U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Field Office
50629 US Highway 6 & 24
Glenwood Springs, CO 81601

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-N040-2009-0052-EA

CASEFILE/PROJECT NUMBER: 0500228, 0507607

PROJECT NAME: Grazing Permit Renewal

LEGAL DESCRIPTION: T.5S., R.94W. (Roan Plateau) See map, JQS Allotment #18908

APPLICANT: Grazing Permittees

DESCRIPTION OF PROPOSED ACTION, BACKGROUND AND ALTERNATIVES:

PROPOSED ACTION: The Proposed Action is to renew a term grazing permit for the above applicants. The number/kind of livestock, period of use, percent public land and Animal Unit Months (AUMS) will remain the same as the previous permit. The permit will be issued for a 3-year period and will be re-evaluated upon expiration based on increased monitoring of riparian areas and AMP implementation and effectiveness. The proposed actions are in accordance with 43 CFR 4130.2. The tables below summarize the scheduled grazing use and grazing preference for the permit.

Proposed Grazing Schedule:

Operator No.	Allotment Name and No.	Livestock Number & Kind	Grazing Period Begin	Grazing Period End	%PL	AUMS
0500228	JQS Common #18908	159 Cattle	6/16	9/30	100	559
0507607	JQS Common #18908	1200 Sheep	6/16	9/30	100	844

Grazing Preference (AUMS)

Operator No.	Allotment Name/No.	Total	Suspended	Active
0500228	JQS Common #18908	766	205	561
0507607	JQS Common #18908	1480	636	844

The following terms and conditions will be included on the permit:

Grazing use on the JQS allotment shall be in accordance with the JQS allotment management plan approved on June 18, 1993 and subject to the grazing use agreement executed on March 15, 1990.

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.

The permittee and all persons specifically associated with grazing operations must be informed that any objects or sites of cultural, paleontological, or scientific value such as historic or prehistoric resources, graves or grave markers, human remains, ruins, cabins, rock art, fossils, or artifacts shall not be damaged, destroyed, removed, moved, or disturbed. 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 and notify the BLM authorized officer of the findings. The discovery must be protected until notified in writing to proceed by the authorized officer (36CFR800.110 & 112, 43CFR 0.4).

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.

BACKGROUND: As a result of an allotment evaluation and the concern of some permittees that the allotment may be overstocked, active grazing use was reduced by agreement from 3963 to 3170 AUMS in 1990. In June 1993, the JQS AMP was revised with a major emphasis on riparian. More detailed objectives were listed for riparian and desired plant community objectives were established for upland vegetation. One of the unique features of the AMP is that it required a grazing plan be developed annually but did list several conditions and parameters for the annual plan. It also required that a rider be present on the allotment each day to minimize grazing use in bottoms. New projects were proposed such as ponds, prescribed burning, and a solar pump/pipeline. Many of these projects have been constructed. The plan still remains in effect today. Also in 1993 a conversion from cattle to sheep took place (40 head of cattle converted to 200 sheep for a total of 1200 sheep). A great deal of effort during the 1990s has been made by the permittees and BLM to maintain older water developments and fencing so most are now functioning. Current grazing use is 844 AUMS active preference for sheep and 2326 AUMS cattle for a total of 3170 AUMS. Period of use is June 16 to Sept 30.

There is a lack of recent monitoring data but general observations have indicated a declining trend on the JQS allotment. The AMP identifies monitoring methods such as the Greenline Method, level II-B Aquatic Habitat monitoring, Channel Cross Section monitoring, and Stubble Height; none of which has been conducted since the AMP revision was implemented in 1993. The AMP also calls for an evaluation summary of monitoring studies annually. Since the implementation of this AMP an evaluation has been conducted in 1993 and 1994. The 1994 evaluation reported that actual use was 2,418 AUMs. Although this year experienced an extreme drought, multiple riparian areas showed signs of excessive use. In 2009 an evaluation of the cumulative utilization data was summarized. Upland monitoring data from 1980 to present shows utilization levels are generally below the 50% use threshold identified in the AMP and reiterated in the permit terms and conditions. No other evaluations have been done. A Land Health Assessment and determination document were completed for this allotment in 1999 and signed on 1/8/2001. The allotment, at that time, was meeting land health standards. Monitoring was done in 2008 although all sites were not visited. There were 7 Daubenmire transects, 5 utilization studies, and 4 Riparian Trend Photos completed. Average utilization data

taken at 3 different riparian areas was above the 50% use threshold. Monitoring data for riparian areas has not been adequate.

This permit authorizes grazing during most of the growing season. Livestock have been rotated on up to four pastures in the past but changes made in subsequent AMPs and agreements have limited cattle to two pastures and sheep to one pasture. This was done to improve deteriorating conditions on Trapper Creek. The Trapper pasture has not been used by cattle since about 1990. The Trapper pasture has shown signs of improvement since then.

CURRENT REVISED MANAGEMENT: Management actions pertaining to livestock grazing in the new Roan Plateau Management Plan will be put in place and adhered to. Cattle grazing in the Trapper pasture will be limited to 2-3 weeks in the first year. The grazing utilization levels will be evaluated after the first year and use of the Trapper pasture may be extended to a longer period of time if the conditions warrant. This will allow extra time for rest on the Anvil Points and JQS pastures. The AMP currently requires the permittees to have a rider on the allotment every day of the week. This will be modified and enforced to require a rider from each cattle permittee at least 2 days a week. A rider will not be required by a permittee who has been approved for complete non-use. Monitoring will be improved and increased in the riparian areas and will involve the Greenline Method as described in BLM technical bulletin (April 2008), Stubble Height measurements, Trend Photo Points, and other vegetation community measurements that may be identified. Although these methods were already part of the AMP they have not been actively monitored. Stubble Height and Greenline Method will be monitored annually and used to trigger pasture moves and management actions. Upland utilization and trend monitoring should also be continued to ensure that achievement of riparian objectives does not result in a decline of upland health.

ALTERNATIVES CONSIDERED BUT ELIMINATED:

The No Grazing alternative has been eliminated from further consideration. The Roan Plateau Management Plan allocated AUM's available for livestock grazing use. The permittees who are applying for grazing permit renewals have applied for the same use identified in the plan.

The No Action alternative has also been eliminated from further consideration. The No Action alternative would involve reissuing the permit/lease with current terms and conditions and no additional stipulations would be added to the permit/lease. Reissuing the permit/lease without the new stipulations would be unrealistic due to new guidance in the Roan Plateau Management Plan.

NEED FOR PROPOSED ACTION:

The action 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,(5) to allow use of native rangeland

resource for conversion into protein suitable for human consumption, and (6) to meet the Guidelines for Livestock Grazing Management and the Standards for Land Health.

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: Glenwood Springs Roan Plateau Resource Management Plan Amendment.

Date Approved: June 2007; Record of Decision for the Designation of Areas of Critical Environmental Concern for the Roan Plateau Resource Management Plan, March 2008

Decision Number/Page: The action is in conformance with the Grazing and Rangeland goals (ROD-38), and the Grazing Management Guidelines for Riparian Areas (ROD-Appendix B)

Decision Language: Goal 1-"Provide livestock forage while maintaining or enhancing healthy landscapes." Goal 2-"Ensure grazing management conforms to the BLM grazing regulations and the BLM's Colorado Standards for Public Land Health and Guidelines for Livestock Grazing Management."

Standards for Public Land Health:

In January 1997, Colorado 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.

The BLM completed a formal land health assessment on the JQS Allotments as part of the Roan Cliffs Landscape Unit in 1999. The determination was made that the JQS allotment was meeting all the standards at that time and that existing livestock grazing was not resulting in deterioration of land health conditions.

This environmental analysis must address whether the proposed action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these five standards.

COMPLIANCE WITH SECTION 302 OF FLPMA RELATIVE TO THE COMB WASH DECISION

A review of applicable planning documents and a thoughtful consideration of new issues and new demands for the use of the public lands involved in this allotment have been made. This analysis concludes that the current land and resource uses are appropriate.

Reasons for the conclusion are: No new issues or new demands for the use of public lands involved in this grazing allotment have been identified since approval of the land use plan and amendments.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a description of the human and natural environmental resources that could be affected by the proposed action and no action alternative. In addition, the section presents comparative analyses of the direct and indirect consequences 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 critical environmental elements. Not all of the critical elements that require inclusion in this EA are present, or if they are present, may not be affected by the proposed action and alternative (Table 2). Only those mandatory critical elements that are present and affected are described in the following narrative.

In addition to the mandatory critical elements, there are additional resources that would be impacted by the proposed action and alternative. These are presented under Other Affected Resources.

Table 2. Critical Elements of the Human Environment

Critical Element	*Present*		*Affected*		*Critical Element*	*Present*		*Affected*	
	Yes	No	Yes	No		Yes	No	Yes	No
Air Quality		X		X	Prime or Unique Farmlands		X		X
ACECs	X		X		Threatened, Endangered, and Sensitive Species*	X		X	
Cultural Resources	X		X		Wastes, Hazardous or Solid		X		X
Environmental Justice	X			X	Water Quality, Surface and Ground*	X		X	
Floodplains		X		X	Wetlands and Riparian Zones*	X		X	
Invasive, Non-native Species	X		X		Wild and Scenic Rivers	X		X	
Migratory Birds		X	X		Wilderness/ WSAs		X		X
Native American Religious Concerns		X		X					

* Public Land Health Standard

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment:

The Record of Decision for the Designation of Areas of Critical Environmental Concern for Roan Plateau Resource Management Plan Amendment (March, 2008) designated four ACECs in the Roan Plateau Planning Area. The JQS Allotment falls within the Trapper/Northwater Creek ACEC and the East Fork Parachute Creek ACEC.

The Trapper/Northwater Creek ACEC was designated to protect important fisheries and ecological values. The area contains a genetically pure population of native, wild, naturally-reproducing Colorado River cutthroat trout. These populations are considered "core conservation populations" and are regionally and nationally important in the conservation of the species. The Trapper/Northwater Creek ACEC also contains the Colorado endemic plant, hanging garden sullivantia, which is narrowly restricted to calcareous seeps, but is common along seeps in the cliffs of the Roan Plateau. The Roan Plateau supports roughly 62 percent of the total number of hanging garden sullivantia occurrences. Two significant plant communities are also found within this ACEC.

