounded with increased forage demand during calving activities would make land health achievement or improvement slightly more difficult with the "no action" alternative. The allotment is supporting a broad area of habitat where terrestrial wildlife can find food, shelter and security. Grazing as proposed is predicted to only result in insignificant and/or discountable effects to terrestrial wildlife and their habitat. Thus it is concluded that the proposed action and implementation of the AMP will promote continued achievement of public land health standard 3 across the landscape.

If future monitoring indicates that conditions are failing to meet the standard 3 or are trending away from meeting the standard 3 and livestock is a substantial contributing factor, action would be taken to ensure progress toward meeting the standard for healthy wildlife communities.

CUMULATIVE EFFECTS
Soil and Water. Cumulative impacts to soil and water resources can occur from existing roads and trails throughout the allotment. Roads and trails contribute to increased surface runoff and accelerated erosion, especially where proper drainage is lacking. BLM Road #8006 runs adjacent to Northwater Creek for a substantial portion of the allotment. The proximity of the road to the stream has influenced the soils and water quality, by confining the stream channel in places, limiting riparian vegetation, and compacting soils. The road also facilitates livestock trailing along the creek, which further degrade soils and water quality. Other impacts such as vegetation treatments and weed treatments may also change water infiltration or runoff rates and affect soil and water resources. Cumulative effects to soil and water are difficult to quantify; however, if proper best management practices are implemented along with compliance with the terms and conditions of the AMP, cumulative impacts to soils and water from livestock grazing can be substantially mitigated.

Wildlife (including Special Status Species). The area covered by the proposed action only comprises a small portion of the watershed. Many other land use activities (e.g., recreation, road construction/maintenance) occur within the allotment boundaries and the watershed. All of these

activities have altered the amount of suitable and potentially suitable habitats for terrestrial wildlife species. Cumulatively, many of the future actions planned on private and other lands may have some undetermined effect on wildlife including special status species habitat. The proposed action would create negligible landscape-level cumulative impacts to wildlife when viewed in comparison with those activities currently occurring and reasonably certain to occur on adjacent private/other lands

RESIDUAL EFFECTS

None

5. Tribes, Individuals, Organizations, or Agencies Consulted

Erin Leifeld consulted with the Southern Ute Tribe, Ute Tribe of the Uinta and Ouray Bands, and Ute Mountain Ute Tribe regarding this proposal.

Grazing permittee

6. List of Preparers

Members of the CRVFO Interdisciplinary Team who participated in the impact analysis of the Proposed Action and alternatives, development of appropriate mitigation measures, and preparation of this EA are listed in Table 6-1, along with their areas of responsibility.

Table 6-1. BLM Interdisciplinary Team Authors and Reviewers

Name	Title	Areas of Participation
Isaac Pittman	Rangeland Management Specialist	NEPA lead, Range
Carla DeYoung	Ecologist	Areas of Critical Environmental Concern; Vegetation; T/E/S Plants; Land Heath Standards
Greg Wolfgang	Outdoor Recreation Planner	VRM, Travel Management
Kimberly Miller	Outdoor Recreation Planner	Wild and Scenic Rivers, Wilderness, Recreation
Erin Leifeld	Archaeologist	Cultural Resources and Native American Concerns
Darren Long	Wildlife Biologist	Migratory Birds, Terrestrial Wildlife and T/E/S Terrestrial Wildlife, Aquatic Wildlife and T/E/S Aquatic Wildlife
Everett Bartz	Rangeland Management Specialist	Wetlands & Riparian Zones
Pauline Adams	Hydrologist	Air Quality, Water Quality, Soils
Kristy Wallner	Rangeland Management Specialist	Invasive, Non-Native Species (Noxious Weeds)

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Appendix – Clough-Alber Allotment Management Plan (AMP)

CLOUGH-ALBER ALLOTMENT MANAGEMENT PLAN
Colorado River Valley Field Office
Prepared By Isaac Pittman
Rangeland Management Specialist

Table of Contents

I. Introduction

The Clough-Alber allotment, consisting of 5,323 acres, is located in the northwest corner of the Roan Plateau; Township 5 South Range 94 & 95 West. The allotment ranges in elevation from 7,600 to 9,300 feet and averages approximately 20 inches of precipitation a year. Common vegetation types include aspen, conifer, mountain shrub and sagebrush.

The preparation of a management plan was recommended in the 1990 evaluation summary of this allotment. In that evaluation it was noted that more emphasis needed to be placed on monitoring of riparian zones. It was also identified in the Record of Decision for Approval of Portions of the Roan Plateau Resource Management Plan Amendment that BLM should "develop, implement, monitor, and review AMPs on a regularly scheduled basis with grazing permittees. The major focus of this Allotment Management Plan is to address riparian issues and develop corresponding objectives and management actions.

This management plan is specific to the Clough-Alber allotment and serves as a supplement to the land use plan.

II. Land Use Planning Guidance

Grazing and Rangeland Goal:

- Provide livestock forage while maintaining or enhancing healthy landscapes.

