

# U.S. Department of the Interior Bureau of Land Management

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## Environmental Assessment DOI-BLM-NM- A010- 2013- 34 - EA

For Livestock Grazing Permit Issuance  
On the Following Allotments:

Petoch Wash (#00221), Tafoya Canyon (#00431),  
Arroyo Del Puerto (#06006), Ruby Well (#06032),  
El Tintero (#06079), Crockett Draw (#06092),  
Cerro Bandera (#22338)

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## Introduction

This environmental assessment (EA) identifies the impacts to public land resources from a proposal to issue new term grazing permits on the following grazing allotments; Petoach Wash (#00221), Tafoya Canyon (#00431), Arroyo Del Puerto (#06006), Ruby Well (#06032), El Tintero (#06079), Crockett Draw (06092), and Cerro Bandera (#22338) Allotments. This EA fulfills the Bureau’s responsibility to comply with the National Environmental Policy Act (1969), the Public Rangeland Improvement Act (1978), The Clean Water Act (1972), the National Historic Preservation Act (1966 as amended) and the Endangered Species Act (1973). The Bureau of Land Management’s authority to administer livestock grazing on public land comes from the Taylor Grazing Act (1934) and the Federal Land Policy and Management Act (1976).

This EA will identify impacts of livestock grazing and its effect on other resources within the project area. The EA will also identify livestock project design features or livestock management practices to be implemented to reduce or eliminate potential undesirable impacts. Finally, if livestock grazing is authorized, this EA will bring livestock management on the allotments into compliance with new laws, regulations, and/or policies that have been enacted since the issuance of the previous term grazing permit. The issues considered in this EA will be the effects of grazing on soils/hydrology, upland vegetation, riparian, water quality, wildlife, threatened and endangered (T&E) species, cultural resources, invasive/non-native species and rangeland health.

The scope is limited, future management actions related to livestock grazing will be addressed in project specific NEPA documents as they are proposed.

The term grazing permits under consideration are for the seven allotments listed above (see general location map).

**TABLE 1: - Current Permitted Grazing Use**

Allotment Name , (Allotment #)	%Public Land	Permitted Livestock Class	Permitted Stocking Rate	Permitted Season of Use	Total Preference AUM's
Petoach Wash (#00221)	82%	Cattle	63	03/01-02/28	620
	82%	Horses	5	03/01-02/28	49
					<b>669</b>
Tafoya Canyon (#00431)	100%	Cattle	32	03/01-02/28	384

**TABLE 1 continued: - Current Permitted Grazing Use**

<b>Arroyo Del Puerto (#06006)</b>	<b>100%</b>	Cattle	42	03/01-02/28	504
<b>Ruby Well (#06032)</b>	<b>100%</b>	Cattle Cattle	6 6	03/01-05/31 10/1-02/28	18 30 <b>48</b>
<b>El Tintero (#06079)</b>	<b>100%</b>	Cattle	9	03/01-02/28	108
<b>Crockett Draw (#06092)</b>	<b>100%</b>	Cattle	4	03/01-02/28	48
<b>Cerro Bandera (#22338)</b>	<b>100%</b>	Cattle	4	03/01-02/28	46

\*Total AUM's are based on preference. Actual AUM's are rounded up or down to a number that will give an even number of cattle grazing.

## **Fundamentals of Rangeland Health and Standards and Guidelines**

The Standards and Guidelines for livestock grazing on Bureau of Land Management lands in New Mexico were approved in January 2001. The standards were written to accomplish the four fundamentals of rangeland health. Appendix II, describes the fundamentals of rangeland health, the New Mexico Standards and Guidelines and the health assessment process.

## **Purpose and Need for the Proposal**

The need for the proposal is to provide for legitimate multiple use of the public lands by issuing new term grazing permits on the seven allotments. The permits will be issued with terms and conditions for grazing use that conform to New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management, as developed by the New Mexico Resource Advisory Council (RAC) and approved in 2001. The proposed action will be in accordance with all applicable laws, regulations, and policies including Title 43 CFR 4130.2(a) which states "Grazing permits or leases authorize use on the public lands and other BLM-administered lands that are designated in land use plans as available for livestock grazing."

## **Conformance to Land Use Planning**

The proposed action is consistent with Federal, State, and local plans to the maximum extent possible. The proposed action is in conformance with the Rio Puerco Resource Management Plan, approved November 1986. The proposed action has been analyzed within the scope of other relevant plans, statutes, regulations, and executive orders listed below and found to be in compliance:

- New Mexico Nonpoint Source Management Program, 2009.
- Endangered Species Act of 1973, as amended (PL 93-205; 16 U.S.C. 1531 et seq.).
- Wilderness Act (1964) (PL 88-577; 16 USC 1131-1136)
- Migratory Bird Treaty Act of 1918, as amended (Executive Order 11629)

## Conformance to Statutes, Regulations, or Other Plans

The proposed action complies with BLM New Mexico State Office, as per the requirement set forth in BLM Washington Office IMs WO 2003-071 and WO 2004-126. This document complies with the IM guidance. It also complies with the requirements outlined in the following policies and manuals:

