U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Field Office
2300 River Frontage Road
Silt, CO 81652

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-N040-2010-0027-EA

CASEFILE NUMBER: 0507583

PROJECT NAME: Grazing Permit Renewal on the Cabin Gulch, Bocco Mtn., East Castle, Bellyache, Hells Hole and Domantle Allotments

LOCATION: T2S R83W, T2S R84W, T3S R83W, T3S R84W, T4S R83W – Cabin Gulch No. 08731, Bocco Mtn. No. 08730, East Castle No. 08601, Bellyache No. 08734, Hells Hole No. 08735 and Domantle No. 08733 Allotments. Refer to the attached allotment maps.

APPLICANT: Grazing Permittee

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action: The Proposed Action is to renew a term grazing permit for the above applicant. The number/kind of livestock, period of use, percent public land and Animal Unit Months (AUMS) will remain the same as the previous permit with exception of the Hells Hole and Domantle Allotment. The grazing permittee has requested a change in the number of livestock, class of livestock (Hells Hole only) and period of use. All of the above changes have been requested through the Application for Grazing Permit Renewal. The permit would be issued for a 10-year period unless the base property is leased for less, but for purposes of the EA, we are assuming 10 years of grazing by this or another applicant (in case of transfer). The proposed action is in accordance with 43 CFR 4130.2. The tables below describe the scheduled grazing use and grazing preference for the previous permits and any changes proposed.

Mandatory Terms and Conditions
Scheduled Grazing Use:

Allotment Name & No.	Livestock No. & Kind	Period of use	Percent Public Land	AUMs
Cabin Gulch 08731	1200 Sheep	05/15 – 06/03	100	158
	1200 Sheep	10/10 – 11/01	100	181
Bocco Mtn. 08730	1700 Sheep	05/16 – 05/31	100	179
	1690 Sheep	09/01 – 09/10	100	111
East Castle 08601	2120 Sheep	06/01 – 11/15	100	2342
Bellyache 08734	100 Cattle	05/10 – 07/09	9	18
Hells Hole 08735	28 Cattle	05/16 – 10/15	24	34
Domantle 08733	2700 Sheep	06/01 – 06/15	12	32

	2700 Sheep	10/01 – 10/15	12	32

Proposed Changes in Grazing Use for Hells Hole and Domantle Allotments:

Allotment Name & No.	Livestock No. & Kind	Period of use	Percent Public Land	AUMs
Hells Hole 08735	200 Sheep	08/1 – 11/15	24	34
Domantle 08733	1100 Sheep	06/01 – 07/01	12	27
	1500 Sheep	10/01 – 11/01	12	38

Grazing Preference AUMS:

Allotment Name & No.	Active	Suspended	Total
Cabin Gulch 08731	340	0	340
Bocco Mtn. 08730	290	0	290
East Castle 08601	2342	0	2342
Bellyache 08734	18	0	18
Hells Hole 08735	34	0	34
Domantle 08733	65	0	65

The following Other Terms and Conditions were included on the previous (expiring) permit and will be carried forward on the renewed permit:

- 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.
- An actual use report for each allotment shall be submitted annually to the BLM office no later than 15 days after livestock have been removed (i.e., the grazing end period on the bill or permit).

Additional Background Information: Sheep are attended by a herder and are typically grazed to fresh feed every one or two days.

ALTERNATIVES CONSIDERED BUT ELIMINATED:

The No Grazing alternative has been eliminated from further consideration. No unresolved conflicts involving alternative use of available resources have been identified. For this reason, discontinuance of grazing use (No Grazing) will not be considered or assessed.

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 current Washington Office and Colorado State Office policies.

PURPOSE AND NEED FOR THE ACTION: These permits/leases are subject to renewal or transfer at the discretion of the Secretary of the Interior for a period of up to ten years. The U.S. Bureau of Land Management has the authority to renew the livestock grazing permits/leases consistent with the provisions of the Taylor Grazing Act, Public Rangelands Improvement Act,

Federal Land Policy and Management Act, and Glenwood Springs Field Office's Resource Management Plan/Environmental Impact Statement. This Plan/EIS has been amended by Standards for Public Land Health in Colorado.

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

The proposed changes in grazing use on the Hells Hole Allotment would better suit the current livestock operation which grazes sheep on its adjacent private land during the dates requested. In addition, the allotment is more suitable for sheep rather than cattle grazing due to steep slopes present. The proposed changes in grazing use on the Domantle Allotment would reduce livestock numbers to a more typical herd size of a sheep operation.

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 Resource Management Plan.

Date Approved: Jan. 1984, revised 1988, amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 - Red Hill Plan Amendment; amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance; amended in June 2007 – Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment; and amended in March 2009 - Record of Decision for the Designation of Areas of Critical Environmental Concern for the Roan Plateau Resource Management Plan.

Decision Number/Page: The action is in conformance with Administrative Actions (pg. 5) and Livestock Grazing Management (pg. 20).

Decision Language: Administrative actions states, "Various types of actions will require special attention beyond the scope of this plan. Administrative actions are the day-to-day transactions required to serve the public and to provide optimal use of the resources. These actions are in conformance with the plan". The livestock grazing management objective as amended states, "To provide 56,885 animal unit months of livestock forage commensurate with meeting public land health standards."

STANDARDS FOR PUBLIC LAND HEALTH:

The Colorado Standards for Public Land Health consist of 5 standards: upland soils, riparian systems, plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands.

The Bellyache allotment lies within the Eagle River South Landscape, which was assessed in 2002. Three of the allotments proposed for renewal (Bocco Mountain, East Castle, and Hells Hole) lie within the North Eagle Landscape which was assessed in 2003. Cabin Gulch and Domantle allotments are located within the Burns to State Bridge Landscape which was assessed in 2006. The allotments in this permit renewal were meeting all of the standards except for the Bocco Mountain allotment which was not meeting Standard 4 for special status, threatened or endangered species due to local and regional declines in greater sage-grouse populations.

The impact analysis must address whether the proposed action would result in impacts which would improve, maintain or deteriorate land health conditions for each of the parameters found in the Standards for Public Land Health.

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 1). 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.**

Critical Elements

Table 1. 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	Special Status 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

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 #1010-9) was completed for Cabin Gulch, Bocco Mtn., East Castle, Bellyache, Domantle and Hells Hole Allotments on March 17, 2010 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)**
Cabin Gulch	462	278	14	5	No	No additional acres need to be inventoried for the renewal. 51% of the allotment has 30%+ slopes.
Bocco Mtn.	852	3115	22	84	Yes	No additional acres need to be inventoried for the renewal. 35% of the allotment has 30%+ slopes.
East Castle	589	8891	6	3	No	359 additional acres need to be inventoried for the renewal. 19% of the allotment has 30%+ slopes.
Bellyache	821	120	15	0	No	No additional acres need to be inventoried for the renewal. 65% of the allotment has 30%+ slopes
Domantle	562	0	0	0	No	No additional acres need to be inventoried for the renewal. 17% of the allotment has 30%+ slopes
Hells Hole	68	640	10	1	No	No additional acres need to be inventoried for the renewal. 76%

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)
						of the allotment has 30%+ slopes
Total	1478	10213	64	93		

A combined total of 24 Class III cultural resource inventories have been conducted within these allotments. Forty-two historic properties and three areas of Native American concern were identified within these allotments. Historic properties are cultural resources that are considered eligible or potentially eligible for listing on the National Register of Historic Places. Undiscovered 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 moderate to very high potential for historic properties and areas of Native American concern within these allotments.

Subsequent site field visits, inventory, and periodic monitoring may have to be done to identify if additional historic properties are present 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 three known areas of Native American concern within these allotments. On October 26, 2009 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 Tribes, identifying the proposed 2010 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: 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 result in cumulative, long term, irreversible adverse effects to historic properties.

The East Castle and Domantle allotments have not had adequate cultural inventories to meet at least a 10% sample. Additional survey should be undertaken within the term of the permit to determine if historic properties and/or areas of Native American concern are present and what affect if any grazing has had on them. The potential for adverse impacts is greatest in the Bocco Mtn. allotment. The increase in change of livestock from cattle to sheep and the number of livestock in the Hells Hole allotment may also increase the potential for adverse impacts.

Forty-two historic properties were identified during the inventories for these allotments. Additional historic properties and areas of Native American concern may be found which could require mitigation, therefore the BLM has made a determination of **Conditional No Adverse Affect** has been made for this renewal. The cultural resource specialist should be involved in discussions about improvements, maintenance, supplemental feeding areas, etc to ensure that the historic properties and Native American areas of concern are avoided.

Mitigation: New improvements or maintenance of existing range improvements, additional feeding areas, etc., may require cultural resource inventories, monitoring, and/or data recovery. In order to mitigate this potential affect to historic properties all ground disturbing activity, salt blocks, and the placement of supplemental feed, etc, must be at least 100 m from the areas of concern. Ground disturbing activities may require a ¼ mile buffer around areas of Native American concern. The cultural resource specialist should be involved in discussions for improvements, maintenance, supplemental feeding areas, etc to ensure that the historic properties and area of concern is avoided. This allotment may also contain other undiscovered 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: 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).

Invasive, Non-native Species

Affected Environment: The proposed action is to renew a term grazing permit on the Cabin Gulch, Domantle, East Castle, Hells Hole, and Bellyache Allotments. The Hells Holes Allotment is proposed to be converted to sheep and moving the period-of-use later in the season. The Domantle Allotment is proposed to change the period of use and animal units. There are no changes proposed on the Cabin Gulch, East Castle, and Bellyache Allotments.

A landscape wide inventory for the presence of noxious and invasive species has not been completed on the above said allotments. However, noxious weeds have been documented on some allotments and the likelihood of infestations to occur on all allotments is very high. The following list of noxious weeds is common in Eagle County:

Canada thistle, Musk thistle, Whitetop, Plumeless thistle, Houndstongue, Cheatgrass, Bull thistle, Russian knapweed

The following list of noxious weeds has been documented within or adjacent to the corresponding allotments. Specific locations of the following weeds are stored in a GSFO geodatabase:

Cabin Gulch – Bull thistle, musk thistle, Canada thistle, and whitetop.
East Castle – Canada thistle.
Bellyache – Houndtongue, musk thistle, and Canada thistle.

Environmental Consequences/Mitigation: Livestock grazing can facilitate the spread and establishment of noxious and invasive species in two major ways.

First, overgrazing can reduce native vegetation thereby providing a niche for noxious weeds to become establish and spread. Conversely, properly managed grazing at low to moderate levels does not significantly increase the establishment and spread of noxious weeds and as some recent studies have shown can reduce the ability of some weeds, such as cheatgrass, to invade range sites. Land health studies conducted in 2003/2004 and monitoring information collected indicate current stocking levels and management are sufficient enough to maintain the current native plant communities in the discussed allotments and therefore the proposed action is not expected to increase noxious and invasive plant species levels.

Second, livestock can act as a vector to spread reproductive vegetative plant parts and weed seed by means of either attaching to the hair or wool of the animal or being transported through fecal matter. The ability of livestock to transport weed seed and plant parts is directly related to the physiology of the weed species. However, this affect is minimal as compared to other weed seed dispersal vectors such as vehicle routes and ground disturbing activities. The current weed management plan for the GSFO is able to mitigate the expected effects of livestock grazing on noxious and invasive weed management. Furthermore, some of the funding from collected grazing fees is used for weed treatments, thereby offsetting some of the effects that livestock might incur on the above said allotments.

Migratory Birds

Affected Environment:
BLM Instruction Memorandum No. 2008-050 provides guidance toward meeting the Bureau of Land Management's (BLM) responsibilities under the Migratory Bird Treaty Act (MBTA) and the Executive Order (EO) 13186. The guidance directs Field Offices to promote the maintenance and improvement of habitat quantity and quality. To avoid, reduce or mitigate adverse impacts on the habitats of migratory bird species of conservation concern to the extent feasible, and in a manner consistent with regional or statewide bird conservation priorities. 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." The "*BIRDS OF CONSERVATION CONCERN 2008"* (U.S. Fish and Wildlife Service 2008) is the most recent effort to carry out this mandate.

The MBTA prohibits the "take" of a protected species. Under the Act, the term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The USFWS interprets "harm" and "kill" to include loss of eggs or nestlings due to abandonment or reduced attentiveness by one or both adults as a result of disturbance by human activity, as well as physical destruction of an occupied nest.

The conservation concerns are the result of population declines - naturally or human-caused, small ranges or population sizes, threats to habitat, or other factors. Although there are general patterns that can be inferred, there is no single reason why any species was is on the list. Habitat loss is believed to be the major reason for the declines of many species. 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 for many species.

The Glenwood Springs Field Office is within the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR). The 2008 list of Birds of Conservation include the following: Gunnison Sage-Grouse *(Centrocercus minimus)*, American Bittern *(Botaurus lentiginosus)*, Bald Eagle *(Haliaeetus leucocephalus)*, Ferruginous Hawk *(Buteo regalis)*, Golden Eagle *(Aquila chrysaetos)*, Peregrine Falcon *(Falco peregrines)*, Prairie Falcon *(Falco mexicanus)*, Snowy Plover *(Charadrius alexandrinus nivosus/tenuirostris)*, Mountain Plover *(Charadrius montanus)*, Long-billed Curlew *(Numenius americanus)*, Yellow-billed Cuckoo *(Coccyzus americanus)*, Burrowing Owl *(Athene cunicularia)*, Lewis's Woodpecker *(Melanerpes lewis)*, Willow Flycatcher *(Empidonax traillii)*, Gray Vireo *(Vireo vicinior)*, Pinyon Jay *(Gymnorhinus cyanocephalus)*, Juniper Titmouse *(Baeolophus ridgwayi)*, Veery *(Catharus fuscescens)*, Bendire's Thrasher *(Toxostoma bendirei)*, Grace's Warbler *(Dendroica graciae)*, Brewer's Sparrow *(Spizella breweri)*, Grasshopper Sparrow *(Ammodramus savannarum)*, Chestnut-collared Longspur *(Calcarius ornatus)*, Black Rosy-Finch *(Leucosticte atrata)*, Brown-capped Rosy-Finch *(Leucosticte australis)*, and Cassin's Finch *(Carpodacus cassinii)*.

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, oakbrush, aspen, pinyon-juniper woodlands, other types of coniferous forests and riparian and wetland areas support many bird species. The Gray Vireo, Pinyon Jay, Juniper Titmouse, Lewis's Woodpecker and Grace's Warbler are characteristically found in pinyon/juniper woodlands and the Brewer's sparrow *(Spizella breweri*) is found within sagebrush habitats. Many species of raptors (red-tailed hawks, Cooper's hawks, kestrels and owls) not on the Fish & Wildlife Service's Birds of Conservation Concern list also could occur in the area. Raptor surveys have not been conducted in the area.

Bald eagle (*Haliaeetus leucocephalus*). 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. 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 animals. Major threats include habitat loss, human disturbance and illegal shooting.

Environmental Consequences/Mitigation:
Limited specific bird count or species data exists for the area. No intentional take of native bird species is anticipated under the proposed action. Responses of individual bird species to land management activities are often habitat and species specific. Birds generally do not respond to the presence of livestock but are impacted by improper grazing. Improper livestock grazing has the potential to: reduce ground cover and forage, degrade riparian areas, the spread of exotic species, accidentally destroy ground nests through trampling, and alter natural fire regimes. Grazing can also affect riparian habitats which are vitally important to most migratory bird species. The abundance of food, water, and shade which attracts migratory birds to these areas also attracts livestock. On a landscape scale the greater concern is its cumulative impact on the fragmentation of habitats.

Given current overall existing habitat conditions/trends (see riparian and vegetation sections), it is unlikely that livestock grazing as proposed (i.e. numbers, duration, terms/conditions attached), would reduce the extent or quality of habitat available for migratory bird breeding functions or movement. In conclusion, the effects of the proposed action on migratory bird species is expected to be minimal and isolated, but not enough to influence populations of migratory birds on a landscape level or cause clear direct or indirect impacts.

Special Status Species – Aquatic Wildlife (includes an analysis of Public Land Health Standard 4)

Affected Environment:
Federally Listed, Proposed or Candidate Aquatic Wildlife Species
According to the latest species list from the U. S. Fish and Wildlife Service (U.S. Fish and Wildlife Service. 2008), the following Federally listed, proposed, or candidate aquatic wildlife species may occur within or be impacted by actions occurring within the GSFO (Table Table - Special Status Species – Aquatic Wildlife):

Table - Special Status Species – Aquatic Wildlife

Aquatic Wildlife Species	Habitat/Range	Eagle County	Garfield County	Mesa County	Pitkin County	Routt County
Greenback cutthroat trout *(Oncorhynchus clarki stomias)*	Cold, clear, gravely headwater streams and mountain lakes. Originally found in the mountain and foothill areas of the Arkansas and South Platte river systems in Colorado and part of Wyoming.	X	X	X	X	X
Bonytail *(Gila elegans)*	Large, fast-flowing waterways of the Colorado River system.	X	X	X	X	X
Colorado pikeminnow *(Ptychocheilus lucius)*	Swift flowing muddy rivers with quiet, warm backwaters of the Green, Yampa, White, Colorado, Gunnison, San Juan, and Dolores rivers.	X	X	X	X	X

Aquatic Wildlife Species	Habitat/Range	Eagle County	Garfield County	Mesa County	Pitkin County	Routt County
Humpback chub *(Gila cypha)*	Deep, fast-moving, turbid waters often associated with large boulders and steep cliffs such as canyon-bound portions of the Colorado River system such as Black Rocks and Westwater canyons.	X	X	X		X
Razorback sucker *(Xyrauchen texanus)*	Deep, clear to turbid waters of large rivers and reservoirs over mud, sand or gravel. Currently low numbers in the Yampa, Colorado and Gunnison rivers. Reproducing populations remain only in the Colorado River near Grand Junction.	X	X	X	X	X

These species: their status, their distributions, habitat associations, and as appropriate their association to the project area is summarized below.

Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*). Federally listed as threatened. The greenback cutthroat trout was not identified on the USFWS list for Garfield County; however, recent surveys have identified a population in Cache Creek, located several drainages east of the project area. The greenback is the subspecies of cutthroat trout native to the Platte River drainage on the Eastern Slope of Colorado, while the Colorado River cutthroat trout is the subspecies native to Garfield County and throughout the Western Slope of Colorado. Although the occurrence of greenbacks in Cache Creek and potentially elsewhere in the GSFO and WRNF areas is apparently the result of human intervention (e.g., sanctioned or *ad hoc* transplantation of fish from the Eastern Slope), its status as threatened applies to Western Slope populations. However, because drainages within the project area do not support this species, it is not considered further.

Bonytail (*G. elegans*). Federally listed as endangered. This large chub is a member of the minnow family. Their current distribution and habitat status are largely unknown due to its rapid decline prior to research into its natural history. Historically, bonytails were present in the Colorado River system, which includes the Yampa, Green, Colorado and Gunnison rivers. The bonytail is extremely rare in Colorado and no self-sustaining population exist throughout the Colorado River basin. Only one has been captured in the state since 1980. Restoration stocking of bonytail in the wild to develop adult populations is the priority recovery action in Colorado.

Colorado Pikeminnow (*Ptychocheilus lucius*). Federally listed as endangered. The Colorado pikeminnow (formerly Colorado squawfish) Colorado pikeminnow were once abundant in the main stem of the Colorado River and most of its major tributaries in Colorado, Wyoming, Utah, New Mexico, Arizona, Nevada, California and Mexico. Now, they exist primarily in the Green River below the confluence with the Yampa River, the lower Duchesne River in Utah, the Yampa River below Craig, Colo., the White River from Taylor Draw Dam near Rangely downstream to the confluence with the Green River, the Gunnison River in Colorado, and the Colorado River from Palisade, Colo., downstream to Lake Powell. Biologists believe Colorado pikeminnow populations in the upper Colorado River basin are now relatively stable and in some areas may even be growing. Designated Critical Habitat for the Colorado pikeminnow includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle.

Humpback Chub (*Gila cypha*). Federally listed as endangered. The nearest known habitat for the humpback chub and bonytail is within the Colorado River approximately 70 miles downstream from the project area. Only one population of humpback chub, at Black Rocks west of Grand Junction, is known to exist in Colorado.

Razorback Sucker (*Xyrauchen texanus*). Federally listed as endangered. The razorback sucker was once widespread throughout most of the Colorado River Basin from Wyoming to Mexico. In the upper Colorado River Basin, they are now found only in the upper Green River in Utah, the lower Yampa River in Colorado and occasionally in the Colorado River near Grand Junction. Because so few of these fish remain in the wild, biologists have been actively raising them in hatcheries in Utah and Colorado and stocking them in the Colorado River. Designated Critical Habitat for the razorback sucker includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle.

BLM Sensitive Aquatic Wildlife Species
According to the latest *Colorado BLM State Director's Sensitive Species List (Animals and Plants) June, 2000,* the following aquatic wildlife species may occur within or be impacted by actions occurring within the GSFO (Table - Colorado BLM Sensitive Species - Aquatic):

Table - Colorado BLM Sensitive Species - Aquatic

Name	**Habitat**	**Habitat Potential Present / Absent**
Northern leopard frog (*Rana pipiens)*	Wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches.	**Present**
Flannelmouth sucker (*Catostomas latipinnis)*	Generally restricted to rivers and major tributaries.	**Absent**
Mountain sucker (*Catostomus platyrhynchus*)	Small low to mid elevation streams and rivers primarily in northwestern Colorado. Within the GSFO, only known in Piceance Creek.	Present
Roundtail chub (*Gila robusta)*	Generally restricted to rivers and major tributaries.	**Absent**
Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus)*	Occurs in clear, cool headwaters streams with coarse substrates, well-distributed pools, stable streambanks, and abundant stream cover.	**Present**

The following paragraphs address species with a habitat potential to be present in the project area.

Leopard Frog (*Rana pipiens*). Northern leopard frogs are generally found between 3,500 to 11,000 feet in Colorado, in wet meadows and in shallow lentic habitats. Northern leopard frogs require year 'round water sources, deep enough to provide ice free refugia in the winter. The presence of northern leopard frogs has been associated with sites with more herbaceous cover as opposed to sites with earlier successional stages of emergent vegetation. Leopard frogs feed primarily on emergent adults of aquatic insects or on terrestrial insects attracted to the water. Within the GSFO, this species has been documented in various locales. Suitable habitat is

abundant within the GSFO, and is located where quality riparian vegetation exists in conjunction with reliable perennial water sources. Larger populations of this species have been documented northwest of King Mountain within the small drainage that feeds and exits King Mountain (Ligon) Reservoir, June Creek and East Divide Creek south of Silt, Colorado, and in portions of the Rifle Creek watershed north of Rifle, Colorado. Population declines have been attributed to habitat alteration and loss, the effects of introduced bullfrogs and gamefish, aerial pesticide applications, and droughts that limit the availability of year 'round water

Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus).* Colorado River cutthroat trout (CRCT) are one of three subspecies of native trout found in Colorado. This Conservation Strategy has been initiated by the wildlife agencies in Colorado, Utah and Wyoming to reduce threats to CRCT. CRCT have hybridized with non-native salmonids in many areas, reducing the genetic integrity of this subspecies (CRCT Coordination Team 2006).

This species has been documented as occurring within the mainstem of Parachute Creek on private lands. It is likely that all of the perennial waters capable of harboring fish historically contained this native trout species. Competition with non-native salmonids including rainbow, brook, and brown trout is the major factor contributing to the absence/decline of this native species. Riparian habitats in and adjacent to Parachute Creek have not been assessed due to private land. However, based on limited visual observations it appears that at least the upper portions of the creek have habitat capable of supporting this species.

Mountain Sucker (*Catostomus platyrhynchus*). The mountain sucker is found primarily in smaller rivers and streams with gravel, sand, and mud bottoms. Colorado specimens are found in areas of undercut banks, eddies, small pools, and in areas of moderate current. Young fish prefer backwaters and eddies. A population of mature adults is found in at least one Colorado impoundment, Steamboat Lake. They can be affected by reduced flow regimes, and may hybridize with non-native white suckers, which can lead to reduced genetic diversity.

Environmental Consequences/Mitigation:

Federally Listed, Proposed or Candidate Aquatic Wildlife Species. Neither the greenback cutthroat trout nor the four species of federally listed big-river fishes are found within the area or the vicinity of the proposed action. Livestock grazing as proposed would have "No Effect" to these fishes or their habitat.

BLM Sensitive Aquatic Wildlife Species. The Bluehead sucker, Flannelmouth sucker, and Roundtail chub are endemic to the Colorado River basin and reside within the mainstem Colorado River and its major tributary rivers/streams. The proposed action would have negligible negative impact to these species or their habitats.

Analysis on the Public Land Health Standard 4 for Aquatic Wildlife Special Status Species: (partial, see also Plants and Terrestrial Wildlife): The current grazing management does not appear to be impacting the structure and/or composition of native plant communities to a degree where it is changing the quality or usability of the area for aquatic wildlife. Based on overall habitat condition within the landscape area, Standard 3 is being achieved. The proposed action likely will not result in decreased flows or adverse modification of aquatic habitat and should

have no measurable impact on the areas ability to continue to meet standard 3 for aquatic wildlife.

Special Status Species – Terrestrial Wildlife (includes an analysis of Public Land Health Standard 4)

Affected Environment:
Federally Listed, Proposed or Candidate - Terrestrial Wildlife Species
According to the latest species list from the U. S. Fish and Wildlife Service (U.S. Fish and Wildlife Service. 2008), the following Federally listed, proposed, or candidate terrestrial wildlife species may occur within or be impacted by actions occurring within the GSFO (Table 1):

Table 1.

Terrestrial Wildlife Species	Habitat/Range	Eagle County	Garfield County	Mesa County	Pitkin County	Routt County
Black-footed Ferret (*Mustela nigripes*)	In Colorado habitat includes the eastern plains, the mountain parks and the western valleys. Specifically grasslands or shrublands that supported some species of prairie dog, the ferret's primary prey.	X				
Canada lynx (*Lynx Canadensis)*	Mesic forests of lodgepole pine, subalpine fir, Engelmann spruce, and quaking aspen in the upper montane and subalpine zones, generally between 8,000 and 12,000 feet in elevation.	X	X	X	X	X
Mexican spotted owl *(Strix occidentalis lucida)*	Mature montane forests, shady canyons, and steep canyons. The key components in montane forests are common to old-growth forests: uneven-age stands with high canopy closure and tree density, fallen logs and snags.	X	X		X	
Greater sage grouse (*Centrocercus urophasianus)*	Resident of relatively large, open sagebrush flats or rolling sagebrush hills. Uncommon and unlikely in this part of the GSFO or associated habitats	X				X
Yellow-billed cuckoo *(Coccyzus americanus)*	Mature riparian forests of cottonwoods and other large deciduous trees with a well-developed understory of tall riparian shrubs. Uncommon summer resident of Colorado.	X	X	X	X	X
Uncompahgre fritillary butterfly *(Boloria acrocnema)*	Patches of snow willow (*Salix spp.*) at high elevations.	X			X	

These species: their status, their distributions, habitat associations, and as appropriate their association to the project area is summarized below.

Black-footed Ferret (*Mustela nigripes*). Federally listed as endangered. Black-footed ferrets have ranged statewide but never have been abundant in Colorado. Their habitat included the eastern plains, the mountain parks and the western valleys – grasslands or shrub lands that

supported some species of prairie dog, the ferret's primary prey. Little is known about their natural history. They mate in early spring and give birth to a litter of three or four mouse-sized pups after a seven-week gestation period. Black-footed ferrets are reported to be killed. They are susceptible to distemper, predators like owls and coyotes, and vehicles. It is assumed that plowing for agriculture and programs to eradicate prairie dogs have driven the black-footed ferret to the verge of extinction. State and federal biologists have established two major black-footed ferret colonies: one at Coyote Basin (Colorado-Utah border west of Rangely) and another at the BLM's Wolf Creek Management Area southeast of Dinosaur National Monument (CDOW 2009 Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, this species is not considered further.

Canada Lynx (*Lynx canadensis*). Federally listed as threatened. Canada lynx (*Lynx canadensis*) was listed as a federally threatened species, effective April 24, 2000 (Federal Register Volume 65, No. 58). Canada lynx occupy high-latitude or high-elevation coniferous forests characterized by cold, snowy winters and an adequate prey base (Ruggiero et al. 1999). The preferred prey of Canada lynx throughout their range is the snowshoe hare (*Lepus americanus*). In the western United States, lynx are associated with mesic forests of lodgepole pine, subalpine fir, Engelmann spruce, and quaking aspen in the upper montane and subalpine zones, generally between 8,000 and 12,000 feet in elevation. Although snowshoe hares are the preferred prey in Colorado, lynx in also feed on other species such as the mountain cottontail (*Sylvilagus nuttallii*), pine squirrel (*Tamiasciurus hudsonicus*), and blue grouse (*Dendragapus obscurus*).

The majority of lynx habitat lies within National Forest lands, therefore lynx habitat contained within the area of the proposed action functions as part of a larger landscape. The U.S. Forest Service (USFS) has mapped suitable denning, winter, and other habitat for lynx within the White River National Forest (WRNF). The mapped suitable habitat in the WRNF comprises several areas known as Lynx Analysis Units (LAUs). Lynx analysis units (LAUs) are management areas that contain suitable lynx habitat and approximate the size of a female home range. Several LAUs border BLM lands however no areas large enough to be considered LAUs occur within the GSFO. BLM lands within the GSFO area generally support the movement of lynx dispersing to a new area or, potentially, moving to lower elevations during severe winter weather in search of prey. The allotment is part of the Castle Peak landscape linkage.

Greater sage grouse (*Centrocercus urophasianus).* The U.S. Fish and Wildlife Service announced on Friday, March 5, 2010 that the greater sage-grouse (Centrocercus urophasianus) would be added to the Endangered Species Act "Candidate" list. The USFWS determined that proposing the species for protection is precluded by the need to take action on other species facing more immediate and severe extinction threats. As a result, the greater sage-grouse was placed on the list of species that are candidates for Endangered Species Act Protection. Evidence suggests that habitat fragmentation and destruction across much of the species' range has contributed to significant population declines over the past century. If current trends persist, many local populations may disappear in the next several decades, with the remaining fragmented population vulnerable to extinction.

Sage grouse, as the name implies, are found only in areas where sagebrush is abundant, providing both food and cover. Although these birds are found at altitudes of 6000-8500 feet,

they are not forest grouse and prefer relatively open sagebrush flats or rolling sagebrush hills. In winter, sagebrush accounts for 100% of the diet for these birds. In addition, it provides important escape cover and protection from the elements. In late winter, males begin to concentrate on traditional strutting grounds or leks. Females arrive at the leks 1-2 weeks later. Leks can occur on a variety of land types or formations (windswept ridges, knolls, areas of flat sagebrush, flat bare openings in the sagebrush. Breeding occurs on the leks and in the adjacent sagebrush, typically from March through May. Females and their chicks remain largely dependent on forbs and insects for food well into early fall. Cultivated herbaceous broad-leaved plants (alfalfa, clover) are important early fall food sources when available (CDOW 2009a).

The Northern Eagle/Southern Routt population, while small (<500 birds), probably has, or had, a relationship with the larger population in Moffat, Rio Blanco and western Routt counties, and probably with the Middle Park population to the east. Sage-grouse are still present in the Radium area between State Bridge and Kremmling (Northern Eagle/Southern Routt Greater Sage-Grouse Work Group 2004) and likely to occur in the Gypsum Hills area and the area north of Wolcott which includes portions of these allotments.

Mexican Spotted Owl (*Strix occidentalis*). Federally listed as endangered. This owl nests, roosts, and hunts in mature coniferous forests in canyons and foothills. The only extant populations in Colorado are in the Pikes Peak and Wet Mountain areas of south-central Colorado and the Mesa Verde area of southwestern Colorado. Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, this species is not considered further.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*). Candidate for Federal listing. This secretive species occurs in mature riparian forests of cottonwoods and other large deciduous trees with a well-developed understory of tall riparian shrubs. Western cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods (*Populus fremontii*) and willows (*Salix* sp.). A few sightings of yellow-billed cuckoo have occurred in western Colorado along the Colorado River near Grand Junction (USFWS 2009b). Riparian areas in the project area do not provide suitable habitat for this species due to the patchy nature of the stands and the general lack of a tall-shrub understory. Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, this species is not considered further.

Uncompahgre fritillary butterfly *(Boloria acrocnema).* Federally listed as endangered. The butterfly has been verified at only two areas in the San Juan Mountains in Colorado. There is anecdotal evidence of other colonies in the San Juans and southern Sawatch ranges in Colorado. The butterfly exists above treeline in patches of its larval host plant, snow willow. The butterfly is most often found on north and east facing slopes, which provide a moist, cool, microclimate. The greatest known controllable threat is butterfly collecting. Climatological patterns, disease, parasitism, predation, and trampling of larvae by humans and livestock might pose additional threats. Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range, elevation and habitat conditions, this species is not considered further.

BLM Sensitive - Terrestrial Wildlife Species
According to the latest *Colorado BLM State Director's Sensitive Species List (Animals and Plants) June, 2000,* the following terrestrial wildlife species may occur within or be impacted by actions occurring within the GSFO (Table - BLM Sensitive - Terrestrial Wildlife Species):

Table - BLM Sensitive - Terrestrial Wildlife Species

Name	**Habitat/Range**	**Habitat Potential Present / Absent**
Townsend's big-eared bat (*Corynorhinus townsendii*) and Fringed myotis (*Myotis thysanodes)*	Occur as scattered populations at moderate elevations on the Western Slope, along the foothills of the Front Range and the mesas of southeastern Colorado. Maximum elevation is 7,500 feet. Breeds and roosts in caves, trees, mines, and buildings; hunts over pinyon-juniper, montane conifer, and semi-desert shrubland habitats. Known occurrences - Potential in caves, mines or trees	Present
Northern goshawk (*Accipter gentilis)*	Resident in foothills and mountains and occasional in migration and winter at lower elevations. Predominantly uses mature stands of aspen, and pines (ponderosa and lodgepole). Uncommon - seasonal	Present
Goldeneye, Barrow's (*Bucephala islandica)*	Rare winter resident and spring/fall migrant in lowlands and mountains; a few breed in the northern mountains. Uncommon - seasonal	Absent
Ibis, white-faced (*Plegadis chihi)*	Inhabits wet meadows, marsh edges and reservoir shorelines. Very rare, non-breeding, summer migrant to western Colorado valleys and mountain lakes. Main breeding area is in the San Luis valley.	Absent

The following paragraphs address species with a habitat potential to be present in the project area.

Fringed Myotis (*Myotis thysanodes*) and Townsend's Big-eared Bat (*Plecotus townsendii*). Occur as scattered populations at moderate elevations on the Western Slope of Colorado. Habitat associations are not well defined. Both of these bats will forage over water and along the edge of vegetation (pinyon-juniper woodlands, montane conifer woodlands, semi-desert shrublands) for aerial insects. Although they commonly roost in caves, rock crevices, mines, or buildings, they also may roost in tree cavities. Both species are widely distributed and usually occur in small groups. The animals roost in rock crevices, caves, mines, buildings and trees. Townsend's big-eared bat is not very abundant anywhere in its range and this is attributed to patchy distribution and limited availability of suitable roosting habitat (Gruver, J.C. and D.A. Keinath 2006).