The East Fork Parachute Creek ACEC was designated to protect relevant and important scenic values, fisheries and wildlife resources, and natural processes or systems. The important scenic values include a 200-ft high waterfall plunging into a narrow scenic box canyon. The East Fork of Parachute Creek supports a "core conservation population" of the Colorado River cutthroat trout and raptor nest sites along the cliffs which border the creek. The ACEC also supports Roan Cliffs blazing star, a BLM Sensitive plant species and four significant riparian and wetland plant communities along the East Fork of Parachute Creek which are rare or uncommon, in excellent condition, and vulnerable to adverse change.

The 2008 ROD for the Designation of ACECs for the Roan Plateau RMP Amendment and EIS prescribed protective measures (NSO/NGD, CSU/SSR, and TLs) to preserve the scenic, botanical, and wildlife values. The objective is to preclude any surface-disturbing actions that might impair the identified values.

Environmental Consequences/Mitigation:
Since the East Fork Falls and box canyon lie outside of the boundaries of the JQS allotment, livestock grazing under this permit would have no discernable impact on the scenic values of the East Fork Falls viewshed. Livestock grazing could have potential negative impacts on other relevant and important values, especially the condition of Colorado River cutthroat habitat and the significant riparian plant communities. (*see Threatened, Endangered and Sensitive Species & Vegetation sections*). However, if the mitigation proposed in these sections is implemented and the existing terms and conditions placed on the permit are enforced and if regular monitoring indicates proper livestock distribution and levels of use are occurring, then impacts should be reduced to acceptable levels. Continuation of livestock grazing under the existing terms and conditions should not degrade the values for which the Trapper/Northwater Creek and East Fork Parachute Creek ACECs were designated.

CULTURAL RESOURCES and NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: Range permit renewals are undertakings under Section 106 of the National Historic Preservation Act. Additional range improvements (e.g., fences, spring improvements) are subject to compliance requirements under Section 106 and will undergo standard cultural resources inventory and evaluation procedures. During Section 106 review, a cultural resource assessment (GSFO #1009-21) was completed for the JQS Common allotment on February 19, 2009 following 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, CO-2001-026, and CO-2002-029. The results of the assessment are summarized in the table below. A copy of the cultural resource assessment is available at the GSFO office.

Allotment Number	**Acres Inventoried at a Class III level**	**Acres NOT Inventoried at a Class III Level**	**Percent (%) Allotment Inventory data 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)**
JQS Com	6703	3753	64	83	Yes	No additional acres need to be inventoried to meet the 10% sampling threshold. 30% of the allotment has 30%+ slopes.
Total	6703	3753	64	83		

Eighteen Class III cultural resource inventories have been conducted within this allotment resulting in the identification of 17 historic properties. Historic properties are cultural resources that are considered eligible or potentially eligible for listing on the National Register of Historic Places that need to be preserved. If they cannot be avoided, the adverse impacts must be mitigated. Based on available data, there is a moderate to high potential for historic properties within this allotment. Unidentified historic era sites within this allotment could represent a time frame from the late 1800's through the 1950's; Native American sites could represent a time range from 200 to 10,000 years before present. Based on available data, there is a high potential for historic properties within both allotments.

Subsequent site field visits, inventory, and periodic monitoring may have to be done to identify adverse grazing impacts for the historic properties identified within the term of the permit and as funds are made available. If the BLM determines that grazing activities will adversely impact the properties, mitigation will be identified and implemented in consultation with the Colorado SHPO.

At present, there are no known areas of Native American concern within this allotment. On November 7, 2008 the Glenwood Springs Field Office mailed an informational letter and maps to the Ute Tribe (Northern Ute Tribe), Southern Ute Tribe, and the Ute Mountain Ute Tribe, identifying the proposed 2009 grazing permit renewals. No response has been received. If new data is disclosed, new terms and conditions may have to be added to the permit to accommodate their concerns. The BLM will take no action that would adversely affect these areas or location without consultation with the appropriate Native Americans.

Environmental Consequences: Seventeen historic properties were identified during the inventories for this allotment; additionally this allotment is located in a cultural high sensitivity area within the Roan Plateau Planning Area Resource Management Plan (RMP 2004). A determination of "**May Adversely Affect"** has been made for this renewal. In order to mitigate

this potential affect and comply with the Roan Plan Cultural Resource Management Plan **all** ground disturbing activity must be monitored by a qualified archaeologist and any cultural manifestation identified must be mitigated as it is found Record of Decision (ROD 2007:31-32).

The direct impacts that occur where livestock concentrate include trampling, chiseling, and churning of site soils, cultural features, and cultural artifacts, artifact breakage, and impacts from standing, leaning, and rubbing against historic structures, above-ground cultural features, and rock art. Indirect impacts include soil erosion, gullying, and increased potential for unlawful collection and vandalism. Continued grazing may cause substantial ground disturbance and cause cumulative, long term, irreversible adverse effects to historic properties.

Mitigation**:** Maintenance of range improvements not previously inventoried or new improvements will be subject the Roan Plateau Planning Area cultural resource management plan which could include cultural resource inventories, monitoring, and/or data recovery. This allotment may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM may require modification to development proposals to protect such properties, or disapprove any activity that is likely to result in damage to historic properties or areas of Native American concern.

Education/Discovery stipulation needs to be added to the lease renewal.
The permittee and all persons specifically associated with grazing operations must be informed that any objects or sites of cultural, paleontological, or scientific value such as historic or prehistoric resources, graves or grave markers, human remains, ruins, cabins, rock art, fossils, or artifacts shall not be damaged, destroyed, removed, moved, or disturbed. 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 notified in writing to proceed by the authorized officer (36CFR800.110 & 112, 43CFR 0.4).

ENVIRONMENTAL JUSTICE

Affected Environment: Review of 2004 data from US Census Bureau indicates the median annual income of Garfield County averages $50,119 and is neither an impoverished or wealthy county. Median annual income of Mesa County averages $40,045 and is not an impoverished or wealthy county. U.S. Census Bureau data from 2006 shows the minority population of Garfield and Mesa County comprises less than 0.7 % of the total population of Colorado[a].

Garfield County	Mesa County
Median Household Income (2004)	Median Household Income (2004)

[a] Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, Census of Population and Housing, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report
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Estimate	Estimate
$50,119	$40,045

Environmental Consequences/Mitigation: The proposed action and alternatives are not expected to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations within the area.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Noxious weed infestation reports identify Canada thistle *(Cirsium arvense)*, musk thistle (*Carduus nutans* L.) houndstongue *(Cynoglossum officinale)*, bull thistle *(Cirsium vulgare)*, common mullein *(Verbascum Thapsus)*, plumeless thistle *(Carduus acanthoides)*, and yellow toadflax *(Linaria dalmatica)* occurs within the JQS Allotment. The majority of the weed infestations occur along riparian areas and roads.

Environmental Consequences/Mitigation: As livestock come in contact with noxious and invasive weed species they will continue to transport seed via coat and feces to other areas of the allotment. Past heavy livestock grazing and wildlife use is the primary cause for the high levels of noxious weeds in riparian zones on JQS. Continued overuse of native vegetation would provide a niche for noxious weeds to continue to spread in the future. In contrast, if grazing use levels are controlled to acceptable levels to allow native plants to recover, the spread of noxious weeds will slow. Weed management techniques will need to be implemented to reduce the number of noxious weeds to levels that provide for ecological health of the communities.

MIGRATORY BIRDS

Affected Environment:
The 1988 amendment to the Fish and Wildlife Conservation Act mandates the U.S. Fish and Wildlife Service (USFWS) to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." *Birds of Conservation Concern 2008 (http://www.fws.gov/migratorybirds/reports/BCC2008/BCC2008m.pdf)* is the most recent effort to carry out this mandate. The conservation concerns may be the result of population declines, naturally or human-caused small ranges or population sizes, threats to habitat, or other factors. The primary statutory authority for *Birds of Conservation Concern 2008* (*BCC 2008*) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Although there are general patterns that can be inferred, there is no single reason why any species was is on the list. The Glenwood Springs Field Office is within the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR). The 2008 list include the following birds: Gunnison Sage Grouse, American Bittern, Bald Eagle, Ferruginous Hawk, Golden Eagle, Peregrine Falcon, Prairie Falcon, Snowy Plover, Mountain Plover, Long-billed Curlew, Yellow-billed Cuckoo, Burrowing Owl, Lewis's Woodpecker, Willow Flycatcher, Gray Vireo, Pinyon Jay, Juniper Titmouse, Veery, Bendire's Thrasher, Grace's Warbler, Brewer's Sparrow, Grasshopper Sparrow, Chestnut-collared Longspur, Black Rosy-Finch, Brown-capped Rosy-Finch, and Cassin's Finch.

Habitat loss due to alteration or destruction continues to be the major reason for the declines of many species *(http://www.fws.gov/migratorybirds/reports/BCC2008/BCC2008m.pdf)*. When considering potential impacts to migratory birds the impact on habitat, including: 1) the degree of fragmentation/connectivity expected from the proposed project relative to before the proposed project; and 2) the fragmentation/connectivity within and between habitat types (e.g., within nesting habitat or between nesting and feeding habitats. Continued private land development, surface disturbing actions in key habitats (e.g. riparian areas) and the proliferation of roads, pipelines, powerlines and trails are local factors that reduce habitat quality and quantity.

The GSFO planning area provides both foraging and nesting habitat for a variety of migratory birds that summer, winter, or migrate through the area. The habitat diversity provided by the broad expanses of sagebrush, mixed mountain shrub, aspen, pinyon-juniper woodlands, other types of coniferous forests, and riparian and wetland areas support many bird species. The pinyon jay is characteristically found in pinyon/juniper woodlands and the Brewer's sparrow *(Spizella breweri*) is found within sagebrush habitats. Other Birds of Conservation Concern 2008 may also occur locally. Many species of raptors (red-tailed hawks, golden eagles, northern goshawks, Cooper's hawks, kestrels and owls) not on the Fish & Wildlife Service's Birds of Conservation Concern list also could occur in the area.