- BLM Manual 8560, H-8560-1, 8561 (Wilderness Management)  
 “The BLM must foster a natural distribution of native species of wildlife, fish, and plants by ensuring that ecosystems and ecological processes continue to function naturally” (.11 A 1).  
 BLM Manual 8400 - Visual Resources Management

## Description of the Proposed Action and Alternatives

### Proposed Action

The Bureau of Land Management would re-authorize grazing through the issuance of new permits on the Petoch Wash (#00221), Tafoya Canyon (#00431), Arroyo Del Puerto (#06006), Ruby Well (#06032), El Tintero (#06079), Crockett Draw (06092), Cerro Bandera (#22338) Allotments. Grazing activities would be administered through individual permits issued to operators and the allotment would continue to be managed as a whole in terms of total stocking rate and season of use. The proposed livestock management actions are described in the table below:

**Table: 2 - Detailed Livestock Management**

Allotment Name / Number	Current Allotment AUM's	Proposed Allotment AUM's	Current Season of Use	Proposed Season of Use
Petoch Wash (#00221)	669	0-669	*03/01-02/28	**03/01-02/28
Tafoya Canyon (#00431)	384	0-384	*03/01-02/28	**03/01-02/28
Arroyo Del Puerto (#06006)	504	0-504	*03/01-02/28	**03/01-02/28
Ruby Well (#06032)	48	0-48	03/01-05/31 10/01-02/28	**03/01-05/31 **10/01-02/28
El Tintero (#06079)	108	0-108	*03/01-02/28	**03/01-02/28
Crockett Draw (#06092)	48	0-48	*03/01-02/28	**03/01-02/28
Cerro Bandera (#22338)	46	0-46	*03/01-02/28	**03/01-02/28

\*Maximum season of Yearlong Grazing

\*\* Flexibility and deviations in livestock numbers, areas of use and periods of use may be determined on a seasonal basis where such deviations are warranted. Authorization of deviation would not prevent attainment of shared goals, the multiple-use objectives and the standards for grazing administration.

Based on the livestock management described above in Table 2, new permits would be issued for a period of up to ten years. The terms and conditions as listed in appendix III, of the permits would contain stipulations to aid in achieving and/or maintaining the New Mexico Standards and Guidelines for Public Land Health.

## **Adaptive Management**

The BLM in cooperation with the permittees have recognized the need for adaptive management and the permittees agree to voluntarily adjust stocking rates or season of use in order to reduce grazing intensities and allow for rangeland rest and recovery when deemed necessary by the authorized officer. Adaptive management adjustments will continue to be made until resource conditions are rested and recovered to desired levels.

## **Alternatives to the Proposed Action**

### **No Action Alternative:**

Under this alternative grazing would continue under current management with the same Terms and Conditions.

### **No Grazing Alternative**

The no grazing alternative would no longer allow for authorized grazing on BLM lands within the seven allotment boundaries. All applications to graze livestock on the allotments would be denied based on this alternative and permits would not be re-issued. Livestock found on public lands within the allotment would be classified as unauthorized. Maintenance of range improvements would be re-assigned to the BLM's wildlife program in situations where wildlife would receive primary benefits such as from water sources. All other improvements would be removed from public lands. Permittees would receive reasonable compensation for permanent range improvements placed or constructed on public lands covered under the cancelled permits. The planning documents for the Field Office would be amended to show the change in use of the lands within the seven allotments.

Additionally, the Environmental Impact Statement for the New Mexico Statewide Resource Management Plan analyzed several other alternatives:

1. The no-action alternative, Management of vegetation on public lands within New Mexico would continue, consistent with existing RMP decisions and guidance.
2. Resource Advisory Council (RAC) alternative (Preferred)
3. The County alternative
4. The Fallback alternative

## **Description of the Affected Environment**

The Petocho Wash (#00221), Tafoya Canyon (#00431), Arroyo Del Puerto (#06006), Ruby Well (#06032), El Tintero (#06079), Crockett Draw (06092), Cerro Bandera (#22338) Allotments are located near Grants, New Mexico. All of the allotments are located in McKinley and Cibola Counties. The average annual precipitation is approximately from 8 to 12 inches.

Typically, about half of the annual precipitation falls from July through October, and November through June are the drier months. Much of the rainfall occurs as convective thunderstorms late in July through September. Snow falls regularly in winter, but it does not remain on the ground very long. Allotment acres both public and private are listed in Table 3 below. The figures below display the general location of the allotments, the land ownership characteristics along with the allotment boundary distinctions.

**Table 3: Allotment Summary**

Allotment Name	BLM Acres	State Land Acres	Private Land Acres	Total Allotment Acreage	MLRA
Petoch Wash	5,048	0	2,796	7,844	35&42
Tafoya Canyon	2,700	485	430	*6,890	35
Arroyo Del Puerto	3,323	0	7,380	10,703	35
Ruby Well	318	672	6,593	7,583	35
El Tintero	809	1,921	2,481	5,211	36&35
Crockett Draw	342	1,268	2,771	*6,068	35
Cerro Bandera	433	0	0	433	48

\*Remaining balance are tribal lands

### Standard Elements of the Human Environment

The elements of the human environment which must be considered because of requirements specified in statute, regulation, executive order or Bureau policy, are listed in Table 4. Additional elements that may be affected are further described in this EA. Those elements that are not present or would not be affected are also listed in the table, but will not be considered further in this document.