Vegetation, Weeds, and Riparian/Wetland:

- Develop and implement economically feasible grazing systems and range improvements.
- Defer grazing use for two growing seasons on disturbed areas larger than 0.5 acres (e.g., a fire event, reclamation of disturbed lands, or vegetation treatment), or until site-specific analysis and monitoring data indicate that vegetation cover, species composition, and litter accumulation are adequate to support and protect watershed values and meet vegetation objectives.
- Avoid or mitigate activities that could cause a downward trend in the condition of riparian resources or functioning condition.
- Initiate activity plans that identify habitat improvement projects to achieve desired conditions.
- Implement grazing management on riparian/wetland areas that will result in achieving Proper Functioning Condition and late-seral stage plant community development and improve fisheries habitat.
- Maintain healthy native vegetation free of noxious weeds and exotic (introduced) species.
- Require the use of weed free hay and feed for livestock.
- Use only native plant species for revegetation (preferably locally collected).

Special Status Fish and Wildlife:

- Implement appropriate actions as soon as practicable, not later than the start of the next grazing year if livestock grazing management practices or utilization levels are found to be substantial factors in stream bank damage along any occupied cutthroat trout streams.

Greater Sage-Grouse:

The following prescriptions have been identified in the Colorado Greater Sage-Grouse Conservation Plan (CCP). The following definitions and criteria would apply to habitat available in the Clough-Alber allotment.

Summer-Fall habitat is defined as those habitats that provide food and cover in the summer when breeding habitat desiccates. These habitats include higher elevation mixed shrub communities, wet meadows, riparian areas and irrigated pastures that grouse inhabit from July through September. Grouse can move several kilometers to these habitats.

- The proposed action would need to meet the entire Summer-Fall structural habitat criteria outlined in Table A-2 of the Colorado Greater Sage-Grouse Conservation Plan (2008). Vegetation requirements are listed in Table A below. Specific measurement protocols can be referenced in the CCP. Grey shaded columns are those specific to the Clough-Alber Allotment.

Table A. SUMMER-FALL HABITAT

	Greater Sage-Grouse (Colorado)		Connelly et al. (2000)	
Vegetation Variable	**Arid**	**Mesic**	**Arid**	**Mesic**
Sagebrush Canopy (%)	10 - 25	10 -25	10 - 25	10 - 25
Non-sagebrush Canopy(%)	5 - 10	5 -15	-	-
Total Shrub Canopy (%)	20 - 35	20 - 40	-	-
Sagebrush Height (cm)	30 - 65 (11.8 - 25.6 inches)	35 - 70 (13.8 -27.6 inches)	40 - 80 (15.7 -31.5 inches)	40 - 80 (15.7 - 31.5 inches)
Grass Cover (%)	10 - 30	15 - 40	-	-
Forb Cover (%)	5 - 15	10 -25	>15	>15
Grass Height (cm)	10 - 15	10 - 20	Variable	Variable
	(3.9 - 5.9 inches)	(3.9 - 7.9 inches)	-	-
Forb Height (cm)	5 - 10	5 - 15	Variable	Variable
	(2.0 -3.9 inches)	(2.0 - 5.9 inches)		

Winter Habitat is defined as sagebrush communities inhabited by grouse from October through February. These habitats provide high quality sagebrush cover and forage. Wind scoured or leeward ridges may also provide important refuge for wintering sage grouse. Herbaceous cover is not considered a factor for winter habitat as grouse are more dependent exclusively on sage.

- The proposed action would need to meet the entire Winter Habitat structural habitat as outlined in the CCP (Table A-3). Measurement protocols are also described within the

CCP (2008). Vegetation requirements are listed below in Table B. Specific measurement protocols can be referenced in the CCP. Grey shaded columns are those specific to the Clough-Alber allotment.

Table B.	WINTER HABITAT			
	Greater Sage-Grouse (Colorado)		Connelly et al. (2000)	
Vegetation Variable	**Arid**	**Mesic**	**Arid**	**Mesic**
Sagebrush Canopy (%)	20 - 40	25 - 40	10 - 30	10 - 30
Sagebrush Height (cm)	20 - 40 (7.9 - 15.7 inches)	25 - 40 (9.8 -27.6 inches)	25 - 35 (9.8 -13.8 inches)	25 - 35 (9.8 - 13.8 inches)

Cultural Resources:

- Have a qualified archeologist on site during construction/maintenance activities as determined by the Cultural Resource Specialist.

Grazing and Rangeland:

- Develop, implement, monitor, and review AMPs (Allotment Management Plans) on a regularly scheduled basis with grazing permittees with priority for allotments determined not to be meeting Colorado Standards for Public Land Health.
- Apply guidelines and Best Management Practices (BMPs) to rest and defer grazing of riparian areas.
- Ensure that Colorado Standards for Public Land Health are being met through land health surveys, and application of the GSFO Resource Monitoring Plan. Use a combination of administrative solutions (season of use revisions, livestock exclusion, and stocking level adjustments) and rangeland projects (fences, ponds, and so forth) to direct livestock use to meet resource objectives and Colorado Standards for Public Land Health.
- Abandon and rehabilitate rangeland projects that do not function to maintain resource values and meet management objectives.
- Identify criteria for determining the beginning and end of droughts…
- Initiate proactive management (i.e. season of use adjustments, reduced stocking levels, or complete rest) to mitigate the drought effects upon a determination by the Field Manager that a drought has begun.
- Initiate gradual restocking and season of use adjustments upon a determination by the Field Manger that a drought has ended.