Bald eagle (*Haliaeetus leucocephalus*). Bald eagles are known to winter along portions of the Colorado, Eagle and Roaring Fork Rivers and its major tributaries. Wintering bald eagles are generally present from mid-November to mid-April. Large mature cottonwood trees along the rivers and their major tributaries are used as roosting and perching sites, and these waterways provide the main food sources of fish and waterfowl. Upland habitats adjacent to these waterways are used as scavenging areas primarily for winter killed mule deer and elk. Major threats include habitat loss, human disturbance and illegal shooting. Bald eagles are increasing in numbers throughout their range and were removed from the federal threatened and endangered species list in 2007 however bald eagles are still protected under the Migratory Bird Treaty Act. The Diamond Flats Allotment overlaps with bald eagle winter range and winter foraging areas.

Environmental Consequences/Mitigation:
Limited bird count or species data exists for the area, however the greater concern is the continued fragmentation of habitat and losses of large blocks of contiguous habitat required by many bird species including bald eagles. No intentional take of native bird species is anticipated under the proposed action. Grazing by cattle could result in the accidental destruction of ground nests through trampling. This impact is expected to be minimal and isolated and would not influence populations of migratory birds on a landscape level. Given current overall existing habitat condition, livestock grazing, as proposed, will not negatively affect the degree of fragmentation/connectivity expected relative to the existing condition of the allotment and the fragmentation/connectivity within and between habitat types (e.g., within nesting habitat or between nesting and feeding habitats would also likely not change.

THREATENED, ENDANGERED, & SENSITIVE SPECIES (includes an analysis on Standard 4)

Affected Environment: *Federally Listed, Proposed or Candidate Species*

According to the latest species list from the U. S. Fish and Wildlife Service (http://mountain-prairie.fws.gov/endspp/CountyLists/COLORADO.htm), the following Federally listed, proposed, or candidate plant and animal species may occur within or be impacted by actions occurring in Garfield County: Colorado hookless cactus (*Sclerocactus glaucus*), Ute ladies-' tresses orchid (*Spiranthes diluvialis*), Parachute beardtongue (*Penstemon debilis*), DeBeque phacelia (*Phacelia submutica*), Canada lynx (*Lynx canadensis*), Mexican spotted owl (*Strix occidentalis*), yellow-billed cuckoo (*Coccyzus americanus*), Greenback cutthroat trout (*Oncorhynchus clarkii stomias*), razorback sucker (*Xyrauchen texanus*), Colorado pikeminnow (*Ptychocheilus lucius*), bonytail chub (*Gila elegans*), and humpback chub (*Gila cypha*). The U. S. Fish and Wildlife Service announced the delisting of the bald eagle in June, 2007 with an effective date of August 8, 2007. The BLM now considers the bald eagle a sensitive species.

Plants:
A historic population of Parachute beardtongue is known to occur within the Green River shale formation along the Anvil Points Rim Road on the southeast end of the allotment. In 1994, this site was reported to have several hundred individuals; however, since 2002, no Parachute beardtongue plants have been observed. There are no documented occurrences of or known suitable habitat for the other three federally-listed or candidate plant species.

Terrestrial Wildlife:
Special status terrestrial wildlife species are those whose populations have declined significantly. These declines may result from habitat loss, habitat modification, and changes in competition, predation, or disease. Habitat loss and modification by human activities are the primary causes of declining populations, particularly of species that are highly adapted to specific ecological niches. Such species may or may not be legally protected by federal or state agencies. BLM land management practices are intended to sustain and promote species that are legally protected and prevent species that are not yet legally protected from needing such protection. Limited inventories and surveys have been conducted for special status wildlife species other than Canada lynx *(Lynx canadensis).*

Canada lynx (Lynx canadensis). Canada lynx are a federally threatened and Colorado endangered species. In 2000, the Canada lynx was listed under the ESA as a threatened species throughout its range in the contiguous United States. Actions that may impact lynx populations and habitat include timber management, fire management, recreation, livestock grazing, utility corridors, and residential, commercial and agricultural developments (such as housing, ski areas, and large resorts).

Mexican Spotted Owl (Strix occidentalis). Limited potential exists for Mexican spotted owl habitat within the GSFO. In fact the GSFO is relatively distant from any known active territories. Critical habitat has been designated for Mexican spotted owls within the state of Colorado, though none exists on BLM lands within the GSFO.

Western yellow-billed cuckoo (Coccyzus americanus). The western yellow-billed cuckoo is a federal candidate species that has declined due to loss of riparian habitat from agricultural and water use and road and urban development. Western cuckoos breed in large blocks of riparian habitats (particularly woodlands with cottonwoods (*Populus fremontii*) and willows (*Salix sp.*)).

Dense understory foliage appears to be an important factor in nest site selection, while cottonwood trees are an important foraging habitat in areas where the species has been studied. The yellow-billed cuckoo is an uncommon summer resident of Colorado and only few records of cuckoos exist at all in the mountainous region of the state.

Affected Environment: *BLM Sensitive Species*

Plants:
BLM sensitive plant species with habitat and/or occurrence records in Garfield County include adobe thistle (*Cirsium perplexans),* DeBeque milkvetch (*Astragalus debequaeus),* Naturita milkvetch (*Astragalus naturitensis),* Roan Cliffs blazing star (*Mentzelia rhizomata*), Piceance bladderpod (*Lesquerella parviflora*), and Harrington's penstemon (*Penstemon harringtonii*). Of these species, only the Roan Cliffs' blazing star has suitable habitat within the JQS allotment. The Roan Cliff's blazing star is found in the Green River shale formation, often in association with Parachute beardtongue. Several populations of Roan Cliff's blazing star have been documented along the eastern edge of the plateau where the Green River shale formation is exposed.

Fish:
Colorado River cutthroat trout. The allotment contains the headwater portions of four perennial streams East Fork Parachute Creek, JQS Gulch, Northwater Creek, and Trapper Creek. All of these waters contain core conservation populations of genetically pure Colorado River cutthroat trout a BLM sensitive fish species.

Terrestrial Wildlife:
Reptiles (Midget faded rattlesnake [Crotalus viridis concolor] and the Utah milk snake [Lampropeltis triangulum taylori]): Little is known about these reptiles. This snakes range from across Utah and portions of Wyoming into west-central Colorado, whose populations are in the eastern margin of this species' range. Utah milk snakes occupy various habitats, but many records have been noted within and near floodplains. The species are of concern in Colorado because of the small number of records and restricted range. Threats include development, outright killing, and illegal collection of individuals for commercial purposes.

Bats (Townsend's big-eared bat [Corynorhinus townsendii], fringed myotis [Myotis thysanodes], big free-tailed bat [Nyctinomops macrotis], Yuma myotis [Myotis yumanensis], and spotted bat [Euderma maculatum]). Bats prefer natural caves and abandoned mines for winter, summer, day, and maternal roost sites. These species typically forage on a variety of insects and may use a variety of habitats, including pinyon-juniper woodlands, riparian areas, montane forests, and semidesert shrublands. Although some occurrences have been recorded, little is known about the population sizes and distribution of bats within the GSFO. All of the bats listed above are BLM sensitive species, and the Townsend's big-eared bat is also a Colorado species of concern.

Black-footed ferret (Mustela nigripes). Black-footed ferrets, a state and federally endangered species, historically occurred throughout much of the western US, where large colonies of prairie dog towns were present. This species was likely never common within the GSFO due to the lack of suitable habitat. No black-footed ferrets have been documented in the GSFO, and the only known ferret population in Colorado is a recently reintroduced population in Moffat County.

River otter (*Lontra canadensis*). River otters inhabit riparian vegetation along rivers and streams. This species requires water year-round and feeds on fish and crustaceans. River otters were extirpated in Colorado until 1976, when the CDOW began reintroducing them into major waterways, including the Colorado River. Recent surveys have found signs of otters in both the Colorado and Roaring Fork Rivers.

Environmental Consequences/Mitigation: *Federally Listed, Proposed or Candidate Species:*

Plants:
The historic population of Parachute beardtongue is found on a steep, nearly barren slope of the Green River Shale formation. This site is far from water sources and does not provide good forage, so livestock are not drawn to the site. Very little sign of livestock grazing has been documented at this site, so the current condition of the population is not attributable to livestock grazing impacts.

Terrestrial Wildlife:
No occupied or suitable habitat is found on the allotments for any of the federally-listed, proposed or candidate terrestrial wildlife species that occur in Garfield County. Due to the absence of any occupied or critical habitat within these allotments, the proposed action would have **"No Effect"** on any of the listed, proposed or candidate terrestrial wildlife species.

Environmental Consequences/Mitigation: *BLM Sensitive Species:*

Plants:
Very little livestock grazing has been documented in the shale barrens where the Roan Cliff's blazing star occurs, so continuation of livestock grazing, as proposed, should have no impact on this species or its habitat.

Fish:
Colorado River cutthroat trout. The allotment contains the headwaters of four perennial streams that harbor core conservation populations of Colorado River cutthroat trout (99% genetically pure or better). While it is true that back in 1999 the allotment was meeting Colorado's Land Health Standards, portions of the allotment since that time appear to be in a downward trend. Most notable are the upper portions of Northwater Creek and East Fork Parachute Creek and JQS Gulch. Based on repeated visual observation, portions of riparian and stream habitats are showing excessive use by livestock and areas of bare ground, damaged banks, and excessive weeds are present.

The proposed action calls for the same levels of grazing and the same duration of grazing as has been authorized the past several years. In addition, the proposed action calls for grazing use on the JQS allotment to be in accordance with the JQS allotment management plan approved on June 18, 1993 and subject to the grazing use agreement executed on March 15, 1990. The allotment management plan (AMP) has many good actions in it. Among others it calls for:

- The timely rotation of livestock amongst 3 pastures based on timely utilization monitoring

- Herding/Riding Requirements – for cattle at least one rider will be on the allotment each day. For sheep a herder will be on the allotment each day

Neither of these actions has been occurring on a consistent basis. Use of the Trapper Pasture has not occurred for several years. While this has improved conditions in upper Trapper Creek, it has concentrated more animals and more use within the Anvil and JQS pastures which is likely at least a partial cause for the apparent downward trend in JQS Gulch and the upper portions of both Northwater Creek and East Fork Parachute Creek. Timely and aggressive riding would help to keep cattle out of stream bottoms and at least maintain riparian and stream habitats. This also has not been done consistently which has allowed cattle to drift and stay in creek bottoms for longer than desired timeframes.

