

**U.S. Department of the Interior  
Bureau of Land Management  
Gunnison Field Office  
DOI-BLM-CO-S060-2013-0001-EA**

## **ENVIRONMENTAL ASSESSMENT**

**NUMBER:** DOI-BLM-CO-S060-2013-0001-EA

**PROJECT NAME:** Gunnison Field Office Livestock Trailing

**PLANNING UNIT:** Gunnison Resource Area Resource Management Plan (RMP)  
Management Units 1, 2, 11, 12, 13, 14, and 15

**LEGAL DESCRIPTION:**

Montrose, Saguache, Hinsdale, Ouray, and Gunnison Counties

**APPLICANT:** Annually, various livestock operators

### **I. INTRODUCTION**

#### **1.1. BACKGROUND/INTRODUCTION:**

There are 104 allotments with active livestock grazing in the Gunnison Field Office. Private and State lands are scattered and intermingled with public land in most of these allotments. The majority of these intermingled lands are cooperatively managed with public land. Of the 104 grazing allotments in the Gunnison FO, requests have been received to allow trailing across 14 grazing allotments. Please refer to Table 2.1.1 for a complete listing of allotments.

Livestock trailing occurs at different times throughout the year but mostly in the spring or early summer and again in the fall to accommodate livestock grazing that is moving onto or off of BLM lands from National Forest Service lands or between BLM allotments, private, or state land. The timing of livestock trailing within a given season may vary each year because of the current year's resource conditions, weather, wildfire, vegetation treatments, individual livestock operations, or forage production.

Livestock trailing has occurred annually within the Gunnison FO boundary for decades. Prior to train stock cars and semi-trucks, all BLM grazing allotments had some form of livestock trailing event. Many trailing events have been replaced with semi-trucks but livestock trailing across public lands is still a necessity in portions of the FO due to the presence of some roadways that are not engineered for semi-trucks, lack of road access to some areas, expense of trucking and livestock safety concerns related to trucking or trailing along state highways. Many injuries and deaths can occur during the trucking of livestock when conducted off of paved roads.

Each trailing event varies depending on the individual livestock operator and the kind of livestock to be moved. Generally, cattle are trailed by individuals on horseback; however, motorcycles or ATV's are also used by some operators. Cattle are first gathered into a herd and then driven at a slow pace in the direction of the intended trail. Once on the trail, cattle tend to spread out lengthwise in more of a

single-file like formation, allowing them to travel in a relatively narrow area. Sheep are generally trailed by one or two herders accompanied by two to eight sheepdogs. Sheep are trailed in one large band that generally follows roads as the trail route.

The livestock utilization levels that occur during a livestock trailing event are typically negligible (0-5% utilization) as opposed to the utilization levels that occur under active preference livestock grazing (up to 40-60% utilization).

Out of the 14 grazing allotments where livestock trailing is proposed, nine allotments are meeting, or making progress towards meeting, all land health standards (2 of these have some ongoing upland soil/riparian concerns). Land Health has not been assessed on two allotments. One or more standards are not being met on three allotments due to livestock grazing practices in place at the time the assessment was made (see Table 1.1.1 for livestock management actions taken to address land health issues since the initial assessment).

Table 1.1.1: Land Health Conditions and Actions Taken to Date, by Allotment

<b>Allotment</b>	<b>Land Health Conditions in affected allotments</b>	<b>Actions taken to begin making progress towards meeting Standards for Land Health</b>
Little Willow Willow Fort Hicks Blue Canyon Big Blue Big Park	All Land Health Standards are being met	N/A
American Lake American Flats	Land Health Standards are being met overall; however, there are ongoing concerns about soil erosion and deposition in riparian habitat in the area of the Ridge Stock Driveway.	N/A
Indian Creek	Riparian, Plant and Animal Communities, Special Status Species, and Water Quality Standards are being met. Progress is being made towards meeting the Upland Soil Standard (historic livestock grazing was a causative effect in not meeting).	N/A
Powderhorn Common	Land Health has not been assessed; however there are known concerns for Road Beaver Creek water quality for Colorado River cutthroat trout habitat.	To improve water quality of Road Beaver Creek, two livestock water gaps were closed and off-stream water troughs were installed.
South Parlin	Land Health has not been assessed.	N/A

Lower Cochetopa	Upland Soil, Riparian, Plant and Animal Communities, and Special Status Species Standards are not being met.	The livestock grazing system was changed and the grazing amount and duration were drastically reduced.
Razor Creek Allotment	Upland Soil, Plant and Animal Communities, and Special Status Species Standards are not being met.	The livestock grazing system was changed and grazing frequency was reduced.
Camp Kettle Gulch Allotment	The Upland Soil, Riparian, Plant and Animal Communities, and Special Status Species Standards are not being met.	The livestock grazing system was changed and the grazing amount was reduced.

### 1.2. PURPOSE AND NEED:

The purpose of and need for the action is to respond to applications for livestock trailing permits by identifying areas and terms and conditions for authorizing trailing of livestock across BLM-administered lands within the Gunnison FO. BLM is required, under the Federal Land Policy and Management Act (FLPMA) and the Taylor Grazing Act to respond to requests for livestock trailing across BLM-administered lands. Authorized trailing of livestock across BLM administered lands would be in accordance with 43 CFR 4130 and 4160, and would be consistent with the provisions of the Taylor Grazing Act and the Federal Land Policy and Management Act. Trailing permits are considered in cases where livestock trailing across federal lands is the safest or most efficient method for livestock operators to achieve proper grazing management of BLM grazing allotments or to move livestock to and from private, state, or other federally administered lands.

### 1.3. DECISION TO BE MADE:

The BLM will decide if livestock trailing will be authorized and if so, what specific livestock management actions will be implemented to ensure trailing activities are compatible with RMP goals and objectives, and the Standards for Public Land Health in Colorado.

### 1.4. SCOPING AND PUBLIC INVOLVEMENT:

A scoping letter detailing the Proposed Action of the EA was sent on January 14, 2013 to counties, federal and state agencies, permittees, and the affected interests and interested publics on the grazing allotments through which trailing activities are proposed. Tribal consultation was initiated in March of 2013 to determine any possible locales that have not been previously identified. The BLM did not receive any comments or concerns from the tribes. On April 23, 2013, BLM staff met with sheep operators and US Forest Service in Montrose, CO to discuss design criteria needed for sheep grazing and trailing, particularly in/near bighorn sheep habitat.

### 1.5. ISSUES AND CONCERNS:

The following issues and concerns were identified through public scoping comments and interdisciplinary team review of the Proposed Action.

### 1.5.1. Issues to be Analyzed

- a. Bighorn Sheep – What effect would the Proposed Action or alternatives have on bighorn sheep populations? How would effective separation be achieved to minimize/eliminate the risk of disease transmission from domestic sheep to bighorn sheep? How will the 2012 Western Association of Fish and Wildlife Agencies Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat be incorporated? How will agencies communicate and respond to incidents of direct or near contact between domestic and bighorn sheep?
- b. Cultural Resources – What effect would the Proposed Action or alternatives have on cultural resources?
- c. Migratory Birds – What effect would the Proposed Action or alternatives have on migratory birds?
- d. Threatened, Endangered, and Sensitive Species – What effect would the Proposed Action or alternatives have on threatened, endangered, and sensitive species?
- e. Soils – What effect would the Proposed Action have on soil erosion?
- f. Riparian – What effect would the Proposed Action have on riparian habitat and ecosystems?
- g. Special Status Aquatic Wildlife Species - What effect would the Proposed Action have on special status aquatic wildlife species?
- h. Range Management – What effect would the Proposed Action or alternatives have on the livestock grazing system associated with the grazing allotments crossed by the trailing routes?
- i. Access and Transportation Management – What effect would the Proposed Action or alternatives have on route proliferation, particularly in Sage-grouse habitat?
- j. Invasive, Non-native Species – What effect would the Proposed Action or alternatives have on the spread of invasive, non-native species?

### 1.5.2. Issues Not Analyzed

See Appendix A for a discussion of other resources that either were not present or that were not affected to a degree that warranted detailed analysis.

## **2. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

The Proposed Action and Alternative #2 only consider trailing use that occurs on allotments where the permittee either does not have a grazing permit within the allotment through which he is trailing or the permittee does have a grazing permit but needs to trail livestock outside of their permitted use dates. Livestock that have active preference to graze in allotments do not need trailing permits to move livestock from one pasture to another within the allotment.

**Actions Common to the Proposed Action and Alternative #2:**

Table 2.1. Trail Route Summary

Trail	Number	Kind	# of trips	Season		Distance/ Duration	Overnight Stops
				Begin	End		
Doyleville to Cochetopa	40	Cattle	1	October	December	10.6 miles 1 day	None
Cochetopa West	40	Cattle	1 spr 1 fall	May	October	2.5 miles 1 day	None
Razor Creek to Tomichi Creek	150	Cattle	1 spr 1 fall	February	December	3.7 miles 1 day	None
Blue Mesa	1800	Sheep	1	September	October	2.9 miles 3 days	None on public land
Powderhorn	900	Sheep	2 sum 2 fall	July	October	8.6 miles 2 days each trip	One each trip
Doyleville to Parlin	250	Cattle	1	February	March	10 miles 1 day	None
Powderhorn to Park Creek	180	Cattle	2	May	October	1.8 miles 1 day	None
6 Mile Lane	240	Cattle	2	May	October	6 miles 1 day	None
Blue Canyon	900	Sheep	1 sum 1 fall	June September	July October	2.7 miles 1 day	None on public land
Parlin to Saguache	400	Cattle	1	October	November	12 miles 1 day	None on public land
Razor Creek Dome	180	Cattle	1	September	October	1.2 miles 1 day	None
Ridge Stock Driveway	900	Sheep	3 sum 5 fall	June August	July September	5.3 miles 2 days	One each trip

Trailing Permit Terms and Conditions (common to all trail routes for both action alternatives):

1. Any objects or sites of cultural or paleontological value, such as historic or prehistoric resources, graves or grave markers, human remains, ruins, cabins, rock art, fossils, or artifacts shall not be damaged or disturbed. If any such resources are encountered, the permittee shall notify BLM immediately.

2. Trailing permit holders will notify the BLM and the livestock grazing permittees in the allotment(s) they cross at least 24 hours prior to beginning trailing activities.
3. There will be no cross-country or off road motorized vehicle use.
4. Trailing livestock will not be allowed to damage public land fences, gates, water troughs, or other developments.
5. Trailing permit holders will not allow livestock to stray or be left behind in a grazing allotment.
6. Trailing permit holders will not allow other livestock to join their herd and be removed from any pasture or allotment.
7. Trailing activities, including herding, camping, livestock watering, and use of public land facilities will not be allowed to interfere with the prescribed livestock grazing systems in the allotments crossed.
8. No overnight stops will be authorized in or within 0.25 miles of naturally occurring riparian areas.
9. Overnight stops in Sage-grouse habitat must be preauthorized and within temporary or permanent holding facilities.
10. Permit holders are responsible for contacting and obtaining permission to cross fenced and unfenced private, municipal, state, and non-BLM managed federal lands along trail corridors.
11. Trailing livestock will yield the right of way to motor vehicle traffic on all roads open to public use.
12. On trail routes that follow existing roads, herding will be conducted to keep livestock on the existing roadbed, except as necessary to allow safe passage of vehicles and other road users.
13. Permit holders will facilitate the safe movement of recreational users, motorized vehicles, and non-motorized vehicles through or around their herds.
14. Livestock must be kept moving and not be allowed to stop (loiter, loaf, graze, or siesta) along the route, particularly in riparian areas (creeks, springs, wetlands, and fens) and swales.

Route Specific Trailing Permit Terms and Conditions:

**Cochetopa West Route (Proposed Action only)**

15. When moving livestock off of existing roads, trailing will not be authorized until cross-country portions of the route are dry to a depth of two inches below the surface over at least 90% of the route.
16. When moving livestock off of existing roads, cease use of the route or trail if hoof shear up to one inch occurs on 10% or more of the route.
17. When moving livestock off of existing roads, trailing will be located out of drainage bottoms and swales.

**Blue Mesa Route**

15. Grazing use would be in conformance with Canada lynx habitat standards:
  - a. Do not allow livestock use in openings created by fire or timber harvest that would delay successful regeneration of the shrub and tree components.
  - b. Manage grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.

- c. Within the elevational ranges that encompass forested lynx habitat, shrub-steppe habitats should be considered as integral to the lynx habitat matrix and should be managed to maintain or achieve mid-seral or higher condition.
  - d. Within lynx habitat, manage livestock grazing in riparian areas and willow carrs to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species.
16. When moving livestock off of existing roads in non-forested areas, trailing will not be authorized until cross-country portions of the route are dry to a depth of two inches below the surface over at least 90% of the route..
17. When moving livestock off of existing roads in non-forested areas, cease use of the route or trail if hoof shear up to one inch occurs on 10% or more of the route.
18. When moving livestock off of existing roads, trailing will be located out of drainage bottoms and swales.

#### **Powderhorn Route**

15. Grazing use would be in conformance with Canada lynx habitat standards:
- a. Do not allow livestock use in openings created by fire or timber harvest that would delay successful regeneration of the shrub and tree components.
  - b. Manage grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.
  - c. Within the elevational ranges that encompass forested lynx habitat, shrub-steppe habitats should be considered as integral to the lynx habitat matrix and should be managed to maintain or achieve mid-seral or higher condition.
  - d. Within lynx habitat, manage livestock grazing in riparian areas and willow carrs to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species.