**Table 4. Standard Elements of the Human Environment**

Element	No or Negligible Effect Beyond Those Disclosed in the RMP/FMP/Grazing EIS	May Be Affected	Not Present	Rationale
Air Quality	X			Some blowing dust occurs due to wind and certain soil surfaces without livestock grazing. Changes in grazing management could improve soil surface conditions.
Areas of Critical Environmental Concern (ACEC)			X	No ACECs occur within the Allotments.
Cultural Resources		X		The allotments are predominately within a medium to high cultural sensitivity level.
Environmental Justice		X		In accordance with Executive Order 12898, each federal agency must analyze environmental effects, including human health, economic, and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by NEPA. The No Grazing alternative would have a potentially negative social and economic effect on the predominantly Hispanic permittees.

**Table 4. Standard Elements of the Human Environment**

Element	No or Negligible Effect Beyond Those Disclosed in the RMP/FMP/Grazing EIS	May Be Affected	Not Present	Rationale
Farmlands (Prime or Unique)			X	No prime farmland soils occur in the allotments.
Floodplains	X			Floodplains would be affected only if Land Health Standards are not met.
Migratory Birds	X			A number of migratory bird species are known to have a distribution that overlaps with the proposed action area. Migratory bird nesting and foraging habitat may be located throughout the allotments. Based on known habitat associations, species composition may be somewhat anticipated. Where sagebrush occurs, migratory obligate species may use the area. Outside the breeding season, a number of species have the potential to use the area during the winter or migration. The potential for the proposed livestock grazing to negatively affect migratory birds is discountable because of low density of livestock within the allotments.
Native American Religious Concern		X		No concerns have been identified so far. Consultation with potentially affected American Indian tribes will be initiated on the basis of this EA.
Noxious Weeds and Non-Native, Invasive Species		X		Proposed action may increase the risk of establishment or spread of these species in the allotment.
Federally Listed or Proposed Plant and Animal Species			X	None present
Special Status Animal and Plant Species (Federally candidate threatened or endangered species and state sensitive species)	X			There are no special status or threatened/endangered plant or animal species that occur within the allotments.
Wastes (Hazardous and Solid)			X	No hazardous or solid wastes exist in the allotment nor would be introduced by the proposed action.
Water Quality	X			Water quality would be affected only if Land Health Standards are not met.

**Table 4. Standard Elements of the Human Environment**

Element	No or Negligible Effect Beyond Those Disclosed in the RMP/FMP/Grazing EIS	May Be Affected	Not Present	Rationale
Wetlands/Riparian			X	There are no riparian resources within the allotments
Wild Horses and Burros			X	There is no Herd Management Areas associated with the allotments
Wild and Scenic Rivers			X	There are no wild and scenic rivers in or near the allotment.
Wilderness Values			X	There are no wilderness areas within the eight allotments

In addition to the standard elements of the human environment, the BLM considers other resources and uses that occur on public lands and the issues that may result from the implementation of the proposed action. The potential resources and uses, or additional elements that may be affected are listed in Table 5. A brief rationale for either considering or not considering these elements further is provided. The additional elements that are considered in the EA are described in the Affected Environment and are analyzed in the Environmental Consequences section.

**Table 5. Other Resources and/or Issues in the Allotment**

Resource or Issue	No or Negligible Effect Beyond Those Disclosed in the RMP/FMP/Grazing EIS	May Be Affected	Not Present	Rationale
Livestock Grazing/Range Standards and Guidelines		X		The proposed action would add terms and conditions to the grazing permit that would aid livestock management toward maintaining/achieving the Standards for Rangeland Health.
Vegetation		X		Proposed additional stipulation changes may affect vegetation in the allotment through improved management.
Soils		X		Livestock Grazing may affect soils on the allotments. Thresholds are set by the Standards for Rangeland Health, and comparison of actual rangeland conditions to the thresholds is made with Rangeland Health Assessments.
Wildlife		X		Grazing management changes may affect wildlife habitat through improved grazing management.
Recreation	X			Grazing management changes would not affect recreation activities which occur on the allotment.
Visual Resource	X			Grazing activities would not affect Class IV VRM classified landscapes.

**Potentially Affected Elements of the Human Environment**

Based on the review of existing baseline data and surveys conducted in preparation of this EA, BLM specialists have identified the following as potentially affected resources that relate to the human environment:

- Livestock Grazing/Rangeland Health Standards and Guidelines
- Noxious Weeds and Invasive Non-Native Species
- Soils
- Vegetation
- Wildlife
- Cultural Resources
- American Indian Uses
- Socio-economic

**Livestock Grazing/Rangeland Health Standards and Guidelines**

Rangeland health assessments for the eight allotments were conducted between August and November 2012. Data was collected using an interdisciplinary team of natural resource professionals. It was

identified that all of the allotments are achieving the New Mexico Standards for Public Land Health as written by the New Mexico Resource Advisory Council (RAC) and approved in 2001 (see table 2).