Continued livestock grazing as proposed would continue to result in some soil compaction and displacement and increase the likelihood of erosional processes, especially on steeper slopes, areas devoid of vegetation, and at livestock concentration areas such as salting and mineral sites, water sources, and creek bottoms. Streambank alteration has occurred and would likely continue to occur. As large herbivores, e.g., elk, deer, and cattle, walk along streambanks or across streams, the animals' weight can cause shearing that result in a breakdown of the streambank and subsequent widening of the stream channel. It also exposes bare soil, increasing the risk of erosion of the streambank. Animals walking along the streambank may increase the amount of soil exposed to the erosive effects of water by breaking or cutting through the vegetation and exposing roots and/or soil. Excessive trampling causes soil compaction, resulting in decreased vegetative cover, less vigorous root systems, and more exposure of the soil surface to erosion (Burton et al. 2008). Soil detachment and sediment transport are likely to occur during spring runoff from snowmelt and during short-duration high intensity thunderstorms. Allowing prolonged use within the creek bottoms increases the potential for increased sediment loading into all of these cutthroat trout streams.

Increases in sediments entering the stream can impact resident cutthroat trout by covering spawning/rearing areas, thereby reducing the survival of fish embryos and juveniles (USDA Forest Service 2000). Excessive sedimentation can also fill in important pool habitats reducing their depth and making them less usable by cutthroat and other aquatic organisms. Pool habitats are important as over-summer and over-winter thermal refugia areas for these fish and are limited in many of these streams. A number of sublethal effects to resident cutthroat may also occur as a result of sedimentation, including avoidance behavior, reduced feeding and growth, and physiological stress (Waters 1995). Over the long-term, increased sediment loads reduce primary production in streams (USDA Forest Service 2000). Reduced insect productivity results from excessive sediment that fills in the interstitial spaces between stream substrates needed by these aquatic invertebrates. This loss is stream productivity can disrupt the food chain and result in reduced food sources for resident fish as well as terrestrial bird and bat species.

The reduction of streamside riparian vegetation can alter the nutrient dynamics of the aquatic habitat. In areas where riparian vegetation has been depleted or lost, a shift in energy inputs from riparian organic matter to primary production by algae and vascular plants have been predicted (Minshall et al. 1989) and observed (Spencer et al. 2003). The increased solar radiation that results from the loss of streamside (or poolside, etc.) vegetation causes temperatures, light levels, and autotrophic production (i.e., plants and algae) to increase. This change in a stream's food web could alter the composition of food and thus energy sources that are available to resident cutthroat and aquatic invertebrates. Terrestrial insect diversity and productivity also decreases with reductions in streamside vegetation which also effects food availability for resident fish. Increased stream temperatures affect cutthroat by reducing their growth efficiency and increasing their likelihood of succumbing to disease. Prolonged and excessive utilization of streamside/riparian vegetation can also result in increased peak flows as vegetation is not sufficient to slow stream velocities and act as a "sponge" to retain water over longer periods. This can result in reduced water quantities throughout the summer into fall when stream temperatures are at their highest which further negatively impacts resident fish. These effects may occur until such time as sufficient streamside vegetation is re-established along disturbed portions of the streams.

Prolonged livestock congregation within these small stream corridors is also affecting water quality for cutthroat trout. With increased nutrient input and limited summer and fall streamflows, eutrophication can and has been occurring. This is the condition in which the increase of mineral and organic nutrients has reduced the dissolved oxygen levels within the stream, producing an environment that favors plant life over animal life. In other words, the mineral and organic nutrient levels being inputted into these streams are greater than the streams flows can handle or carry through the system. This routinely occurs within portions of all of these streams and results of this are often seen as large algae blooms that form dense patches of algae within the creek. This further depletes oxygen levels and reduces habitat quality for resident cutthroat.

All of the above effects are negatively impacting resident cutthroat trout and can result in declines in species recruitment and overall productivity.

Mitigation:
To minimize the above impacts from continued livestock grazing as proposed, the following mitigation is recommended:

- Enforce and monitor compliance of the AMP and the stipulations therein in a timely manner with an emphasis on riparian/stream stipulations and actions versus upland monitoring, and move cattle to the next pasture or off of the allotment when established utilization levels have been reached

- A new Management Action associated with two new ACEC's located on the Roan Plateau that covers streams within this allotment states: Objective: Minimize direct impacts to streambanks resulting from livestock grazing. Management Action: Manage livestock grazing within the ACEC so that streambank damage does not exceed ten

percent of the stream length. Conduct grazing so that this threshold is not exceeded and monitor to assure that this management action is being addressed.

- Add the Trapper Pasture back into the 3 pasture rotation system to spread use more evenly within the allotment and provide for more growing season rest

Terrestrial Wildlife:
Due to the absence of any known occupied or suitable habitat for BLM sensitive terrestrial wildlife species, the proposed action would have no impact on these species.

Analysis on the Public Land Health Standard for T&E Species:
A formal Land Health Assessment was completed for the area in 1999. At that time, Standard 4 for fish was not being met in JQS Gulch or East Fork Parachute Creek. This was primarily due to the presence of non-native brook trout vs. habitat quality. Based on limited data, it appears that large portions of JQS Gulch, East Fork Parachute Creek, Northwater Creek and Trapper Creek are still in good condition. However, larger than desired portions within all of JQS Gulch and the headwater portions of East Fork Parachute Creek and Northwater Creek appear to be in a downward trend with the impacts noted above occurring to various degrees. Continued livestock grazing as proposed would continue to impact resident cutthroat trout and continue the downward trend in riparian and stream habitat condition unless the mitigation measures above are implemented and better and timelier monitoring and compliance and enforcement of existing permit stipulations and AMP actions is performed.

WATER QUALITY, SURFACE AND GROUND (includes an analysis on Standard 5)

Affected Environment: The JQS Common Allotment is located northwest of the City of Rifle, north of I-70 and the Colorado River, and along the eastern edge of the Roan Plateau. The northern part of the allotment is within a 21,862 acre unnamed 6th field watershed that contains the major perennial drainages Trapper and Northwater Creek and their ephemeral tributaries including Tichner Draw, which is tributary to Northwater Creek. The southern part of the allotment is within a 26,345 acre unnamed 6th field watershed that contains the major perennial drainage East Fork of Parachute Creek and its tributaries JQS Gulch and Golden Castle Gulch at the headwaters; Second Anvil Creek to the south; and First Water, Second Water, and Third Water Creeks to the north.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 37) list, drainages within the JQS Common Allotment are within the Lower Colorado River Basin segment 8 that includes the mainstem of Northwater and Trapper Creeks, including all tributaries and wetlands, from their sources to the confluence with the East Middle Fork of Parachute Creek. This segment has been classified aquatic life cold 1, recreation N, water supply, and agriculture. Aquatic life cold 1 indicates that these waters are capable of sustaining cold water biota including sensitive species or could become suitable. Recreation class N refers to waters that are not suitable or intended to become suitable for primary contact recreation. This segment is however suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use. In addition, the State has currently given this stream segment an Outstanding Waters designation that affords such waterbodies additional water quality protection.

The State of Colorado has developed a *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone and a *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) that identifies water bodies suspected to have water quality problems. At this time, the drainages within the JQS Common Allotment are not listed on either of these two lists.

Historically 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 Glenwood Springs Field Office in 1999 as part of the Roan Cliffs Land Health Assessment, and data collected by Colorado Trout Unlimited in 2007. Following are the water quality results in order from those sampling events.

Long-term Stream Discharge Data for USGS Gaging Stations, Parachute Creek Basin

Station Name/Location	Station Number	Period of Record	Avg. and Range of Annual Mean Flow	Avg. and Max. Annual Peak Flow	Avg. and Min. Annual Low Flow
East Fork Parachute Creek (above falls)	09092960	10/1/76 - 10/7/83 8/25/77 - 5/30/83	6.7 cfs 0.6 - 13.7 cfs	139 cfs 364 cfs	0.38 cfs 0.07 cfs
Northwater Creek	09092830	10/1/76 - 5/16/83 8/19/77 - 5/5/82	4.1 cfs 0.5 - 7.5 cfs	84 cfs 225 cfs	0.25 cfs 0.01 cfs

Long-term Water Quality Data for USGS Gaging Stations, Parachute Creek Basin

Station Name/Location	Station Number	Period of Record	Temp. (°C)	pH	Conductivity (µS/cm)	Suspended Sediment Conc. (mg/L)	Suspended Sediment Load (tons/day)
Northwater Creek	09092830	2/76 - 5/83	0 - 21	7.7 - 8.6	380 - 697	10 - 61	0.01 - 1.0

DOE Discharge and Water Quality data for NOSR 1 streams

Stream Name	Sampling Period	Discharge (cfs)	Temp. (°C)	Cond. (µS/cm)	pH
Northwater Creek	seasonal, 1981	0-81	0-17	380-530	8-8.5
Trapper Creek (1 sample)	Sept. 1981	0.5	15.5	560	8.7

1999 Roan Cliffs Land Health Assessment

Stream Name	Date	Discharge (cfs)	Temp. (°C)	Cond. (µS\cm)	pH	Salinity 0/00
East Fork Parachute Creek	7/12/1999	1.50	15.0	382	9	0
Golden Castle Gulch	8/24/1999	0.02	12.5	389	8.5	0
JQS Gulch	8/24/1999	0.03	12.5	518	8	0
Northwater Creek	7/6/1999	1.20	22.6	445	-	0
Second Anvil Creek	8/24/1999	0.02	24.5	567	7.6	0
Third Water Gulch	8/25/1999	0.05	14.7	416	8.8	0
Trapper Creek	7/6/1999	0.41	20.2	451	-	0

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

In addition, the BLM Glenwood Springs Field Office collected water quality data in summer 2008 prior to and following seasonal grazing activities. These samples were taken at areas where cattle have historically concentrated in the past and were analyzed by Grand Junction Laboratories. The following table presents the laboratory water chemistry results from summer 2008 sampling.