#### **Powderhorn to Park Creek Route**

15. Grazing use would be in conformance with Canada lynx habitat standards:
- a. Do not allow livestock use in openings created by fire or timber harvest that would delay successful regeneration of the shrub and tree components.
  - b. Manage grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.
  - c. Within the elevational ranges that encompass forested lynx habitat, shrub-steppe habitats should be considered as integral to the lynx habitat matrix and should be managed to maintain or achieve mid-seral or higher condition.
  - d. Within lynx habitat, manage livestock grazing in riparian areas and willow carrs to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species.

#### **Blue Canyon Route**

15. Grazing use would be in conformance with Canada lynx habitat standards:
- a. Do not allow livestock use in openings created by fire or timber harvest that would delay successful regeneration of the shrub and tree components.

- b. Manage grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.
  - c. Within the elevational ranges that encompass forested lynx habitat, shrub-steppe habitats should be considered as integral to the lynx habitat matrix and should be managed to maintain or achieve mid-seral or higher condition.
  - d. Within lynx habitat, manage livestock grazing in riparian areas and willow carrs to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species.
16. When moving livestock off of existing roads in non-forested areas, trailing will not be authorized until cross-country portions of the route are dry to a depth of two inches below the surface over at least 90% of the route.
  17. When moving livestock off of existing roads in non-forested areas, cease use of the route or trail if hoof shear up to one inch occurs on 10% or more of the route.
  18. When moving livestock off of existing roads, trailing will be located out of drainage bottoms and swales.
  19. Sheep will not be allowed to camp or siesta in the bottom of Big Blue Creek

#### **Parlin to Saguache Route (Proposed Action only)**

15. When moving livestock off of existing roads, trailing will not be authorized until cross-country portions of the route are dry to a depth of two inches below the surface over at least 90% of the route.
16. When moving livestock off of existing roads, cease use of the route or trail if hoof shear up to one inch occurs on 10% or more of the route.
17. When moving livestock off of existing roads, trailing will be located out of drainage bottoms and swales.

#### **Razor Creek Dome Route**

15. Grazing use would be in conformance with Canada lynx habitat standards:
  - a. Do not allow livestock use in openings created by fire or timber harvest that would delay successful regeneration of the shrub and tree components.
  - b. Manage grazing in aspen stands to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.
  - c. Within the elevational ranges that encompass forested lynx habitat, shrub-steppe habitats should be considered as integral to the lynx habitat matrix and should be managed to maintain or achieve mid-seral or higher condition.
  - d. Within lynx habitat, manage livestock grazing in riparian areas and willow carrs to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species.

#### **Ridge Stock Driveway Route**

15. Trailing will not be authorized until the route is dry to a depth of two inches below the surface over at least 90% of the route.
16. Cease use of the trail if hoof shear up to one inch occurs on 10% or more of the route.
17. Salt blocks/portable salt containers will be placed at least 0.25 miles away from riparian areas and their associated systems whenever possible.

18. Permittees will ensure herders have a method to immediately notify them of all instances of contact or near contact between domestic sheep and bighorn sheep.
19. Permittees will immediately contact BLM, FS or CPW if BHS have contacted or there is impending contact with domestic sheep.
20. Only visibly healthy domestic sheep will be trailed across BLM lands.
21. Livestock that are physically disabled and unable to keep up with the herd, and all visibly sick livestock will be removed from BLM lands immediately. Animals that are too far from roads to be removed will be terminated. Under no circumstances will injured or sick livestock be left behind.
22. Salt supplements will be placed on rocky areas. Herders will place only as much salt as the sheep will consume in one night.
23. Herders will be encouraged to haze away bighorn sheep that are approaching domestic sheep bands. However, they will be instructed to NOT haze away bighorn sheep that have already made contact with domestic sheep.
24. When trailing through allotments and along trails that overlap bighorn habitat, domestic sheep bands will have no more than 3 bands combined.
25. Additional herders will be present when sheep are trailed to/from allotments along stock driveways and trails.
26. Domestic sheep will be kept together while trailing.
27. Sheep will be kept moving when on trailing routes.
28. Trailing routes and driveways will be revisited following trailing to ensure no domestic sheep have been left behind.
29. Sheep will be bedded on upland areas, as far away from canyon edges, rims, and other areas with a high potential for contact with bighorn sheep as feasible.
30. Sheep bedding is encouraged in the American Flats Allotment if necessary to avoid bedding near bighorn concentration areas north and south of American Flats.

Monitoring:

BLM will periodically monitor entrance to, exit from, and travel along trailing routes to ensure livestock are within permitted numbers, travel is restricted to trail corridors, motorized vehicle use is restricted to existing roads, public land fences and developments are left in good repair, travel and overnight stops are within the prescribed locations and timeframe, and stray livestock are not left behind. Compliance monitoring will ensure livestock are kept moving during trailing activities and are not allowed to stop and graze along the way (particularly in sensitive areas such as swales and riparian meadows).

Soil, water, salting, riparian and upland vegetation conditions along trail routes will be monitored in conjunction with regularly scheduled allotment monitoring activities. Accelerated erosion would be monitored along 50 feet of cross country routes and along the Ridge Stock Driveway before and after use. If trailing activities are causing an area or an allotment to not meet Land Health Standards, adaptive management would be implemented. These may include one or more of the following: moving trailing away from specific sensitive areas to less sensitive areas, changing the season of use that trailing is authorized, reducing the number of livestock or the number of trails authorized along a route, changing bedding/overnight sites, temporarily denying a trailing application, and/or permanently denying trailing applications along a particular route.

## 2.1. DESCRIPTION OF THE PROPOSED ACTION

In addition to the actions common to the Proposed Action and Alternative 2 described above, the Proposed Action would include the following route descriptions.

Table 2.1.1 – Proposed Action Routes Description:

<b>Trail</b>	<b>Allotment/ Pasture</b>	<b>Surface</b>	<b>Distance (miles)</b>	<b>*Area (acres)</b>
Blue Mesa	Little Willow Allotment	Maintained County Road	0.8	10
	Willow Creek Allotment	Open Jeep Trail	1.5	18
	Fort Hicks Allotment	Open Jeep Trail	0.1	1
	Other BLM	Open Jeep Trail	0.2	2
	Indian Creek Allotment	Cross Country	0.3	4
Powderhorn	Indian Creek Allotment, Pole Gulch, Lower Indian, and West Fork Pastures	Maintained County Road	2.6	32
		Open Jeep Trail	0.9	11
		Closed Jeep Trail	5.1	62
Blue Canyon	Blue Canyon Allotment	Closed Jeep Trail	1.4	17
	Blue Canyon Allotment	Cross Country	0.2	2
	Big Park Allotment	Cross Country	0.5	6
	Big Blue Allotment	Cross Country	0.6	7
Powderhorn to Park Creek	Powderhorn Common Allotment, Powderhorn Pasture	Open Jeep Trail	1.4	17
		Closed Jeep Trail	0.4	5
6 Mile Lane	Lower Cochetopa Allotment, Tomichi East, Lower and Upper Long Pastures	Maintained County Road	6	73
Razor Creek to Tomichi Creek	South Parlin Allotment, Houston Gulch Pasture	Open Jeep Trail	2.8	34
		Closed Jeep Trail	0.9	11
Cochetopa West (Proposed)	Lower Cochetopa Allotment, Upper Long and Cochetopa Pastures	Open Jeep Trail	1.8	22
		Closed Jeep Trail	0.3	4
		Cross Country	0.4	5
Doyleville to Cochetopa	Razor Creek Allotment	Maintained County Road	1	12
Doyleville to Cochetopa	South Parlin Allotment, Houston Gulch, Long Gulch, and Sage Hen Pastures	Unimproved County Road	0.7	8
		Open Jeep Trail	4.6	56
		Closed Jeep Trail	0.3	4
Doyleville to Cochetopa	South Parlin Allotment, Houston Gulch Pasture	Unimproved County Road	0.5	6
Doyleville to Parlin	South Parlin Allotment, Houston Gulch and Parlin Flats Pastures	Unimproved County Road	4	49

Doyleville to Parlin	South Parlin Allotment, Parlin Flats Pasture	Maintained County Road	1	12
Parlin to Saguache	South Parlin Allotment, Parlin Flats and Sage Hen Pastures	Maintained County Road	1.2	15
		Open Jeep Trail	2.2	27
		Closed Jeep Trail	0.8	10
Parlin to Saguache**	Camp Kettle Gulch Allotment	Closed Jeep Trail	3.3	262
		Cross Country	3.3	262
Razor Creek Dome	Camp Kettle Gulch Allotment	Open Jeep Trail	1.2	15
Doyleville to Parlin	Razor Creek Allotment	Administrative Route	0.2	2
Ridge Stock Driveway	American Lake and American Flats	Historic Stock Driveway	5.3	64
		<b>Total:</b>	<b>57.8</b>	<b>1147</b>

\* Acres assumes a 100' corridor of disturbance, though most trail routes stay within a 50' corridor. A 100' corridor was used to allow for minor deviations due to vehicle traffic, erratic livestock behavior, etc.

\*\*The proposed portion of the Parlin to Saguache route that occurs on the northern half of the Camp Kettle Gulch Allotment varies somewhat from year to year. The trail route travels through steep terrain with multiple closed jeep trails. Herding efforts are aimed at reducing the amount of elevation gain and loss by keeping cattle "on the contour". Therefore, a wider potential disturbance corridor of ¼ mile (1,320 feet) was used.

## 2.2. DESCRIPTION OF ALTERNATIVES ANALYZED IN DETAIL:

### 2.2.1. NO TRAILING (Alternative #1)

Under this alternative, no livestock trailing permits would be issued. Operators would be required to transport livestock by trucking in areas that are not accessible by private land, county roads, or state highways.

### 2.2.2. RESTRICT TRAILING TO EXISTING ROADS WHERE NEEDED TO MITIGATE IMPACTS ON RESOURCES (Alternative #2)

In addition to the actions common to the Proposed Action and Alternative 2 described above, Alternative #2 would include the following route descriptions.

Table 2.2.2.1 - Alternative 2 Route Description:

<b>Trail</b>	<b>Allotment/ Pasture</b>	<b>Travel Surface</b>	<b>Distance (Miles)</b>	<b>*Area (Acres)</b>
Blue Mesa	Little Willow Allotment	Maintained County Road	0.8	10
	Willow Creek Allotment	Open Jeep Trail	1.5	18
	Fort Hicks Allotment	Open Jeep Trail	0.1	1
	Other BLM	Open Jeep Trail	0.2	2
	Indian Creek Allotment	Cross Country	0.3	4

Powderhorn	Indian Creek Allotment, Pole Gulch, Lower Indian, and West Fork Pastures	Maintained County Road	2.6	32
		Open Jeep Trail	0.9	11
		Closed Jeep Trail	5.1	62
Blue Canyon	Blue Canyon Allotment	Closed Jeep Trail	1.4	17
	Blue Canyon Allotment	Cross Country	0.2	2
	Big Park Allotment	Cross Country	0.5	6
	Big Blue Allotment	Cross Country	0.6	7
Powderhorn to Park Creek	Powderhorn Common Allotment, Powderhorn Pasture	Open Jeep Trail	1.4	17
		Closed Jeep Trail	0.4	5
6 Mile Lane	Lower Cochetopa Allotment, Tomichi East, Lower and Upper Long Pastures	Maintained County Road	6	73
Razor Creek to Tomichi Creek	South Parlin Allotment, Houston Gulch Pasture	Open Jeep Trail	2.8	34
		Closed Jeep Trail	0.9	11
Cochetopa West (Alternative 2)	Lower Cochetopa Allotment, Upper Long and Cochetopa Pastures	Open Jeep Trail	2.6	32
		Closed Jeep Trail	0.3	4
Doyleville to Cochetopa	Razor Creek Allotment	Maintained County Road	1	12
Doyleville to Cochetopa	South Parlin Allotment, Houston Gulch, Long Gulch, and Sage Hen Pastures	Unimproved County Road	0.7	8
		Open Jeep Trail	4.6	56
		Closed Jeep Trail	0.3	4
Doyleville to Cochetopa	South Parlin Allotment, Houston Gulch Pasture	Unimproved County Road	0.5	6
Doyleville to Parlin	South Parlin Allotment, Houston Gulch and Parlin Flats Pastures	Unimproved County Road	4	49
Doyleville to Parlin	South Parlin Allotment, Parlin Flats Pasture	Maintained County Road	1	12
Parlin to Saguache	South Parlin Allotment, Parlin Flats and Sage Hen Pastures	Maintained County Road	1.2	15
		Open Jeep Trail	2.2	27
		Closed Jeep Trail	0.8	10
Parlin to Saguache (Alternative 2)	Camp Kettle Gulch Allotment	Maintained County Road	1.9	23
		Open Jeep Trail	4.8	58
Razor Creek Dome	Camp Kettle Gulch Allotment	Open Jeep Trail	1.2	15
Doyleville to Parlin	Razor Creek Allotment	Administrative Route	0.2	2
Ridge Stock Driveway	American Lake and American Flats	Historic Stock Driveway	5.3	64
<b>Total:</b>			<b>58.3</b>	<b>709</b>

\* Acres assumes a 100' corridor of disturbance, though most trail routes stay within a 50' corridor. A 100' corridor was used to allow for minor deviations due to vehicle traffic, erratic livestock behavior, etc.