All seven of the allotments that are being evaluated for New Mexico Standards for Public Land Health were found to be meeting standards one and two, standard three is non-applicable due to no riparian resources are located within the allotments. Overall, the allotments appear to have a decrease in cool season species such as Indian ricegrass (*Achnatherum hymenoides*), western wheatgrass (*Pascopyrum smithii*) and the shrub winterfat (*Krascheninnikovia lanata*). This is attributed to historical grazing that took place in the area and long-term drought that is currently occurring throughout the Western United States. The current vegetative composition of native species within the allotments is appropriate for the range sites and is conducive to allowing a hydrologic cycle and energy flow that will support a productive and diverse native biotic community. Though the frequency of desirable native primary grammanoid and shrub species is less than what is recommended in the Ecological Site Descriptions (ESD), the presence of the primary species along with secondary species within the allotment is an indicator that the overall ecological condition within the community is making progress towards the Historical Climax Plant Community (HCPC).

Grazing management is in complete conformance within the guidelines for all eight allotments. The complete summary of Evaluations and determinations are located in Appendix I. Table 6 shows a summary of the standards by allotment:

**Table 6. Summary of Standards**

Allotment	Standard 1. Upland Sites	Standard 2. Biotic Communities	Are livestock a contributing factor?
Petoch Wash	Meeting the Standard	Meeting the Standard	N/A
Tafoya Canyon	Meeting the Standard	Meeting the Standard	N/A
Arroyo Del Puerto	Meeting the Standard	Meeting the Standard	N/A
Ruby Well	Meeting the Standard	Meeting the Standard	N/A
El Tintero	Meeting the Standard	Meeting the Standard	N/A
Crockett Draw	Meeting the Standard	Meeting the Standard	N/A
Cerro Bandera	Meeting the Standard	Meeting the Standard	N/A

### Noxious Weeds and Invasive, Non-Native Species

Weeds (invasive/non-native vegetation) can be introduced in many ways, including wind, vehicles, recreational activity, heavy equipment, livestock, and wildlife. The potential for weeds to invade or spread within an area is increased when native vegetation is removed and physical disturbance to the soil occurs. Establishment of weeds usually occurs in disturbed sites. There are currently no known documented federally listed weed infestations within the allotments. While completing the rangeland health assessments for these allotments, the ID team determined that non listed invasive/non-native plants are scattered throughout the allotments which include;

Salt cedar *Tamarix spp.*

### Cheatgrass *Bromus tectorum*

Piñon pine and juniper, though native, have invaded sagebrush/grass areas and are scattered throughout these sites. In addition, sagebrush has invaded historical grasslands. When sagebrush invades a grassland it utilizes the available nutrients, which in turn limits the establishment of grasses. Current terms and conditions address management practices that are in place to reduce the risk of introduction and or spread of invasive plants. (Appendix III)

## Soils

Soils in the allotments are variable across the terrain that consists of hill slopes, mesa tops, alluvial fans, and valley bottom areas. Soils are generally deep and well drained except on mesa tops, sides, and in other areas of rock outcrop. Surface textures are dominantly loamy and vary among clay loams, silt loams, fine sandy loams, silty clay loams, and other loamy textures. These soils are formed in alluvium or by in-place weathering from sandstone and shale parent material. Mean annual precipitation ranges from approximately 8 inches on the lower elevations to about 12 inches on the upper elevations.

Based on comparisons of the current *soil / site stability* and *hydrologic function indicators* to those expected for the site from the ESDs, the ID team determined that overall:

- The soil / site stability attribute was rated as having a “none to slight” degree of departure from the range site descriptions.
- The hydrologic function attribute was rated as having a “none to slight” degree of departure from the range site description.

## Vegetation

The allotments are characterized by desert shrub communities which dominate much of the valleys. Soils determine largely which plant communities occur. The soils are described in the soils section of this document.

The majority of the allotments are dominated by two Major Land Resource Areas. They are MLRA 35, and 36 with a minor component of MLRA 39. These are described in detail at the NRCS website which is located at <http://soils.usda.gov/survey/geography/mlra/index.html>

### MLRA 35

MLRA 35 supports desert shrub and woodland vegetation. At high elevations, Piñon-juniper woodland and sagebrush have an understory of galleta, blue grama, black grama, and western wheatgrass. Galleta grass (*Pleuraphis jamesii*), alkali sacaton (*Sporobolus airoides*), Indian ricegrass (*Achnatherum hymenoides*), bottlebrush squirreltail (*Elymus elymoides*), and needlegrasses intermixed with fourwing saltbush (*Atriplex canescens*) and winterfat (*Krascheninnikovia lanata*) are at the lower elevations. Greasewood (*Sarcobatus vermiculatus*) and shadscale (*Atriplex confertifolia*) are part of the plant communities on salty soils. Blackbrush may dominant at the lower elevations.