2008 BLM Roan Plateau Water Chemistry Lab Results				
Stream Name	**Northwater**	**Northwater**	**Trapper**	**Trapper**
Date	6/11/2008	10/23/2008	6/10/2008	10/23/2008
pH	8.5	8.15	8.3	8.1
Conductivity (umhos/cm)	420	529	424	528
Sodium (mg/l)	25	27	26.5	37
Calcium (mg/l)	48	59	49	52
Magnesium (mg/l)	18	26	15	27
Potassium (mg/l)	0.6	0.4	0.8	0.5
Chloride (mg/l)	4	2	2	2
Sulfate (mg/l)	18	14	19	25
Phenol Alk (mg/l)	12	0	0	0
Total Alk (mg/l)	219	273	217	272
Bicarbonate (mg/l)	236	330	263	329
Carbonate (mg/l)	14	0	0	0
Dissolved Solids (mg/l)	240	332	244	314
Hardess (mg/l)	194	254	184	240
Hydroxide (mg/l)	0	0	0	0
Acidity (mg/l)	0	0	0	0
Fluoride (mg/l)	0.07	0.02	0.08	0.14
Total Suspended Solids (mg/l)	0	0	7	0
Fecal Coliform Bacteria (col/100ml)	4	39	0	117

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 show elevated 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 class N is 630 colonies per 100ml which means that the sample collected by Colorado Trout Unlimited on Trapper Creek on November 7, 2007 exceeded this standard.

Studies in the Pacific Northwest on streams containing salmonids have shown that the optimal level of fecal colonies for aquatic ecosystems is around 50 fecal colonies per 100ml and should not exceed 100 fecal colonies for freshwater systems (EPA 1991, Bjornn & Reiser 1991). Samples collected by the BLM on Raspberry, Trapper, and Yellowjacket Creeks on October 23, 2008 exceed the 100 fecal colonies per 100ml level. Given the presence of sensitive trout species in drainages on the Roan Plateau, one would expect the standards to be similar.

In addition to water quality monitoring, streambank monitoring occurred in summer 2008 by BLM personnel on major drainages on the Roan Plateau. The results have shown that livestock are 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 bank failures. Together these negative impacts lead to loss of aquatic cover and habitat by increasing temperatures and sediment input.

Environmental Consequences/Mitigation: Grazing activities would result in soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms. In addition, the number of livestock in the area would increase the amount of feces present in close proximity to nearby drainages. The introduction of livestock feces to water bodies often leads to water quality degradation by increasing fecal coliform bacteria levels. Due to the close proximity of the proposed activities to area drainages, there is potential that additional sediment associated with grazing practices as well as fecal coliform bacteria from livestock feces could reach any of the drainages mentioned above.

As mentioned above, existing conditions appear to be degrading based on recent streambank monitoring and water quality data. The proposed action involves continued grazing in the allotment similar in number and season of use to past years. These activities would likely result in continued streambank trampling, riparian vegetation loss, and elevated Fecal Coliform and E. coli bacteria levels. These impacts in turn result in changes in stream geomorphology, aquatic habitat loss, and water quality degradation. All these variables are directly related and correlative to overgrazing. Bank stability is lost and additional sediment becomes available for transport which results in channel widening, aggradation, and lower water levels. Decreased water levels and loss of riparian vegetation result in raised temperatures, low dissolved oxygen levels, and turbid waters; all of which are detrimental to salmonids and indicators of water quality degradation.

Existing conditions clearly suggest concentrated livestock use in area drainages, thus recommended mitigation is to limit the amount and period of use in drainages on the Roan Plateau. Streambank and water quality monitoring will continue for the next three years and would allow staff to evaluate conditions and the effectiveness of proper grazing rotation. It is anticipated that more intensive monitoring and communication with permittees could improve existing conditions by dispersing livestock more effectively throughout the season of use.

Mitigation: To minimize the above impacts from continued livestock grazing as proposed, the following mitigation is recommended:

- Enforce and monitor compliance of the AMP and the stipulations therein in a timely manner with an emphasis on riparian/stream stipulations and actions versus upland monitoring, and move cattle to the next pasture or off of the allotment when established utilization levels have been reached

- A new Management Action associated with two new ACEC's located on the Roan Plateau that covers streams within this allotment states: Objective: Minimize direct impacts to streambanks resulting from livestock grazing. Management Action: Manage livestock grazing within the ACEC so that streambank damage does not exceed ten percent of the stream length. Conduct grazing so that this threshold is not exceeded and monitor to assure that this management action is being addressed.

- Add the Trapper Pasture back into the 3 pasture rotation system to spread use more evenly within the allotment and provide for more growing season rest

Analysis on the Public Land Health Standard 5 for Water Quality: In summer 1999, the BLM Glenwood Springs Field Office evaluated drainages within the JQS Common Allotment as part of the Roan Cliffs Unit Land Health Assessment. Water quality parameters collected at that time were limited, but showed no violation of the water quality standards established by the State of Colorado. 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 expected levels for salmonid bearing streams. At this time, it is believed that Standard 5 for Water Quality is not being met in specific stream segments with elevated coliform levels. It is anticipated that water quality conditions would continue to degrade if the mitigation measures described above and the AMP actions are not adhered to.

WETLANDS and RIPARIAN ZONES (includes an analysis on Standard 2)

Affected Environment:

The table below lists known riparian areas and their Proper Functioning Condition (PFC) assessment for the JQS Allotment:

Riparian Area Name	Miles	Year Assessed	Condition Rating
First Anvil Creek – Lower Reach	1.2	1994	Proper Functioning Condition
First Anvil Creek – Upper Reach	0.8	1994	Non-riparian system
Second Anvil Creek – Lower Reach	1.0	1999	Proper Functioning Condition
Second Anvil Creek – Upper Reach	0.6	1999	Functioning at Risk Upward Trend
Golden Castle Gulch	1.3	1999	Proper Functioning Condition
East Fork Parachute Creek – Middle Reach	2.6	1999	Proper Functioning Condition
East Fork Parachute Creek – Upper Reach	1.6	1999	Proper Functioning Condition
JQS Gulch	1.7	1999	Proper Functioning Condition
First Water Gulch	0.7	1994	Proper Functioning Condition
Second Water Gulch	1.3	1994	Proper Functioning Condition
Third Water Gulch	1.3	1999	Proper Functioning Condition
Northwater Creek – Upper Reach	1.2	1999	Functioning at Risk Upward Trend

Riparian Area Name	Miles	Year Assessed	Condition Rating
Trapper Creek – Upper Reach	2.5	1999	Functioning at Risk Upward Trend
South Tributary to East Fork Parachute Creek (unnamed gulch)	0.4	1994	Proper Functioning Condition

In addition to the riparian areas listed above, numerous springs exist on the allotment. These have not been inventoried or accessed.

The Land Health Assessment Roan Cliffs Unit, dated 1999, stated that virtually all of the riparian zones accessed show definite signs of improvement since the 1994 PFC assessment with widening of the riparian zone evident, a decrease in the amount of bare soil or cut banks and recruitment of woody and/or herbaceous riparian species. Riparian trend photos taken in 1998 on the JQS Allotment also show improved conditions when compared to earlier baseline photos.

Recent riparian area monitoring data is limited. In 2008, riparian trend photos were taken at four locations on the allotment. Two were taken on Trapper Creek which showed improved conditions compared to the photos taken in 1998. At both locations the riparian zone had widened. There was an increase in cover and diversity of riparian plant species and a decrease in bare ground. Another location was East Fork of Parachute Creek at the confluence of Second Anvil Creek. This showed improved conditions as well (i.e., widening of riparian zone, increase in riparian plant species cover, production, and diversity, and decrease in bare ground). Another photo taken on East Fork of Parachute Creek at the confluence of First Anvil Creek was inconclusive as the photos were taken at a slightly different location from the previous ones; however, the riparian zone appeared to be in good condition. Recent visual observations of portions of riparian areas along the upper portions of Northwater Creek, JQS Gulch, and the headwaters of East Fork Parachute Creek indicated excessive use by livestock, areas of bare ground, damaged banks, and an excessive amount of weeds present. The condition of these riparian areas may be declining.

The Background section of this document indicates average utilization data was taken at three different riparian areas in 2008. This data monitored upland plant species rather than riparian species although the monitoring sites were near riparian areas.

Environmental Consequences/Mitigation: The proposed action would renew two grazing permits for sheep and cattle for a period of use of June 16 to Sept. 30. This is the same period of use as other common use permittees authorized on the allotment. The allotment is under an AMP that requires rotational grazing for cattle, herding/riding requirements for sheep and cattle, salting requirements away from riparian areas, and establishes utilization limits for riparian plant species. Close adherence to this plan from 1993 to 1998 was successful in improving riparian area conditions as evidenced from the findings of the 1999 land health report and monitoring that was conducted during that period. Recent visual observations of riparian areas, noted in the Affected Environment above, indicate AMP compliance has lapsed. Assuming there will be improvement in monitoring, compliance/enforcement of permit stipulations and the AMP, the condition of riparian areas would be expected to improve. Proposed revisions to grazing management that would allow cattle grazing in Trapper Pasture should also result in

improved riparian conditions by reducing the duration of grazing use in other pastures.

In the event AMP compliance is not adhered to, adverse impacts to riparian areas would likely occur. These impacts include:

- Soil compaction, bank shearing, or severing of roots of riparian vegetation, which are needed for plant survival and bank stability (Behnke and Raleigh 1978).
- Trampling damage that can lead to greater erosion or deposition, change in channel geomorphology, and less soil moisture (Skovlin 1984, Legge et al. 1981).
- Defoliation of important plants at times that do not allow for recovery, for long periods that lead to many repeated defoliations, or at intensities that set back plant growth (Wyman et al. 2006).
- A decline in the condition of the riparian vegetation (e.g., reduced age-class diversity, species composition, and cover).