Northern Goshawk *(Accipiter gentilis).* The Northern Goshawk is the largest North American accipiter. The goshawk is a forest habitat generalist that uses a variety of forest type, forest ages, structural conditions and successional stages. Goshawks prey on small-medium sized birds and mammals. It breeds in coniferous deciduous and mixed forests. The nest is typically located on a northerly aspect in a drainage or canyon and is often near a stream. Nest areas contain one or more stands of large, old trees with a dense canopy cover. A goshawk pair occupies its nest area from March until late September. The nest area is the center of all movements and behaviors associated with breeding from courtship through fledging.

Goldeneye, Barrow's (*Bucephala islandica).* This bird is a rare and local breeder in Flat Tops Wilderness Area in Garfield and adjacent counties. First confirmed record this century of fledged young or broods on 3 shallow lakes in Flat Tops Wilderness in 1990; also found in 1991 and 1994 (CLO 2009). Goldeneye's prefer alkaline-freshwater lakes in parkland areas and to a lesser extent subalpine/alpine lakes/beaver ponds for breeding.

Ibis, white-faced (*Plegadis chihi).* The species inhabits primarily freshwater wetlands, especially cattail (*Typha* spp.) and bulrush (*Scirpus* spp.) marshes. This species feeds in flooded hay meadows, agricultural fields, and estuarine wetlands. This species breeds in isolated colonies in mainly shallow marshes with "islands" of emergent vegetation. This species is more commonly found on the eastern slope of Colorado. Sparse historical records indicate that this species is uncommon within the GSFO.

Environmental Consequences/Mitigation:
Federally Listed, Proposed or Candidate - Terrestrial Wildlife Species
Due to the absence of any occupied or suitable habitat within or adjacent to these allotments, the proposed action would have "No Effect" to Black-footed Ferret, Mexican spotted owl, Yellow-billed cuckoo, or the Uncompahgre fritillary butterfly.

All allotments were field checked in late summer and fall of 2009 to assess the habitat conditions as well as the continued suitability for the recovery of special status species such as the Canada lynx and greater sage grouse.

Canada Lynx (*Lynx canadensis*). The biggest effect to lynx is livestock competition with lynx prey species for forage resources. Any reduction in forage that could lead to a reduction in prey species or prey density could result in lower lynx productivity over the term of the permit. See "Biological Assessment (BA) for the Glenwood Springs Field Office Regarding Grazing Permit Renewals and Canada Lynx – FY 2010" for an allotment specific analysis. The CRVFO submitted a biological assessment to the U.S. Fish and Wildlife Service (USFWS) in December of 2009. The consultation was tiered to the programmatic consultation (ES/GJ-6-CO-03-F-013) on the Field Office grazing program regarding Canada lynx. Through the issuance of a Biological Opinion (see appendix), the FWS concurred with the BLM's "May Affect, Not Likely to Adversely Affect" determination on February 9, 2010. After reviewing the status of the Canada lynx, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it was the USFWS's biological opinion that the proposed renewal of grazing permits on the subject allotments is not likely to jeopardize the continued existence of the Canada lynx. Furthermore, the USFWS concurred with the "may affect, not likely to adversely affect" determination of the BA.

Greater sage grouse (*Centrocercus urophasianus).* The field assessments did not find any indication that livestock grazing was causing habitat fragmentation or destruction of the species' range which has contributed to significant population declines over the past century throughout the west.

BLM Sensitive Terrestrial Wildlife Species.

Fringed Myotis and Townsend's Big-eared Bats. Distribution seems is likely to be locally determined by availability of roosts, such as caves, mines, tunnels, crevices and masonry structures with suitable temperatures. No bat roosts or hibernaculum have been documented within the area of the proposed action.

The greatest threats to Townsend's Big-eared Bat (and likely Fringed Myotis) are the: (a) loss/modification/disturbance of roosting habitat resulting from uninformed closure of abandoned mines, recreation and renewed mining at historical sites; (b) loss/modification/disturbance of foraging habitat resulting from elimination of forest canopy, elimination or alteration of wetland habitat and conversion of native shrub and grasslands to urban or agricultural uses; and (c) exposure to environmental toxins (Gruver, J.C. and D.A. Keinath 2006). It is plausible that over-grazing by livestock could contribute to the decline of the functionality of foraging habitat for bats. The allowable number of animal unit months and periods of use, along with land health standards and terms/conditions; should continue to maintain adequate habitat conditions (suitability and connectivity) for bats.

Northern Goshawk. It is plausible that over-grazing by livestock could contribute to the decline of the functionality of the habitat. A reduction in forage availability could limit prey population density. However no nest sites are known to occur within the area of the proposed action and nesting birds are unlikely in the predominant habitat types. The allowable number of animal unit months and periods of use, along with land health standards and terms/conditions; should continue to maintain adequate habitat conditions (suitability and connectivity) for Northern goshawks.

Analysis on the Public Land Health Standard 4 for Terrestrial Wildlife Special Status Species: (also see Plants and Aquatic Wildlife Special Status Species). The current grazing management does not appear to be impacting the structure and/or composition of native plant communities to a degree where it is changing the quality or usability of the area for any special status wildlife species. Grazing standards and guidelines are maintaining acceptable residual herbivore forage and acceptable riparian conditions. The allotment is supporting a broad area of habitat where terrestrial wildlife can find food, shelter and security. Grazing as proposed is predicted to only result in insignificant and/or discountable effects to lynx and their habitat. Thus it was concluded the continuation of the current grazing system and stocking rates will continue to promote achievement of public land health standard 3 across the landscape and within landscape linkages; and public land health standard 4 in lynx habitat.

Special Status Species – Plants (includes an analysis of Public Land Health Standard 4)

Affected Environment:

Federally Listed, Proposed or Candidate Plant Species

According to the latest species list from the USFWS (http://mountain-prairie.fws.gov/endspp/CountyLists/COLORADO.pdf), the only Federally listed, proposed, or candidate threatened or endangered plant species that may occur, have habitat, and/or be impacted by actions in Eagle County is the Ute ladies'-tresses orchid (*Spiranthes diluvialis*). Habitat for this threatened species is found below 6,500 feet along streams, lakes or in wetland areas with seasonally saturated or subirrigated soils. The allotments within this permit renewal are all above 6,500 feet and no Ute ladies'-tresses orchids have been documented within the vicinity.

BLM Sensitive Plant Species
The only BLM sensitive plant species with habitat and/or occurrence records in Eagle County is Harrington's penstemon (*Penstemon harringtonii*). Harrington's penstemon is found in open sagebrush communities or sagebrush/mixed mountain shrub communities between 6,400 and 10,000 feet. Populations of Harrington's penstemon have been documented within the Bocco Mountain and Bellyache allotments.

Environmental Consequences/Mitigation:

Federally Listed, Proposed or Candidate Plant Species
Due to the absence of known occurrences or suitable habitat for the Ute ladies'-tresses orchid, the Proposed Action would have **"No Effect"** on this listed species.

BLM Sensitive Plant Species
The flowering stalks of Harrington's penstemon are highly palatable to livestock and wildlife. The Bellyache allotment would be grazed from May 10th to July 9th which would overlap the flowering period for the Harrington's penstemon plants (early to late June). The documented occurrence for this species within the Bellyache allotment is on a steep slope immediately adjacent to I-70 which is not routinely grazed by cattle.

The spring grazing period for the Bocco Mountain allotment is from May 16th- through May 31st, which also overlaps the flowering period for Harrington's penstemon. Reduction in Harrington's penstemon populations could result if excessive grazing removes a high percentage of the flower stalks annually thereby inhibiting seed dissemination and reproduction. Little information exists in the allotment files to evaluate the impact of current livestock grazing on Harrington's penstemon within the Bocco Mountain allotment. Utilization studies conducted on June 19, 2009 on 5 key areas of the allotment found that utilization did not exceed the "slight" level. The 2003 Land Health assessment noted some impacts of OHV use on Harrington's penstemon within the allotment, but did not note any impacts from livestock grazing on rare plants in the allotment. Overall, livestock grazing use appeared to be light. Continuation of livestock grazing under the proposed schedule and intensity should have no adverse impacts on the long-term viability of the species at the local or population level.

Analysis on the Public Land Health Standard for Special Status Plant Species:
Standard 4 for special status plant species was being met at the time of the land health assessments for these allotments and continuation of livestock grazing under the current grazing system would not likely prevent Standard 4 for special status plant species from being met.

Water Quality, Surface & Ground (includes an analysis of Public Land Health Standard 5)

Affected Environment:

Cabin Gulch Allotment

The Cabin Gulch Allotment is located southwest of the Colorado River and west of the Town of Bond within a 66,364 acre unnamed 6th field watershed. The northern portion of the allotment borders the Colorado River and is currently mapped as No Surface Occupancy (NSO) stipulation

3 for Major River Corridors and is designed to protect habitat and water quality. However, exception criteria exist and can be applied when impacts are deemed negligible or acceptable. In addition, the eastern portion borders the ephemeral Cabin Gulch which is directly tributary to the Colorado River and several unnamed ephemeral tributaries to the Colorado River flow through the allotment.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 33) list, the Colorado River is within the Upper Colorado River Basin segment 3 that includes the mainstem of the Colorado River from the outlet of Lake Granby to the confluence with the Roaring Fork River. This segment has been classified aquatic life cold 1, recreation E, water supply, and agriculture. Cabin Gulch and the unnamed ephemeral tributaries are within the Upper Colorado River Basin segment 7a that includes all tributaries to the Colorado River from the confluence with the Blue River to the confluence with the Roaring Fork River. This segment has been classified aquatic life cold 1, recreation N, water supply, and agriculture. Aquatic life cold 1 indicates that a water course is capable of sustaining a wide variety of cold water biota. Recreation class E refers to waters in which primary contact recreation is presumed to be present while class N refers to waters that are not suitable or intended to become suitable for primary contact recreation. In addition, all of these waters are suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use.

This segment of the Colorado River and the ephemeral drainages mentioned above are not currently listed on the State of Colorado's *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) as waterbodies suspected to have water quality problems. In addition, very limited current water quality data are available for this segment of the Colorado River and the ephemeral drainages mentioned above.

Bocco Mountain, East Castle, and Domantle Allotments

The Bocco Mountain Allotment is located northwest of the Town of Wolcott and north of I-70 and the Eagle River. The eastern portion of the allotment is within the 20,286 acre Alkali Creek 6th field watershed which contains ephemeral tributaries to Alkali Creek while the western portion of the allotment is within the 11,882 acre Milk Creek 6th field watershed which contains the perennial Milk Creek and its ephemeral tributaries. Both Alkali Creek and Milk Creek are directly tributary to the Eagle River to the south and the southern portion of the allotment is currently mapped as No Surface Occupancy (NSO) stipulation 3 for Major River Corridors. This stipulation is designed to protect habitat and water quality and exception criteria do exist and can be applied when impacts are deemed negligible or acceptable.

The East Castle Allotment is located west and adjacent to the Bocco Mountain Allotment. The southern portion of the allotment is within the 11,882 acre Milk Creek 6th field watershed which contains the perennial Milk Creek and its ephemeral tributaries while the northern portion of the allotment is within the 20,286 acre Alkali Creek 6th field watershed which contains the perennial Alkali Creek and its ephemeral tributaries. The Domantle Allotment is located northeast of the

East Castle Allotment within the 20,286 acre Alkali Creek 6th field watershed which contains the ephemeral Willow Creek.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 33) list, both Alkali and Milk Creek are within the Eagle River Basin segment 11 that includes the mainstem of Alkali Creek from the source to the confluence with the Eagle River and the mainstem of Milk Creek from the source to the confluence with the Eagle River. This segment has been classified aquatic life cold 2, recreation P, and agriculture. Aquatic life cold class 2 refers to waters not capable of sustaining a wide variety of cold or warm water biota due to habitat, flows, or uncorrectable water quality conditions. Recreation class P refers to stream segments where there is a potential for primary contact recreation. The agriculture class refers to waters that are suitable for irrigation or livestock use. Numeric standards include a comprehensive list of physical, biological, inorganic, and metal standards that have been established to protect the designated uses above.

Alkali Creek and Milk Creek are not currently listed on the State of Colorado's *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) as waterbodies suspected to have water quality problems. Some historic water quality data exists for Alkali Creek and Milk Creek that was collected by the USGS and the BLM Glenwood Springs Field Office. The following table summarizes this data along with area water quality data that the BLM collected as part of the 2003 Eagle River North Watershed Land Health Assessment.

2003 Eagle River North Watershed Land Health Assessment						
Stream Name	**Date**	**Discharge (cfs)**	**Temp. (°C)**	**Cond. (µS\cm)**	**pH**	**Sediment (mg/l)**
Alkali Creek near Wolcott, CO USGS gaging station #09067300	1958-1965	0.057-985	0.5-21	-	-	-
Alkali Creek 4- miles north of Wolcott, CO	5/14/2003	3.54	16.5	609	8.4	-
Alkali Creek near Welsh Reservoir	7/8/2003	0.04	26	755	8.7	-
North Fork Milk Creek	7/8/2003	0.19	16.2	628	8.6	-
Milk Creek @ campsite	8/21/1979	2.64	17	860	8.2	-
Milk Creek @ campsite	3/84-9/84	2.88-97.4	4-18.7	475-1500	8.0-8.7	90-2000
Milk Creek @ campsite	1/85-10/85	1-7.5	2.0-15	850-1060	7.4-7.7	230
Milk Creek @ campsite	7/86-10/86	4.5-54	2.0-13	560-875	8.1-8.5	61-402
Milk Creek @ campsite	7/87-9/87	2.75-4.87	7.0-18.0	570-870	6.9-8.4	10.0-32.0
Milk Creek @ campsite	6/88-9/88	-	9.5-15	400-700	7.6-8.4	102-5204
Milk Creek @ campsite	7/11/1989	1.34	16	760	8.6	
Milk Creek @ campsite	6/90-8/90	0.3-1.1	14-21	520-850	6.9-7.8	
Milk Creek @ campsite	7/91-9/91	1.0-5.9	12.0-19.0	630-800	6.9-8.3	
Milk Creek @ campsite	6/92-9/92	0.64-4.1	9.0-18.0	590-950	7.6-8.1	
Milk Creek @ campsite	7/93-9/93	1.42-7.0	7.5-22.5	620-750	7.9-8.5	
Milk Creek @ campsite	10/5/1994	1	8	650	8	

Milk Creek @ campsite	9/15/1995	1.8	11	650	8.3	
Milk Creek @ campsite	8/96-9/96	1.7-2.1	11.0-14.0	620-700	7.8-8.5	
Milk Creek @ campsite	5/14/2003	22	13.3	574	8.4	-
Milk Creek nr. Blue Lake	Sep-77	0.5	10-12.5	628-715	-	-
Milk Creek nr. Blue Lake	7/8/2003	0.022	8.4	820	8.2	-
Four Mile Spring	5/13/2003	0.005	9.8	385	8.2	-
Eby Creek nr. Eagle, CO	7/17/2003	0.7	16.7	540	8.6	-
Muddy Creek nr. Wolcott, CO	7/17/2003	0.07	13.1	1665	8.7	-
Milk Creek @ mouth	6/4/1975	48.2	13	479	9	-
Milk Creek @ mouth	4/76-8/76	0.09-20.0	5.0-20.0	420-1060	8.4	8-1330
Milk Creek @ mouth	6/8/1978	37.2	5	420	8.5	-
Milk Creek @ mouth	5/80-6/80	20.4-47.3	5.0-8.0	660-700	8.4-8.9	688-2180
Milk Creek 1 mile from mouth	9/14/1977	0.5	15	1020	9	-

Bellyache and Hells Hole Allotments

The Bellyache Allotment is located west of the Town of Wolcott and southeast of the Eagle River and I-70 within the 15,805 acre Eagle River above Eagle 6th field watershed while the Hells Hole Allotment is located west of Wolcott and northwest of the Eagle River and I-70 within the same watershed. The northern portion of the Bellyache allotment borders the Eagle River while the Hells Hole Allotment contains ephemeral tributaries to the Eagle River including the ephemeral Rube Creek along its eastern boundary. A high percentage of both allotments are currently mapped as No Surface Occupancy (NSO) stipulation 3 for Major River Corridors which is designed to protect habitat and water quality. However, exception criteria exist and can be applied when impacts are deemed negligible or acceptable.

According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 33) list, the Eagle River in this vicinity and the ephemeral tributaries are within the Eagle River Basin segments 9b and 10a that includes the mainstem of the Eagle River and all tributaries from a point immediately below the confluence with Rube Creek to the confluence with the Colorado River. These segments have been classified aquatic life cold 1, recreation E, water supply, and agriculture. Aquatic life cold 1 indicates that a water course is capable of sustaining a wide variety of cold water biota. Recreation class E refers to waters in which primary contact recreation is presumed to be present. In addition, all of these waters are suitable or intended to become suitable for potable water supplies and agricultural purposes that include irrigation and livestock use.

The segments of the Eagle River mentioned above are not currently listed on the State of Colorado's *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) or the *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) as waterbodies suspected to have water quality problems. Currently, real time water quality data that include specific conductance, temperature, and discharge parameters are available from the USGS for the Eagle

River below Milk Creek and can be viewed at: http://waterdata.usgs.gov/co/nwis/dv/?site_no=394220106431500&referred_module=qw.