Table 2.2.2.2 - Comparison of the Proposed Action and Alternative #2

Travel Surface	Proposed Action		Alternative 2	
	Miles	Acres	Miles	Acres
Maintained County Road	12.6	154	14.5	177
Unimproved County Road	5.2	63	5.2	63
Historic Stock Trail	5.3	64	5.3	64
Open Jeep Trail	16.7	203	22.3	271
Closed Jeep Trail	12.5	375	9.2	113
Administrative Route	0.2	2	0.2	2
Cross Country	5.3	286	1.6	19
<b>Total</b>	<b>57.8</b>	<b>1147</b>	<b>58.3</b>	<b>709</b>

2.3. DESCRIPTION OF ALTERNATIVES NOT ANALYZED IN DETAIL:

No other alternatives were proposed.

2.4. PLAN CONFORMANCE REVIEW:

The Proposed Action and Alternative 2 are subject to, have been reviewed for, and been found to be in conformance with, the following plan (43 CFR 1610.5, BLM 1617.3). The plan conformance review included consideration of Standard Management (pgs. 2-1 to 2-19), Management Unit Prescriptions (pgs. 2-19 to 2-39), and Standards for Public Land Health (pgs. 4-7).

**Standards for Public Land Health:** In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover 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. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis (EA). These findings are located in specific issues analyzed in Chapter 3 below or in Appendix A, IDT Checklist, as appropriate.

Name of Plan: Gunnison Resource Area Resource Management Plan (including Adoption of Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado)

Date Approved: February 1993 (amended February 1997, August 2000, December 2008, January 2009, August 2011)

Table 2.4.1 - Resource Management Plan – Planning Management Units

<b>Trail</b>	<b>Management Unit</b>	<b>Unit Descriptions</b>
Doyleville to Cochetopa	11 and 14	Sage-grouse upland and riparian habitat
Cochetopa West	11	Sage-grouse upland habitat
Razor Creek to Tomichi Creek	11	Sage-grouse upland habitat
Blue Mesa	1, 13, 15, and 16	Alpine Triangle special recreation management area, I category grazing allotments, important fishery streams, and general resource lands
Powderhorn	2 and 13	Powderhorn Wilderness and I category grazing allotments
Doyleville to Parlin	11 and 14	Sage-grouse upland and riparian habitat
Powderhorn to Park Creek	12, 13, and 15	Big game crucial winter range, I category grazing allotments, and important fishery streams
6 Mile Lane	11, 13, and 14	Sagegrouse upland and riparian habitat and I category grazing allotments
Blue Canyon	13, 15, and 16	I category grazing allotments, important fishery streams, and general resource lands
Parlin to Saguache	11, 12, and 14	Sagegrouse upland and riparian habitat and big game crucial winter range
Razor Creek Dome	12	Big game crucial winter range
Ridge Stock Driveway	1	Alpine Triangle special recreation management area

Decision Number/Page:

Management Unit 12 Direction, pgs. 2-33 to 2-34; 3-13

“Domestic sheep grazing and trailing will be excluded from Game Management Unit (GMU) 64 from October 15 to April 15 in order to eliminate forage competition with big game.”

“Activities that will result in unnecessary disturbances to big game will be excluded from December 1 through April 30.”

There is no additional direction specific to livestock trailing or crossing permits in Standard Management Direction or in Management Units 1, 2, 11, 13, 14, 15, and 16 Direction.

### **3. AFFECTED ENVIRONMENT / ENVIRONMENTAL EFFECTS**

#### **3.1. Cultural Resources**

##### **3.1.1 Affected Environment**

Livestock Trailing Permits are federal undertakings (as defined in 36 CFR 800.16(y)) that fall under Section 106 of the National Historic Preservation Act. Areas where the trailing of livestock cross BLM-administered lands within the Gunnison FO are subject to compliance requirements under Section 106 and will undergo standard cultural resource inventory and evaluation procedures. During Section 106 review, a cultural resource inventory was completed for each route following the procedures and guidance outlined in the following: Instructional Memorandum (IM)-CO -2012-031. In addition, BLM Manuals and the Colorado Protocol between the BLM and the Colorado State Historic Preservation Office (SHPO, 1998) provide guidance in meeting BLM's responsibilities under the National Historic Preservation Act. The results of these assessments are summarized below. Copies of the cultural resource assessment are located in the archaeological files at the Gunnison Field Office.

The cultural resources in the Gunnison Field Office span approximately 12,000 years and are represented by Paleo-Indian, Archaic, Formative, Ute and Euro-American cultures. Sites include lithic scatters, quarries, temporary camps, extended camps, village, rock shelters, rock art, wickiups, culturally scarred trees, hunting sites, kill/butchering sites, processing areas, tree platforms, eagle traps, trails, roads, water resource sites, homesteads, ranches, cabins, mills, railroads, transmission lines, mines, trash dumps, aspen art, isolated artifacts, graves, etc. Many of these sites have the potential to be directly and indirectly affected and impacted by livestock trailing. Continued trailing may cause substantial ground disturbance and cause cumulative, long term, irreversible adverse effects to significant cultural properties. Cultural resources are fragile, non-renewable and significant sites and are protected by law and various regulations.

All twelve trails within the Gunnison Field Office were inventoried for cultural resources. Segments of trails were selectively inventoried based on the potential for cultural resources to be present (based on previous inventories) and topographic features including slope and presence or absence of water. Any previously recorded significant sites were monitored for impacts caused by trailing. The cultural site density and site types varied immensely across the twelve trailing routes.

##### **Native American Religious Concerns**

The following tribes were initially notified of the Gunnison Field Office Livestock Trailing Project via certified letter and map package in March of 2013: the Ute Indian Tribe, the Southern Ute Indian Tribe, and the Ute Mountain Ute Indian Tribe. They were asked to identify traditional cultural places or any other areas of traditional cultural importance that need to be considered within the area of potential effect. The BLM did not receive any comments or concerns from the three tribes.

##### **Environmental Consequences and Mitigation:**

Trailing has the potential to cause substantial ground disturbance and cause cumulative, long term, irreversible adverse effects to significant cultural properties. Most commonly, trailing

impacts to cultural resources result in accelerated erosion, which causes deflation of buried features and artifacts; displacement of artifacts is also common in areas where livestock concentrate while being trailed through an area. Livestock also may adversely affect rock art and standing structures through rubbing and trampling.

Any newly discovered and known cultural resources that are located where trailing occurs will be assessed and monitored for impacts. If adverse effects are found, mitigation measures will need to be implemented. These can include, but are not exclusively limited to, a decrease in the AUMs, construction of fenced enclosures around the sites, excavation of the sites and/or installation of erosion control devices. If future cultural resource inventories identify significant sites within the trailing corridors, the sites will need to be monitored to determine if adverse effects are occurring to the sites. The trailing impacts will be assessed within the ten year period of the permit.

### 3.1.2 Proposed Action

The act of livestock trailing can impact cultural resources in a variety of ways. Direct effects include the destruction of subsurface features and structures, and artifact displacement. The ultimate concern is the loss of irreplaceable artifacts, features and structures - once they are removed or destroyed their meaning in time and space and the clues to past cultures are gone forever. Although lithic debitage (generated from the production of stone tools) and tools that are manufactured may seem indestructible, they usually comprise only a part of an archaeological site. Other, more obscure components of the site can contain the more fragile pieces of the puzzle. Hearths (unlined or lined with clay or rocks), postholes, pieces of waddle and daub, and pit shaped depressions are susceptible to being unknowingly disturbed by livestock trailing. Indirect effects of the Proposed Action may include increased water erosion created by soil disturbance and loss of vegetation. An increase in sheetwash across a site can expose features and artifacts that would normally be protected subsurface.

All sites monitored and documented during this project exhibited very minimal impacts from livestock trailing. Any significant sites will be monitored over the duration of the permit. If impacts from trailing increase mitigation measures may need to be implemented.

### 3.1.3 Alternative #1

This alternative would assure that all cultural sites regardless of eligibility would not be further directly or indirectly affected by livestock trailing. Additional impacts caused by livestock trailing would be absent from any cultural sites discovered in the future.

### 3.1.4 Alternative #2

Alternative #2 would slightly lessen the impacts described in the Proposed Action. Cultural inventories of the cross country routes resulted in no new discoveries and no known resources are located within the cross country segments. However, trailing corridors may vary slightly year to year and the 2012 cultural inventory may not have discovered all resources within this corridor. By restricting livestock to already disturbed routes, the impacts to unknown cultural resources along the cross country routes would be alleviated. This proposal would reduce trailing impacts to any unknown cultural resources for 3.7 miles of trail that goes cross country.

## Cumulative Effects of Proposed Action and Alternative #2

The cumulative effect is that over time fewer archaeological resources will be available to learn about past human lifeways, to study changes in human behavior through time, and to interpret the past to the public. Past and future actions that include historic grazing regimes, off-road vehicle use and other recreational activities can result in substantial ground disturbance and cause cumulative, long-term, irreversible adverse effects to paleontological and cultural resources. While it is hard to determine cumulative effects on unidentified archaeological sites, proposed specific actions for all alternatives should not increase the potential for cumulative effects within the analysis area as a site-specific analysis has been completed in accordance to Section 106 of the NHPA and the BLM's protocol with SHPO. Currently, there are no known traditional cultural properties within or adjacent to the project area. Tribal consultation was initiated in March of 2013 to determine any possible locales that have not been previously identified. The BLM did not receive any comments or concerns from the tribes.

### **3.2. Migratory Birds**

#### 3.2.1 Affected Environment

The Migratory Bird Treaty Act (MBTA) of 1918 was passed to regulate the taking of native birds. In 2001, President Clinton signed Executive Order 13186 (66 FR 3853), which directs federal agencies to further implement the MBTA by considering the effects of projects and actions on migratory birds. Pursuant to this Executive Order, the US Fish and Wildlife Service, BLM and Forest Service are working on a Memorandum of Understanding which requires agencies to review the US Fish and Wildlife Service *Birds of Conservation Concern (BCC)* for species that may inhabit a project area. When reviewing the effects of projects/actions on migratory birds, species on the BCC list are emphasized.

Bird species on the list for the Southern Rockies/Colorado Plateau region which could breed within this proposed project area include the flammulated owl (*Otus flammeolus*), Virginias warbler (*Vermivora virginiae*), Grace's warbler (*Dendroica graciae*), MacGillivrays warbler (*Oporornis tolmiei*), Brown-capped rose-finch (*Leucosticte australis*), Olive-sided flycatcher (*Contopus cooperi*), Hammonds flycatcher (*Empidonax hammondi*), Williamsons sapsucker (*Sphyrapicus thyroideus*), Band-tailed pigeon (*Patagioenas fasciata*), Broad-tailed hummingbird (*Selasphorus platycercus*), Violet green swallow (*Tachycineta thalassina*), Brewer's sparrow (*Spizella breweri*), Sage sparrow (*Amphispiza belli*), and Swainson's hawk (*Buteo swainsoni*). Williamson's sapsuckers, and Violet green swallows are all cavity nesters that may nest within the scattered mixed conifer/aspen stands or riparian areas. Broad-tailed hummingbirds are a tree nesting species with populations recorded in montane forest and shrub habitats throughout the foothills, reaching their greatest breeding densities in aspen forests. MacGillivray's warbler requires aspen forests with a dense shrubby understory. Habitat can also be composed of coniferous forest clearcuts with spruce and Douglas fir or mixed deciduous forests with birch, aspen, or poplar. They nest in clumps of grass on the ground or near the ground in shrubs. The Brown-capped rose-finch nests in the alpine zones (>11,000 ft.) and only on vertical cliffs and crags. The Olive-sided flycatcher and the Hammond's flycatcher nest high in the trees of coniferous and aspen forests. Virginia's warblers and Grace's warblers nest primarily in Gamble oak but are also recorded in dense shrublands and on scrub-adorned slopes of mesas, foothills, open ravines, and mountain valleys in semiarid country. The Band-tailed pigeon is found mostly

in ponderosa pine but also found in spruce fir forests and scrub oak shrublands. Swainson hawks typically nest in scattered trees within grassland, shrubland, riparian, or agricultural landscapes. They forage in open stands of vegetation. Brewers sparrows and Sage sparrows are tied closely to sagebrush. Brewer's sparrows breed in tall dense stands of sagebrush broken up with grassy openings. Sage sparrows nest within sizable (>30 acres), low-elevation (<8400 ft), semi-open to dense stands of 0.5 to 2 m (1.5 to 6.5 ft) tall sagebrush (Colorado Partners in Flight website; Lambeth 1998) which are uncommon but could occur within this allotment. They typically arrive in Colorado by April, initiate nesting in May, and fledge young during June and July. They construct cup nests, usually at mid-bush level with sufficient foliage above to conceal the nest (Lambeth 1998).

### 3.2.2 Proposed Action:

Livestock trailing will not directly affect cavity, cliff, and tree nesting species including flammulated owls, Williamson's sapsuckers, Lewis woodpeckers, Hammond's flycatcher, Brown-capped rosey-finch, Olive-sided flycatcher, Broad-tailed hummingbirds, Grace's warbler, Violet-green swallow, Band-tailed pigeon, Red-naped sapsucker, and Swainson's hawks. Therefore, no take of these species or their nests is expected to occur as a result of trailing under the Proposed Action or alternatives. The ground nesting of the Virginia's warbler, MacGillivray's warbler, and Green-tailed towhee will not be inadvertently affected due to the nest being located in dense vegetation usually beneath shrubs or dense undergrowth. Although the Brewer's sparrow's and Sage sparrow's nesting period overlaps the livestock trailing period, placement of their nests off the ground and well within a sagebrush plant would protect them from being trampled by livestock.