Livestock Management BMPs:

- Require implementation of management tools such as fencing, stock ponds, and salt to manage livestock distribution as needed, and discourage grazing in unwanted areas such as riparian vegetation and sensitive wildlife habitat.
- Adjust livestock grazing in heavily used areas to allow native vegetation an adequate period of recovery to maintain plant health.
- Where an adequate seed bank does not exist, restore temporarily disturbed areas by seeding with native species and planting woody species. A weed-free straw or hay

mulch may be applied and crimped in place or a biodegradable erosion-control fabric may be used to enhance germination and seedling establishment.

- Install fences around revegetated areas to exclude livestock for at least two full growing seasons.
- Construct fences and gates to ensure that livestock do not enter areas being protected for another resource that would be diminished by grazing or trampling.
- Construct alternative water sources to disperse livestock use and reduce dependence on natural streams and riparian corridors.

Appendix B (Grazing Management Guidelines for Riparian Areas):

- Grazing management practices maintain sufficient residual vegetation on both uplands and riparian sites to protect the soil from wind and water erosion, to assist in maintaining appropriate soil infiltration and permeability, and to buffer temperature extremes. In riparian areas, vegetation dissipates energy, captures sediment, recharges ground water, and contributes to stream stability.
- Control the timing of grazing to prevent damage to streambanks when they are most vulnerable to trampling.
- Recommended "Rule of Thumb" Guidelines:
  1. Avoid continuous season long grazing strategies
  2. Adopt grazing strategies that allow ample regrowth periods.
  3. Place salt and supplements at least 0.25 and preferably 0.5 mile from riparian areas
  4. Develop additional water sources
  5. Adopt frequent riding and/or herding
  6. Avoid using streams as fenced pasture boundaries
  7. Consider exclusion fencing where practical or riparian pasture fencing
  8. Adopt utilization and/or residual vegetation targets
  9. Apply guidelines that limit streambank shearing and trampling
  10. Conduct upland vegetation treatments to attract livestock away from riparian areas

Areas of Critical Environmental Concern:

Trapper/Northwater Creek ACEC (4,810 acres) (See appendix 5)

Specific management actions will be applied that will protect relevant and important values in the Trapper/Northwater Creek ACEC including Colorado River cutthroat trout habitat, sensitive plant species, and significant plant communities.

Management Actions affecting livestock grazing in these ACECs are:

10. Manage livestock grazing within the ACECs so that streambank alteration does not exceed 25 percent of the stream length.

11. Manage livestock grazing within occupied or potential habitat for rare plants or significant plant communities to promote plant health, maintain sufficient residual vegetation, and sustain overall watershed functions, as defined in the Colorado Livestock Grazing Management Guidelines.

12. Allow No Ground Disturbance (NGD/NSO) within high and moderate risk habitat areas for Colorado River cutthroat trout. Allow no loss or degradation of fish habitat that supports Colorado River cutthroat trout high risk habitat.

13. Roads, transmission lines, storage facilities and similar human-induced surface disturbances will be restricted to an area beyond the outer edge of the riparian vegetation.

A CSU (Controlled Surface Use) would apply within 500 feet of the outer edge of the wetland or riparian area.

III. Specific Resource Objectives

Riparian Areas

1. Achieve Proper Functioning Condition (PFC) on all riparian areas by 2018.

2. Achieve or be moving toward late seral stage riparian communities at key areas by 2018. This objective will be achieved if all of the following conditions are met:
    a. Carex (Nebraska sedge or beaked sedge) has increased by at least 5% (ex. from 5% to 10%).
    b. Riparian zones have widened by at least 5% (ex. From 5ft to 5 ½ ft).
    c. Evidence of woody riparian species recruitment where expected (e.g.willow)

Upland Areas

3. Maintain at least 25% canopy cover of key upland grasses at key areas.
    a. The following have been identified as key upland grass species: needlegrass spp., wheatgrass spp., mountain brome, and elk sedge.
    b. Maintain the relative abundance of each key upland grass species within the appropriate range for the ecological site.

4. Maintain at a minimum, the canopy cover of desirable, native forbs measured in baseline studies in 2005.

5. On upland terraces immediately adjacent to key riparian areas, increase native perennial grass species by at least 5% by 2018.

*Resource objectives will be monitored at key areas identified on the attached map. Key areas may be adjusted if it is determined these are no longer representative of grazing use or if they do not capture the information necessary to access objectives.

III. Management Prescriptions Necessary to Meet Resource Objectives

1. Grazing management on the Clough-Alber allotment will be in accordance with the Clough-Alber Allotment Management Plan (AMP).

2. An Actual Use report for the Clough-Alber allotment shall be submitted to the BLM office no later than July 20 for the spring use and no later than November 30 for the fall use.

3. Adaptive management will be employed on this allotment. The Mandatory Terms and Conditions on this grazing permit show the maximum allowable flexibility. The permittee may use the allotment when the range is ready but not earlier than the beginning dates

described in the permit. The range will be considered ready when there is a minimum of 4 inches of new growth on grasses. AUM usage may not exceed active preference.

4. Maintenance of range improvements is required and shall be in accordance with all approved cooperative agreements and range improvement permits. Maintenance shall be completed prior to turnout. Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed. The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment. Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site.

5. A herder will be present on the allotment each day of the grazing season. Sheep camps will be moved every 5-7 days and sheep will not be brought back to the same area once it has been used that grazing season. The herder will minimize grazing use by sheep on the creek bottoms. Sheep can be herded to creek bottoms for brief periods for watering purposes only. Once sheep have been watered they will be herded away from the creek bottoms.