### MLRA 36

The potential vegetation is grass and sagebrush at the lower elevations. Piñon-juniper woodland and ponderosa pine forests are at mid elevations. Forests of Rocky Mountain Douglas –fir and white fir are at the higher elevations. Some common plants are Wyoming big sagebrush (*Artemisia tridentata*), western

wheatgrass (*Pascopyrum smithii*), galleta, needleandthread (*Hesperostipa comata*), and blue grama at the lower elevations; twoneedle Piñon, Utah juniper, Indian ricegrass, mountain mahogany (*Cercocarpus kunth*), ponderosa pine, Gambel oak (*Quercus gambelii*), Arizona fescue (*Festuca arizonica*), and muttongrass (*Poa fendleriana*) at mid elevations; and Rock Mountain Douglas-fir, white fir, mountain muhly, common snowberry, Parry's oatgrass, and mountain brome at the higher elevations.

#### **MLRA 42**

This area supports desert shrub and woodland vegetation. At high elevations, pinyon-juniper woodland and sagebrush have an understory of galleta, blue grama, black grama, and western wheatgrass. Galleta grass, alkali sacaton, Indian ricegrass, bottlebrush squirreltail, and needlegrasses intermixed with fourwing saltbush and winterfat are at the lower elevations. Greasewood and shadscale are part of the plant community on salty soils. Blackbrush may be dominant at the lower elevations. Some of the major wildlife species in this area are elk, mule deer, antelope, mountain lion, coyote, fox, bobcat, badger, skunk, rabbit, prairie dog, bats, eagles, hawks, owls, crow, woodpecker, bluebird, and swallow.

#### **MLRA 48**

The potential vegetation in this area is grass and sagebrush at the lower elevations, montane and subalpine coniferous forest and some grassland at the mid and high elevations, and alpine tundra on the mountain peaks above timberline (at an elevation of about 11,500 feet, or 3,505 meters). Some common plants are mountain big sagebrush, western wheatgrass, and needleandthread at the lower elevations; ponderosa pine, Rocky Mountain Douglas-fir, white fir, Arizona fescue, mountain muhly, common snowberry, Parry's oatgrass, and mountain brome at mid elevations; Engelmann spruce, subalpine fir, corkbark fir, lodgepole pine, limber pine, bristlecone pine, grouse whortleberry, elk sedge, and Thurber's fescue at the higher elevations; and kobresia, alpine bluegrass, alpine clover, and golden avens above timberline. Wildlife species in the alpine tundra include white-tailed ptarmigan, rosy finch, pika, yellow-bellied marmot, long-tailed weasel, bighorn sheep, and mountain goats. In the slightly lower, montane to subalpine forested sites, typical species include chickaree, Albert's squirrel, golden-mantled ground squirrel, beaver, black bear, elk, mule deer, moose, Steller's jay, golden eagle, blue grouse, black-billed magpie, mountain chickadee, Clark's nutcracker, and common raven. There is considerable overlap of species between the montane and lower shrub-grassland habitats; however, typical species in these lower areas include bobcat, coyote, mountain lion, sage grouse, western rattlesnake, bullsnake, Merriam's turkey, golden eagle, and piñon jay. Habitats for fish are varied in this area and include streams and rivers, small alpine lakes, and larger lakes and reservoirs. The species of fish in streams and lakes at the higher elevations are rainbow, brown, cutthroat, brook, and lake trout; kokanee; and mountain whitefish. These species also occur at the lower elevations, and some waters at the lower elevations also contain northern pike, yellow perch, and a variety of nongame species.

#### **Wildlife**

Wildlife species composition expected to occur on these allotments is characteristic of both the Colorado Plateau and Southwestern Plateaus, Mesas and Foothills regions. Some common species include: roadrunner, cottontail rabbit, scaled quail, mule deer, elk, antelope, fox, coyote, black bear, mountain lion, black-tailed jackrabbit, Gunnison's prairie dog, skunk, bats, eagles, hawks, owls, crow, woodpecker, bluebird, swallows, badger, piñon jay, black-billed magpie, mountain chickadee, red-breasted nuthatch, white-breasted nuthatch, collared lizard, fence lizard, and western rattlesnake.

### Threatened, Endangered and Sensitive Species

Threatened, endangered and sensitive wildlife species lists for Cibola and McKinley Counties (<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/> and [http://www.fws.gov/southwest/es/NewMexico/SBC\\_view\\_all\\_BC.cfm](http://www.fws.gov/southwest/es/NewMexico/SBC_view_all_BC.cfm) ) as well as the NM BLM sensitive species list, (October 2013) were reviewed for this analysis. Geographic distribution and habitat requirement information for each species was considered with regard to the habitat within the allotments. No federally listed (endangered, threatened, or candidate) species are known to occur within the allotments. There are 3 federally listed endangered species, 1 threatened species, 3 candidate species and 20 BLM sensitive species likely present within McKinley and Cibola Counties. Of the 20 BLM sensitive species, 3 have suitable habitat present, are known or have the potential to exist, and may be affected by one of the proposed alternatives. The following table is a list of wildlife species that potentially occur within the allotments. Those species excluded due to not being present on the allotment or because there would be no effect due to implementation of one of the alternatives will not be addressed further in this document.