### 3.2.3 Alternative 1

Under this alternative, no effect to migratory birds will occur.

### 3.2.4 Alternative 2

Although effects are similar to the proposed action, remaining on roads will ensure that ground nesting birds are protected.

### Cumulative Effects

Since trailing has been occurring for decades, there are very few cumulative effects relating to migratory birds. Results will be positive as unrestricted grazing/trailing will not occur and minimization standards will occur each season.

## **3.3. Threatened, Endangered, and Sensitive Species**

### 3.3.1 Affected Environment:

Of the threatened, endangered and sensitive species within the Gunnison Field Office, those that warrant discussion are Canada lynx, Gunnison Sage-grouse, and Gunnison milkvetch. Gunnison Sage-grouse is currently proposed for listing as Endangered under the endangered species act. Canada lynx is threatened under the endangered species act. Gunnison milkvetch is a BLM sensitive species.

### Canada lynx

Potential lynx habitat was mapped for the BLM state wide in 2002 under contract with the Colorado Natural Heritage Program (CNHP) using the best available information in each Field Office. GIS information used included Gunnison Field Office timber stand data, CDOW Basin-wide Vegetation Index Maps, and models that were created using Colorado Gap Analysis Land Coverage maps. Habitat polygons are defined as Denning, Foraging, Other and Unsuitable. Denning habitat has old growth components and enough down woody debris to support denning activities. Foraging habitat has the required cover however lacks the large woody component needed to support denning. Other habitat supports alternate prey species and has some value to lynx however the habitat quality is not sufficient enough to support long term survival. Unsuitable habitat is habitat that has the potential to be suitable but is currently in an altered condition. For example a recent clear cut or stand replacing fire. Lynx Analysis Units (LAUs) serve as baseline landscape units from which long-term trends in landscape change can be tracked. In concept, LAUs are intended to reflect an average female lynx home range in size and landscape.

The Powderhorn and Powderhorn to Park Creek trailing routes overlap with less than a ½% (0.04) of the Cebolla Creek Lynx Analysis Unit (LAU). The Blue Canyon trailing route overlaps with less than ½% (0.03) of the Blue/Pine Creek LAU. The Blue Mesa trailing route overlaps with less than ½% (0.01) of the Lake Fork of the Gunnison LAU. The Razor Creek Dome trailing route overlaps with 0.2 acres of the Cochetopa LAU and is of such small size, primarily lying outside of usable lynx habitat that this trailing section is not further analyzed. See below charts for trailing overlaps with mapped lynx habitat. Ultimately, of the total 341,464 combined BLM LAU acres, approximately 102 acres of BLM proposed trailing would take place within lynx habitat.

Table 3.3.1. Lynx habitat overlap relevant to trailing alternatives\*:

<b>LAU Name/total acres</b>	<b>Cebolla Creek</b>	<b>Blue/Pine Creek</b>	<b>Lk. Fk. Gunnison</b>	<b>Totals</b>
<b>BLM Habitat affected by trailing</b>	155,061	66,185	120,218	341,464
Denning	17.8	2.1	3.6	23.5
Forage	7.7	6.9	3.5	18.1
Other	33.5	11.7	5.1	50.3
<b>Totals</b>	<b>59</b>	<b>20.7</b>	<b>12.2</b>	<b>91.9</b>

\* All routes in lynx habitat are road routes and eliminate the road prism acreage assuming that trailing within the road prism would not affect suitable lynx habitat.

### Gunnison Sage-grouse

Livestock trailing would result in some cattle and sheep use of native forbs preferred by sage-grouse. The decrease in herbaceous cover values in the allotments affected by trailing would increase the possibility of nest site predation and reduce concealment and security cover for young sage-grouse chicks on the trail corridors. Reduction in height and diversity of vegetation would also reduce the number and occurrence of insects, a key component in the diet of young sage-grouse chicks. However, the anticipated reduction in habitat quality for Gunnison sage-grouse from the Proposed Action would likely be minimal. Utilization of vegetation during livestock trailing events is typically

slight use (0-5% utilization) and occurs mostly due to livestock trampling versus consumption of individual plants. Light to moderate utilization (20-60% utilization) of vegetation has the potential to occur during livestock trailing only where multiple trailing events occur within the same season or when a trailing event is repeated over many years such as in the Cochetopa west and Razor Creek to Tomichi Creek trails.

Out of the 7 BLM grazing allotments in which livestock trailing has been applied for in proposed Gunnison sage-grouse critical habitat, 3 allotments were not meeting one or more Rangeland Health Standards, and current livestock grazing practices were a factor for the failure of at least one Standard. Out of those 3 allotments not meeting at least one Rangeland Health Standard due to current livestock grazing practices, these allotments were not meeting Standard 4, Threatened and Endangered Plants and Animals. (Rangeland Health Standards have not been completed on 2 allotments and the remaining two were meeting these standards.) Of the 4 allotments in *occupied* critical habitat for the Proposed Action, 3 did not meet the standards and one has not been completed and will be analyzed for affects by the Proposed Action.

Of the 3 allotments in *potential* critical habitat, 2 were meeting all the standards and one assessment has not been completed for Land Health. The site specific analysis for the Proposed Action puts the proposed sections of trailings in Indian Creek and Powderhorn common allotments outside of Gunnison sage-grouse potential critical habitat due to these areas not meeting the structural sagebrush characteristics needed for all life stages described in primary constituent elements 2-5 of the Federal Register and will not be further analyzed. The remaining Little Willow Allotment (Blue Mesa trail) falls under the unoccupied *potential* critical habitat and its primary constituency elements can reasonably be met to carry forward for analysis. Proposed trails relevant to Sage-grouse and their critical habitat analysis are listed in the table below:

Table 3.3.2. Gunnison Sage-grouse habitat overlap relevant to trailing:

Trail	Number & Kind	Sage-grouse Habitat Acres	# of trips	Season		Distance/ Duration	Overnight Stops
				Start	End		
Blue Mesa	1800 Sheep	11.8	1	September	October	2.9 miles 3 days	None on public land
Doyleville to Cochetopa	40 Cattle	108.9	1	October	December	10.6 miles 1 day	None
Cochetopa West	40 Cattle	30.1	1 spr 1 fall	May	October	2.5 miles 1 day	None
Razor Creek to Tomichi Creek	150 Cattle	38.1	1 spr 1 fall	February	December	3.7 miles 1 day	None
6 Mile Lane	240 Cattle	61.9	2	May	October	6 miles 1 day	None
Parlin to Saguache	400 Cattle	137.2	1	October	November	12 miles 1 day	None on public

							land
Razor Creek Dome	180 Cattle	3.6	1	September	October	1.2 miles 1 day	None

\*Habitat acreage calculated minus an average 10% road prism of the 100 ft. buffer assumed to be unsuitable for Sage-grouse on road routes

### Gunnison Milkvetch

The Gunnison milkvetch is endemic to the Gunnison Basin and is known to occur in several of the proposed areas. Within its range, it is widely scattered and fairly abundant, most commonly growing on south to southwestern-facing slopes of 2 to 20 degrees. It is typically found on dry, gravelly flats and hillsides at elevations ranging from 7,500 to 9,400 ft. Associated vegetation includes black sagebrush, big sagebrush, rabbitbrush, phlox, and grasses.

### 3.3.2 Effects common under Proposed Action and Alternative 2

#### Canada lynx

##### Direct Effects:

No loss of Canada lynx habitat is anticipated under this Proposed Action due to the small amount of vegetation removed and kept in early seral conditions that may be conducive to prey species while causing unmeasurable effects to habitat continuity. Direct impacts to lynx associated with livestock trailing are likely minimal and primarily associated with lynx movement and dispersal. Excessive loss of forage could result in a reduction of hiding cover which could directly affect a lynx's ability to move across the landscape. Lynx movements within the GFO generally include dispersal across forested BLM lands to similar contiguous forested habitats on Forest Service lands located adjacent to the GFO. There are no lynx landscape habitat linkages identified and mapped within the Proposed Action area.

##### Indirect Effects:

Indirect effects of livestock trailing are mainly associated with competition for available forage between livestock and potential lynx prey species such as snowshoe hare, jack rabbits, cottontails, blue grouse, voles, and squirrels within a narrow trail corridor. Within important lynx prey habitat such as riparian areas, aspen stands and high-elevation willow communities, livestock trailing may directly affect lynx prey species habitat if it causes a reduction in available forage and cover caused by competitive grazing and trampling of vegetation of supporting prey species which could cause lower productivity in lynx.

Based upon land health assessments, utilization monitoring, and/or general inspections, Colorado Standard 2, 3, and 4 for threatened and endangered species is being achieved in those allotments associated with the Proposed Action in lynx habitat. This is based, in part, on lynx and lynx prey habitat in areas of these allotments meeting the LCAS planning objectives and standards for livestock grazing. Under the proposed grazing regime, it is expected that these objectives will continue to be met; mid-seral or higher conditions providing natural cover and prey availability for lynx should be maintained. Regeneration of aspen clones is not expected to be inhibited by the proposed level of grazing or trailing. If reductions in the quality of habitat for lynx prey species does occur, it is expected to be localized and temporary. In addition, the Proposed Action incorporates the Project Planning Standards from the LCAS to ensure that habitat for lynx

prey species is protected and maintained. These standards will be monitored each year that livestock grazing and trailing occurs within a pasture to ensure compliance. Because of the high deer and elk populations in some of the allotments, these standards may have to be evaluated before and after livestock grazing to accurately determine if use is from livestock or big game, particularly for those standards addressing aspen stands and riparian areas.

### Sage-Grouse

#### Direct Effects:

No loss of critical Gunnison Sage-grouse habitat is anticipated under these measures. Direct impacts to Sage-grouse associated with livestock trailing are likely minimal and primarily associated with accidental trampling of nests. Trailing outside of designated corridors or durations in areas already sensitive to grazing conditions could result in a reduction of hiding cover which could directly affect sage-grouse ability to move across the landscape.

#### Indirect Effects:

Indirect effects of livestock trailing are mainly associated with the temporary reduction of herbaceous cover which can affect hiding cover, habitat connectivity, and food availability including insect numbers. The proposed trailing alternative would reduce 388 acres of Sage-grouse critical habitat for all life stages according to the primary constituent elements outlined by the USFWS. Within important Sage-grouse habitat such as riparian areas, livestock trailing may directly affect grouse habitat if it changes the structure or composition of native plant communities. Reduction in available vegetation and cover could result in reduced productivity of food and habitat availability which in turn could result in reduced Sage-grouse productivity. Livestock trailing can cause flushing of birds in primary habitats and push them to more marginal areas and/or chick abandonment that can increase the chances of take. Trailing can also increase compacted soil, erosion, and the probability of the presence and spread of exotic plant species.

### Gunnison Milkvetch

Although Gunnison milkvetch is present and flowering during the period that livestock trailing will occur, there is no evidence that Gunnison milkvetch is a livestock forage species. However there is potential for livestock to trample and cause physical damage to plants. Because these plants have co-existed with livestock grazing for decades and are widespread throughout the Gunnison basin, implementation is not expected to adversely affect the continued existence of this species. Under Alternative 2, there is a reduced chance of trampling since livestock will remain on roads.

#### 3.3.3 Alternative 1

There will be no effect to Threatened, Endangered, or Sensitive plants or animals under this alternative.

#### 3.3.4 Cumulative Effects

Since trailing has been occurring for decades, there are very few cumulative effects relating to threatened, endangered, and sensitive species. Results will be positive as unrestricted grazing/trailing will not occur and minimization standards will occur each season.

### **3.4 Bighorn Sheep**

### 3.4.1 Affected Environment

Domestic sheep within or near the range of bighorn sheep could threaten the sustainability of populations of a designated tier one bighorn sheep herd through disease transmission. The Ridge Stock Driveway proposed domestic sheep trailing route entirely overlaps with bighorn sheep overall habitat in GMU 33. Trailing consists of 900 sheep for a total of 2 days and 10.6 miles of overlap that may pose risk to contact with bighorn sheep. This route parallels Horsethief Trail, a recreational trail, through the American Flats and American Lakes allotments.

### 3.4.2 Effects common to Proposed Action and Alternative 2

#### Direct Effects:

The Ridge Stock Driveway proposed domestic sheep trailing route entirely overlaps with bighorn sheep overall habitat in GMU 33 and does not provide adequate topographic breaks suitable to prevent bighorn movement or limit the chance of nose to nose contact known to transmit disease (Brandon Diamond, CPW terrestrial biologist pers. comm.). Design criteria intended to achieve effective separation between domestic and bighorn sheep have been incorporated in both action alternatives. These criteria would minimize the chances of disease transmission from domestic sheep to bighorn sheep.

#### Indirect Effects

Current Land Health Determinations find that the American Flats/Lakes Allotments are generally meeting all standards. However, sheep use in this area may be a causal factor to exacerbated soil erosion within these allotments which could reduce forage availability/competition for bighorn sheep. Trailing terms and conditions to this permit state that trailing will not be authorized when soils (along the driveway/in the cross country portions of the route) are saturated as common during the wet seasons associated with the Ridge Stock Driveway trailing time frames.

### 3.4.3 Alternative 1

There will be no effect to bighorn sheep under this alternative.

### 3.4.4 Cumulative Effects

Since trailing has been occurring for decades, there are very few cumulative effects relating to bighorn sheep. Results will be positive as unrestricted grazing/trailing will not occur and minimization standards will occur each season to ensure a low risk of disease interaction with bighorn sheep.