6. Trailing use through the Hubbard Mesa (#18903) and JQS (#18908) allotments will take place in the spring-summer for 2 days (1 day up and 1 day down) and in the fall for 2 days (1 day up and 1 day down). A majority of the trailing use will be on county roads.

7. Supplemental feed such as salting blocks should be placed at least ¼ mile from water developments and riparian areas and, where applicable, up to a ½ mile. This will encourage livestock distribution and give permittees more control over what areas are being used.

8. The following use levels are considered to be the maximum allowed use to sustain or improve resource conditions in the Clough-Alber allotment. Once any of these levels have been reached livestock will be moved to another portion of the allotment, moved to the next scheduled pasture, or removed immediately from the allotment.

Riparian Key Areas:			
Maximum allowable utilization levels on key riparian forage species*	Maximum allowable streambank alteration	Maximum allowable browse of current year's growth on key woody species	Minimum greenline stubble height
40%	**25%**	**40%**	**4-inches**
Upland Key Areas:			
Maximum allowable utilization levels on key upland forage species*	Minimum stubble height on uplands and terraces adjacent to riparian areas		
40%	**4-6 inches**		

*Key riparian forage species include tufted hair-grass, redtop, all riparian sedge and rush species, and willow. Key upland species are listed above under Resource Objectives.

9. The allotment will be divided into two pastures. The West pasture and the East pasture. Use in each pasture will be rotated to achieve objectives.

IV. Specifications of Flexibility

1. The following table shows what will be authorized under this AMP:

Operator Name	Auth. No.	Livestock Number	Livestock Kind	Begin Date	End Date	Public land %	AUMs
James Craig Bair Ranch Co.	0503994	1000 1000	Sheep Sheep	5/16 9/25	7/6 11/15	80 80	274 274
James Craig Bair Ranch Co.	"NEW"	1000 1000	Sheep Sheep	5/16 9/25	7/5 11/15	80 80	268 274

2. Adaptive management will be employed on this allotment. The Mandatory Terms and Conditions on this grazing permit show the maximum allowable flexibility. The permittee may use the allotment when the range is ready but not earlier than the beginning dates described in the permit. The range will be considered ready when there is a minimum of 4 inches of new growth on grasses. AUM usage may not exceed active preference.

3. The establishment of a rotational grazing system will be the responsibility of the permittee and will be coordinated with the BLM. It is recommended that all areas of the allotment be used at some point in the grazing season and that no overlap in use occur.

V. Provisions for Monitoring

1. The following key sites will be monitored for both short term indicators and long term trend and are listed by study name and legal description. These locations are also identified on the attached map.

Riparian Sites
Trapper Creek - T5S R94W Section 7 SENW
Raspberry Creek - T5S R94W Section 20 NWNE
Yellow Jacket Creek - T5S R94W Section 20 NESW
Upper Northwater Creek - T5S R94W Section 15 NESW
Lower Northwater Creek - T5S R94W Section 17 NESW

Upland Sites
Cook Ridge - T5S R94W Section 8 NWSE
Raspberry Ridge - T5S R94W Section 21 SWNE

2. Riparian monitoring:
    a. Will be conducted using the Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation (MIM), BLM TR 1737-23 and Monitoring the Vegetation Resources in Riparian Areas, General Technical Report RMRS-GTR-47.
    b. Photos will be taken at the key areas around 6/1 and again around 10/15 to capture pre-use and vegetation recovery conditions.
    c. Short-term monitoring of riparian areas and upland terraces will be conducted each year during the livestock use period. Monitoring will include stubble height and utilization by weight. Bank alteration along the streams will also be measured. Utilization monitoring may occur several times during the use period and will be used as a trigger to move livestock when necessary to achieve objectives. Photos will be repeated during each utilization monitoring. Utilization transects will be a minimum of 300 feet.
    d. Long-term trend monitoring will occur at 5 year intervals to determine if objectives are being achieved. Monitoring will consist of greenline and riparian cross-section measurements.
    e. There are several other historic photo point locations that have been established and will be repeated as time allows on a 5-10 year cycle. These legacy spots have been identified as gray dots on the monitoring map.
    f. Exclosures may be constructed in riparian areas to establish reference sites for riparian potential.

3. Upland monitoring:
    a. Utilization monitoring will be completed once annually using the Key Species Method as described in the Glenwood Spring Monitoring Plan and will be conducted at the 2 key areas after livestock use has occurred and livestock have been moved to another area.
    b. Trend monitoring will be conducted every 5 years using the Daubenmire method or other method from the Sampling Vegetation Attributes, Interagency TR 1730-02, at the 2 key upland sites and those terraces adjacent to key riparian sites.
    c. As with the riparian areas, there are several other historic photo point locations that will be repeated as time allows on a 5-10 year cycle. These legacy spots have been identified as gray dots on the monitoring map.

4. The permittee is responsible for monitoring utilization levels and moving livestock when utilization levels have been reached.

5. Water quality will continue to be monitored at designated sites to determine appropriate levels of fecal coliform and/or E. coli, along with other basic water quality parameters.

6. Compliance Inspections will be conducted throughout the grazing period to determine if management and range improvement maintenance is adequate. Other studies may also be conducted according to the Glenwood Springs Resource Monitoring Plan if needed.