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 and could lead to stream bank trampling. The introduction of livestock feces to waterbodies often leads to water quality degradation by increasing fecal coliform bacteria levels and often leads to algal blooms which increase water temperatures. 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 the ephemeral drainages mentioned above. However, given the period of use, numbers of livestock, and the distance from major perennial drainages; the potential for measureable water quality degradation is minimal.

Analysis on the Public Land Health Standard for Water Quality: In 2002 the Glenwood Springs Field Office evaluated area drainages south of I-70 as part of the Eagle River South Watershed Land Health Assessment and in 2003 area drainages north of I-70 were evaluated as part of the Eagle River North Watershed Land Health Assessment. During the assessments, the limited water quality data collected did not show any violations of water quality standards established by the State to protect classified uses. Based on the period of use, numbers of livestock, and the distance from major perennial drainages; the proposed activities would not likely prevent Standard 5 for Water Quality from being met.

Wetlands and Riparian Zones (includes an analysis on Public Land Health Standard 2)

Affected Environment: The table below lists known riparian areas and their Proper Functioning Condition (PFC) assessment for the affected grazing allotments:

Allotment Name	Riparian Area Name	Miles/ Acres	Year Assessed	Condition Rating
Cabin Gulch	Colorado River #1	0.8 mi	2006	Proper Functioning Condition
Bocco Mtn.	Milk Creek Reach 3	0.6 mi	2003	Proper Functioning Condition
	Milk Creek Reach 2	0.3 mi	2003	Proper Functioning Condition
	Milk Creek Reach 3	0.8 mi	2003	Proper Functioning Condition
East Castle	Milk Creek Reach 4	3.2 mi	2003	Proper Functioning Condition
	Milk Creek north fork lower reach 1	0.7 mi	2003	Proper Functioning Condition
	Milk Creek north fork	1.7 mi	2003	Proper Functioning

Allotment Name	Riparian Area Name	Miles/ Acres	Year Assessed	Condition Rating
	upper reach			Condition
	Alkali Creek south fork	2.0 mi	2003	Proper Functioning Condition
	Alkali Creek # 3 upper reach	0.9 mi	2003	Proper Functioning Condition
	Alkali Creek #2	2.4 mi	2003	Proper Functioning Condition
	Picture Lake	7 ac	2003	Proper Functioning Condition
	Blue Lake	9 ac	2003	Proper Functioning Condition
Bellyache	Eagle River	1.2 mi	2003	Proper Functioning Condition
Hells Hole	Rube Creek	0.7 mi	1995	Proper Functioning Condition
Domantle	No known riparian resources			

In addition to the above, the East Castle Allotment also contains riparian areas associated with numerous seeps and springs which have not been inventoried or assessed.

The Proper Functioning Condition assessments above did not raise or identify any issues with livestock grazing. There is no current monitoring, inventory or documented field observations for the affected riparian areas other than what is discussed above.

Environmental Consequences/Mitigation: Livestock grazing, if improperly managed, can result in direct or indirect impacts to riparian areas such as excessive utilization, soil compaction or repeated defoliations that do not allow sufficient time for rest and recovery of plant species. This may result in a decline in the condition of the riparian vegetation (e.g., reduced age-class diversity, species composition, and cover), reduced vigor or death of plant species as well as increased potential for weed invasion or other undesirable vegetation. Excess herbivory or trampling damage can lead to greater erosion or deposition, changes in channel geomorphology, and less soil moisture (Skovlin 1984, Legge et al. 1981). Conversely, livestock grazing that promotes and is compatible with healthy riparian vegetation contributes to sustainable levels of aboveground biomass, root growth, and root strength in streambanks. Through overbank flows, riparian vegetation is naturally defoliated or buried by stream and sediment deposition. Livestock can contribute to the maintenance of vegetation by defoliating dormant or dead growth in between these overflow events, thus increasing green matter and hence root strength and growth (Wyman et al. 2006).

Under the Proposed Action, the duration of grazing use varies from as short as 16 days on the Bocco Mtn. Allotment to as long as 5.5 months on the East Castle Allotment. The kind of livestock would be sheep on all grazing allotments with exception of the Bellyache Allotment which is cattle. Sheep are attended by a herder and are typically grazed to fresh feed every one

or two days. Given this grazing practice, sheep would not graze any given area of an allotment for an extended period of time. Consequently, the duration of grazing use on any given section of a riparian zone would be short (approximately two days or less). Repeated defoliation is less likely to occur and there would be a period of grazing rest throughout most of the growing season. This would allow for ample grazing rest and recovery time for riparian plant species. Some trampling and soil compaction would be expected; however, this would occur over a short period which would minimize adverse impacts. The Bellyache Allotment would be grazed by cattle for a 61 day period; however, most of the grazing use occurs on private lands within the allotment. In addition, the riparian area along the Eagle River is inaccessible to cattle due to steep slopes.

In consideration of the analysis above and the conditions of riparian zones described in the Affected Environment, renewal of the grazing permit (including the proposed changes in grazing use) is not expected to cause adverse impacts to riparian zones. The condition of riparian areas would be maintained or improved. There would be no cumulative impacts.

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.

Wild and Scenic Rivers

Affected Environment: Portions of the allotments (Cabin Gulch, Bocco Mountain, Hells Hole and Bellyache) are adjacent to (2) two stream segments found to be "Eligible" under a Wild and Scenic Eligibility Study in 2007. The Colorado River (Segment 6) and the Eagle River segment 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 the Colorado River were scenic, recreational (floatboating, scenic driving), geologic, wildlife, historic and botanical. The ORV identified for the Eagle River was recreational (floatboating). The overall objectives for the two segments are to not allow activities that might impair the identified ORV's or their preliminary classifications, which were classified as recreational.

Environmental Consequences/Mitigation: Cabin Gulch Allotment includes lands along the Colorado River segment 6 (State Bridge to Dotsero). Bocco Mountain, Hells Hole and Bellyache Allotments include lands adjacent to the Eagle River segment. Grazing has historically occurred in these allotments and have not affected the identified ORV's. Therefore, no impacts are expected to occur within those allotments that there is no change from historical grazing use. The Hells Hole Allotment is within the .5 mile river corridor, but the allotment is separated from the river by the interstate. The river bank and dense riparian vegetation along this segment would diminish the possibility that recreationists would view livestock along the river. Therefore, changing livestock number, kind and period of use in the Hells Hole Allotment will not affect the recreational ORV and classification of that segment of the Eagle River. If impacts to any of the identified ORV's are disclosed in subsequent WSR study or planning, the permit would need to be amended to provide the needed protection.

Wilderness/WSAs

Affected Environment: The East Castle Allotment is within the Castle Peak Wilderness Study Area and within the Castle Peak Citizens Wilderness Proposal (CWP) area. In addition, most of the Cabin Gulch Allotment is within the Pisgah Mountain Citizens Wilderness Proposal area. Both Citizens Wilderness Proposal areas include lands with wilderness characteristics. These units are included in pending legislation for wilderness in the State of Colorado.

Environmental Consequences/Mitigation: Grazing is an allowed activity under the Wilderness Act of 1964. Public land health standards are being achieved or moving towards achievement in these allotments (see Invasive, Non-native Species, Special Status Species, Water Quality, Wetland and Riparian Zones, Soils, and Vegetation sections). The proposed action does not authorize any new projects or related developments. No changes occur within the East Castle or Cabin Gulch Allotments in the proposed action from past grazing use. Therefore, no effects to wilderness character within these areas are predicted. However, any new associated projects or developments within a potential area containing wilderness character could have negative impacts and must be analyzed under a separate environmental assessment. In additions, all actions related to this permit within the Castle Peak Wilderness Study Area will be managed under BLM's Interim Management Policy (IMP) for Lands Under Wilderness Review, H-8550-1 so as not to create irreversible or irretrievable impacts and as not to impair the suitability of the area for preservation as wilderness.

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

*Public Land Health Standard

Range Management

Affected Environment: Refer to the Proposed Action section for the description of the Affected Environment (i.e., grazing allotments, livestock numbers/kind, period of use and AUMs).

Environmental Consequences/Mitigation: The proposed changes in grazing use on the Hells Hole Allotment would better suit the current livestock operation which grazes sheep on its adjacent private land during the dates requested. The allotment is also more suitable for sheep rather than cattle grazing due to steep slopes present. Since sheep are attended by a herder and are typically grazed to fresh feed every one or two days, grazing would not occur on any given area of an allotment for an extended period of time. Consequently, the duration of grazing use on any given section of a riparian zone would be short (approximately two days or less). Repeated defoliation is less likely to occur and there would be a period of grazing rest throughout most of the growing season. This would allow for ample grazing rest and recovery time for rangeland vegetation and would better conform to the Colorado Livestock Grazing Management Guidelines. The proposed changes in grazing use on the Domantle Allotment would reduce livestock numbers to a more typical herd size of a sheep operation. Although the period of grazing use would be increased somewhat, sheep would still be herded and would not graze any given area of an allotment for an extended period of time.

Soils (includes an analysis of Public Land Health Standard 1)

Affected Environment: According to the *Soil Survey of Aspen-Gypsum Area, Colorado: Parts of Eagle, Garfield, and Pitkin Counties* (USDA 1992), the Cabin Gulch *(soils: 25, 30, 33, 47, 66, 67, 104, 105)*, Bocco Mountain *(29, 40, 47, 73, 88, 102, 103, 104, 105)*, East Castle *(10, 11, 18, 19, 59, 61, 67, 103, 105)*, Bellyache *(9, 16, 21, 22, 47, 64, 98, 104)*, Hells Hole *(25, 46, 104)*, and Domantle *(11, 19)* Allotments contain 27 different soil map units that can be identified by the numerical code assigned by the soil survey. The respective soil map units are scattered throughout the allotments and some of them have been identified as having severe water erosion hazards. In addition, many areas within the allotments 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 27 different soil map units found within six allotments mentioned above.

- Ansel-Anvik association (9) – This soil map unit is found on fans, foot slopes, and mountainsides at elevations ranging from 7,500 to 9,500 feet and on slopes of 25 to 45 percent. Approximately 70 percent of this unit is Ansel soil and 20 percent Anvik soil with 10 percent consisting of other soil types. The Ansel soil is deep, well drained, and formed in alluvium derived from material of mixed mineralogy. Runoff for this soil is rapid and the water erosion hazard is moderate to severe. The Anvik soil is deep, well drained, and formed in alluvium and colluvium derived from material of mixed mineralogy. Runoff for this soil is rapid and the water erosion hazard is moderate to severe. Primary uses for this soil map unit include woodland and wildlife habitat.
- Anvik-Skylick-Sligting association, 10 to 25 percent slopes (10) – This soil map unit is found on fans and mountainsides at elevations ranging from 7,500 to 9,500 feet and on slopes of 10 to 25 percent. Approximately 30 percent of this unit is Anvik soil, 30 percent Skylick soil, and 30

percent Sligting soil. The other 10 percent of this soil map unit is made up of Cochetopa, Antrobus, Forsey, Coulterg, and Ansel soils. The Anvik soil is deep, well drained and is derived from alluvium and colluvium of mixed mineralogy. The surface runoff for this soil is medium and the water erosion hazard is moderate. The Skylick soil is deep, well drained and is derived from sandstone colluvium. The surface runoff for this soil is medium and the water erosion hazard is moderate. The Sligting soil is deep, well drained and is derived from sandstone and basalt colluvium. The surface runoff for this soil is medium and the water erosion hazard is moderate. Primary uses for this soil map unit include woodland, wildlife habitat, and rangeland.

- Anvik-Skylick-Sligting association, 25 to 50 percent slopes (11) – This soil map unit is found on fans and mountainsides at elevations ranging from 7,500 to 9,500 feet and slopes of 25 to 50 percent. Approximately 30 percent of the unit is Anvik soil, 30 percent Skylick soil, and 30 percent Sligting soil. The Anvik soil is deep, well drained and is derived from alluvium and colluvium of mixed mineralogy. The surface runoff for this soil is rapid and the water erosion hazard is moderate to severe. The Skylick soil is deep, well drained and is derived from sandstone colluvium. The surface runoff for this soil is rapid and the water erosion hazard is moderate to severe. The Sligting soil is deep, well drained and is derived from sandstone and basalt colluvium. The surface runoff for this soil is rapid and the water erosion hazard is moderate to severe. Primary uses for this soil map unit include woodland, wildlife habitat, and rangeland.

- Charcol-Mord complex, 25 to 50 percent slopes (16) – This soil map unit is found on mountain and valley side slopes at elevations ranging from 8,000 to 9,500 feet and on slopes of 25 to 50 percent. Approximately 60 percent of this unit is Charcol soil and 30 percent Mord soil with 10 percent being composed of other soil types. Both the Charcol soil and Mord soil are deep and well drained and formed in colluvium derived from sandstone and quartzite. Runoff for this soil map unit is rapid and the water erosion hazard is moderate to severe. This unit is primarily used for woodland purposes and wildlife habitat.

- Cochetopa-Antrobus association, 12 to 25 percent slopes (18) - This soil map unit is found on mountainsides and alluvial fans at elevations ranging from 8,500 to 10,500 feet and on slopes of 12 to 25 percent. Approximately 45 percent of this unit is Cochetopa loam and 35 percent of this unit is Antrobus very stony loam. The other 20 percent of this unit is composed of other soil types. The Cochetopa soil is deep, well drained and derived from basaltic alluvium and colluvium. The surface runoff is rapid and the water erosion hazard is moderate. The Antrobus soil is deep, well drained and derived from basaltic alluvium and colluvium. The surface runoff is rapid and the water erosion hazard is moderate. Primary uses for this soil map unit include rangeland and homesite development.

- Cochetopa-Antrobus association, 25 to 50 percent slopes (19) – This soil map unit is found on mountainsides at elevations from 8,500 to 10,500 feet and on slopes of 25 to 50 percent. Approximately 45 percent of this unit is Cochetopa loam and 40 percent of this unit is Antrobus very stony loam. The other 15 percent of this unit is composed of other soil types. The Cochetopa soil is deep, well drained and derived from basaltic alluvium and colluvium. The surface runoff is rapid and the water erosion hazard is moderate to severe. The Antrobus soil is deep, well drained and derived from basaltic alluvium and colluvium. The surface runoff is rapid and the water erosion hazard is moderate. Primary uses for this soil map unit include rangeland and homesite development.

- Curecanti-Fughes complex, 6 to 12 percent slopes (21) – This soil map unit is found on mountainsides and foot slopes at elevations ranging from 6,500 to 8,300 feet and on slopes of 6 to 12 percent. Approximately 50 percent of this soil map unit is Curecanti stony loam and 35 percent Fughes stony loam. The Curecanti soil is deep, well drained, and derived from sandstone

colluvium and alluvium. Surface runoff is slow and the water erosion hazard slight. The Fughes soil is also deep, well drained, and derived from alluvium and colluviums. Surface runoff is medium and the water erosion hazard moderate. Primary uses for this complex include rangeland and home development.

- Curecanti-Fughes complex, 12 to 25 percent slopes (22) – This soil map unit is found on mountainsides and foot slopes at elevations ranging from 6,500 to 8,300 feet and on slopes of 12 to 25 percent. Approximately 55 percent of this soil map unit is Curecanti soil and 30 percent Fughes soil. The Curecanti soil is deep, well drained, and derived from sandstone colluviums and alluvium. Surface runoff is slow and the water erosion hazard moderate. The Fughes soil is also deep, well drained, and derived from alluvium and colluviums. Surface runoff is rapid and the water erosion hazard moderate. Primary uses for this complex include rangeland and home development.

- Cushool-Rentsac complex (25) – This soil map unit is found on mountains and mesa side slopes at elevations ranging from 6,200 to 7,600 feet and on slopes of 15 to 65 percent. Approximately 45 percent of this soil map unit is Cushool soil and 40 percent Rentsac soil. The Cushool soil is moderately deep, well drained, derived from sandstone and shale, and is found on slopes of 15 to 50 percent. Surface runoff for this soil is rapid and the erosion hazard is classified as severe. The Rentsac soil is shallow, well drained, derived from sandstone, and is found on slopes of 25 to 65 percent. Surface runoff for this soil is rapid and the erosion hazard is classified as severe. Primary uses for this soil map unit include rangeland, wildlife habitat, Christmas trees, firewood, and fence posts.

- Dollard-Rock outcrop, shale complex, 12 to 25 percent slopes (29) – This map unit is found on ridges, mountainsides, and valley sides at elevations ranging from 6,800 to 8,500 feet and on slopes of 12 to 25 percent. Approximately 45 percent of this unit is Dollard soil, 45 percent shale Rock outcrop, and the other 10 percent being a mixture of soil types. The Dollard soil is moderately deep, well drained and is derived from Mancos shale. Surface runoff is rapid and the water erosion hazard is slight to moderate. The Rock outcrop portion of this unit is slightly weathered exposures of Mancos shale. Primary uses for this unit include rangeland and wildlife habitat.

- Dollard-Rock outcrop, shale complex, 25 to 65 percent slopes (30) – This map unit is found on ridges, mountainsides, and valley sides at elevations ranging from 6,800 to 8,500 feet and on slopes of 25 to 65 percent. Approximately 45 percent of this unit is Dollard soil, 45 percent shale Rock outcrop, and the other 10 percent being a mixture of soil types. The Dollard soil is moderately deep, well drained and is derived from Mancos shale. Surface runoff is rapid and the water erosion hazard is severe. The Rock outcrop portion of this unit is slightly weathered exposures of Mancos shale. Primary uses for this unit include rangeland and wildlife habitat.