## **3.5. Soil Productivity**

### 3.5.1. Affected Environment

This section discusses soil productivity in terms of erosion, bare ground, or ground cover, which can be vegetative cover or cover provided by small rock fragments. Erosion is a natural process and without human intervention this process takes a long time to occur, whereas these processes can be shortened by anthropogenic means (Jacobsen, 1987). Erosion naturally occurs as a result from wind, snowmelt, runoff, or other geologic processes. Soil productivity on BLM lands is affected by land use and land cover. Wild and domestic animals, road and trail construction and maintenance, mining, developed and dispersed recreational sites, and forestry management can

change the amount of ground cover, which is necessary for preventing accelerated erosion. Depending on the climate and elevation, a landscape becomes susceptible to erosion, once a threshold loss of cover occurs exposing bare soil (Evans, 1998). There are several ecosystems within this analysis but of concern are rangelands between Tomichi Creek and Razor Dome and the alpine tundra by Engineer Pass. A literature search of sheep grazing and trailing by the BLM library revealed a dearth of references with little current information.

According to Evans (1998), most of the degradation to rangelands resulted from grazing animals. In this area, that may be true, but roads have a major impact on the landscape. Within the alpine environment of American Flats, climate, animals, and mining, roads, and recreation, have caused degradation. What makes this area more critical is that alpine ecosystems are especially sensitive to animals and the effects can take a long to heal if at all (WYGF, 2010 and Hall et al., 1999).

In 2012, each of the trailing routes except Blue Mesa was surveyed for soil productivity. Blue Mesa was not assessed as this trail became covered with snow in November 2012, making it impossible to evaluate soil productivity.

Table 3.5.1 qualitatively summarizes soil productivity of all the trailing routes, discussed as accelerated erosion. Burrowing by voles in American Flats was observed but not quantified for this analysis. Hall et al. (1999) quantify erosion due to vole burrowing in the Canadian Rockies. Below are types of erosion observed and documented:

- *Rill* - A small, intermittent water course with steep sides; usually only several centimeters deep (SSA, 2013). In alpine ecosystems, rills naturally form below late-season snow banks (Thilenius, 1975).
- *Gully erosion* - The erosion process whereby water accumulates and often recurs in narrow channels and, over short periods, removes the soil from this narrow area to considerable depths...and typically ranges from 0.5m to as much as 25 to 30m (SSA, 2013). In alpine ecosystems, gullies naturally form below late-season snow banks (Thilenius, 1975).
- *Sheet erosion* - The removal of a relatively uniform thin layer of soil from the land surface by rainfall and largely unchanneled surface runoff (sheet flow) (SSA, 2013). In alpine ecosystems, sheet erosion occurs below late-season snow banks when water doesn't concentrate into channels, but instead over the entire soil surface (Thilenius, 1975).
- *Headcut* - A headcut is an abrupt step in the channel profile, some centimeters to some meters high (SSA, 2013).

Four trailing routes had no detectable accelerated erosion on or off the route: Blue Canyon, Powderhorn, Powderhorn to Park Creek, and Razor Creek Dome (Table 3.5.1). Cochetopa West (proposed) trailing route follows open roads and closed routes, but has a minor problem with surface erosion. At the intersection of 3073 and 3073c, there are multiple spurs that have no vegetative ground cover. These spurs do not have productive soils, as soils have been compacted. Use by animals and motorized vehicles prevent establishment of vegetation and keep soils compacted. Also, the cross country route in T.48N., R.2E., sections 8 and 9 has a high soil erosion potential as the route follows slopes in excess of 30 percent. Four trailing routes, which follow open roads and closed routes have no accelerated erosion on the trail, but have gullies within 30 feet of either side of the road. These trailing routes include: Six Mile Lane; Doyleville to Cochetopa; Doyleville to Parlin; and Razor Creek to Tomichi Creek (Table 3.5.1 and Figure

3.5.1). Gully systems adjacent to roads were at one point an old wagon road, a livestock trail, or wildlife trailing route, which became a gully due to soil compaction and loss of ground cover. Expansion of these gully system results from excessive runoff from roads and high runoff velocities at the outlet of culverts and water bars.

Trails not meeting land health standard 1 due to accelerated erosion on and off the trail include Parlin to Saguache and Ridge Stock Driveway. The former is located within the Camp Kettle and South Parlin Flat Allotments, which are not meeting land health standard 1 for soil quality. Cross-country trail routes do not meet land health standard 1 for soil quality due to excessive erosion. Each swale and drainage bottom has either one or more of the following erosion problems: headcuts, gullies, and multiple trailing. These forms of accelerated erosion result from livestock and maybe wildlife trailing in drainage bottoms.



Figure 3.5.1. This photo shows BLM Road 3085 in Poverty Gulch. Soils are derived from Mancos shale, which is highly erosive due to the high percentage of clay. This gully which is located in the valley bottom, bisects the Parlin to Saguache trailing route.

Table 3.5.1. Summary of Impacts observed on and off trailing routes.

<b>Trailing Route</b>	<b>Assessed</b>	<b>Impacts to soil productivity on the trailing route?</b>	<b>Are there existing impacts to soil productivity within 50 feet of trail?</b>	<b>Other risks</b>
6 Mile Lane	yes	No, route lies on open roads.	Gully system east of BLM road 3072	
Blue Canyon	yes	No, route lies on closed routes.	none	
Blue Mesa	no	unknown	unknown	Alpine tundra
Cochetopa West (Proposed)	yes	No, route lies primarily on open roads and closed routes.	Multiple road spurs at the intersection of 3073a and 3073	Steep slopes on cross country route (T.48N., R.2E., Sections 8 and 9)

Doyleville to Cochetopa	yes	No, route lies on open roads.	Gullies adjacent to BLM Roads 3080a, 3080b, 3076, and 3079 and intersection of 3079 and 3077.	
Doyleville to Parlin	yes	No, route lies on open roads.	Gullies adjacent to BLM Roads 3076, BLM Road 3077 (T48N, R3E, S6); and at intersection of 3079 and 3077.	
Parlin to Saguache	yes	Gullied systems in each drainage bottom and swale. Multiple trailing in drainage bottoms.	Gully systems at intersection of BLM roads 3076a and 3076b; adjacent to Gunnison County Road 43 (T49N, R2E, S26); at intersections of BLM Road 3080a, 3080b, and 3080.	Steep bare slope north of Saguache County Road 14PP (T.47N., R.3E., Sec. 6).
Powderhorn	yes	No, route lies on open roads and closed routes.	none	
Powderhorn to Park Creek	yes	No, route lies on open roads.	none	
Razor Creek Dome	yes	No, route lies on open roads.	None	
Razor Creek to Tomichi Creek	yes	No, route lies on open roads and closed routes.	Gully system east of closed route (T.49N., R.3E., Sec. 32)	
Ridge Stock Driveway	yes	Headcutting and gully erosion on and off the trail, multiple trailing, loss of alpine tundra, (T.30N., 7.W., Secs 12 and 13; and T.30N., R.6W., Sec. 7).	Headcutting and gully erosion within 50 feet of Ridge Stock Driveway, loss of alpine tundra, (T.30N., R.7W., Secs 12 and 13; and T.30N., R.6W., Sec. 7)	Alpine tundra and three wetlands, including one confirmed fen with 300 feet of the trail.

## Saguache to Parlin Trail



Photo on the left shows parallel gullies from multiple trailing, a gully formed in a trail, which was abandoned. Photo on right shows a trail with water concentrated in the trail, which begins the formation of a new gully. Both photos were taken in valley bottoms between National Forest System lands and BLM Road 3185.

Figure 3.5.2 Accelerated erosion on Saguache to Parlin Trail.

An inventory of erosion occurred in late fall of 2012; however the exact cause of erosion is uncertain at this time. It is also unknown if these areas are actively eroding or healing from past and current land management actions, such as historic mining, old roads, or historically higher number of sheep AUM's in this alpine ecosystem. Along the Ridge Stock Driveway, one headcut was located within the trail and this headcut has caused less than 1 ton of soil loss. Off the trail, erosion accounts for 14 headcuts and a total soil loss of 88 tons (Figure 3.5.3). Within 50 feet of the trail are 2 headcuts within stream channels and wetlands, including fens, accounting for 1 ton of soil loss. Total soil loss associated with headcuts within 50 feet of the Ridge Stock Driveway equals 89 tons. All of these headcuts are still raw and active. Fourteen of these headcuts have associated gullies with gully length less than 3 feet to more than 100 feet. Bedrock normally arrests headcuts and six of these headcut systems have the potential to erode headward an additional 60 to 120 feet as that's the distance of the headcut to bedrock. Consequently, there's the potential for an additional soil loss of 40 cubic yards or 60 tons. Sheet erosion accounts for 15 tons of soil loss at 26 locations of such erosion within 50 feet of the trailing route (Figure 3.5.4). Trail erosion aside from headcuts and gully erosion includes trail widening, multiple trailing and trail incision along 0.2 miles within a 50 foot corridor of the trailing route. Multiple trailing between 2 and 4 trails was observed on 424 feet of trail, while trail incision greater than 4 inches occurs on 0.15 miles of the route.

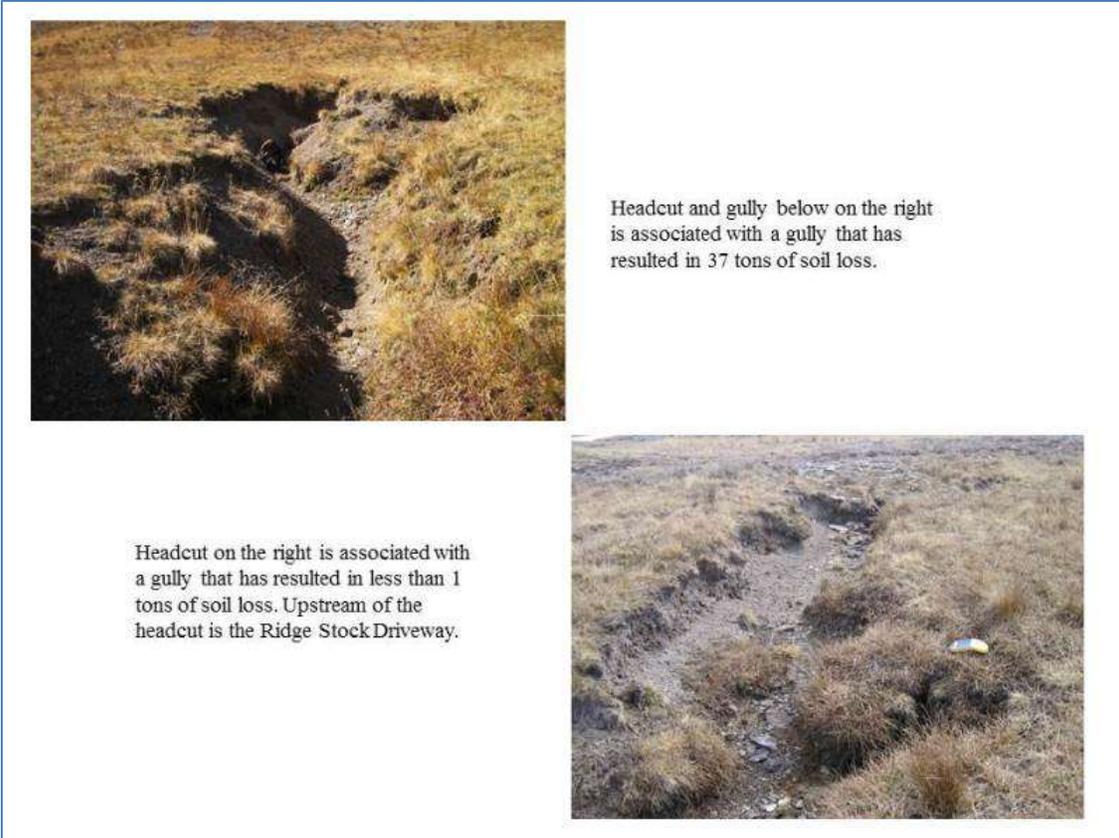


Figure 3.5.3 Headcuts associated with the Ridge Stock Driveway.





Figure 3.5.5. Trail erosion along the Ridge Stock Driveway.

### 3.5.2 Proposed Action:

#### Direct and Indirect Effects

Under the Proposed Action, there would be negligible direct and indirect effects to soil erosion from all trailing routes except on the Ridge Stock Driveway and Parlin to Saguache Route, where cross country travel occurs. Accelerated erosion and loss of soil productivity in these two areas was discussed in the affected environment. If trailing occurs on the cross country route within the Parlin to Saguache Route, 400 livestock would travel on these routes. On existing areas of bare ground, trailing would result in more soil displacement and soil compaction. During runoff events, these routes would become more entrenched and too deep for livestock. Consequently, these routes will be abandoned and trailing will occur adjacent to these abandoned trails. Trailing by livestock will remove protective vegetative cover and compact the soils from their weight. Loss of vegetation will result in larger contiguous areas of bare ground, which are susceptible to erosion. This process would continue a vicious circle of livestock trail formation, followed by entrenchment, abandonment, and creation of new trails. Eventually, these trails could form a dendritic system and at some point, a knick point will form, which will move headward up each trail, resulting in a new gully system.