7. As indicated in the grazing regulations, active use will be reduced if utilization levels exceed the livestock carrying capacity and are causing a negative impact to watersheds,

habitat, water quality, vegetative composition, or ecological processes. If monitoring determines that the resource objectives in this plan are not being achieved, the authorized officer may require 1 or more years of rest to make significant progress toward achieving the objectives in this plan

VI. Terms and Conditions (43 CFR 4130.3)

"Livestock grazing permits and leases shall contain terms and conditions determined by the authorized officer to be appropriate to achieve management and resource condition objectives for the public lands and other lands administered by the Bureau of Land Management, and to ensure conformance with land health standards."

The terms and conditions of this plan are included as "Management Prescriptions Necessary to Meet Resource Objectives" and are not relisted here. These management prescriptions will be included as terms and conditions in the grazing permits.

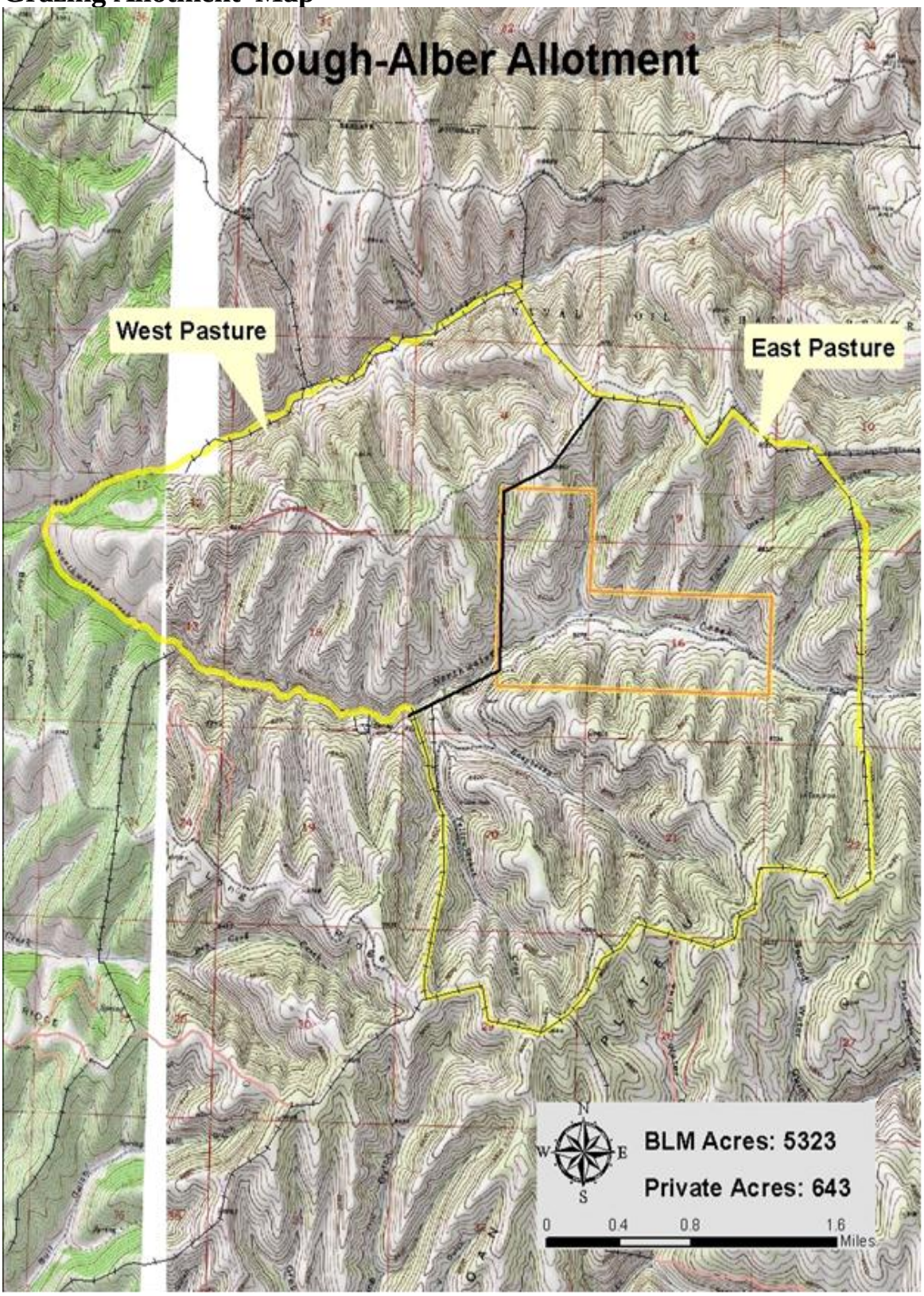
Other terms and conditions listed here were not identified to achieve vegetation resource objectives but will also be included on the permits as part of other regulatory guidance.

1. The permittee and all persons associated with grazing operations must be informed that any person who injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until further notified in writing to proceed by the authorized officer.