**Table 7. TE&S Wildlife Species for Rio Puerco Field Office Grazing Allotments**

Species	Status	Habitat	Potential to Occur within the Allotment	Potential Impacts	Species Justification
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	BLMS	Occurs in most upland habitats. Prefers areas with some scrub for nesting.	High	High- destruction of grasslands by heavy grazing could lead to loss of prey base.	<b>Analysis is required. See below for species discussion.</b>
Black-footed ferret ( <i>Mustela nigripes</i> )	FE	Suitable habitat consists of b-t prairie dog colonies (>80 ac) or Gunnison's p d colonies (>200 ac). Presumed extirpated from NM.	None – species is presumed extirpated from NM and no large prairie dog colonies present in the allotment analysis area	None – Presumed extirpated from NM	Species does not occur in analysis area. No further analysis required
Spotted bat ( <i>Euderma maculatum</i> )	BLMS	Habitats include riparian, pj woodlands, and ponderosa pine. Roost sites include crevices in cliffs or under loose rocks.	Low – this species could potentially occur within suitable habitats in the RPFO.	None – grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required

Table 7. TE&S Wildlife Species for Rio Puerco Field Office Grazing Allotments

Species	Status	Habitat	Potential to Occur within the Allotment	Potential Impacts	Species Justification
Western small-footed myotis ( <i>Myotis ciliolabrum melanorhinus</i> )	BLMS	Found in woodlands, forests, and desert communities. Known to roost in caves, abandoned buildings, under rocks, in crevices and under pine bark.	Low – This species may occur in buildings in the vicinity of the analysis allotments.	None – Low; Grazing unlikely to be harmful to this species.	No Effect – grazing will not affect habitat. No further analysis required
Long-eared myotis ( <i>Myotis evotis</i> )	BLMS	Uses p-j woodlands, and coniferous forests. Roosts in caves and buildings generally above 6,700 feet.	Low – this species may occur in buildings in the analysis allotment	None – low; grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required
Occult little brown bat ( <i>Myotis lucifugus occultus</i> )	BLMS	Uses riparian habitats associated with perm water sources. Roost in man-made structures, caves, tunnels, and hollow trees including p-j, and ponderosa pine and mixed conifer forests.	Low – this species could occur within suitable habitats throughout the analysis allotments	None- Low; grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required
Fringed myotis ( <i>Myotis thysanodes thysanodes</i> )	BLMS,	Occurs in mid-elevation habitats included desert scrub, grasslands, and oak/pj. Roosts in caves, mines and buildings.	Low – this species could occur within suitable habitats throughout the analysis allotment	None –low; grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required
Long-legged myotis ( <i>Myotis volans interior</i> )	BLMS	Habitat usually ponderosa pine and higher elevations	Low – preferred habitats are not present within these allotments	None - low grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required

Table 7. TE&S Wildlife Species for Rio Puerco Field Office Grazing Allotments

Species	Status	Habitat	Potential to Occur within the Allotment	Potential Impacts	Species Justification
Yuma myotis ( <i>Myotis yumanensis</i> )	BLMS	Uncommon seasonal visitor to desert, grassland, woodland, and riparian areas from 4,000 – 7,000 ft. Roost in buildings, caves and crevices.	Low – this species could occur within suitable habitats throughout the analysis allotments	None – low grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required
Big free-tailed bat ( <i>Nyctinomops macrotis</i> )	BLMS	Summer resident; prefers coniferous and mixed woods. Can also be found in p-j woodlands, and desert communities. Roosts on rocky cliffs, caves, rock fissures, bridges and buildings	Low – this species could occur within suitable habitats throughout the analysis allotments	None – low grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required
<b>Ferruginous hawk</b> ( <i>Buteo regalis</i> )	BLMS	Rare to uncommon transient and winter migrant. Nest sites include trees, ledges, large rock outcrops and low cliffs in sage brush valleys and rolling grasslands	Moderate – this species could occur within suitable habitats throughout the analysis allotments.	Low – moderate; loss of prey base in heavily grazed areas.	<b>Analysis is required. See below for species discussion.</b>
Mexican spotted owl ( <i>Strix occidentalis lucida</i> )	FT	Found in canyons, mixed conifer forests, pine-oak woodlands and riparian areas	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
SW willow flycatcher ( <i>Empidonax traillii extimus</i> )	FE	Nesting habitat includes shrubs and trees in willow thickets, shrubby mountain meadows, and deciduous woodlands along streams and lakes	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required