- Earsman-Rock outcrop complex (33) – This soil map unit is found on mountainsides and ridges at elevations ranging from 6,000 to 8,500 feet and on slopes of 12 to 65 percent. Approximately 45 percent of this unit is Earsman very stony sandy loam and 35 percent Rock outcrop. The Earsman soil is shallow, excessively drained, and derived from calcareous redbed sandstone. Surface runoff for this soil map unit is rapid and the water erosion hazard is classified as slight to severe depending on slope. Primary uses for this soil map unit include rangeland, wildlife habitat, fence posts, and firewood.

- Evanston loam (40) - This deep, well drained soil formed in mixed alluvium and is found on alluvial fans, terraces, and valley sides at elevations ranging from 6,500 to 8,000 feet and on slopes of 25 to 45 percent. Surface runoff for this soil is rapid and the erosion hazard is classified as moderate to severe. Primary uses for this soil include rangeland and wildlife habitat.

- Forsey cobbly loam, 12 to 25 percent slopes (46) – This deep, well drained soil is found on alluvial fans, mountainsides, and ridges at elevations ranging from 7,500 to 9,500 feet and on slopes of 12 to 25 percent. This soil is derived from alluvium and colluvium of mixed mineralogy. Surface runoff for this soil is medium and the water erosion hazard is moderate. This soil is used primarily for rangeland purposes.
- Forsey cobbly loam, 25 to 65 percent slopes (47) – This deep, well drained soil is found on alluvial fans, mountainsides, and ridges at elevations ranging from 7,500 to 9,500 feet and on slopes of 25 to 65 percent. This soil is derived from alluvium and colluvium of mixed mineralogy. The surface runoff for this soil is medium and the water erosion hazard is moderate. Primary uses for this soil include rangeland and wildlife habitat.
- Iyers loam (59) – This moderately deep, well drained soil is found on hills, ridges, and mountainsides at elevations ranging from 8,000 to 10,000 feet and on slopes of 6 to 25 percent. It is derived from calcareous shale colluvium. Surface runoff for this soil is medium and the water erosion hazard is slight to severe. Primary uses for this soil include rangeland and wildlife habitat.
- Iyers silty clay loam (61) – This moderately deep, well drained soil is found on hills, ridges, and mountainsides at elevations ranging from 8,000 to 10,000 feet and on slopes of 6 to 25 percent. It is derived primarily from calcareous shale colluvium. Surface runoff for this soil is medium and the water erosion hazard is slight to severe. Primary uses for this soil include rangeland and wildlife habitat.
- Jerry loam (64) – This deep, well drained soil is found on alluvial fans and hills at elevations ranging from 7,500 to 9,500 and on slopes of 25 to 65 percent. This soil is derived from sandstone and shale alluvium. Surface runoff is very rapid and the water erosion hazard is moderate. This soil is used primarily for rangeland purposes.
- Jerry-Millerlake loams, 6 to 25 percent slopes (66) – This soil map unit is found on alluvial fans and valley sides at elevations ranging from 7,500 to 9,500 feet and on slopes of 6 to 25 percent. Approximately 50 percent of this unit is Jerry soil and 40 percent Millerlake soil, with the other 10 percent being a mix of soil types. The Jerry soil is deep, well drained and is derived from sandstone and shale alluvium. Surface runoff is rapid and the water erosion hazard is severe. The Millerlake soil is deep, well drained and is derived from sedimentary rock alluvium. Surface runoff is medium and the water erosion hazard is moderate. Primary uses for this soil map unit include rangeland, pasture, and wildlife habitat.
- Jerry-Millerlake loams, 25 to 45 percent slopes (67) – This soil map unit is found on alluvial fans and valley sides at elevations ranging from 7,500 to 9,500 feet and on slopes of 25 to 45 percent. Approximately 50 percent of this unit is Jerry soil and 40 percent Millerlake soil, with the other 10 percent being a mix of soil types. The Jerry soil is deep, well drained and is derived from sandstone and shale alluvium. Surface runoff is rapid and the water erosion hazard is severe. The Millerlake soil is deep, well drained and is derived from sedimentary rock alluvium. Surface runoff is rapid and the water erosion hazard is severe. Primary uses for this soil map unit include rangeland, and wildlife habitat.
- Kobar silty clay loam (73) – This deep, well drained soil is found on alluvial fans and terraces at elevations ranging from 6,800 to 7,400 feet and on slopes of 3 to 25 percent. It is derived primarily from Mancos shale alluvium. Surface runoff is rapid and the water erosion hazard is moderate. Primary uses for this soil include rangeland and hayland.
- Moyerson-Rock outcrop complex (88) – This soil map unit is found on mountainsides and ridges at elevations ranging from 7,500 to 8,500 feet and on slopes of 15 to 60 percent. Approximately

60 percent of this unit is Moyerson silty clay loam, 25 percent shale Rock outcrop, and the remaining 15 percent composed of other soil types. The Moyerson soil is shallow, well drained and derived from sandstone and shale alluvium and colluvium. Surface runoff is medium and the water erosion hazard is high. Primary uses for this soil map unit include rangeland and wildlife habitat.

- Southface cobbly sandy loam (98) – This deep, well drained soil is found on upland terraces, mountainsides, valley sides, and alluvial fans at elevations ranging from 6,000 to 7,000 feet and on slopes of 12 to 25 percent. It is derived from colluvium and alluvium composed of redbed sandstone and shale intermixed with gypsiferous material. Surface runoff is rapid and the water erosion hazard is moderate. Primary uses for this soil include wildlife habitat and rangeland.
- Tanna-Pinelli complex, 6 to 12 percent slopes (102) – This soil map unit is found on fans and valley sides at elevations ranging from 6,500 to 8,300 feet and on slopes of 6 to 12 percent. Approximately 45 percent of this unit is Tanna soil, 45 percent Pinelli soil, and 10 percent other soil types. The Tanna soil is moderately deep, well drained and is derived from alluvium and residuum. Runoff for this soil is rapid and the water erosion hazard is moderate. The Pinelli soil is deep, well drained and is derived from sedimentary alluvium. Runoff for this soil is rapid and the water erosion hazard is moderate. Primary uses for this soil map unit include rangeland and wildlife habitat.
- Tanna-Pinelli complex, 12 to 25 percent slopes (103) – This soil map unit is occurs on fans and valley sides at elevations ranging from 6,500 to 8,300 feet and on slopes of 12 to 25 percent. Approximately 50 percent of this unit is Tanna soil, 40 percent Pinelli soil, and 10 percent other soil types. The Tanna soil is moderately deep, well drained and is derived from alluvium and residuum. Runoff for this soil is rapid and the water erosion hazard is moderate. The Pinelli soil is deep, well drained and is derived from sedimentary alluvium. Runoff for this soil is rapid and the water erosion hazard is moderate. Primary uses for this soil map unit include rangeland and wildlife habitat.
- Torriorthents-Camborthids-Rock outcrop complex, 6 to 65 percent slopes (104) – This soil map unit occurs on south-facing mountainsides, hills, and ridges with slopes ranging from 6 to 65 percent. Approximately 45 percent of this unit is Torriorthents, 20 percent Camborthids, and 15 percent Rock outcrop. The Torriorthents are shallow to moderately deep, well drained, and are derived from sedimentary rock. Surface runoff is rapid and the water erosion hazard is severe. The Camborthids are shallow to deep, well drained, and are derived from sandstone, shale, and basalt. Surface runoff is rapid and the water erosion hazard is severe. The Rock outcrop component of this unit consists of exposed sandstone, shale, and basalt. This soil map unit is used primarily for wildlife habitat.
- Torriorthents-Camborthids-Rock outcrop complex, 45 to 95 percent slopes (105) – This soil map unit occurs on south-facing mountainsides, hills, and ridges with slopes ranging from 45 to 95 percent. Approximately 45 percent of this unit is Torriorthents, 20 percent Camborthids, and 15 percent Rock outcrop. The Torriorthents are shallow to moderately deep, well drained, and are derived from sedimentary rock. Surface runoff is rapid and the water erosion hazard is severe. The Camborthids are shallow to deep, well drained, and are derived from sandstone, shale, and basalt. Surface runoff is rapid and the water erosion hazard is severe. The Rock outcrop component of this unit consists of exposed sandstone, shale, and basalt. This soil map unit is used primarily for wildlife habitat.

Environmental Consequences/Mitigation: As mentioned above, areas within the four allotments occur on soils with severe erosion hazards and on slopes greater than 30% (17°). 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 the drainages mentioned in the water section above. However, given the period of use and the distance from major perennial drainages the potential for measureable sediment transport and negative soil impacts is minimal.

Analysis on the Public Land Health Standard 1 for Upland Soils: In 2002 the Glenwood Springs Field Office evaluated the Bellyache Allotment as part of the Eagle River South Watershed Land Health Assessment in which all acres were achieving or moving towards achieving Standard 1 for Upland Soils. In 2003 the Bocco Mountain, East Castle, and Hells Hole Allotments were evaluated as part of the Eagle River North Watershed Land Health Assessment in which all acres were achieving or moving towards achieving Standard 1 for Upland Soils. In 2006 the Cabin Gulch and Domantle Allotments were evaluated as part of the Burns to State Bridge Land Health Assessment in which all acres were achieving or moving towards achieving Standard 1 for Upland Soils. Based on the period of use and existing conditions, the proposed activities would not likely contribute to degrading conditions and prevent Standard 1 for Upland Soils from being met.

Vegetation (includes an analysis of Public Land Health Standard 3)

Affected Environment:

Bellyache Allotment

The Bellyache Allotment is south of I-70 and the Eagle River near Wolcott, Colorado. The allotment ranges in elevation from 7,000-8,600 feet. On the steep northwest-facing slopes, vegetation is primarily Douglas-fir forest, and on the mesa top, vegetation is mixed mountain shrubs (mountain big sagebrush, green rabbitbrush, mountain mahogany and bitterbrush) with an herbaceous understory dominated by bottlebrush squirreltail, Letterman's needlegrass, and slender wheatgrass. The land health assessment indicated that the upland vegetation was very diverse and productive. Moderate hedging was noted on the most palatable shrubs.

Bocco Mountain

Bocco Mountain Allotment lies north of the Eagle River and northwest of the town of Wolcott, Colorado. Elevation on the allotment ranges from 7,000-9,000 feet. There are several vegetative communities on the allotment including pinyon/juniper woodlands on south-facing slopes and Rocky Mountain juniper/mountain mahogany along the upper elevations. The lower elevations and drainages are dominated by big sagebrush communities. In areas of previous vegetative treatments, the understory is dominated by crested wheatgrass; in untreated areas the understory is primarily western wheatgrass, Letterman's needlegrass and prairie junegrass. The land health assessment determined that the Bocco Mountain allotment was achieving Standard 3 but with certain problems identified with vegetative conditions. Sagebrush stands were old, decadent with little age class diversity. The understory was lacking in forbs and overall diversity of herbaceous species. Pinyon-juniper encroachment was evident on several sagebrush sites.

Cabin Gulch Allotment
The Cabin Gulch allotment is east of Pisgah Mountain and west of State Bridge. The allotment ranges in elevation from 6,800- 8,900 feet. Most of the allotment consists of mountain big sagebrush with a bluebunch wheatgrass and prairie junegrass understory. Pinyon/juniper woodlands dominate the lower elevations and steep slopes. The land health assessment found good age class distribution among shrubs and a good diversity and abundance of perennial grasses and forbs.

Domantle Allotment
The Domantle allotment is a small allotment mid-way between Cabin Gulch and East Castle allotments. Elevations on the allotment range from 8,800-9,400 feet. Most of the allotment is subalpine sagebrush and rubber rabbitbrush with an understory of Thurber's fescue. Small stands of aspen also occur here. The Domantle allotment was meeting Standard 3 for healthy plant and animal communities. Vegetation in the subalpine meadows was robust and dense. Some hedging of shrubs was noted during the Land Health Assessment.

East Castle Allotment
The East Castle allotment occupies the east slopes of Castle Peak, northwest of Wolcott, Colorado. The allotment ranges in elevation from 8,000-10,000 feet. Vegetation is primarily subalpine meadows intermingled with patches of aspen. Engelmann spruce-subalpine fir forest dominates the highest elevations. At the time of the land health assessment, the ground cover of vegetation was excellent and vegetation was robust and productive. Some mortality due to insect infestation was noted in the conifer stands.

Hells Hole Allotment
This allotment is on the steep south-facing slopes north of the Eagle River and west of Wolcott. Elevations range from 7,000-8,000 feet. Vegetation on the steep slopes is mostly Douglas-fir and pinyon/juniper. The flatter terrain at the top of the slopes is mixed mountain shrubs (mountain big sagebrush, snowberry, bitterbrush and serviceberry) with an understory dominated by Columbia needlegrass and slender wheatgrass. Small aspen stands occupy the upper elevations. Ground cover at the land health assessment site was excellent and vegetation was very diverse.

<u>Environmental Consequences/Mitigation</u>:
Although no quantitative trend monitoring data is available for these allotments, Trend Photo Plots were initiated in 1981 and repeated in 2008 on the Bocco Mountain, Cabin Gulch and East Castle allotments. In addition, one year of utilization data was collected on all 6 allotments in 2009. Previous utilization studies were collected in the 1980's.

Bellyache Allotment
The only recent livestock utilization data was collected in 2008 and no livestock utilization was noted at that time. Vegetation appeared diverse and robust.

Bocco Mountain
Grazing utilization studies conducted on 5 key areas within the allotment on June 19, 2009 found utilization levels were in the slight range (3-11%). Trend photo plots to monitor visual changes

in vegetation cover and composition were established on 5 key areas in 1981 and repeated in 2008.

The Bocco South Pasture #1 Trend Photo Plot was established in a sagebrush brushbeating that was seeded to crested wheatgrass. In 1981, sagebrush density was sparse but the shrubs were young and robust. In 2008, sagebrush density was comparable to the 1981 photo, but shrubs were old, tall and showing signs of decadence. Overall cover showed a slight increase from 1981 to 2008, with the increase due mostly to crested wheatgrass and rabbitbrush. Less utilization is evident in the 2008 photo.

The Bocco South Pasture #2 Trend Photo Plot was also established in a sagebrush brushbeating treatment that was seeded to crested wheatgrass. The 1981 photo indicates little vegetative cover with mostly bare ground. Few junipers are visible in the landscape. In 2008, both grass and forb cover has increased. Juniper trees have encroached onto the site; trees are widely spaced but are 10-15 feet tall. Less utilization is evident in 2008.

Vegetation at the Bocco Mountain North Pasture #1 is sagebrush with crested wheatgrass in the understory. Ground cover has increased from 1981 to 2008. The change appears to be due mostly to an increase in crested wheatgrass density and productivity.

The Bocco Mountain North Pasture #2 Trend Photo Plot was established in a sagebrush brushbeating seeded to crested wheatgrass. This site shows the most dramatic increase in ground cover from 1981 to 2008. The increase in cover is due primarily to an increase in crested wheatgrass and rabbitbrush.

Vegetation at Bocco Mountain North Pasture #3 is sagebrush with mixed grasses. Sagebrush density appears to have decreased from 1981 to 2008, with a corresponding increase in grasses and forbs. Less utilization is evident in 2008.

Overall, sagebrush treatments on the Bocco Mountain allotment are still dominated by crested wheatgrass with less diversity of grasses and forbs than native ecosystems, but total ground cover has improved since 1981.

Cabin Gulch Allotment
Utilization data collected on November 4, 2009 found utilization levels were in the slight range (10-20%). Trend photo plots to monitor visual changes in vegetation cover and composition were established in two key areas in 1981 and repeated in 2008. Both Cabin Gulch #2 and #3 Trend Photo Plots are in a low sagebrush/grass vegetative community.

At Cabin Gulch #2, a slight increase in total ground cover is apparent in the 2008 photos. The additional ground cover is due mostly to a slight increase in the density of grasses and rabbitbrush.

The Cabin Gulch #3 Plot appears to show little change or possibly a slight decrease in visual ground cover due to a slight decrease in grass cover.

Over the past 27 years, the trend in vegetative conditions on the Cabin Gulch allotment appears to be static.

Domantle Allotment
Livestock utilization data collected in November 6, 2009 measured approximately 20% utilization.

East Castle Allotment
Utilization studies conducted on October 23, 2009 found a maximum of 22% utilization on key grasses. Eight trend photo plots were established in 1981 and photographed again in 2008 to monitor ocular changes in vegetation cover and composition. At most sites, there was less utilization in 2009 than in the early 1980's.

The East Castle Milk Creek #2 Trend Photo Plot was established in a grassy meadow. The trend photos show an improvement in vegetative cover from 1981 to 2008.

The Trend Photo Plot at East Castle Milk Creek #3 was established in a grass-dominated meadow. The photos shows no detectable visual change in vegetation from 1981 to 2008. Trend appears to be static.

Trend Photo Plots for East Castle Divide #1 and #2 were established in herbaceous meadows. The 2008 Trend Photo Plot for East Castle Divide #1 shows an increase in total ground cover mostly due to an increase in the cover of grasses.

At East Castle Divide #2, the vegetation appears to be dominated by composite forbs in 1981, with a substantial increase in grass cover in 2008.

Vegetation at the East Castle Horse Mountain #1 Trend Photo Plot is a mountain shrub/grass community. The Trend Photo Plot shows a decrease in sagebrush cover, but an increase in rabbitbrush and grass cover from 1981 to 2008 for a net increase in total ground cover.

Vegetation at East Castle Horse Mountain #2 Trend Photo Plot is dominated by Thurber's fescue. There is little change or a slight increase in total vegetative cover since 1981.

Vegetation at East Castle Welch #2 Trend Photo Plot was almost entirely Thurber's fescue in 1981. In 2008, total ground cover appears to be comparable to the cover in 1981, but the cover of rabbitbrush has increased.