Continued trailing of 900 sheep along the Ridge Stock Driveway could result in gully and headcut expansion on and off this route. As previously mentioned there are 14 headcuts with associated gully systems. If sheep remove vegetation along the sides of these headcuts or trample the sides of the headcuts, these headcuts will expand and will enlarge. Six of these systems have bedrock between 60 and 120 feet away from the headcut. Disturbance to these headcuts could result in loss of 60 tons of soil due to gully erosion till up gradient bedrock arrests their progress. Currently, sheet erosion account for 8 tons of soil erosion within 50 feet of the route. Loss of

vegetation along these 26 sites from browsing or trampling would increase the amount of bare ground of 270 square feet. This surface area of 270 square feet would be susceptible to increased erosion in exceedance of current soil loss estimates of 15 tons.

### Cumulative Effects

Cumulative effects analysis has two portions. The first part shows the change in compacted surfaces from roads, closed routes, and cross country routes. Included in this analysis are all allotments where a portion of a trailing route crosses it. The second part discusses accelerated erosion observed within or near trailing routes. Table 3.5.2 summarizes the percentage of bare ground and compacted surfaces as a result of each alternative. This percentage only takes into account roads, trails, closed routes, and cross country routes. This analysis doesn't take into account disturbed areas such as houses, mines, or recreational sites. A buffer of 50 feet was placed on either side of the cross country routes and the Ridge Stock Driveway, as compaction or a loss of cover could occur that distance from these routes. It is assumed that livestock will remain on roads, so the current compaction and bare ground that exists on this ground is not expected to change.

Table 3.5.2 Percentage of bare ground and compacted surfaces within allotments, which have part of a trailing route crossing it. Disturbed surfaces only include closed routes, open roads and trails, and cross country routes. A fifty foot buffer was placed on both side of cross country routes and the Ridge Stock Driveway.

Allotment	Area	Area	Closed Routes	Open Road and Trail	Pre project/No Action	Horse Trail, cross country Area	Alternative 1	Alternative 2
	Acres	Sq. Miles	Sq. Miles	Sq. Miles	Compacted or Bare Ground	Sq. Miles	Compacted or Bare Ground	Compacted or Bare Ground
American Flats	1,919	3.00	0.00	0.02	0.65%	0.01	0.99%	0.99%
American Lake	6,825	10.66	0.01	0.02	0.25%		0.25%	0.25%
Big Blue	2,985	4.66	0.01	0.02	0.65%		0.65%	0.65%
Big Park	3,091	4.83	0.00	0.01	0.28%		0.28%	0.28%
Blue Canyon	4,842	7.57	0.02	0.01	0.38%		0.38%	0.38%
Camp Kettle Gulch	16,098	25.15	0.32	0.20	2.08%	0.06	2.34%	2.08%
Fort Hicks	210	0.33	0.00	0.00	1.02%		1.02%	1.02%
Indian Cr	10,276	16.06	0.12	0.09	1.36%	0.01	1.40%	1.36%
Little Willow	2,436	3.81	0.01	0.02	0.84%		0.84%	0.84%
Lower Cochetopa Com	21,327	33.32	0.29	0.25	1.63%	0.01	1.65%	1.63%
Powderhorn Com	15,601	24.38	0.16	0.14	1.26%		1.26%	1.26%
Razor Cr	766	1.20	0.01	0.01	1.91%		1.91%	1.91%
Razor Cr Dome	4,759	7.44	0.03	0.07	1.38%		1.38%	1.38%
S Parlin Flats Com	27,016	42.21	0.24	0.21	1.07%		1.07%	1.07%
Sapinero Mesa	31,444	49.13	0.21	0.24	0.93%	0.00	0.93%	0.93%
W Powderhorn	4,315	6.74	0.01	0.01	0.33%		0.33%	0.33%
Willow Cr	2,470	3.86	0.01	0.04	1.13%		1.13%	1.13%

Under the Proposed Action, trailing would be allowed on cross country routes, certain closed routes, and specific open roads. Consequently, only four allotments will have a detectable change in compacted or bare ground. American Flats would increase from 0.65% to 0.99%; Camp Kettle Gulch increases from 2.08% to 2.34%; Indian Creek increases 1.36% to 1.40%; and Lower Cochetopa Commons increases from 1.63% to 1.65%. There will be no cumulative impacts within Big Blue, Big Park, Blue Canyon, Fort Hicks, Indian Creek, Little Willow,

Powderhorn, Sapinero Mesa, or Willow Creek Allotments on soil productivity, as trailing will occur on roads and closed routes that are already compacted and have bare soil.

Within the American Flats and American Lake Allotments, a quick inventory of headcuts, gullies, and sheet erosion occurred in 2012 and likely didn't capture all the accelerated erosion in the area. Within the inventory were 119 headcuts, including the ones within 50 feet of the Ridge Stock Driveway. Eighty five of these headcuts have gully erosion associated with them. These gullies range in size between 0.8 feet and 158 feet. Estimated soil loss from these headcuts and associated gullies is 310 tons. Within this same area, sheet erosion accounts for 720 square feet of soil loss at 68 sites. This entire area is eroding naturally (Thielenius, 1975) and from cumulative impacts (Evans, 1998). Cumulative impacts include mining, recreational bull dozing, historically high sheep numbers, old roads, and recreational trails. Both these allotments do not meet Land Health Standard 1 for soil quality. Trailing will prevent the process of these areas meeting this land health standard. However, accelerated erosion will occur in this fragile ecosystem regardless of sheep trailing as there are natural processes and historical impacts that are poorly understood. BPS project number 65351 has been submitted as several unknowns need to be answered so better decisions can be made under adaptive management:

- Sources of erosion- anthropogenic or natural.
- Rates of erosion.
- Ways to reduce erosion within the Uncompahgre Wilderness Study Area.
- Effects of multiple uses management and climate change on soil erosion.
- Determine if this area has healed from past impacts or is still actively eroding.

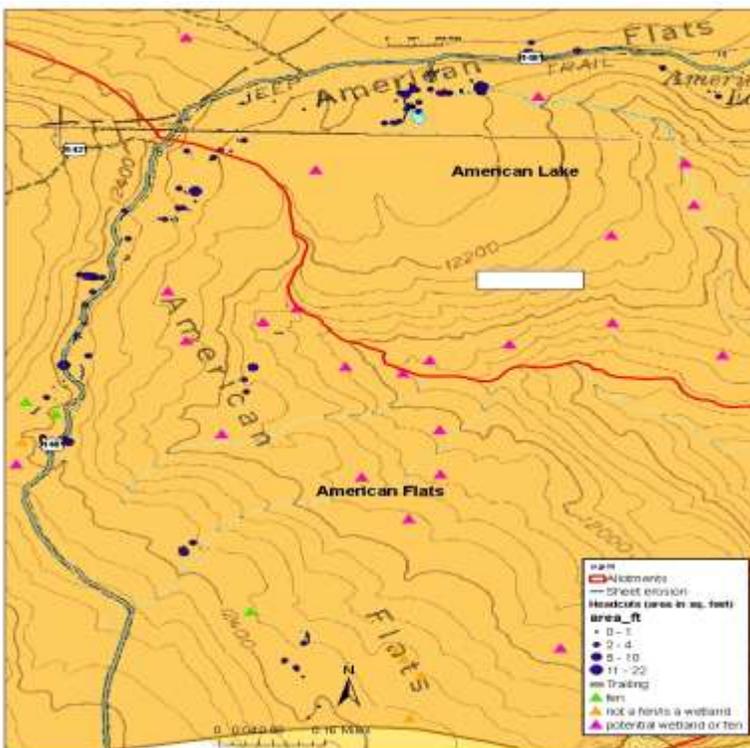


Figure 3.5.6. Accelerated erosion in American Flats and American Lake Allotments

A rapid inventory of accelerated erosion was conducted for the rest of the areas with trailing. Consequently, locations of some headcuts and gullies were mapped within Camp Kettle Gulch Allotment, while dimensions of these sites were not tabulated. Within Camp Kettle Gulch Allotment, headcuts and gully complexes were mapped at 13 locations on cross country routes and next to open roads (Figure 3.5.7). Other gully systems were hand drawn on a map within the other allotments due to failures with the GPS unit. Within Camp Kettle Gulch, cross country routes cover 40 acres within this allotment and the amount of erosion associated with this area will expand if cross country routes are used. This erosion would reduce the amount of productive soils from the creation of new trails and consequent gullies on cross country routes. Camp Kettle is not meeting Land Health Standard 1 and trailing on cross country routes will keep this standard at its current rating. There are gully systems along open roads used as trailing routes within Camp Kettle Gulch, Lower Cochetopa Commons, Razor Creek Dome, Razor Creek, and South Parlin Flats Common Allotments. Trailing on the roads should not result in expansion of these gullies. Within all these allotments, roads cause the highest loss of productive soils due to bare ground, compaction, and off the road erosion.

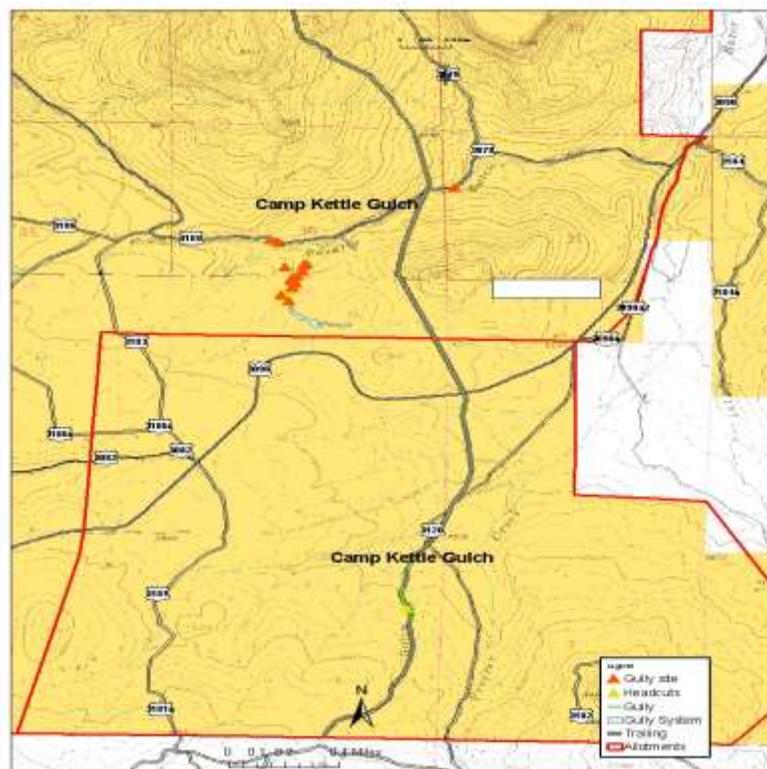


Figure 3.5.7 Accelerated erosion in Camp Kettle Gulch Allotment.

### 3.5.3 Alternative 1:

#### Direct and Indirect Effects

Under Alternative 1, there will be no changes to soil productivity from this action. Trailing would not occur on cross country routes, the Ridge Stock Driveway, open roads, or closed routes. Soil productivity will remain unchanged from its current condition.

#### Cumulative Effects

Under Alternative 1, trailing would not be authorized on public lands. As a result, the current percentage of bare ground on open roads and closed routes would remain the same (pre-project/no action column in table 3.5.2).

Cumulative effects within American Flats and America Lake Allotments from use of the Ridge Stock Driveway are the same as in the Proposed Action.

Cumulative effects within the Camp Kettle Gulch Allotment will be the same as Alternative 2.

#### 3.5.4 Alternative 2:

##### Direct and Indirect Effects

Under Alternative 2, there would be negligible direct and indirect effects to soil erosion from all trailing routes except on the Ridge Stock Driveway. Because all trailing would occur on open and closed roads and trails, cross country travel would not occur on the Parlin to Saguache route. Consequently, accelerated erosion within this 40 acre area would not expand due to livestock trailing.

Continued trailing of 900 sheep along the Ridge Stock Driveway could result in gully and headcut expansion on and off this route. As previously mentioned there are 14 headcuts with associated gully systems. If sheep remove vegetation along the sides of these headcuts or trample the sides of the headcuts, these headcuts will expand and will enlarge. Six of these systems have bedrock between 60 and 120 feet away from the headcut. Disturbance to these headcuts could result in loss of 60 tons of soil due to gully erosion till the arrested by bedrock up gradient of the initial knickpoint. Currently, sheet erosion account for 8 tons of soil erosion within 50 feet of the route. Loss of vegetation along these 26 sites from browsing or trampling would increase the amount of bare ground to 270 square feet. This surface area of 270 square feet would be susceptible to increased erosion in exceedance of current soil loss estimates of 15 tons.

##### Cumulative Effects

Under Alternative 2, trailing would be allowed on the Ridge Stock Driveway, certain closed routes, and specific open roads. Consequently, one allotment will have a detectable change in compacted or bare ground; American Flats will increase from 0.65% to 0.99%. Cumulative effects within American Flats and America Lake Allotments from use of the Ridge Stock Driveway are the same as in the Proposed Action.

Within the other allotments, outside of the alpine ecosystems of American Flats and American Lake, the percentage of bare ground and compacted surfaces would not change and there would be no cumulative impacts. The multiple trailing and gully systems within the southern part of the Camp Kettle Gulch Allotment (T47N, R2E, 12) would begin healing once livestock trailing ceases in these swales. Vegetation should be able to take hold, thereby allowing precipitation to infiltrate in the ground instead of running off. It is doubtful that big game will cause these areas to actively erode, as the Gunnison Field Office Biologist indicates that wildlife normally wouldn't use the same cross country route as livestock. Livestock use these routes as permittees usually locate water on these routes. Intense rainfall events prior to vegetative recovery would prevent natural rehabilitation of these areas with erosion. Preventing cross country travel within Camp Kettle Gulch will not change the condition of the gully networks between BLM roads

3090 and 3185 and consequently, this allotment will continue not to meet land health standard 1, as runoff from the roads will continue gully expansion.