Table 7. TE&S Wildlife Species for Rio Puerco Field Office Grazing Allotments

Species	Status	Habitat	Potential to Occur within the Allotment	Potential Impacts	Species Justification
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	FC	Open woodlands, streamside willow and alder grooves.	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Whooping crane ( <i>Grus americana</i> )	F-Exp Non-Ess	Breed in marshes and uses surrounding habitat.	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Goat peak pika ( <i>Ochotona princeps nigrescens</i> )	BLMS	Species confined to Jemez Mtns on patches of large talus slopes in alpine zones above 9,000 ft.	None – the allotment areas is outside of the species range	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
White-faced ibis ( <i>Plegadis chihi</i> )	BLMS	Inhabits shoreline and marsh habitats that border open water, desert riparian; deciduous woodland marsh and grasslands.	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Northern goshawk ( <i>Accipiter gentilis</i> )	BLMS	Prefer closed canopy coniferous forests. Found in ponderosa pine, mixed conifer and spruce-fir forests. Nests are located in large trees.	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Harlequin duck ( <i>Histrionicus histrionicus</i> )	BLMS	Prefers undisturbed, low gradient mountain streams with dense shrubby vegetation	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Pale Townsend's big-eared bat ( <i>Corynorhinus (Plecotus) townsendii pallescens</i> )	BLMS	Occurs widely throughout all habitats.	Moderate – this species could occur within suitable habitats throughout the analysis allotment	None – low grazing unlikely to be harmful to this species	No Effect – grazing will not affect habitat. No further analysis required

Table 7. TE&S Wildlife Species for Rio Puerco Field Office Grazing Allotments

Species	Status	Habitat	Potential to Occur within the Allotment	Potential Impacts	Species Justification
<b>Burrowing owl</b> <i>(Athene cunicularia hypugaea)</i>	BLMS	Typically nest in abandoned burrows of prairie dogs, ground squirrels, foxes, and badgers in grassland, open shrubland and woodland communities	High. Suitable habitat exists within the analysis allotment	Low- moderate; loss of prey base in heavily grazed areas; loss of nesting habitat to prairie dog control	<b>Analysis is required. See below for species discussion.</b>
Zuni fleabane ( <i>Erigeron rhizomatus</i> )	FT	Grows in selenium-rich red or gray detrital clay soils exclusively in the Sawtooth Mountains in Catron County, NM.	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Pecos sunflower ( <i>Helianthus paradoxus</i> )	FT	Grows in saturated, saline soils of marshes.	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Zuni bluehead sucker ( <i>Catostomus discobolus yarrowi</i> )	FC	Native to headwater streams of the Little Colorado River in east-central Arizona and west-central New Mexico	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required
Fathead chub ( <i>Platygobio gracilis</i> )	BLMS	Rio Grande River	None – suitable habitat is not present	None – no habitat	Key habitat or species does not occur in analysis area. No further analysis required

**Affected Environment for Species Carried Forward for Analysis**

**Loggerhead Shrike (*Lanius ludovicianus*)**

Loggerhead shrikes are a year round resident of New Mexico but are considered a rare visitor in McKinley and Cibola Counties (BISON-M). They inhabit open shrubland and shrubby grasslands usually 2,800-7,500 ft. in elevation.

Breeding occurs in May-July. Nest habitat includes small trees and shrubs, nests are often reused every year and if the nest is destroyed then the pair usually renests. Territory radius is approximately 400-600M.

Prey items include large insects and occasionally small reptiles and mammals. Shrike frequently impale prey on thorns or barbed wire, this behavior serves to hold prey for tearing as shrikes lack talons.

Threats include lack of nesting site availability and loss of open feeding habitat (NMDGF 2005).

### **Ferruginous hawk (*Buteo regalis*)**

Ferruginous hawks inhabit open country, primarily prairies; sagebrush, saltbush-greasewood shrubland, periphery of Piñon-juniper and other woodland, and desert. In Cibola County, they are considered a summer resident, although they are listed as rare to uncommon in the state (BISON-M). Generally they avoid areas of intensive agriculture or human activity.

Nest site selection depends upon available substrates and surrounding land use. Ground nests typically are located far from human activities and on elevated landforms in large grassland areas (Natureserve). Lone or peripheral trees are preferred over densely wooded areas when trees are selected as the nesting substrate (Natureserve). Tree-nesting hawks seem to be less sensitive to surrounding land use, but they still avoid areas of intensive agriculture or high human disturbance (Natureserve). Easily disturbed by human presence during breeding season and could easily abandon nest, particularly if disturbance occurs in the early stages of nesting (Natureserve)

Mammals are the primary prey (jackrabbits, ground squirrels, and pocket gophers, etc.) although birds, amphibians, reptiles, are also taken. Vulnerability of prey is an important factor in habitat suitability, such that Ferruginous Hawks avoid dense vegetation that reduces their ability to see prey (Howard and Wolfe 1976, Wakeley 1978, Schmutz 1987). Conversion of large areas of dense shrublands to grasslands may locally benefit Ferruginous hawks. Poisoning of prey species may be a threat both directly to hawks eating poisoned animals and indirectly through reduction of prey base, especially at prey concentration areas such as prairie dog colonies (Natureserve).

Grazing provides benefits by reducing vegetative cover and making prey more visible (Wakeley 1978, Konrad and Gilmer 1986). Kantrud and Kologiski (1982) found highest densities of Ferruginous hawks in heavily grazed areas in the northern Great Plains. These areas provided a combination of grazing and soil type (typic borolls) that resulted in abundant prey populations. Livestock, however, can weaken nest trees by excessive rubbing or trampling (Houston 1982, Olendorff 1993). Bock et al. (1993) suggested negative response to grazing in shrubsteppe habitats, based on the ground cover requirements of their prey.