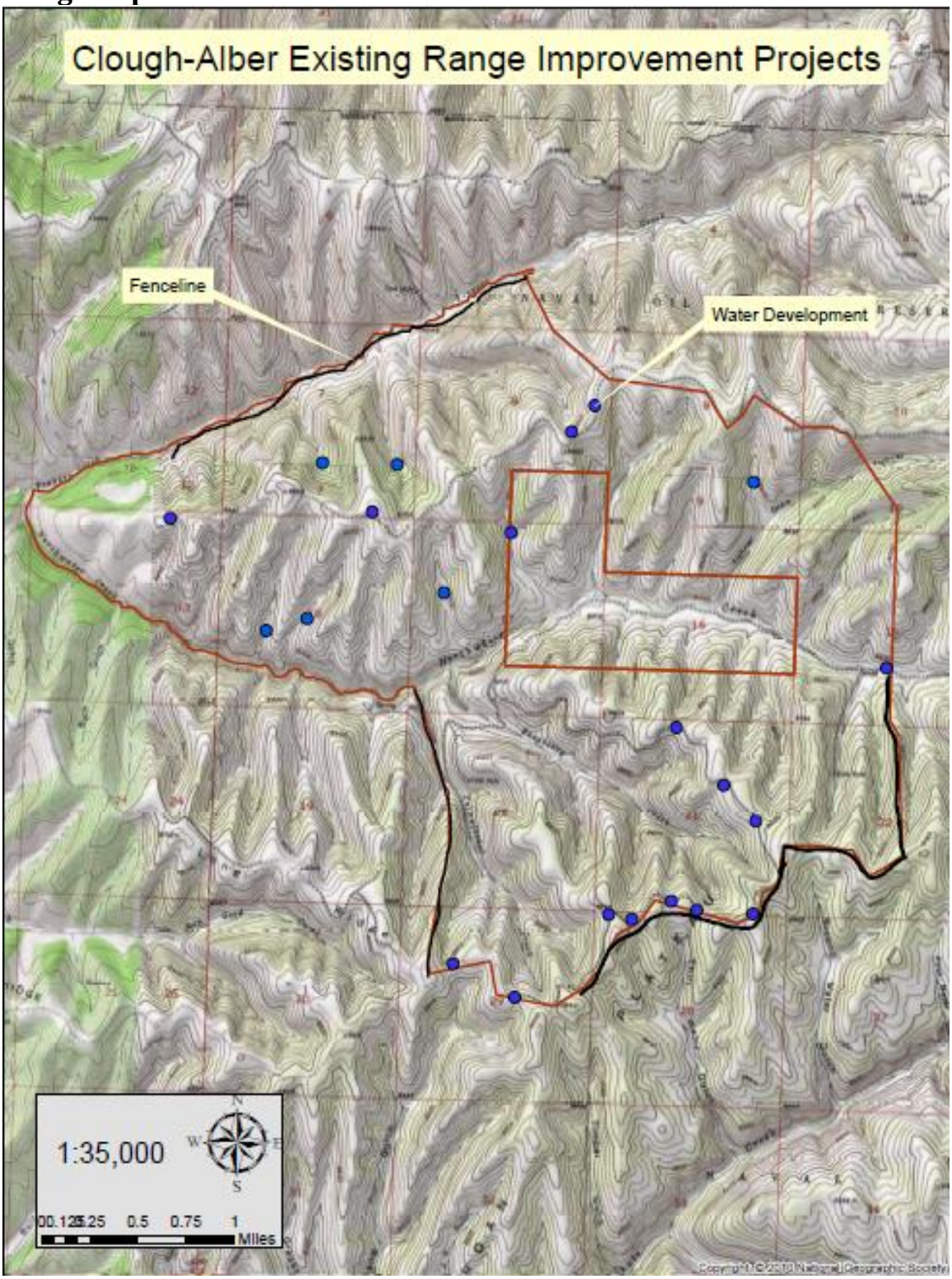
2. Administrative access on routes identified as "Foot/Horse Trail" will be allowed from June 1 to August 25 and should only be utilized for the maintenance of assigned range improvement projects. Motorized administrative access on "Foot/Horse Trail" routes for grazing operation after August 25th will require the permit holder to seek and receive prior authorization from an authorized BLM officer.

3. New range improvements, maintenance of existing range improvements, or additional feeding areas may require cultural resource inventories, monitoring, and/or data recovery.