### **3.6 Riparian**

#### 3.6.1 Affected Environment

Riparian and wetland ecosystem health is affected by use and vegetation cover. A land use such as grazing by wildlife or livestock may minimally to severely affect riparian condition such as its hydrology, vegetation, and soil.

Within riparian and wetland areas in western Colorado, roads, mining, development, grazing, and recreational uses are the primary disturbances (Tiner 2003, Chimner et al. 2010). Grazing by livestock or wildlife in riparian areas that produces minimal soil disturbance and water channeling and maintains hydrology and at least 4 – 6 inches of residual riparian/wetland plant material (wide-leaved sedges, willows, rushes), is effective at maintaining plant wetland/riparian plant species with deep dense root systems and decreasing sedimentation and erosion (Hall & Bryant 1995, Winward 2000, Clary & Leininger 2000, Wyman et al. 2006).

There are approximately 9.7 acres of riparian, wetland, and fen areas with perennial water located within the 100' trail buffer (BLM GIS 2013). The largest riparian and wetland areas that livestock trail next to or through are Blue Canyon on the Alpine Plateau and in the alpine tundra of American Flats. The riparian areas along the trailing routes support various plant communities from low elevation narrowleaf cottonwood-willows to high elevation beaked sedge communities within wetlands and fens. Fens are especially sensitive to hydrologic and soil disturbances as they depend on consistent groundwater and vegetation production for peat accumulation over thousands of years. They are also a source of biodiversity and paleocological history. Riparian areas, wetlands, and fens are critical to wildlife for water, hiding cover, forage, nesting, brood-rearing, food sources. In addition, riparian and wetland areas are important to livestock for water and forage (Johnston 2001). People value riparian areas for viewing, water, recreational activities, and research.

Limited monitoring took place in 2011 and 2012. Most sites exhibited very minimal impacts from livestock trailing. Off-road trailing along Blue Creek on the Alpine Plateau had little effect on the Blue Creek riparian area. The greatest impacts were noted along the Ridge Stock Driveway where headcuts, bank damage, vegetation alterations, water channeling, and postholing in riparian areas, wetlands, and fens were documented (BLM 2011, 2012). In 2013 BLM GIS, gully erosion was identified coming off the Ridge Stock Driveway. See photograph below.



Figure 3.6.1

### 3.6.2 Alternative #1 – Direct, Indirect, and Cumulative Effects

Since no trailing would be permitted with this Alternative, there would be no direct or indirect impacts to riparian areas from trailing with this alternative. The lack of impacts from Alternative #1, removing livestock trailing, will reduce cumulative effects on riparian and wetland areas.

### Proposed Action and Alternative #2 – Direct, Indirect, and Cumulative Effects

The two action alternatives, the Proposed Action and Alternative #2, are the same except for portions of cross-country routes included in the Proposed Action. Trailing off roads would continue through portions of Blue Canyon and Blue Mesa. American Flats trailing of multiple sheep herds follows an old stock driveway going out onto allotments and coming back home.

Since livestock trailing has been occurring along the proposed routes and stock driveway for decades, direct and indirect impacts through riparian and wetland areas would continue. Trailed livestock are mostly staying on roads and being pushed along past riparian and wetland areas. When livestock trailing is not kept out of riparian and wetland areas, riparian areas have been impacted in a variety of ways, depending on the length of time spent along the riparian area or in

the wetland. Stream crossings perpendicular to the stream channel generally have fewer impacts than trailing directly down the stream channel.

Direct effects of livestock trailing through riparian areas include continued trampling of streambanks, widening of stream channels, sedimentation, fecal deposits in stream water, and a decrease in plant residual matter or stubble heights. Trailing in wetlands and fens leads to water channeling, loss of vegetation, and increased oxygen into wetland soils. See photograph below of old wagon tracks and sheep trailing along Horsethief Trail in American Flats.



Figure 3.6.2

Indirect effects of the two action alternatives may include continued water erosion created by soil disturbance and loss of vegetation, sedimentation, loss of peat soils due to oxygenation, temporary damage to fish habitat, and invasion of noxious weeds from seed brought in on livestock hooves or hair.

#### Cumulative Effects of the Proposed Action and Alternative #2

Cumulative effects pertaining to NEPA are defined as “the effects that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.” Past activities in the trailing areas include mining, livestock grazing, spring development, pond construction, wheeled sheep wagon use, road construction, use and maintenance, recreation, fence construction, and natural events such as fire and flooding. Livestock use three times per year via allotment use and trailing may have impacted riparian and wetland plant communities, although no quantifiable data is available. Areas where some of

these impacts were observed were in American Flats and in a wetland on the BLM-Forest Service boundary on the south side of Camp Kettle Gulch.

Current actions include allotment livestock grazing, recreation, road maintenance, and natural events. Reasonably foreseeable actions anticipated to occur in trailing areas include livestock grazing, recreation activity, forestry management, road maintenance, and natural events.

Other Reasonably foreseeable actions were identified in the Road Beaver Creek EA, including hardening of road crossings. Reasonably foreseeable actions for the American Flats area would be adding additional sheep herds and hikers to the Ridge Stock Driveway trail. The Proposed Action and Alternative #2 are not likely to add to Reasonably foreseeable actions, past mining, road use, spring development, pond construction, and grazing to cause cumulative effects. Implementing the EA's *Trailing Permit Terms & Conditions* are likely to improve watershed conditions in the long-term which would benefit riparian areas, resident aquatic species and their habitat.

### **3.7 Special Status Aquatic Wildlife Species**

#### **3.7.1 Affected Environment**

The two action alternatives, the Proposed Action and Alternative #2, are the same except for portions of cross-country routes included in the Proposed Action. Trailing off roads would continue through portions of Blue Canyon and Blue Mesa. American Flats trailing with multiple sheep herds follows an old stock driveway going out onto allotments and coming back home. Livestock trailing along the road next to Road Beaver Creek would stay the same in both the Proposed Action and Alternative #2.

*Colorado River Cutthroat Trout*: Along the trailing routes, Road Beaver Creek is the only creek that contains a small population of genetically pure Colorado River cutthroat trout, a BLM sensitive species. This population is considered a Core Conservation Population in the "Conservation Agreement and Strategy for Colorado River Cutthroat Trout (*Oncorhynchus clarkii pleuriticus*) in the States of Colorado, Utah, and Wyoming, June 2006", and is considered important to the overall conservation of this species.

#### **3.7.2 Proposed Action**

##### **Direct and Indirect Effects**

The primary negative effect to Colorado River cutthroat trout associated with the two action alternatives is the potential for sedimentation and increased turbidity. Effects related to these are addressed here in detail and referenced below in analysis by activity.

Increased sediments reduce dissolved oxygen, raise stream temperature, and can cover spawning/rearing areas, thereby reducing the survival of fish embryos and juveniles (USDA Forest Service 2000). Excessive sedimentation can also fill in important pool habitats, reducing their depth and making them less usable by fish and other aquatic organisms. High sediment transport can fill pools and cause reduction or loss of essential salmonid juvenile rearing habitat

(Frissell 1992). In addition, pool habitat is important as over-summer and over-winter thermal refugia areas.

A number of sublethal effects on resident trout may also occur as a result of sedimentation, including avoidance behavior, reduced feeding and growth, and physiological stress (Waters 1995). Reduced macroinvertebrate productivity and diversity results when excessive sediment fills in the spaces between stream substrates needed by these aquatic invertebrates. Food webs can be altered as sediment-intolerant macroinvertebrates are replaced by sediment-tolerant species. Reduction in stream productivity can disrupt the food chain and result in reduced food sources for resident cutthroat trout. Suspended sediment causes turbidity within streams, which can impact species such as cutthroat trout that need clear water in which to successfully capture prey. Results from a study on turbidity (Barrett et al. 1992) clearly indicated that wild rainbow trout exposed to increasing levels of suspended sediment are subject to reductions in their ability to detect prey. This in turn may lead to reduced prey capture rates and foraging success, lowering the growth and fitness of individual fish and populations. The longer the duration of high turbidity the more damage is likely to fish and other aquatic organisms (Newcombe and MacDonald 1991).

#### Cumulative Effects

Cumulative Effects are the past, present, and reasonable foreseeable actions plus effects of the Proposed Action or alternative. Historic activities would include mining, spring development, hunting, road use, and grazing by livestock and wildlife. On-going activities would be hunting, recreation, and livestock grazing. At the present water quality and the aquatic habitat of Road Beaver Creek is being impacted for 10 days annually by over 100 cattle permitted on the Park Allotment. The cattle congregate in two water gaps to find shade and water, as they leave the upper elevations to lower elevations. Because of the location of two riparian fences on the left bank of the channel, the cattle remain in the channel, causing ground disturbance. Disturbance of stream banks and channel bottom results in erosion and sedimentation of Beaver Creek at both water gaps. Depositional areas downstream of the water gaps have filled in with fine-grained sediment, which results in a loss of resting habit for Colorado Cutthroat trout. Turbid water extends at least 0.25 miles from these disturbed areas. Because the cattle remain in this narrow corridor, which has a width of 35 feet, animal waste directly enters the creek. Turbid water and animal waste degrade water quality and aquatic habitat in Road Beaver Creek during the 10 days in the summer when the 100 cattle travel down the Road Beaver Creek drainage. Fine-grained sediment remains in the depositional areas until peak snowmelt between May and June of each year flushes these areas out (BLM, Road Beaver Creek EA 2012).

Reasonably foreseeable actions identified in the Road Beaver Creek EA are hardening of road crossings, closing livestock water gaps, and installing upland tanks for seasonal livestock use. The impacts of the Proposed Action, reasonably foreseeable actions, past mining, road use, spring development, pond construction, and grazing are not likely to cause cumulative effects. Water quality for Colorado River cutthroat should improve with planned road work and avoiding trailing through fords during spring spawning periods. Implementing the EA's *Trailing Permit Terms & Conditions* are likely to improve watershed conditions in the long-term which would benefit riparian areas, resident aquatic species and their habitat.

3.7.3 Alternative #1 – There will be no direct, indirect, or cumulative effects on Colorado River cutthroat trout from Alternative #1 since there will be no trailing through Road Beaver Creek.

#### 3.7.4 Alternative #2

##### Direct and Indirect Effects

Alternative #2 is similar to the Proposed Action except two sections of cross-country routes were removed. The primary negative effect to Colorado River cutthroat trout associated with the Proposed Action is the potential for sedimentation and increased turbidity. Effects related to these are addressed here in detail and referenced below in analysis by activity.

Increased sediments reduce dissolved oxygen, raise stream temperature, and can cover spawning/rearing areas, thereby reducing the survival of fish embryos and juveniles (USDA Forest Service 2000). Excessive sedimentation can also fill in important pool habitats, reducing their depth and making them less usable by fish and other aquatic organisms. High sediment transport can fill pools and cause reduction or loss of essential salmonid juvenile rearing habitat (Frissell 1992). In addition, pool habitat is important as over-summer and over-winter thermal refugia areas.

A number of sublethal effects on resident trout may also occur as a result of sedimentation, including avoidance behavior, reduced feeding and growth, and physiological stress (Waters 1995). Reduced macroinvertebrate productivity and diversity results when excessive sediment fills in the spaces between stream substrates needed by these aquatic invertebrates. Food webs can be altered as sediment-intolerant macroinvertebrates are replaced by sediment-tolerant species. Reduction in stream productivity can disrupt the food chain and result in reduced food sources for resident cutthroat trout. Suspended sediment causes turbidity within streams, which can impact species such as cutthroat trout that need clear water in which to successfully capture prey. Results from a study on turbidity (Barrett et al. 1992) clearly indicated that wild rainbow trout exposed to increasing levels of suspended sediment are subject to reductions in their ability to detect prey. This in turn may lead to reduced prey capture rates and foraging success, lowering the growth and fitness of individual fish and populations. The longer the duration of high turbidity the more damage is likely to fish and other aquatic organisms (Newcombe and MacDonald 1991).

##### Cumulative Effects

The effects of Alternative #2 plus Reasonably Foreseeable Actions added to the effects of the Park Creek Allotment 10 days of grazing, other past grazing regimes, mining, road use, spring development and pond construction will not cause cumulative effects to Colorado River cutthroat trout. Implementing the EA's *Trailing Permit Terms & Conditions* are likely to improve watershed conditions in the long-term which would benefit riparian areas, resident aquatic species and their habitat.

### **3.8. Rangeland Management**

#### 3.8.1 Proposed Action:

Under the Proposed Action, trailing livestock would be present on some allotments during the permitted season of use for these allotments. No known conflicts have occurred in the past as a result of livestock being trailed through actively grazed allotments; however the potential for

conflict exists. Terms and Conditions are added to both the Proposed Action and Alternative 2 to minimize the potential for conflict between livestock trailing through allotments and livestock actively grazing allotments.

The socio-economic impact to livestock operators under the Proposed Action would be minimal. Costs associated with trailing livestock across federal lands include the cost of the trailing permit (\$1.35/AUM plus a \$10 Administration Fee), cost of workers to move livestock (wages that would have been paid regardless of trailing), as well as the cost for equipment and gasoline to move workers and haul horses to the trailing location. These are costs that the livestock operators have paid in the past and have already figured into their business operating costs. There would be no additional cost to the livestock operators under the Proposed Action.