Analysis on the Public Land Health Standard for Riparian Systems: The proposed action would not result in failure to achieve this standard and should maintain and/or improve land health conditions for riparian systems. This assumes that adequate monitoring, compliance and enforcement of permit stipulations and the AMP takes place. In the event this does not occur, land health conditions relative to riparian systems may decline.

WILD AND SCENIC RIVERS

Affected Environment: The JQS Common allotment encompasses 4 stream segments (JQS Gulch, Golden Castle Gulch, East Fork of Parachute Creek, Second Anvil Creek) and is adjacent to one additional segment(First Anvil Creek) that were found to be eligible under a Wild and Scenic Eligibility Study in 2002. All eligible segments will be managed to preserve the identified Outstanding Remarkable Values (ORV's) until such a time as a suitability study is completed. The ORV's identified for these segments were their core conservation population of Colorado River cutthroat trout and for its rare hanging garden sullivantia (*see Threatened, Endangered and Sensitive sections for; Fish, Plants*). The overall objective is to not allow surface disturbing activities that might impair those identified ORV's or the segments preliminary classification which range from wild to recreational.

Environmental Consequences/Mitigation: The proposed action within the JQS Common allotment has potential to impact the identified ORV's if the mitigation suggested in the Threatened, Endangered and Sensitive section is not adhered to. In addition, stipulations from the June 2007; Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment and Environmental Impact Statement as amended by Plan Maintenance Change No. 1, which applies the following stipulation: "NSO/NGD Wild and Scenic River Eligibility Corridor". The Management action: "Apply a NGD/NSO to the 7,833 acres until such a time a suitability study is completed. At that time if the waterways are to be suitable the NGD/NSO would remain in place. If the waterways are found not to be suitable, the NGD/NSO for this action would be removed."

OTHER AFFECTED RESOURCES

In addition to the critical elements, the resources presented in Table 2 were considered for impact analysis relative to the proposed action and no action alternative. Resources that would be affected by the proposed action and no action alternative are discussed below.

Table 2. Other Resources Considered in the Analysis.

Resource	*NA or Not Present*	*Present and Not Affected*	*Present and Affected*
Access and Transportation		X	
Cadastral Survey	X		
Fire/Fuels Management		X	
Forest Management		X	
Geology and Minerals		X	
Law Enforcement		X	
Paleontology	X		
Noise	X		
Range Management			X
Realty Authorizations		X	
Recreation		X	
Socio-Economics		X	
Soils			X
Vegetation			X
Visual Resources		X	
Wildlife, Aquatic			X
Wildlife, Terrestrial			X

RANGE MANAGEMENT

Affected Environment: Refer to the Proposed Action section for the description of the Affected Environment.

Environmental Consequences/Mitigation: Although no changes are proposed in the grazing permits, changes are identified in the "Current Revised Management" section of this proposed action. Under the proposed management as outlined in the AMP and clarified in the Current Revised Management livestock will be rotated in three different pastures. This adds one pasture to the normal rotation. The use of the Trapper pasture will effectively remove 2-3 weeks of use from the JQS and Anvil pastures. Requiring a rider from all permittees for at least 2 days a week will increase livestock distribution. Rider days can be scheduled and periodically checked for conformance. Increased monitoring efforts in riparian areas will help BLM to make accurate and supported range management decisions. A meeting will be held annually in the spring to identify pasture rotation sequences which will give the BLM and permittees flexibility with regard to season of use in each pasture. If the AMP is followed the allotment should meet Land Health Standards as was the case in 1999.

SOILS (includes an analysis on Standard 1)

Affected Environment: According to the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (USDA 1985), the JQS Common Allotment contains five different soil map units that can be identified by the numerical code assigned by the soil survey (e.g. Irigul channery loam=36). These soil map units are scattered throughout the allotment and have been identified as having slight erosion hazard potential. In addition, some areas within the 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. Following is a brief description of the five different soil map units found within the JQS Common 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 to 8,700 feet and on slopes of 9 to 50 percent. It is derived from sandstone and marlstone. Surface runoff for this soil is medium and the erosion hazard is slight. Primary uses for this soil include wildlife habitat and grazing.
- Irigul-Starman channery loams (38) – This soil map unit is found on ridges and mountainsides at elevations ranging from 7,800 to 9,000 feet and on slopes of 5 to 50 percent. These soils are derived from sandstone and marlstone parent rocks. Approximately 55 percent of this unit is composed of the Irigul soil and approximately 30 percent the Starman soil. Both of these soils are shallow, well drained, and have slight erosion hazards with medium surface runoff. These soils are used primarily for grazing and wildlife habitat.
- Northwater loam (48) – This deep, well drained soil is found on mountainsides at elevations ranging from 7,600 to 8,400 feet and on slopes of 15 to 65 percent. The Northwater loam is derived from sedimentary rocks. Surface runoff for this soil is slow and the erosion hazard is slight. Primary uses for this soil include grazing, wildlife habitat, and recreation.
- Parachute-Rhone loams (53) – These gently sloping to steep soils are found on ridges and mountainsides at elevations ranging from 7,600 to 8,600 feet and on slopes of 5 to 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. Primary uses for these soils include grazing and wildlife habitat.
- Rhone loam (60) – This deep, well drained, gently sloping to steep soil is found on ridges and mountainsides at elevations ranging from 7,600 to 8,600 feet and on slopes of 5 to 30 percent. This soil is derived from sandstone and marlstone. Surface runoff for this soil is slow and the erosion hazard is slight. Primary uses for this soil include wildlife habitat and limited grazing.

Environmental Consequences/Mitigation: Grazing activities would result in soil compaction and displacement that increase the likelihood of erosional processes, especially on steep slopes and areas devoid of vegetation. 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, there is potential that additional sediment associated with grazing practices could reach nearby drainages. However, based on existing and recently assessed soil conditions and generally good vegetative cover; the likelihood of excessive soil degradation and transport to nearby drainages is minimal. The majority of soil degradation associated with the proposed activities would occur in riparian areas and around drainages.

Analysis on the Public Land Health Standard 1 for Upland Soils: In summer 1999, the BLM Glenwood Springs Field Office evaluated the JQS Common Allotment as part of the Roan Cliffs Unit Land Health Assessment in which staff determined that Standard 1 for Upland Soils was being achieved. Based on the results of the land health assessments and existing soil conditions, the proposed activities would not likely prevent Standard 1 for Upland Soils from being met.

VEGETATION (includes an analysis on Standard 3)

Affected Environment:
The JQS allotment is dissected by Trapper, Northwater, and East Fork Parachute Creeks and their upper tributaries. North-facing slopes along the drainages are generally covered in aspen woodlands. Engelmann spruce and subalpine fir are mingled with the aspen and dominate in the deeper canyons where conditions are cooler and moister. On the lower reaches of these drainages, the southern slopes support scattered individuals of Douglas-fir within a matrix of shale barrens and mountain grasslands. Sagebrush shrublands and mountain grasslands form a narrow band along the top of the cliffs (BLM, 2006). Upper Trapper and Northwater Creek, which are gentler gradient streams, support primarily sedges, rushes and riparian grasses. The steeper East Fork Parachute Creek and its tributaries are dominated by willows and other riparian shrubs. Canada thistle is common in the riparian areas. Houndstongue is also present in some of the upland sagebrush/mixed mountain shrub sites.

Significant Natural Plant Communities:
The Roan Plateau Final RMP (BLM, 2006) identified four significant plant communities within the JQS allotment. These include three grassland communities: Indian ricegrass shale barrens (*Achnatherum hymenoides*), beardless bluebunch wheatgrass/Sandberg bluegrass (*Pseudoroegneria spicata ssp. inermis/ Poa secunda*) and beardless bluebunch wheatgrass; a shrubland community: subalpine big sagebrush/basin wildrye plant community (*Artemisia tridentate var. vaseyana/Leymus cinereus*) and one forested community of aspen/Rocky Mountain maple (*Populus tremuloides/Acer glabrum*). The shale barren community is found on south-facing slopes of East Fork Parachute Creek, Northwater Creek, and Trapper Creek. All of the other communities are found in the southwest corner of the allotment in the Anvil pasture. The wheatgrass community is found along the eastern rim of the Roan Cliffs on dry, windswept sites. The aspen/Rocky Mountain maple and Basin wildrye communities are found near the head of First Anvil Creek in more mesic habitat.

Canyon wall seeps provide year-round water which supports hanging garden sullivantia (*Sullivantia hapemanii*), a Colorado endemic plant that is restricted to calcareous seeps on steep

canyon walls. The hanging gardens are found in the JQS allotment along East Fork Parachute Creek and its tributaries.

Six nested frequency transects were established in the three pastures on the JQS allotment. An analysis of the change in nested frequency between 1990 and 1995 showed significant decreases in key grasses at three of the sites in the JQS and Anvil pastures. However, a formal land health assessment of the Roan Cliffs Unit, conducted in 1999, determined that the upland plant communities were generally in good condition. Grasses and shrubs were robust and productive. Most sites had good species diversity, but some sites had a high percentage of Kentucky bluegrass with fewer native perennials. Aspen stands exhibited higher than expected decadence and mortality, but in most stands, aspen regeneration was also evident.

Recent vegetative monitoring data for this allotment is limited. Seven Daubenmire transects were established in 2008, but no analysis of trend can be done until these transects are repeated in 5-10 years. Utilization monitoring has been conducted in 2001, 2002, and 2008. In these years, average utilization levels on key species exceeded the 50% use threshold identified in the AMP and in the grazing permit only in 2008. However, in each year utilization transects were conducted at the end of the growing season, not when livestock were moved between pastures during the season. Regrowth may have masked the actual utilization levels when livestock were first removed.

Environmental Consequences/Mitigation:
The proposed action would renew two grazing permits for sheep and cattle for a period of use of June 16 to Sept. 30. This is the same period of use as the other permittees authorized on this common use allotment. An Allotment Management Plan, signed in 1993, requires rotational grazing for cattle, herding/riding requirements for sheep and cattle, moving of sheep bedding grounds at least every five days and sets utilization limits for upland and riparian plant species. In addition, the AMP establishes Vegetation Objectives for both riparian and upland species. As stated above, vegetative trend data was collected in 1995 and indicated a slight downward trend at that time. There is no other trend data available to evaluate trends since 1995. Average utilization limits in the AMP were exceeded in 2008.