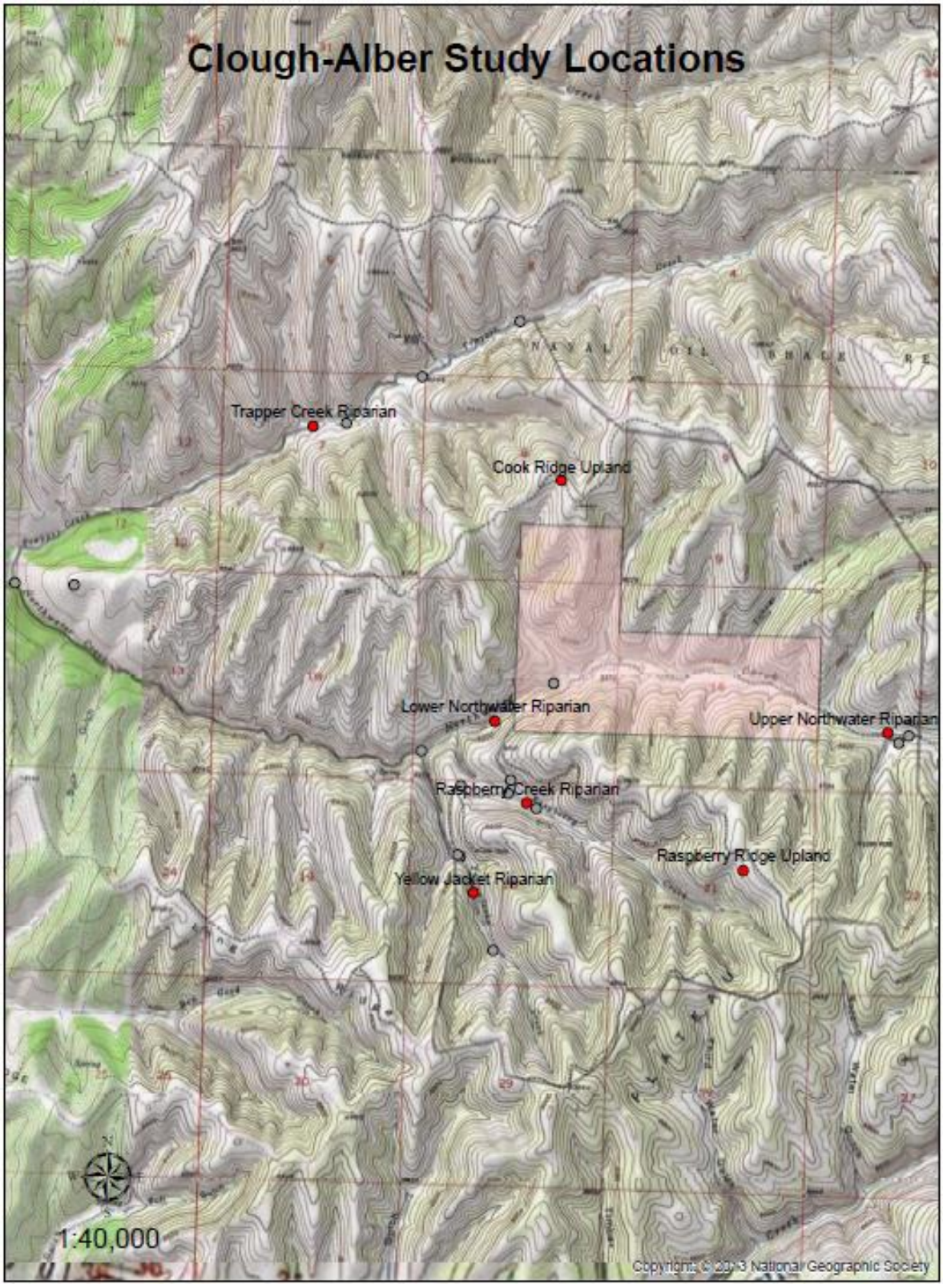
Grazing Allotment Map



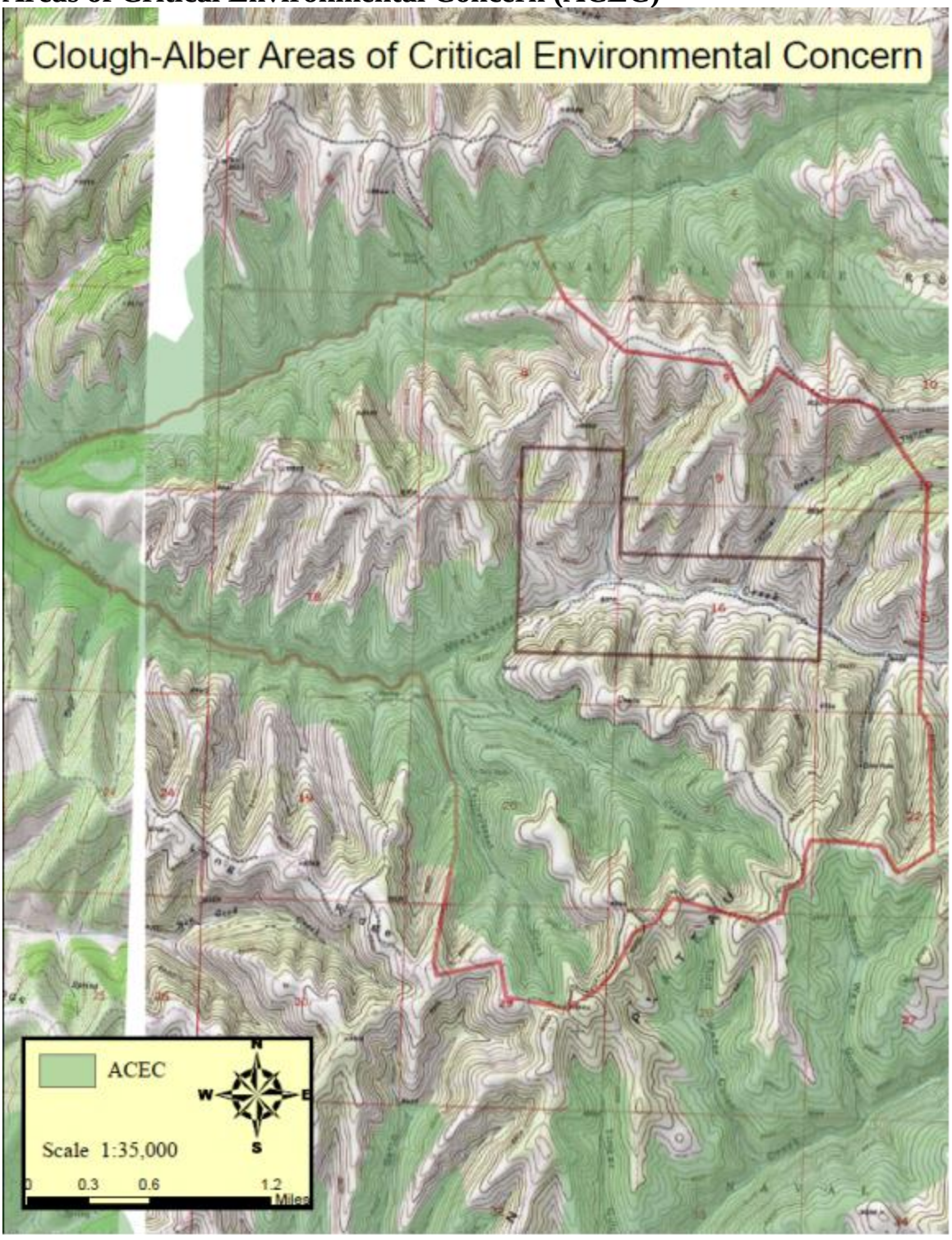
Range Improvements



Monitoring Locations



Areas of Critical Environmental Concern (ACEC)



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COLORADO RIVER VALLEY FIELD OFFICE
SILT, COLORADO

FINDING OF NO SIGNIFICANT IMPACT

DOI-BLM-N040-2013-0016-EA

Finding of No Significant Impact
I have reviewed the direct, indirect and cumulative effects of the proposed action documented in the EA referenced above. The effects of the proposed action are disclosed in the Alternatives and Environmental Effects sections of the EA. Implementing regulations for NEPA (40 CFR 1508.27) provide criteria for determining the significance of the effects. Significant, as used in NEPA, requires consideration of both *context* and *intensity* as follows:

(a) Context. This requirement means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant (40 CFR 1508.27):

(b) Intensity. This requirement refers to the severity of the impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following are considered in evaluating intensity (40 CFR 1508.27).

1. Impacts that may be both beneficial and/or adverse.

Impacts associated with issuing these modified livestock grazing permits are identified and discussed in the Affected Environment and Environmental Effects sections of the EA. The proposed action will not have any significant beneficial or adverse impacts on the resources identified and described in the EA.

2. *The degree to which the proposed action affects health or safety.*

The proposed activities will not significantly affect public health or safety. The purpose of the proposed action is to allow for multiple uses while maintaining or improving resource conditions to meet standards for rangeland health in the allotment. Similar actions have not significantly affected public health or safety.

3. *Unique characteristics of the geographic area such as prime and unique farmlands, caves, wild and scenic rivers, wilderness study areas, or ACECs.*

The Clough-Alber allotment contains one ACEC. The Trappers/Northwater Creek ACEC was established to protect the relevant values associated with a genetically pure population of native, wild, naturally–reproducing Colorado River cutthroat trout and the Colorado endemic plant, hanging garden sullivantia, which is narrowly restricted to calcareous seeps, but is found in abundance in the hanging gardens on the Roan Plateau.

4. The degree to which the effects are likely to be highly controversial.

The possible effects of continued livestock grazing are not likely to be highly controversial.

5. The degree to which the effects are highly uncertain or involve unique or unknown risks.

The possible effects on the human environment are not highly uncertain nor do they involve unique or uncertain risks. The technical analyses conducted for the determination of the impacts to the resources are supportable with use of accepted techniques, reliable data, and professional judgment. Therefore, I conclude that there are no highly uncertain, unique, or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