**3.8.2 Alternative 1:**

Under Alternative 1, no livestock trailing permits would be issued for crossing lands managed by the BLM in the Gunnison FO. No conflicts would arise between actively grazing livestock and trailing livestock because only actively grazing livestock would be permitted in grazing allotments. Livestock trailing would no longer have the potential to contribute to allotments not meeting Land Health Standards.

The socio-economic impact of Alternative 1 would be high for six livestock operations that would be required to truck livestock or to trail livestock long distances along heavily used highways to access private lands and/or public land grazing permits.

Table 3.8.1 - Impacts of Alternative 1, by trail route:

<b>Trail</b>	<b>Impact under Alternative #1 (No Trailing)</b>
Cochetopa West	Cattle would need to be trucked or travel long distances along Highway 50 and Highway 114 to private lands. Trailing cattle along these two highways places livestock and motorists at high risk of collision.
Doyleville to Cochetopa	
Parlin to Saguache	
Razor Creek to Tomichi Creek	Cattle would need to be trucked or travel long distances along Highway 50. Trailing cattle along the highway places livestock and motorists at high risk of collision.
Doyleville to Parlin	
Blue Mesa	Sheep would need to be trucked to corrals on the Alpine Plateau to access BLM and Forest Service permits and private lands. Roads may need to be widened or improved to allow safe passage of livestock trucks to the corrals.
Blue Canyon	
Powderhorn	Sheep would need to be trucked to corrals south of Lake City in order to access BLM permits through Forest Service allotment permits. If the current BLM permit holder loses access to Forest Service permits, there would be no way for sheep to access grazing permits on the Devils Lake or West Powderhorn BLM allotments.
Powderhorn to	Cattle would need to be trucked to the Park Creek Allotment. The

Park Creek	Powderhorn Road may need to be improved to allow safe passage of livestock trucks.
6 Mile Lane	Cattle would continue to use this route because it is a heavily maintained County Road.
Razor Creek Dome	Cattle use patterns in the Forest Service managed Razor Creek Dome Allotment would need to change to ensure cattle could move between pastures without trailing through the Camp Kettle Gulch Allotment
Ridge Stock Driveway	Sheep would need to be trucked to either the Capitol City or Eureka Corrals and be trailed along heavily maintained and utilized county roads to access their high elevation BLM and Forest Service permits. Sheep would be at risk of injury and stress by vehicles using these roads.

### 3.8.3 Alternative 2:

Under Alternative 2, trailing livestock would continue to be present on some allotments during the permitted season of use for these allotments. No known conflicts have occurred in the past as a result of livestock being trailed through actively grazed allotments; however the potential for conflict exists. Terms and Conditions are added to both the Proposed Action and Alternative 2 to minimize the potential for conflict between livestock trailing through allotments and livestock actively grazing allotments.

For allotments that were found to be not meeting, or making significant progress towards meeting, one or more Rangeland Health Standard, and current livestock grazing is a factor, there is a potential for livestock trailing to cause impacts that can slow or prevent these allotments from meeting Land Health Standards. Allotments that were not meeting Land Health Standards and in which current livestock grazing was a factor in the failure of at least one Standard are shown in Table 1.1.1. Terms and Conditions are added to both the Proposed Action and Alternative 2 to minimize the potential of livestock trailing to impact Land Health Conditions, including riparian, wildlife habitat, special status species habitat, water quality, and upland soils. In addition, under Alternative 2, the potential for trailing routes to impact Land Health Standards would be less than the Proposed Action because two of the routes that cross areas with upland soil concerns (Cochetopa West and Parlin to Saguache) would no longer have cross country routes through areas of concern.

The socio-economic impact to livestock operators under Alternative 2 is slightly higher for two livestock operations than the Proposed Action because the Cochetopa West and the Parlin to Saguache trail routes have been made longer to avoid impacts to resources. Costs associated with trailing livestock across federal lands under Alternative 2 include the cost of the trailing permit (\$1.35/AUM plus a \$10 Administration Fee), cost of workers to move livestock (wages that would have been paid regardless of trailing event or not), as well as the cost for equipment and gasoline to move workers and haul horses to the trailing location. These are costs that the livestock operators have paid in the past and have already figured into their business operating costs. The only known socio-economic hardship to the livestock operators from this scenario would be due to two of the trails (West Cochetopa and Parlin to Saguache) being longer than historically, which could slightly increase the cost of wages to move cattle along these two trail routes.

### Cumulative Effects of Proposed Action and Alternatives #1 and #2

The Proposed Action and Alternative #2 would not contribute to cumulative effects on Rangeland Management. Grazing operations have been trailing livestock across public lands to get to other public and private lands since grazing began in the mid 1800's. These routes have changed over time; the minor changes in the routes proposed under Alternative #2 should have little impact on the economic health of livestock grazing operations.

Alternative #1 would greatly change the way several livestock operations based in the Gunnison Basin and areas west to Montrose, Colorado operate. These changes would result in an increase in cost to livestock operations for trucking, livestock losses due to trucking, and potential costs for improving existing roads to accommodate trucking. In the absence of adequate roads to allow for trucking, some grazing allotments may become inaccessible. These increased costs are cumulative to the historic incremental increases in costs that are currently occurring, and that are expected to continue to occur, for livestock operations utilizing public lands for grazing, including: 1) increasing costs for fuel, wages, veterinary care, water development, and supplemental feed, 2) increasing costs associated with managerial time spent planning and consulting with federal agencies and affected interests. In the future, increasing water right and private land values may ultimately result in increased costs to livestock operations due to property tax increases.

### **3.9. Access and Transportation Management**

3.9.1 Affected Environment: Areas of the Proposed Action that indicate "cross-country travel" have the potential to create new travel routes not intended for public use. This is of particular concern in areas of occupied Gunnison Sage-grouse habitat. New routes would further fragment this critical habitat. Since the passage of the Gunnison Basin Travel Management Plan, all motorized and mechanized travel is limited to designated routes; however, many regularly used single-track trails in the Gunnison Resource area began as livestock trails.

3.9.2 Proposed Action: A direct effect of the Proposed Action would be creating new routes of travel on the ground where cross country trailing would occur. As depicted in Table 3, most of the cross country trailing is of relatively short distance and subsequently a relatively small area of affected acres (Specifically; Blue Canyon Trail, Blue Mesa Trail, and Cochetopa West Trail). The impact of these cross country routes would be minimal, as they are short in duration and do not occur in Sage-grouse habitat. The total mileage of cross country travel through the Camp Kettle Gulch Allotment (which does occur in Sage-grouse habitat) is 3.3 miles, with 262 affected acres. An indirect effect of cross country trailing in this area would be a new route on the ground, and potential use of this new route by the recreating public resulting in additional Sage-grouse habitat fragmentation.

3.9.3 Alternative 1: Since no trailing would be permitted with this Alternative, there would be no impacts to access/transportation from trailing with this alternative.

3.9.4 Alternative 2: Alternative 2 would eliminate these impacts by confining cross country trailing in the Camp Kettle Gulch Allotment to previously impacted roads.

### **3.10. Invasive, Non-Native Species**

### 3.10.1 Affected Environment:

3.10.2 Proposed Action: Trailing livestock can contribute to the spread of invasive, non-native species. Invasive species control efforts are concentrated along roads and jeep trails. Under the proposed action, the majority of the livestock trail routes would occur along existing roads. These routes would be regularly checked for invasive species and treated as necessary. The portions of the Blue Mesa, Blue Canyon, Cochetopa West, Camp Kettle Gulch, and the Ridge Stock Driveway trail routes that utilize cross country travel would not be as closely monitored for invasive species. The 10.6 miles of trailing along these portions of these five routes would be more susceptible to invasion by non-native species.

3.10.3 Alternative 1: Since no trailing would be permitted with this Alternative, there would be no impacts to invasive, non-native species from trailing with this alternative.

3.10.4 Alternative 2: Trailing livestock can contribute to the spread of invasive, non-native species. Invasive species control efforts are concentrated along roads and jeep trails. Under Alternative 2, the majority of the livestock trail routes would occur along existing roads. These routes would be regularly checked for invasive species and treated as necessary. The portions of the Blue Mesa, Blue Canyon, and the Ridge Stock Driveway trail routes that utilize cross country travel would not be as closely monitored for invasive species. The 6.9 miles of trailing along these portions of these 3 routes would be more susceptible to invasion by non-native species.

### Cumulative Effects of Proposed Action and Alternative #2

Livestock trailing played a role in the initial establishment of non-native, invasive species on public lands. Subsequent livestock and wildlife trailing and grazing have contributed to the continued establishment and spread of these species. In addition, a number of activities on public and private lands have, are, and will continue to contribute to the establishment and spread of non-native, invasive species, including: 1) increasing dispersed recreational use, such as 4 wheel driving, camping, hiking, and recreational horse use, 2) increases in wildland/urban interface due to the establishment of subdivisions in remote areas, which result in more traffic to/through public lands, more small scale agriculture, and more small scale livestock presence in remote areas, and 3) climate change, with increasing periods of drought/flood, increasing temperatures, and increasing fluctuation in temperature/precipitation extremes.

Non-native, invasive species are well established on public lands; therefore, invasive species control, public awareness, and state invasive species regulatory activities will need to continue regardless of which alternative is selected.

### 3.11. CUMULATIVE IMPACTS SUMMARY:

Past activities in the trailing areas include mining; livestock grazing; spring development; pond construction; wheeled sheep wagon use; road construction, use and maintenance; recreation; fence construction; rural development; and natural events such as fire and flooding. Current actions include allotment livestock grazing, recreation, road maintenance, rural development, and natural events. Reasonably foreseeable actions anticipated to occur in trailing areas include livestock grazing, recreation activity, forestry management, road maintenance, rural development, and natural events, including climate change. Other reasonably foreseeable actions

were identified in the Road Beaver Creek EA, including hardening of two road crossings in Road Beaver Creek. Reasonably foreseeable actions for the American Flats area would be adding additional sheep herds and hikers to the Ridge Stock Driveway trail.

Trailing has been occurring in these areas since the mid 1800's. Implementing Alternative #1 and not allowing livestock trailing across BLM managed public lands would increase costs to several livestock grazing operations. The primary cumulative impact of implementing the Proposed Action or Alternative #2 would be the inclusion of measures to mitigate impacts of livestock trailing on soils, riparian communities, and bighorn populations.

#### **4. TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED:**

January 14, 2013 – A scoping letter detailing the Proposed Action of the EA was sent to counties, federal and state agencies, permittees, and the affected interests and interested publics on the grazing allotments through which trailing activities are proposed, including:

Hinsdale, Gunnison, Montrose, and Ouray Counties	Poverty Mesa LLC
Colorado Parks and Wildlife	Juan and Donna Inda
Gunnison National Forest	James Cochran
Gunnison County Sagegrouse Strategic Committee	Mike Field
Rocky Mountain Resource Management Services	RACO Land and Livestock
Wild Earth Guardians	Leonard Kreuger
Trout Unlimited	Greg Peterson
Colorado Woolgrowers Association	Tony and Bill Krueger
Gunnison County Stockgrowers	Gene Hollenbeck
Rocky Mountain Bighorn Society	Paul Tamarcaz
Wild Sheep Foundation	Les Cook
National Wildlife Federation	Blue Creek Partners
Western Watersheds	Bar IV Ranch
High Country Citizens Alliance	David Gorsuch
Deldorita Ranches	Helen Whinnery
Jerry Smith	Tracy Hildreth
Thomas and Carol Larson	Steve Cadwell

March of 2013 - Tribal consultation was initiated to determine any possible locales that have not been previously identified. The BLM did not receive any comments or concerns from the tribes.

April 23, 2013 - Meeting with sheep operators and USFS in Montrose, CO to discuss design criteria needed for sheep grazing and trailing, particularly in/near bighorn sheep habitat.

## **5. LIST OF PREPARERS:**

<b>Name</b>	<b>Title</b>	<b>Area(s) of Responsibility</b>
Gay Austin	Natural Resource Specialist	Wetlands and Riparian Areas Aquatic Wildlife
Andrew Breibart	Hydrologist	Floodplains Water Quality Hydrology and Water Rights Soils Air Quality
Brian Brown	Forester	Forest Vegetation/Management Fire and Fuels Management
Rebecca Bruno	Surveyor	Cadastral Surveys
Tara de Valois	Rangeland Management Specialist	Invasive, Non-Native Species Upland Vegetation Rangeland Management
Elizabeth Francisco	Archaeologist	Cultural Resources Native American Religious Concerns
Tom Fresques	Fisheries Biologist	Fisheries
Russell Japuntich	Wildlife Biologist	Migratory Birds Threatened, Endangered and Sensitive Species Terrestrial Wildlife
David Lazorchak	Geologist	Geology and Minerals Hazardous Materials Paleontology
Darren Long	Wildlife Biologist	Migratory Birds Threatened, Endangered and Sensitive Species Terrestrial Wildlife
Jim Lovelace	Recreation Planner	Wild and Scenic Rivers Wilderness Lands with Wilderness Characteristics Access and Transportation Recreation Visual Resources
Marnie Medina	Realty Specialist/NEPA Coordinator	Lands Authorizations NEPA Environmental Justice
Kristi Murphy	Recreation Planner	Prime and Unique Farmlands Wild and Scenic Rivers Wilderness Lands with Wilderness Characteristics

Jake Schmalz	Rangeland Management Specialist	Access and Transportation Recreation Visual Resources Invasive, Non-Native Species Upland Vegetation Rangeland Management
Brian Stevens	Prescribed Fire Specialist	Fire and Fuels Management

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