Of the significant plant communities in the JQS allotment, the three grassland communities appear to receive only slight to light grazing use. This may be due to the hot, exposed nature of the sites and the lack of available water in the vicinity. The hanging garden seeps receive little or no grazing use due to the steepness of the sites and the lack of palatable forage. These grassland and hanging garden communities appear to be in good to excellent condition.

The sagebrush/basin wildrye and aspen/Rocky Mountain maple communities receive light to moderate use. Grazing use does not appear to be degrading these sites as community composition has not changed and no weed invasions have occurred.

Recent visual observations in riparian areas indicate that grazing issues may exist and that AMP compliance has lapsed. Proper enforcement of the AMP should result in maintenance or improvement of both upland and riparian conditions.

Proposed revisions to grazing management that would allow cattle grazing in Trapper Pasture should also result in improved vegetative conditions by reducing the duration of grazing use in the other pastures. Cattle grazing in the Trapper pasture should be limited to 2-3 weeks in the first year. The grazing utilization levels will be evaluated after the first year and use of the Trapper pasture may be extended to a longer period of time if the conditions warrant.

Mitigation:
An annual pasture rotation plan will be developed with the permittees. Class of livestock and dates of use in each pasture will be written down so that BLM and permittees are all aware of the use dates. This will also facilitate monitoring acceptable use limits in each pasture during the period when livestock are present in that pasture so that any needed pasture moves can be implemented in a timely fashion. Waiting until the end of the grazing season does not provide the permittees with timely feedback regarding their levels of use.

Monitoring will focus on riparian zones where recent concerns have been raised. However, monitoring will also occur in uplands to ensure proper use levels in the AMP (i.e. not to exceed 50% current year's growth on upland herbaceous species) are not exceeded and to ensure that the trend in vegetative condition is not declining.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial):
A formal Land Health Assessment was completed for the allotment back in 1999. At that time, Standard 3 for plant communities was being met. The proposed action, with proper implementation and enforcement of the AMP and with timely monitoring, should not result in failure to achieve this standard and should maintain and/or improve land health conditions.

WILDLIFE AQUATIC (includes an analysis on Standard 3)

Affected Environment:
In addition to the Colorado River cutthroat trout addressed above, both JQS Gulch and East Fork Parachute Creek contain populations of brook trout within the allotment. All of the perennial streams on the allotment also contain a diverse assemblage of aquatic invertebrates.

Environmental Consequences/Mitigation:
Continued livestock grazing as proposed would continue to result in some soil compaction and displacement and increase the likelihood of erosional processes, especially on steeper slopes, areas devoid of vegetation, and at livestock concentration areas such as salting and mineral sites, water sources, and creek bottoms. Streambank alteration has occurred and would likely continue to occur. As large herbivores, e.g., elk, deer, and cattle, walk along streambanks or across streams, the animals' weight can cause shearing that result in a breakdown of the streambank and subsequent widening of the stream channel. It also exposes bare soil, increasing the risk of erosion of the streambank. Animals walking along the streambank may increase the amount of soil exposed to the erosive effects of water by breaking or cutting through the vegetation and exposing roots and/or soil. Excessive trampling causes soil compaction, resulting in decreased vegetative cover, less vigorous root systems, and more exposure of the soil surface to erosion (Burton et al. 2008). Soil detachment and sediment transport are likely to occur during spring

runoff from snowmelt and during short-duration high intensity thunderstorms. Allowing prolonged use within the creek bottoms increases the potential for increased sediment loading into all of these fish bearing streams.

Increases in sediments entering the stream can impact brook trout by covering spawning/rearing areas, thereby reducing the survival of fish embryos and juveniles (USDA Forest Service 2000). Excessive sedimentation can also fill in important pool habitats reducing their depth and making them less usable by these fish and other aquatic organisms. Pool habitats are important as over-summer and over-winter thermal refugia areas for brook trout and are limited in many of these streams. A number of sublethal effects to resident cutthroat may also occur as a result of sedimentation, including avoidance behavior, reduced feeding and growth, and physiological stress (Waters 1995). Over the long-term, increased sediment loads reduce primary production in streams (USDA Forest Service 2000). Reduced insect productivity results from excessive sediment that fills in the interstitial spaces between stream substrates needed by these aquatic invertebrates. This loss is stream productivity can disrupt the food chain and result in reduced food sources for resident fish as well as terrestrial bird and bat species.

The reduction of streamside riparian vegetation can alter the nutrient dynamics of the aquatic habitat. In areas where riparian vegetation has been depleted or lost, a shift in energy inputs from riparian organic matter to primary production by algae and vascular plants have been predicted (Minshall et al. 1989) and observed (Spencer et al. 2003). The increased solar radiation that results from the loss of streamside (or poolside, etc.) vegetation causes temperatures, light levels, and autotrophic production (i.e., plants and algae) to increase. This change in a stream's food web could alter the composition of food and thus energy sources that are available to resident cutthroat and aquatic invertebrates. Terrestrial insect diversity and productivity also decreases with reductions in streamside vegetation which also effects food availability for resident fish. Increased stream temperatures affect cutthroat by reducing their growth efficiency and increasing their likelihood of succumbing to disease. Prolonged and excessive utilization of streamside/riparian vegetation can also result in increased peak flows as vegetation is not sufficient to slow stream velocities and act as a "sponge" to retain water over longer periods. This can result in reduced water quantities throughout the summer into fall when stream temperatures are at their highest which further negatively impacts resident fish. These effects may occur until such time as sufficient streamside vegetation is re-established along disturbed portions of the streams.

Prolonged livestock congregation within these small stream corridors is also affecting water quality. With increased nutrient input and limited summer and fall stream flows, eutrophication can occur. This is the condition in which the increase of mineral and organic nutrients has reduced the dissolved oxygen levels within the stream, producing an environment that favors plant life over animal life. In other words, the mineral and organic nutrient levels being inputted into the system are greater than the stream flows can handle or carry through the system. This routinely occurs within portions of all of these streams and results of this are often seen as large algae blooms that form dense patches of algae within the creek. This further depletes oxygen levels and reduces habitat quality for resident brook trout.

All of the above effects can result in declines in species recruitment and overall productivity.

Mitigation:
To minimize the above impacts from continued livestock grazing as proposed, the following mitigation is recommended:

- Enforce and monitor compliance of the AMP and the stipulations therein in a timely manner with an emphasis on riparian/stream stipulations and actions versus upland monitoring, and move cattle to the next pasture or off of the allotment when established utilization levels have been reached

- A new Management Action associated with two new ACEC's located on the Roan Plateau that covers streams within this allotment states: Objective: Minimize direct impacts to streambanks resulting from livestock grazing. Management Action: Manage livestock grazing within the ACEC so that streambank damage does not exceed ten percent of the stream length. Conduct grazing so that this threshold is not exceeded and monitor to assure that this management action is being addressed.

- Add the Trapper Pasture back into the 3 pasture rotation system to spread use more evenly within the allotment and provide for more growing season rest

- Discuss problem and concern areas with permittees prior to turnout and emphasize the need for improvement in riparian and stream habitats

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial):
A formal Land Health Assessment was completed for the area back in 1999. At that time, Standard 3 for fish was not being met in JQS Gulch or East Fork Parachute Creek. This was primarily due to the presence of non-native brook trout vs. habitat quality. Based on limited data, it appears that large portions of JQS Gulch, East Fork Parachute Creek, Northwater Creek and Trapper Creek are still in good condition. However, larger than desired portions within all of JQS Gulch and the headwater portions of East Fork Parachute Creek and Northwater Creek appear to be in a downward trend with the impacts noted above occurring to various degrees. Continued livestock grazing as proposed is likely to continue this downward trend in riparian and stream condition unless the mitigation measures above are implemented and better and timelier monitoring and compliance and enforcement of existing permit stipulations and AMP actions is performed.

WILDLIFE TERRESTRIAL (includes an analysis on Standard 3)

Affected Environment:
The allotment provides important habitat for a variety of obligate species of birds, raptors, small mammals, reptiles, and are particularly important as food and cover for wintering big game.
Terrestrial habitats have historically been altered by roads, fences, buildings, public recreation use, vegetative treatments and livestock developments.

Species of High Public Interest. BLM lands within this allotment provide a portion of the less-developed summer range available to deer and elk. The allotments overlap with CDOW mapped deer and elk summer range and elk production areas. Summer range is that part of the overall range where 90% of the individuals are located between spring green-up and the first heavy snowfall. Summer range is not necessarily exclusive of winter range; in some areas winter range and summer range may overlap. Elk production areas are that part of the overall range of elk known to be occupied by the females from May 15 to June 15 for calving.

Data analysis Unit (DAU) E-10 (Yellow Creek) includes game management units (GMUs) 21, 22, 30, 31, 32. The Yellow Creek E-10 DAU is located in west-central Colorado and includes the Bookcliffs, Piceance Basin, and the Roan Plateau areas. The elk population in DAU E-10 was relatively low in the 1950's and has shown steady growth in recent years. The population peaked in 2001 at 10,725 elk, and is now approximately 8,700 elk. The population objective for the Yellow Creek DAU of 3,000 elk has never been formalized. The objective was based on early models that underestimated the population and is unrealistically low. More advanced and sophisticated models estimate a current population size of 8,700. The population objective was established prior to the development of DAU plans and process of development of population objectives. Thus, there has not been extensive public review or review by the BLM of the population objective of 3,000 elk. A more realistic population objective is probably 8,000-10,000 elk. This objective was first introduced during the DAU planning process begun in 1999 and was selected as the preferred alternative, prior to the postponement of plan approvals due to CWD concerns. This population objective is the basis of current DAU planning. The key conflict issues this large DAU involve habitat quality on winter range, wild horse competition between wildlife, and oil and natural gas development. (CDOW 2009).