This EA is specific to the Clough-Alber allotment. It is not expected to set precedent for future actions with significant effects or represent a decision in principle about a future management consideration in or outside of these allotments.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The area covered by the proposed action only comprises a small portion of the watershed. Cumulatively, many of the future actions planned on private and other lands may have some undetermined effect on wildlife including special status species habitat. The proposed action would create negligible landscape-level cumulative impacts to wildlife when viewed in conjunction with those activities currently occurring and reasonably certain to occur on adjacent private/other lands.

8. The degree to which the action may adversely affect scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places.

Samples of the sites listed in the affected environment as eligible or potentially eligible are recommended to be monitored within the Clough-Alber allotment within the terms of this permit. No additional inventory is required for the Clough-Alber allotment.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The entire Clough-Alber allotment is within identified Greater Sage-grouse preliminary general habitat (PGH) and overall habitat. The allotment is approximately 8 miles from the nearest active lek site and approximately 2.25 miles from mapped brood rearing habitat. No collected radio-telemetry data has shown Greater sage-grouse specifically using this allotment but it is considered part of the occupied range and habitat certainly exists that would benefit these birds. The existing terms and conditions outline standards that would complement sage grouse brood rearing habitat for food and concealment needs near riparian areas for early brood rearing activities.

Parachute penstemon generally occurs on steep, nearly barren slopes of Green River formation shale or in alluvial outwash derived from Green River shale. Due to the lack of forage present in Parachute penstemon habitat, it would likely receive very little grazing use or trampling damage. Livestock grazing, as proposed, would have "No Effect" on the federally-listed Parachute penstemon or its habitat.

10. *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

The proposed action does not violate or threaten to violate any Federal, State, or local law or requirements imposed for the protection of the environment.

Based upon the review of the test for significance and the environmental analyses conducted, I have determined that the actions analyzed in the EA will not significantly affect the quality of the human environment. Accordingly, I have determined that the preparation of an Environmental Impact Statement is not necessary for this proposal.

Authorized Officer
Colorado River Valley Field Office

5-20-2013
Date