The East Castle Welch #3 Trend Photo Plot was established in a Thurber's fescue meadow. Total vegetative cover appears to have increased slightly from 1981 to 2008. Forb cover has decreased, but grasses are thicker and more robust than in 1981.

Overall, the ocular trend in vegetation on the East Castle allotment appears to have remained static or improved somewhat from 1981 to 2008.

Hells Hole Allotment

Livestock utilization levels on October 23, 2009 were between 6-9%.

Livestock grazing results in a reduction in the height and canopy cover of vegetation. Cattle tend to graze primarily on herbaceous vegetation, particularly palatable grasses. Sheep will either browse on shrubs or graze on grasses and forbs, depending on the time of year. If improperly managed, livestock grazing can result in excessive utilization, soil compaction or repeated defoliations that do not allow sufficient time for rest and recovery of plant species. This may result in a decline in the vigor and cover of the upland vegetation or a reduction in species diversity as the most palatable species are overgrazed and eventually die. Loss of native vegetation and disturbances to the soil surface from trampling can increase the potential for invasion of noxious weeds or other invasive, non-native species. Conversely, light to moderate grazing by livestock that does not repeatedly defoliate the same plants and allows sufficient time for recovery of root masses and above-ground growth can contribute to the maintenance of vegetation by removing dormant or dead growth and stimulating new growth and root development (Wyman et al. 2006).

Under the Proposed Action, the duration of grazing use varies from as short as 16 days on the Bocco Mtn. Allotment to as long as 5.5 months on the East Castle Allotment. The kind of livestock would be sheep on all grazing allotments with exception of the Bellyache Allotment which would be cattle. Sheep are attended by a herder and are typically grazed to fresh feed every few days. Given this grazing practice, sheep would not graze any given area of an allotment for an extended period of time. Consequently, the duration of grazing use in any given area would typically be short (several days). Repeated defoliation is less likely to occur and there would be a period of grazing rest throughout most of the growing season. This would allow for ample grazing rest and recovery time for upland plant species. Some trampling and soil compaction would be expected; however, this would occur over a short period which would minimize adverse impacts. The Bellyache Allotment would be grazed by cattle for a 61 day period; however, most of the grazing use occurs on private lands within the allotment. The East Castle allotment would be grazed from June 1 to November 15, which is essentially the entire growing season. However, this is also a large allotment and if sheep are properly herded throughout the allotment, no areas of excessive use should occur. Utilization data from 2009 did not find any areas of concern on the allotment.

Given the existing condition of the vegetation within these allotments and the analysis provided above, the renewal of the grazing permit (including the proposed changes in grazing use) is not expected to cause adverse impacts to vegetative conditions.

<u>Analysis on the Public Land Health Standard for Plant and Animal Communities</u> (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial):
A formal land health assessment was conducted on the Bellyache allotment in 2002, on the Bocco Mountain, East Castle and Hells Hole allotments in 2003 and on the Cabin Gulch and Domantle allotments in 2005. All allotments were meeting Standard 3 for plant communities. Vegetation was generally in good to excellent condition except on the Bocco Mountain allotment in which concerns were noted with the health of the sagebrush communities and with the lack of diversity and cover of understory species.

The proposed grazing schedule should allow for sufficient growing season rest and plant recovery periods to maintain vegetative health. Seed production and dissemination and seedling establishment should be adequate to ensure recruitment and sustainability. With good livestock distribution throughout the allotments, the proposed grazing system should not result in a trend away from meeting Standard 3 for healthy plant communities.

Wildlife, Aquatic (includes an analysis of Public Land Health Standard 3):

Affected Environment:
Fish. Castle Creek contains Colorado River cutthroat trout. The Colorado River, Eagle River, Alkali Creek, Catamount Creek, Norman Creek, Eby Creek all are fish-bearing streams.

Amphibians. Several amphibians of interest are found within the GSFO, the Boreal Toad *(Bufo boreas boreas)* and the Great Basin spadefoot toad (*Spea intermontana).* The distribution of the boreal toad is restricted to areas with suitable breeding habitat in spruce-fir forests and alpine meadows generally between 7,500 and 12,000 feet elevation. Breeding habitat includes lakes, marshes, ponds, and bogs with sunny exposures and quiet shallow water. Great Basin spadefoot toads occupy arid grasslands and high sagebrush, desert shrub, and pinion-juniper woodlands. Great Basin spadefoot toad has been documented in the western third of the field office from the town of Rifle west to the boundary with the Grand Junction Field Office. This represents the eastern extent (fringe) of the species overall range and populations are believed to be small and sporadic.

Environmental Consequences/Mitigation:

Fish. Continued grazing activities could result in some soil compaction and displacement and increase the likelihood of erosional processes, especially on steep slopes, areas devoid of vegetation, and at livestock concentration areas such as stock waters, salting sites, and drainage bottoms. Soil detachment and sediment transport are likely to occur during runoff events associated with spring snowmelt and short-duration high intensity thunderstorms.

Sediment can impact fish species by silting in important spawning substrates and in the event eggs are present, by smothering eggs which leads to loss of productivity. Excessive sediment can also fill in important pool habitats reducing their depth and usability during critical summer and winter periods when they are needed for thermal refuge and survival. Aquatic insect productivity can be impaired as sediment covers clean gravels and cobbles and fills in the interstitial spaces used by these insects. This can reduce food sources for fish and terrestrial bird and bat species. The reauthorization of grazing as proposed provides for plenty of growing season rest and adequate plant rest and recovery periods which should maintain good vegetative cover and help to limit offsite soil movement. Stream and riparian habitats are in good condition, and continued livestock grazing as proposed should have minimal impact to nearby streams, fish, or their habitats.

Amphibians. It is plausible that over-grazing by livestock could contribute to the decline of the functionality of the habitat for amphibians. Overgrazing impacts on wetlands and riparian vegetation could impact individual animals and prey populations. Primary, the allotment is

outside the range (overall, elevation, and habitat) of most amphibian species of interest and known to occur in the GSFO. Secondly, land health standard 2 for riparian systems is being achieved (BLM 2004). Thus maintaining the current number of animal unit months and periods of use, along with land health standards and terms/conditions; should continue to maintain adequate habitat conditions (suitability and connectivity) to ensure amphibians are maintained at viable population levels commensurate with the species and habitat's potential.

Analysis on the Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial)**:** The current grazing management does not appear to be impacting the structure and/or composition of native plant communities to a degree where it is changing the quality or usability of the area for any aquatic species. Healthy, productive aquatic animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitats' potential. Thus it was concluded the continuation of the current grazing system and stocking rates will continue to promote achievement of public land health standard 3.

Wildlife, Terrestrial (includes an analysis of Public Land Health Standard 3)

Affected Environment: The CRVFO supports a wide variety of terrestrial wildlife species 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/wetland areas support many species. The current condition of wildlife habitats varies across the landscape. Some habitat is altered by power lines, pipelines, fences, public recreation use, residential and commercial development, vegetative treatments, livestock and wild ungulate grazing, oil and gas development, and roads/trails. These factors have contributed to some degradation/fragmentation of habitat as well as causing disturbance to some species.

Reptiles. Reptile species most likely to occur include the western fence lizard (*Sceloporus undulatus*) and gopher snake (bullsnake) (*Pituophis catenifer*) in xeric shrublands or grassy clearings and the western terrestrial garter snake (*Thamnophis elegans*) along creeks. Other reptiles potentially present along creeks, although more commonly found at lower elevations than the site, are the milk snake (*Lampropeltis triangulum*) and smooth green snake (*Opheodrys vernalis*).

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

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

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

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

Big Game. The mule deer *(Odocoileus hemionus)* is a recreationally important species that are common throughout suitable habitats in the region. Another recreationally important big game ungulate (hoofed animal), the Rocky Mountain elk *(Cervus elaphus nelsonii)*, is also present. Mule deer and elk usually occupy higher elevations, forested habitat, during the summer and then migrate to sagebrush-dominant ridges and south-facing slopes at lower elevation in the winter.

BLM lands provide a large portion of the undeveloped winter range available to deer and elk. The GSFO's Resource Management Plan (RMP) allocated existing forage proportionately to livestock and big game, the criterion being active preference for livestock and 5-year average demand for big game. The RMP allocated all available forage on allotments in big game winter range -unavailable to livestock because of stocking rate limitations or slope restrictions - to big game. Summer range was not limiting to big game; therefore, allocating forage beyond CDOW population goals in summer range was deemed to be unnecessary since winter range is what limits herd size. In addition, the RMP allocated additional forage produced through vegetation manipulation on wildlife winter range first to big game and then to livestock up to active preference. On summer range, additional forage was allocated to livestock first.

Environmental Consequences/Mitigation:

Reptiles. It is plausible that over-grazing by livestock could contribute to the decline of the functionality of the habitat for reptiles. Impacts on upland and riparian vegetation could impact individual animals and prey populations. Primary, the project area is outside the range (overall, elevation, and habitat) of most reptile species of interest and known to occur in the CRVFO. Secondly, land health standard 2 for riparian systems and standard 3 for productive plant communities are being achieved (BLM 2004). Thus the allowable number of animal unit months and periods of use, along with land health standards and terms/conditions; should continue to maintain adequate habitat conditions (suitability and connectivity) to ensure reptiles are maintained at viable population levels commensurate with the species and habitat's potential.

Birds and Mammals. Overgrazing affects bird and mammals by altering habitat structure and food availability. Grazing invariably reduces the height and ground cover of plants, at least temporarily, thus reducing the cover they need for protection, feeding, roosting and nesting. There is no indication or data to support that the proposed action would have any large scale negative impacts to density, composition, or frequency of terrestrial species or the quality or connectivity of terrestrial wildlife habitat. This area receives adequate growing season plant rest and recovery periods. The land health assessment data along with range compliance data indicates that current livestock grazing consistent with achieving land health standards for bird and mammal species.

Mule Deer. All allotments contain mule deer summer range described as 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. All allotments but Domantle and East Castle contain CDOW mapped mule deer critical winter range. This dataset was created by combining Deer DAUs, mule deer winter concentration areas, and "high density" mule deer severe winter range data.

Elk. The East Castle allotment contains elk summer range where elk concentrate from mid-June-mid-August.

Most issues between domestic livestock and big game concerns forage allocation and land health.

Forage Allocation. Managing the timing and intensity of livestock grazing is critical to maintaining habitat conditions preferable to big game. For example, cattle grazing during the early season could improve the quality of winter forage for elk but cattle must be removed early enough to allow plants to re-grow. However, 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 GSFO's RMP allocated existing forage proportionately (50/50) to livestock and big game and that seem to be adequate on this allotment.

Overall, elk populations since the late 1970s to present have been increasing while livestock numbers and periods of use have decreased. Qualitatively viewing the big game population trends and CDOW objectives in relationship to the proposed action (maintaining the existing level of livestock AUMs and periods of use, along with land health standards and terms/conditions), it can be assumed that the proposed action (based on the cumulative annual use of forage by big game and domestic livestock) remains compatible with the CDOW big game objectives while achieving public land health standards.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): The 2002 land health assessment noted "The lower elevations of the North Eagle area provide important winter range habitat for big game species. Some stands of sagebrush and other browse species show signs of hedging, although overall browse conditions here are better than in the South Eagle landscape." The current grazing management does not appear to be impacting the structure and/or composition of native plant communities to a degree where it is changing the quality or usability of the area for any terrestrial wildlife species. Healthy, productive aquatic animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitats' potential. Thus it was concluded the continuation of the current grazing system and stocking rates will continue to promote achievement of public land health standard 3 across the landscape.

SUMMARY OF CUMULATIVE IMPACTS

Wildlife. Cumulatively many of the future actions planned on private and other lands may have some undetermined effect on wildlife including special status species habitat. The proposed action is not anticipated to result in negative cumulative impacts to wildlife when view in

conjunction with those activities currently occurring and reasonably certain to occur on adjacent private/other lands.

PERSONS AND AGENCIES CONSULTED:

A notice of public scoping was posted on the Colorado BLM's Internet web page and a news release was issued on October 20, 2009 regarding grazing permits and associated allotments scheduled for renewal in 2010. The public was provided an opportunity to offer any information or concerns, or to be considered as an interested public on a permit or allotment scheduled for renewal. 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.

The following individuals, groups, organizations and/or local governments were also consulted:

Grazing permittee associated with the permit renewal
Uintah and Ouray Tribe
Southern Ute Indian Tribe
Ute Mountain Ute Tribe
USFW

INTERDISCIPLINARY REVIEW:

Name	***Title***	***Responsibility***
Michael Kinser	Rangeland Management Specialist	NEPA Lead, Wetlands and Riparian Zones, Range Management
Carla DeYoung	Ecologist	ACECs, Vegetation, T/E/S Plants, Land Health Stds
Jeff O'Connell	Hydrologist/Geologist	Soil, Air, Water, Geology
Kimberly Miller	Outdoor Recreation Planner	WSR, Wilderness/WSAs
Greg Wolfgang	Outdoor Recreation Planner	VRM, Recreation, Travel
Cheryl Harrison	Archaeologist	Cultural Resources and Native American Concerns
Brian Hopkins	Wildlife Biologist	Migratory Birds, Terrestrial Wildlife, T/E/S Terrestrial Wildlife, Aquatic Wildlife and T/E/S Aquatic Wildlife
Dereck Wilson	Rangeland Management Specialist	Invasive, Non-native Species

REFERENCES:

Legge, T.A., D.J. Herman, and B. Zamora. 1981. Effects of cattle grazing on mountain meadows in Idaho. J of Range Manage 34(4):324-328.

Skovlin, J. 1984. Impacts of grazing on wetlands and riparian habitat: A review of our knowledge. In: Developing Strategies for Rangeland Management. National Research Council/National Academy of Sciences. Westview Press. Boulder, CO. pp. 1101- 1103.

Wyman, S., D. Bailey, M. Borman, S. Cote, J. Eisner, W. Elmore, B. Leinard, S. Leonard, F. Reed, S. Swanson, L. Van Riper, T. Westfall, R. Wiley, and A. Winward. 2006. Riparian area management: Grazing management processes and strategies for riparian-wetland areas. Technical Reference 1737-20. BLM/ST/ST-06/002+1737. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. 105 pp.

APPENDDICES: Biological Opinion

ATTACHMENTS: Allotment Maps

NAME OF PREPARER: Michael R. Kinser

DATE: April 1, 2010

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
764 Horizon Drive, Building B
Grand Junction, Colorado 81506-3946

IN REPLY REFER TO:
ES/GJ-6-CO-03-F-013
TAILS 65413-2010-I-0043

February 9, 2010

Memorandum

To: Field Manager, Bureau of Land Management, Colorado River Valley Field Office, Silt, Colorado

From: Acting Western Colorado Supervisor, Fish and Wildlife Service, Ecological Services, Grand Junction, Colorado

Subject: Allotment Livestock Grazing Permit issuance under Programmatic Biological Opinion ES/GJ-6-CO-03-F-013

Your letter dated December 22, 2010, included the project level biological assessment (BA) for the effects of renewing 10-year grazing permits on 9 allotments within the Field Office. Your letter was received in our office on December 23, 2010. Your project level BA tiers to programmatic biological opinion (ES/GJ-6-CO-03-F-013) (PBO), and provides information which updates our programmatic consultation. The programmatic opinion analyzed the effects of your grazing program on Canada lynx *(Lynx canadensis)* (Lynx).

Project Description

The proposed action consists of the renewal of 10-year grazing permits on nine allotments that are within a lynx landscape linkage or contain mapped lynx habitat. These allotments are located within the Colorado River Valley Field Office (CRVFO). Five of the nine allotments have individual consultation history while the remaining four do not. The remaining four allotments have not been analyzed at the site-specific level and are addressed herein.

Allotments with prior section 7 consultation

Hells Hole
Section 7 consultation was completed for the Hells Hole allotment in 2000. However, the permittee has proposed to change the class of livestock from cattle to sheep. The proposal will allow sheep grazing on the 527 acre allotment as follows:

- 200 sheep/ grazing period from August 1 – November 15/; 34 animal unit months (AUMs). Animal unit months within the allotment remain the same.

Section 7 consultation has been completed on four additional allotments (see following list) in the past to address the effects of grazing on lynx. No proposed changes in livestock class, timing restrictions or other requirements are proposed in the following allotments. Specifics regarding livestock class, timing restrictions or requirements within these allotments are documented in the BA and PBO.

Bellyache
East Castle Peak
North Thompson Creek Common
Strubi

Allotments without prior site specific section 7 consultation

The following allotments were identified in the PBO. However, site specific information was not provided and project level analysis under section 7 was never completed.

Albertson-King Mountain
The Antelope Creek allotment consists of 1,114 acres, grazes 33 cattle during a period spanning June 1 – October 1 and yielding 133 AUMs. Assessment of the allotment conducted in 2009, concluded that the current grazing system and stocking rates continue to meet public land health standards for standard 3 (healthy and productive plant and animal communities) and standard 4 (special status, threatened and endangered species) for Canada lynx.

Bocco Mountain
The Bocco Mountain allotment contains 3,967 acres, grazes 1,700 sheep during a period spanning May 16 – May 31 yielding 179 AUMs and a second period spanning September 1 - September 30, with 1,690 sheep, yielding 111 AUMs. Although this allotment does not contain lynx habitat, it falls within the Castle Peak linkage area. Assessment of the allotment conducted in 2009, concluded that the current grazing system and stocking rates continue to meet public land health standards for standard 2 (riparian areas) and standard 3 (healthy and productive plant and animal communities). The standards are considered appropriate within landscape linkages that do not contain lynx habitat, but are essential for providing landscape level connective habitats for Canada lynx.