Environmental Consequences/Mitigation:
The terrestrial wildlife objectives for the allotment are derived from the Roan Plateau Area RMPA. The terrestrial wildlife objective is "*Protect wildlife security areas, habitat connectivity, habitat carrying capacity and winter range*". The RMPA identified several management actions however they are mainly directed at gas development and surface disturbing activities. One somewhat confusing and conflicting management action is applicable to livestock grazing, "*Within the constraints of the other resource management objectives and activities, maintain or enhance the habitats capable of sustaining existing or increasing populations of wildlife*".

Recent visual observations of riparian areas, noted in the Wetlands and Riparian Zone section, indicates AMP compliance has lapsed and there is a decline in the condition of the riparian vegetation (e.g., reduced age-class diversity, species composition, and cover). Riparian corridors are particularly valuable for terrestrial wildlife because they offer food and security. Healthy riparian corridors provide vital connective lifelines that enable wildlife movement necessary to maintain habitat connectivity. Degraded riparian areas reduce the overall area's functionality as wildlife habitat and can reduce the habitats capability of sustaining existing or increasing populations of wildlife.

Species of High Public Interest. The magnitude of competitive interactions between big game and livestock is poorly understood. Livestock and wild ungulate carrying capacities should be

evaluated holistically and be used to guide stocking rate decisions and wild ungulate population objectives. The specific wildlife concern in this allotment is related to riparian areas. The cumulative effects of degraded riparian areas along with the other issues (e.g. quality of winter range, natural gas development) will make sustaining existing or increasing populations of big game difficult. Qualitatively viewing big game population trends and objectives in relationship to the analysis of this proposed action, it can be assumed that the proposed action will not contribute to helping meet CDOW's big game objectives. The proposed action is likely in conflict with the terrestrial wildlife objective. However, the proposed action is consistent with the applicable management action.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Aquatic Wildlife):
A formal Land Health Assessment was completed for the allotment back in 1999. At that time, Standard 3 for wildlife communities was being met. This analysis points out that the riparian conditions have deteriorated over the last 10 years. Within the allotment, the density composition, and frequency of wildlife species that utilize riparian areas are likely being affected. Unless monitoring and enforcement maintains land health conditions – specifically the riparian areas, the proposed action will contribute to reducing the spatial distribution of wildlife across the eastern side of the Roan Plateau.

MITIGATION:
Water - Streambank and water quality monitoring will continue for the next three years and would allow staff to evaluate the effectiveness of proper grazing rotation. It is anticipated that more intensive monitoring and communication with permittees could improve existing conditions by dispersing livestock more effectively throughout the season of use. In addition, implementation of the AMP actions would likely improve area water quality conditions.

CUMULATIVE IMPACTS SUMMARY:
Water - As mentioned in the Water Section above, existing conditions appear to be degrading based on recent streambank monitoring and water quality data. However, it is anticipated that more intensive monitoring and communication with permittees could improve existing conditions by dispersing livestock more effectively throughout the season of use. In addition, implementation of the AMP actions would likely improve area water quality conditions.

PERSONS/AGENCIES CONSULTED:

Grazing Permittee
Southern Ute Tribe, Chairman
Northern Ute Tribe, Chairman
Ute Mtn. Ute Tribe, Chairman

Notices of public scoping were issued through the Colorado BLM's Internet web page providing the public an opportunity to obtain information or offer concerns on grazing permits or allotments scheduled for renewal. There have been no responses received specific to the permit renewal or allotments addressed in this NEPA document. The Glenwood Springs 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.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Isaac Pittman	Rangeland Management Specialist	Range, NEPA Lead
Mike Kinser	Rangeland Management Specialist	Riparian Zones
Jeff O'Connell	Hydrologist/Geologist	Soil, Air, Water, Geology
Kay Hopkins	Outdoor Recreation Planner	Wilderness, VRM
Carla DeYoung	Ecologist	ACEC, T/E/S Plants, Standards, Vegetation
Cheryl Harrison	Archaeologist	Cultural & Native American Concerns
Tom Fresques	Fisheries Biologist	Wildlife Aquatic, T/E/S (Fish)
Brian Hopkins	Wildlife Biologist	Wildlife Terrestrial, T/E/S (Terrestrial Wildlife)
Dereck Wilson	Range Management Specialist	Invasive, Non-native Species

SIGNATURE OF PREPARER: Isaac Pittman

DATE SIGNED: 4/29/2009

ATTACHMENTS: Allotment Maps

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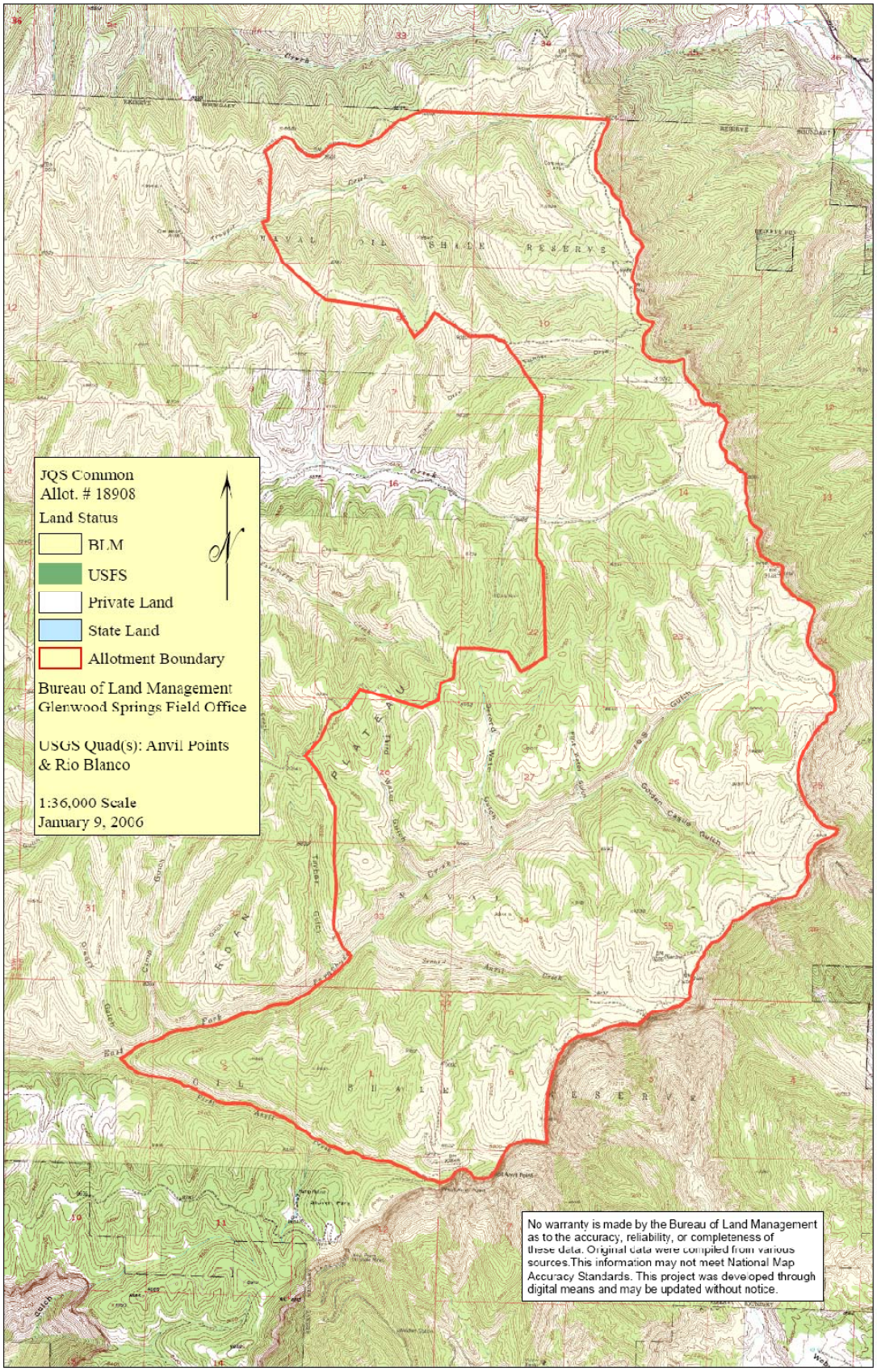
JQS Common
Allot. # 18908
Land Status
BLM
USFS
Private Land
State Land
Allotment Boundary
Bureau of Land Management
Glenwood Springs Field Office
USGS Quad(s): Anvil Points
& Rio Blanco
1:36,000 Scale
January 9, 2006
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources.This information may not meet National Map Accuracy Standards. This project was developed through digital means and may be updated without notice.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GLENWOOD SPRINGS FIELD OFFICE

FINDING OF NO SIGNIFICANT IMPACT

Grazing Permit Renewal on the JQS Common Allotment.

DOI-BLM-CO140-2009-0052-EA

Finding of No Significant Impact
I have reviewed the direct, indirect and cumulative effects of the proposed action documented in the EA for the grazing permit renewal on the JQS Common Allotment. The effects of the proposed action are disclosed in the Alternatives and Environmental Impacts 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):

The disclosure of effects in the EA found the actions limited in context. The planning area is limited in size and activities limited in potential. Effects are local in nature and are not likely to significantly affect regional or national resources.

(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 the livestock grazing permit renewal are identified and discussed in the Environmental Impacts section of the EA. The proposed action with mitigation measures 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. Currently the water quality standard is not being met and will be further monitored to determine if proposed mitigation will result in acceptable levels.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

There are 17 historic properties and two ACECs on this allotment that have been identified in this EA. With mitigation measures that have been included there should be no significant adverse affect to any of these resources.

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

The analysis did not identify any effects that are 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 JQS 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 this allotment.

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

The analysis in the EA did not identify any related actions with cumulative significant effects.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant, cultural, or historical resources.

There are 17 historic properties on this allotment that have been identified in this EA. With mitigation measures that have been included there would be no significant adverse affect to any of these resources.

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.

There is no designated critical habitat for any listed Threatened or Endangered species within the project area. The EA discloses that the proposed action is not likely to adversely affect any species listed as threatened or endangered.

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 laws 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 Official
Glenwood Springs Field Office

4/29/2009
Date