Cabin Gulch
The Cabin Gulch allotment contains 3,240 acres, grazes 1,200 sheep, during a period spanning May 15 – June 3 yielding 158 AUMs and a second period spanning September 10 – November 1, with 1,200 sheep, yielding 182 AUMs. Although this allotment does not contain lynx habitat, the northeast portion of the allotment falls within the Castle Peak linkage area. Assessment of the allotment conducted in 2009, concluded that the current grazing system and stocking rates continue to meet public land health standard 3 (healthy and productive plant and animal communities). The standards are considered appropriate within landscape linkages that do not contain lynx habitat, but are essential for providing landscape level connective habitats for Canada lynx.

Ute Creek
The Ute Creek allotment contains 3,104 acres and is used to graze sheep (2,000), yielding 127 AUMs and horses (5) yielding 2 AUMs during a period spanning May 11 – June 25 and a second period spanning October 1 – November 20 yielding 141 AUMs and 2 AUMs respectively. Although this allotment does not contain lynx habitat, it falls within the Castle Peak linkage area. Assessment of the allotment conducted in 2009, concluded that the current grazing system and stocking rates continue to meet public land health standards for standard 2 (riparian areas) and 3 (healthy and productive plant and animal communities). The standards are considered appropriate within landscape linkages that do not contain lynx habitat, but are essential for providing landscape level connective habitats for Canada lynx.

Status of the Species and Environmental Baseline

The status of the species tiers to the extensive description of the status of the species in biological opinion ES/GJ-6-CO-03-F-013 and is updated with the following information.

Lynx in Colorado are considered a portion of the lower 48 distinct population segment currently listed under the Endangered Species Act (Act). The Colorado Division of Wildlife (CDOW) is currently tracking approximately 43 adult lynx. Two hundred eighteen lynx have been released during the reintroduction program. There are 114 known mortalities and 61 missing animals (Shenk, CDOW, pers. comm., 2009). The CDOW continues to monitor the population to the extent possible. It has become nearly impossible to determine the extent of the lynx population in Colorado due to failed collars, unknown mortalities, etc. Highway mortality ranks as one of the highest human caused mortalities factors for the Colorado lynx reintroduction overall, only exceeded by animals that have been shot. Three release protocols were used during the initial releases of lynx. By adjusting the release protocol, CDOW observed a reduction in the number of starvation deaths (Shenk 2004). Shenk (pers comm. 2008) observed that 3 lynx have died of starvation under their current release protocol, one each in years 2000, 2001, and 2008. One hundred twenty six kittens have been born in Colorado including 10 in 2009 (Shenk 2009), but a survival rate of Colorado born kittens is currently unknown.

Table 2. Kittens born in Colorado

Year	Number of Kittens
2003	16
2004	36
2005	46
2006	11
2007	0
2008	0
2009	10

In addition, on August 20, 2008, the US Fish and Wildlife Service (Service) issued biological opinion ES/LK-6-CO-08-F-024, to the US Forest Service for a proposal to amend seven Forest Plans within the Southern Rocky Mountain Geographic area (i.e. Colorado and southeastern Wyoming). This biological opinion contains the latest range-wide status of the Canada lynx and is incorporated here by reference.

Environmental Baseline

The environmental baseline for the proposed action is generally described in PBO ES/GJ-6-CO-03-F-013. Standards and guidelines that direct livestock grazing on the Colorado River Valley Field Office (CRVFO) are designed to allow grazing at a sustainable level. However, conditions within individual allotments may be influenced by other things, including wild ungulate populations, drought, etc.

The BA reported that all 9 grazing allotments are in good condition within the lynx habitat areas and are meeting standards 2 through 4, of the Colorado Standards for Public Land Health.

Effects Analysis

The general effects of livestock grazing are contained in the PBO ES/GJ-6-CO-03-F-013.

The biggest potential effect to lynx is livestock competition with lynx prey species for forage resources. Any reductions in forage that would lead to a reduction in prey or prey density could result in lower lynx productivity over time. Given the existing and proposed grazing management strategies, Bureau of Land Management (BLM) believes that reauthorization of grazing permits for the allotments discussed herein will continue to meet the Public Land Health Standards. As stated in the programmatic opinion, we have concluded that the standards for public land health are adequate to support lynx conservation. The existence of these standards alone does not necessarily ensure compliance with the standards.

The lynx habitat components contained within the allotments considered herein make up only a portion of the lynx habitat within their respective landscapes including lynx analysis units and landscape linkages. The majority of lynx habitat lies within the US Forest Service boundary. Therefore, lynx habitat contained within the allotments described herein function as part of a larger landscape and management of the larger landscape for lynx requires a coordinated effort between land management agencies. Several of the allotments considered herein fall within one or more of the landscape linkages, and compliance to the standards for public land health ensure that the appropriate habitat conditions exist within each linkage to facilitate movement of lynx across the landscape.

Updated Cumulative Effects Analysis

In addition to public lands, the CRVFO planning area contains a large amount of private land, and some scattered parcels of State land and State wildlife area lands. An undetermined amount, and diverse variety of land management activities are ongoing on private and State lands adjacent to BLM administered lands within the CRVFO. Future actions reasonably certain to occur are numerous and varied on these lands. Human development is occurring at an ever-increasing rate as native rangelands and ranches are being converted to residential and

commercial properties. This trend is reasonably certain to continue to some degree. In addition, farming, ranching, and various recreational activities are ongoing and are reasonably certain to continue on other private and state lands. Livestock grazing is also occurring on some private and State lands within the area, and is reasonably certain to continue. In some areas there is an overall reduction in grazing and other agricultural activities due to the sale of ranches and resulting residential and commercial developments.

Cumulatively, many of the future actions planned on private and state lands may have some undetermined effect on lynx and lynx habitat. The proposed action is not anticipated to result in negative cumulative impacts to lynx when viewed in conjunction with those activities currently occurring and reasonably certain to occur on adjacent private and state lands.

Conclusion

After reviewing the current status of the Canada lynx, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the proposed renewal of grazing permits on the subject allotments, is not likely to jeopardize the continued existence of the Canada lynx. Furthermore, the Service concurs with the "may affect, not likely to adversely affect" determination of the BA.

On February 25, 2009, the Service published its final rule revising its designation of critical habitat for lynx. Habitats within Colorado were not included in the revised designation. Therefore, no adverse modification of critical habitat will result from the proposed action.

Rationale

Permit standards and guidelines that result in acceptable residual herbivore forage and acceptable riparian conditions are design features of all BLM livestock grazing permits/allotment management plans as directed in the *Glenwood Springs Resource Management Plan* (1984, revised 1988), and *Colorado Public Land Standards for Public Land Health and Guidelines for Livestock Grazing*. These same standards and guidelines are consistent with Lynx Conservation Assessment and Strategy (LCAS) standards and guidelines. Therefore, grazing, as proposed, is predicted to only result in insignificant and/or discountable effects to lynx and their habitat.

Incidental Take Statement

Take is to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (Endangered Species Act, 16 U.S.C. 1531 et seq.). Harm is an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3).

Harass is an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). Incidental take is a taking that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR § 402.02).

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be a prohibited taking under the Act, provided that such taking is in compliance with the terms and conditions of an Incidental Take Statement.

Amount or extent of take anticipated

In issuing an incidental take statement, the Service provides a statement of anticipated incidental take. Generally, incidental take is expressed as the number of individuals reasonably likely to be taken or the extent of habitat likely to be destroyed or disturbed, and over what time period the anticipated take will occur. We do not anticipate that the proposed action will result in take of lynx.

Comment/Recommendations

We will attach this project level analysis to biological opinion number ES/GJ-6-CO-03-F-013. It may be necessary to reinitiate consultation at the programmatic level if an individual project generated by the BLM's grazing program results in jeopardy or adverse modification determination, or an adverse effect determination is made for any allotment permit renewal.

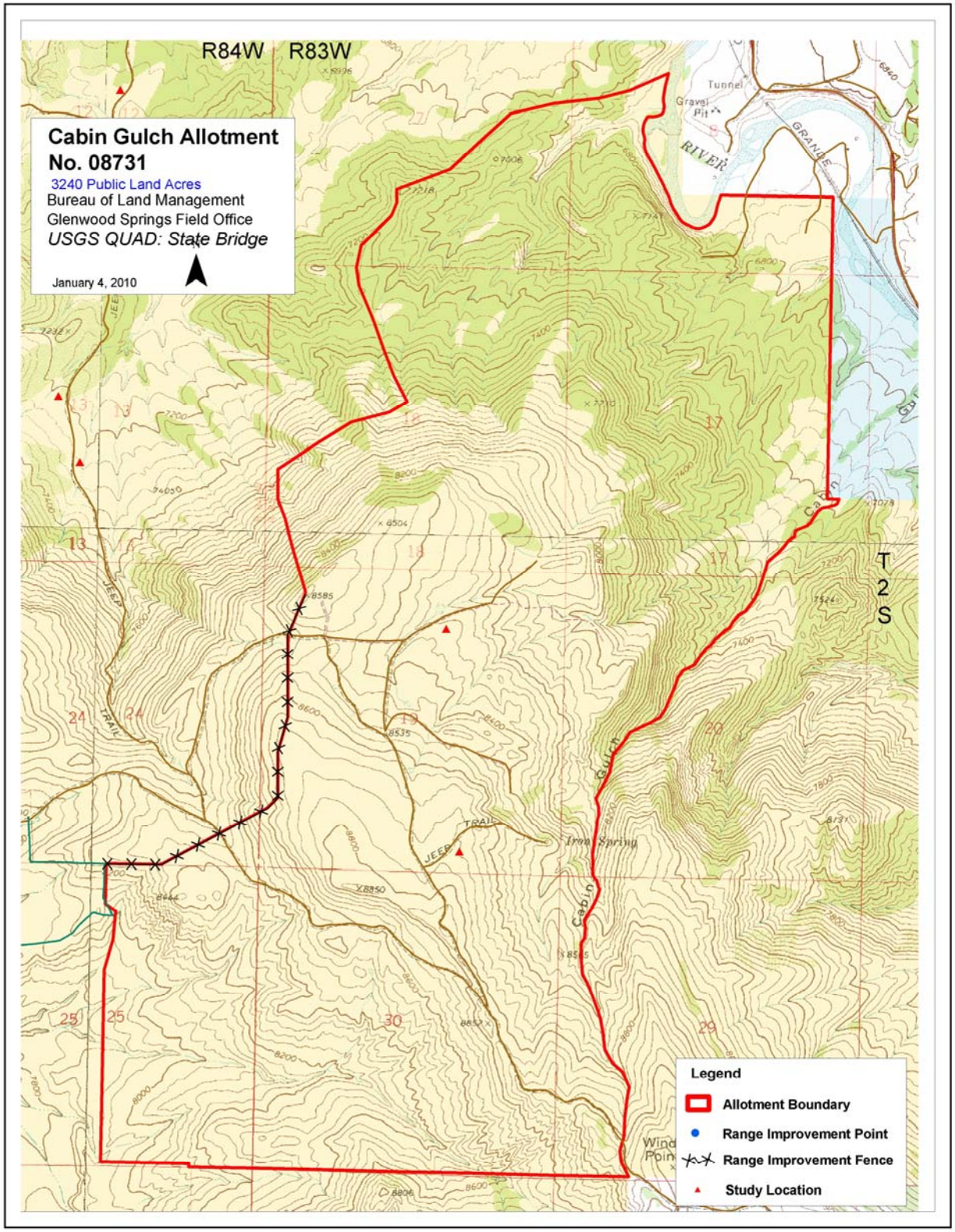
Literature Cited

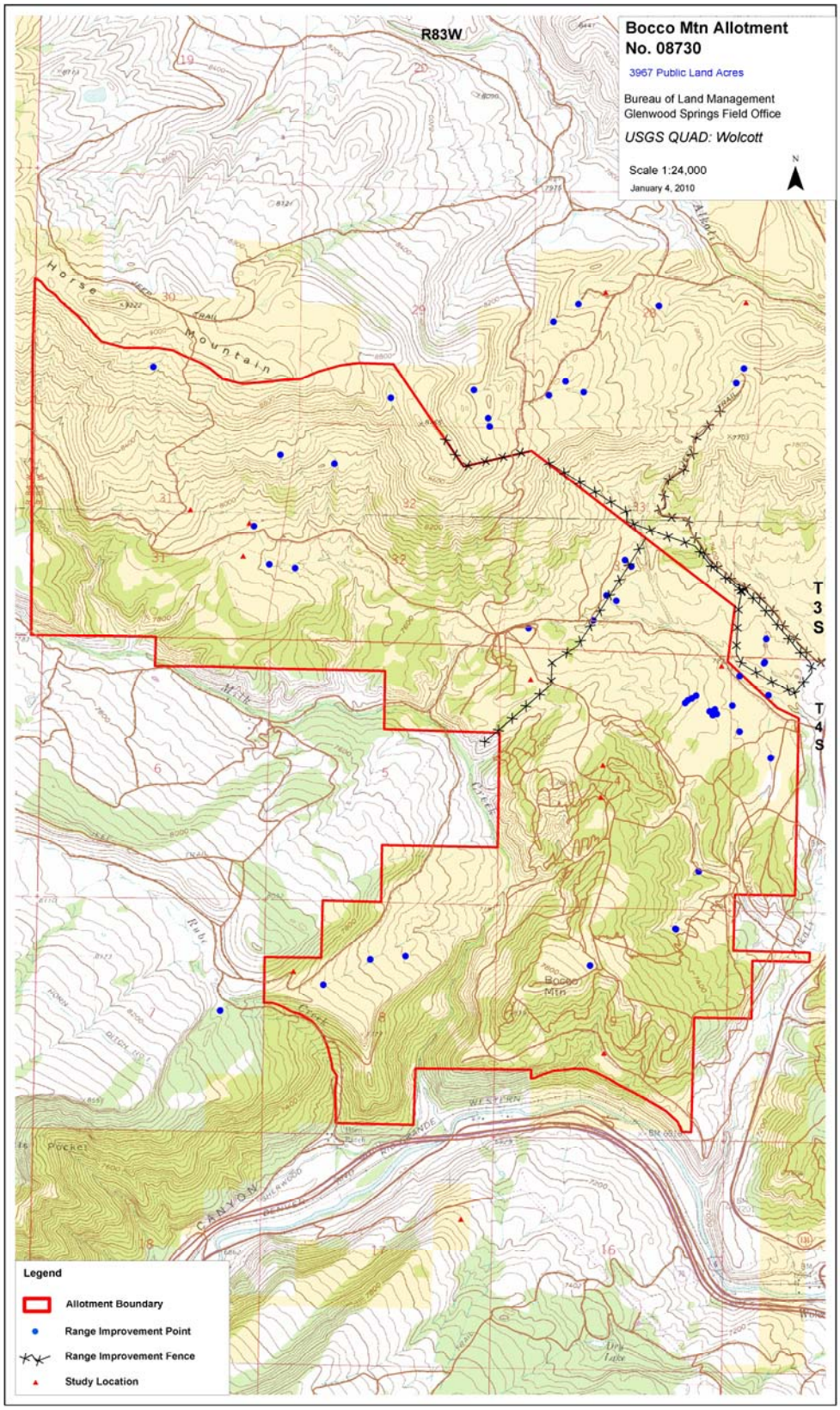
Shenk, T.M. 2004. Colorado Division of Wildlife Job Progress Report. Post Release Monitoring of Lynx Reintroduced to Colorado. 9 pp.

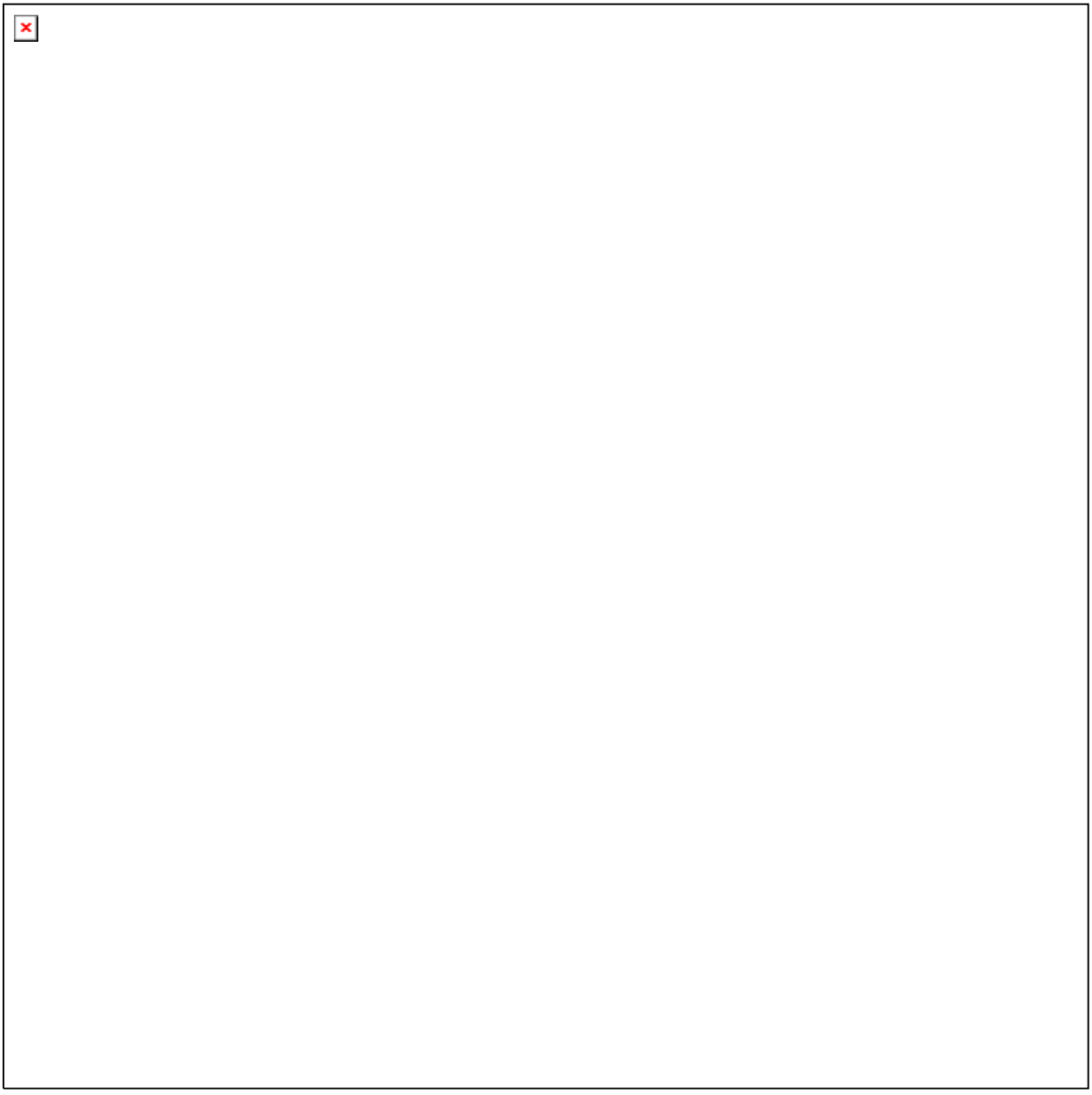
Shenk, T.M. 2006. Colorado Division of Wildlife Research Report. Post Release Monitoring of Lynx Reintroduced to Colorado. 46 pp.

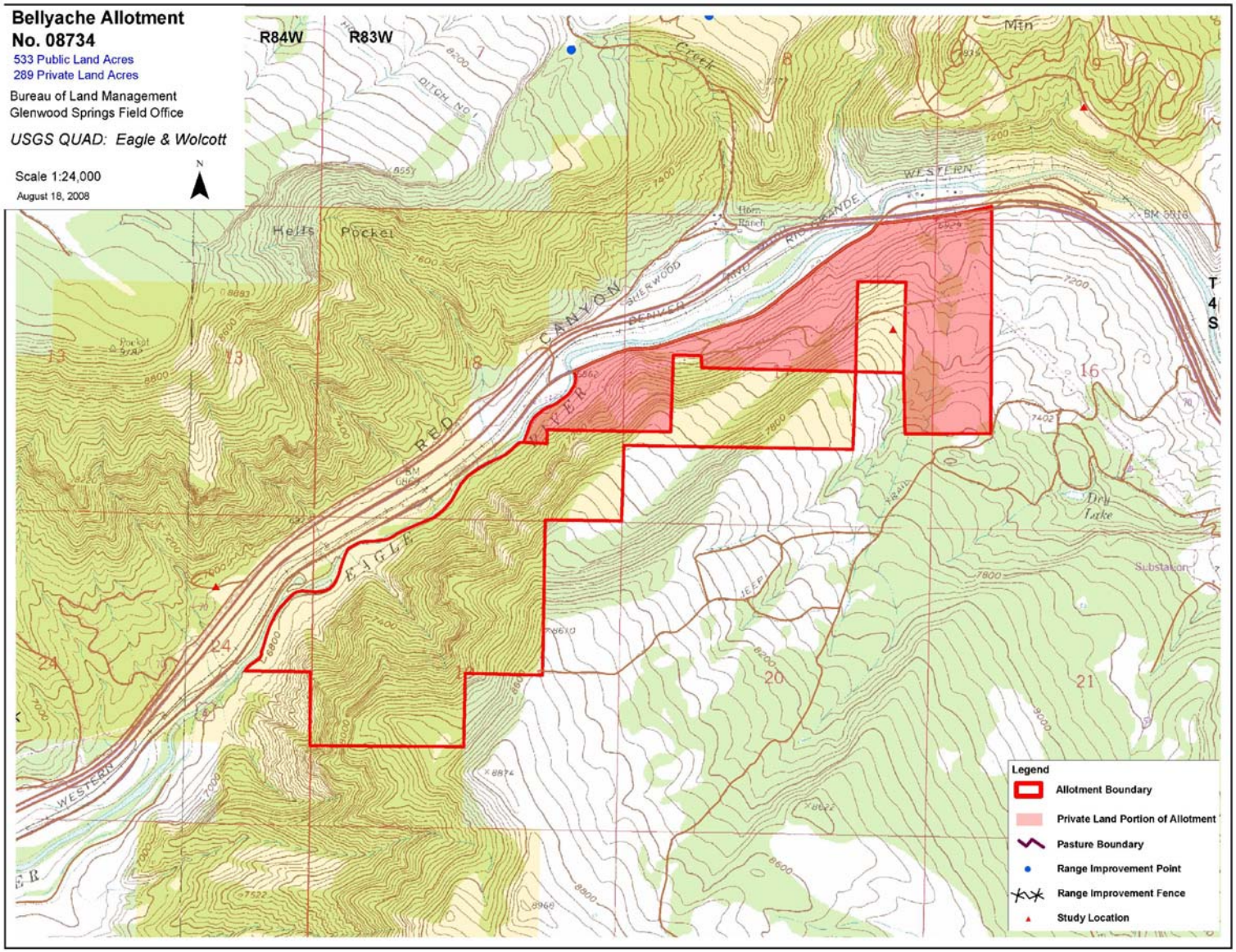
Shenk, T.M. 2009. Colorado Division of Wildlife Research Report. Post Release Monitoring of Lynx Reintroduced to Colorado. 55 pp.

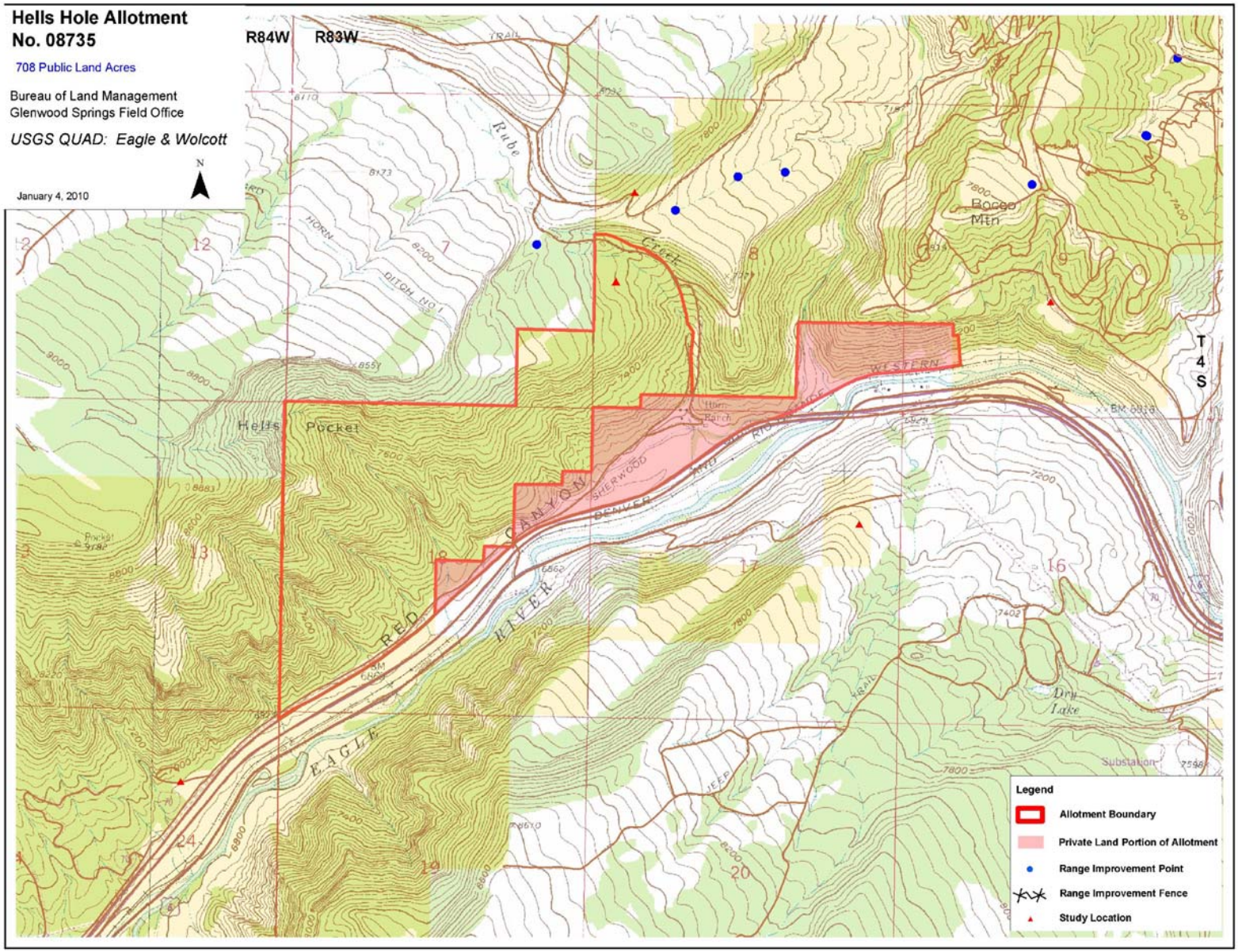
KBroderdorp:BLMCRVFOAllotmentLivestockGrazingPermitIssuanceBOF013.doc:020910:KM

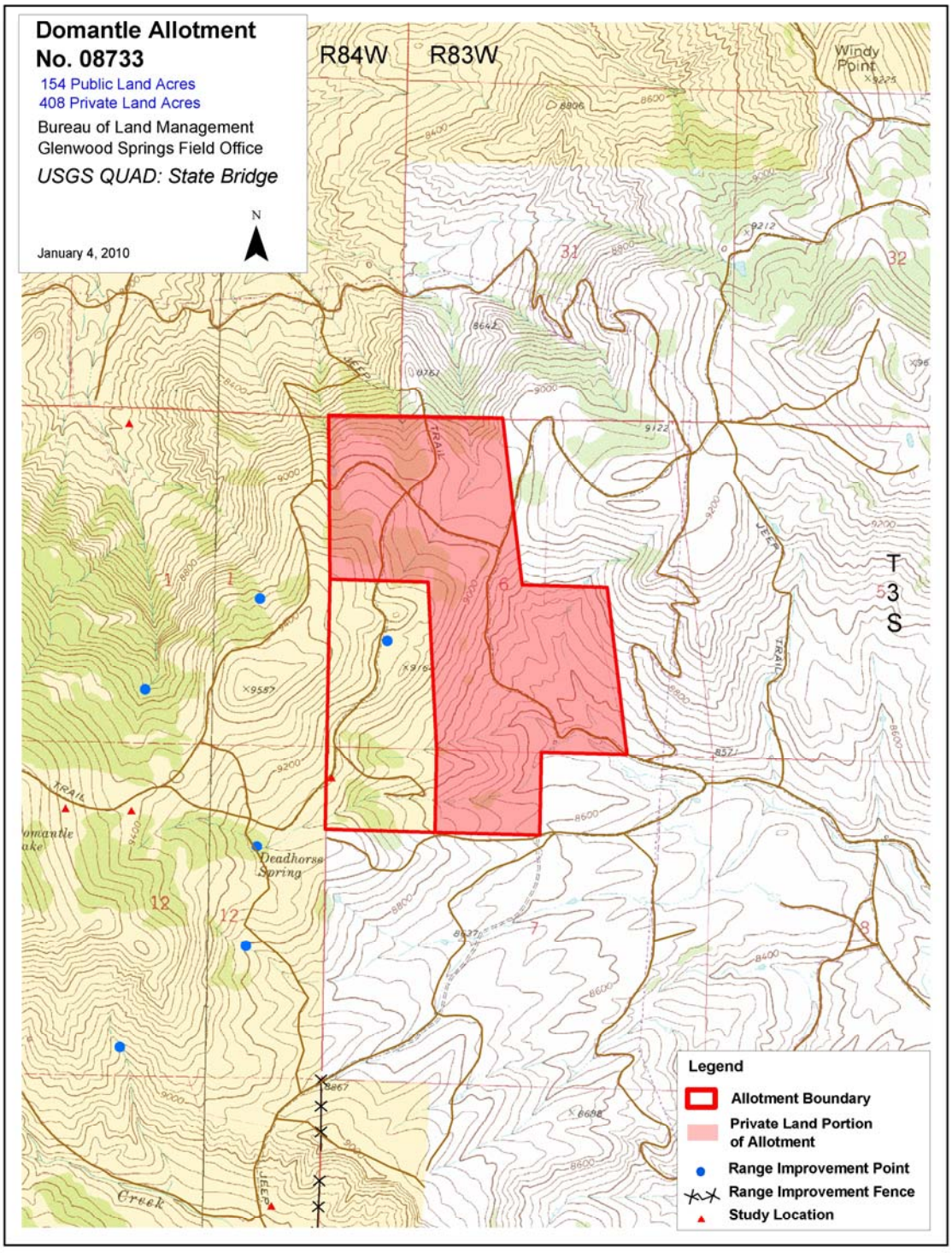

R84W
R83W
Cabin Gulch Allotment
No. 08731
3240 Public Land Acres
Bureau of Land Management
Glenwood Springs Field Office
USGS QUAD: State Bridge
January 4, 2010
T
2
S
Legend
Allotment Boundary
Range Improvement Point
Range Improvement Fence
Study Location


R83W
Bocco Mtn Allotment
No. 08730
3967 Public Land Acres
Bureau of Land Management
Glenwood Springs Field Office
USGS QUAD: Wolcott
Scale 1:24,000
January 4, 2010
N
T 3 S
T 4 S
Horse Mountain
Bocco Mtn
Legend
Allotment Boundary
Range Improvement Point
Range Improvement Fence
Study Location




Bellyache Allotment
No. 08734
533 Public Land Acres
289 Private Land Acres
Bureau of Land Management
Glenwood Springs Field Office
USGS QUAD: Eagle & Wolcott
Scale 1:24,000
August 18, 2008
N
R84W
R83W
T 4 S
Legend
Allotment Boundary
Private Land Portion of Allotment
Pasture Boundary
Range Improvement Point
Range Improvement Fence
Study Location


Hells Hole Allotment
No. 08735
708 Public Land Acres
Bureau of Land Management
Glenwood Springs Field Office
USGS QUAD: Eagle & Wolcott
January 4, 2010
N
R84W
R83W
T
4
S
Hells Pocket
Red Canyon
Eagle River
Dry Lake
Legend
Allotment Boundary
Private Land Portion of Allotment
Range Improvement Point
Range Improvement Fence
Study Location


Domantle Allotment
No. 08733
154 Public Land Acres
408 Private Land Acres
Bureau of Land Management
Glenwood Springs Field Office
USGS QUAD: State Bridge
January 4, 2010
N
R84W
R83W
Windy Point
T 3 S
Deadhorse Spring
Legend
Allotment Boundary
Private Land Portion of Allotment
Range Improvement Point
Range Improvement Fence
Study Location

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

FINDING OF NO SIGNIFICANT IMPACT

Grazing Permit Renewal on the Cabin Gulch, Bocco Mtn. East Castle, Bellyache, Hells Hole and Domantle Allotments

DOI-BLM-CO140-2010-0027-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 Cabin Gulch, Bocco Mtn., East Castle, Bellyache, Hells Hole and Domantle Allotments. 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 Affected Environment and Environmental Consequences section of the EA. The proposed action will not have any significant beneficial or adverse impacts on the resources identified and described in the EA.

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

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

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.* Unique characteristics for the allotments have been identified and addressed in the EA. These include wetlands/riparian zones, stream segments found to be "Eligible" under a Wild and Scenic Eligibility Study, Wilderness Study Areas, and cultural resources. Application of mitigation measures for cultural resources results in a determination of No Adverse Affect for historic properties that occur in the allotments. The proposed action is not expected to cause adverse impacts to the other unique characteristics that occur in the allotments.

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 Cabin Gulch, Bocco Mtn., East Castle, Bellyache, Hells Hole and Domantle Allotments. It is not expected to set precedent for future actions with significant effects or represent a decision in principle about a future management consideration in or outside of these allotments.

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

The EA discloses that cumulatively many of the future actions planned on private and other lands may have some undetermined effect on wildlife including special status species habitat. The proposed action is not anticipated to result in negative cumulative impacts to wildlife when viewed in conjunction with those activities currently occurring and reasonably certain to occur on adjacent private/other lands. No other cumulative impacts have been identified.

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.

Historic properties have been identified within these allotments the majority of which are within one allotment. The EA discloses adverse impacts that may occur to cultural resources from livestock grazing. A determination of No Adverse Affect has been made for this renewal.

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.

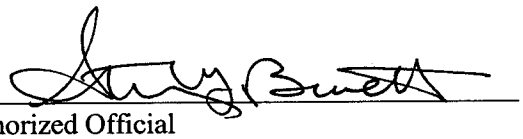
There is no designated critical habitat for any listed Threatened or Endangered species within the project area. Through the issuance of a Biological Opinion for Canada lynx, the FWS concurred with the BLM's "may affect, not likely to adversely affect" determination on February 9, 2010. After reviewing the status of the Canada lynx, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it was the USFWS's biological opinion that the proposed renewal of grazing permits on the subject allotments is not likely to jeopardize the continued existence of the Canada lynx. Furthermore, the USFWS concurred with the "may affect, not likely to adversely affect" determination of the BA.

The EA discloses that the proposed action would have no effect to other 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

4/1/2010
Date