### **Burrowing owl (*Athene cunicularia hypugaea*)**

Burrowing owls are year round residents of New Mexico but are only considered a spring and summer resident in McKinley and Cibola Counties (BISON-M). Preferred habitat includes open shrubland and grassland. These owls occur in a variety of vegetative communities ranging from disturbed areas to climax grassland and are tolerant of human activity.

Burrowing owls do not dig their own burrow and are dependent on other burrowing mammals. They use abandoned prairie dog, ground squirrel, fox, badger and similar burrows as well as ground holes in road

cuts for nesting. Feed diurnally primarily on large insects (especially in warmer months) and concentrates around vicinity of nest burrow; while nocturnal foraging efforts are primarily in areas with high small mammal abundance (NatureServe).

Primary threat is habitat loss, due to intensive agriculture practices; habitat degradation via control of burrowing mammals, and habitat fragmentation (NatureServe). Johnson and Anderson (2002) found that moderate to heavy grazing benefited burrowing owls using grasslands but that overgrazing and over stocking of cattle may decrease any benefits and lead to detrimental effects.

#### Migratory Birds

On January 10, 2001 President Clinton issued Executive Order 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds” directing Federal agencies to comply with Migratory Bird Treaty Act (MBTA).

New Mexico Partners in Flight (PIF) identifies physiographic areas and high priority migratory bird species by broad habitat types. They also developed a list of priority breeding bird species by habitat type. The US Fish and Wildlife Service released its Birds of Conservation Concern 2008 report (USDI 2009). The environmental assessment for this project uses information from both the New Mexico PIF website (<http://www.hawksaloft.org/pif.shtml>) and the Birds of Conservation Concern Report for the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR) #16 for the migratory bird analysis. The New Mexico PIF highest priority list of species of concern by vegetation type and the BCR #16 species list will be used to determine which species will be analyzed in this analysis.

The following list describes habitats found on the Rio Puerco grazing allotments and the migratory birds that are typically found in these habitats such as: Mountain chickadee, Black-billed magpie, red-breasted nuthatch, white-breasted nuthatch, Western bluebird, Sage thrasher, Bendire's thrasher, Sage sparrow, Scaled quail, Ash-throated flycatcher, Gray flycatcher, MacGillivray's warbler, Rock wren, Black-throated sparrow, Green-tailed towhee, and Brewer's sparrow. No surveys have been conducted specifically within this allotment for this project to determine presence but these species have the potential of occurring within these habitats.

**Piñon-Juniper Woodland**

Piñon-juniper woodland habitat type is found throughout the state above desert or grassland vegetation and below pine forest, ranging from 4,500 to 7,500 in elevation. Table 7 lists the migratory bird species that may occur within this habitat in the Rio Puerco Allotments and the likely effects on those species.

**Table 7 Species of migratory birds that may occur in Piñon -Juniper Woodland habitat within the Rio Puerco Allotments, and likely effects on those species**

Species	FWS /PIF	Important Features and Life History Considerations	Effects
Ferruginous Hawk	FWSP F	Needs close proximity to high quality grasslands in NM. Encountered in grasslands and other open habitats at lower elevations (2,800-5,500') and open to dense stands of shrubs and low trees at middle elevations (5,000-7,500'). Prefers forest edge or mature, isolated, flat-topped junipers, with thick support branches for nest in NM Highly sensitive to human disturbance Prey mainly small to medium-sized mammals in NM	Grazing will not affect habitat
Gray Flycatcher	PIF	Prefers open Piñon-juniper forest, often with interspersed ponderosa Shrub cover cannot be too dense; prefers approximately 60% Logging and fire may create new habitat after several years	Grazing will not affect habitat

**Great Basin Desert Shrubland/Grass Habitat Type**

This habitat occurs in northwestern New Mexico from western Bernalillo and Sandoval counties to the Colorado border. It also occurs in western Taos and eastern Rio Arriba Counties. Big sagebrush (*Artemisia tridentata*) communities with significant grass cover are considered to be part of the Great Basin vegetation type. Tree junipers may also occur here. Other sagebrush species that occur with big sagebrush include black sage (*Artemisia arbuscula*) and bigelow sage (*Artemisia bigelovii*). Table 8 lists the migratory bird species that may occur within this habitat in the Rio Puerco Allotments and the likely effects on those species.

**Table 8. Species of migratory birds that may occur in Great Basin Desert Shrubland/Grass Habitat Type within the Rio Puerco Allotments, and the likely effects on those species**

Species	FWS / PIF	Important Features and Life History Considerations	Effects
Burrowing Owl	FWS	In habits open grasslands, especially prairie, plains and savanna. Optimum habitat typified by short vegetation and presence of fresh small mammal burrows.	Moderate to heavy grazing benefits burrowing owls using grasslands.

**Table 8. Species of migratory birds that may occur in Great Basin Desert Shrubland/Grass Habitat Type within the Rio Puerco Allotments, and the likely effects on those species**

Species	FWS / PIF	Important Features and Life History Considerations	Effects
Loggerhead Shrike	PIF	Shrub component within grassland habitat is critical. Nest height above-ground depends on shrub height. Shrubs with spines or barbed wire fence useful for impaling prey before eating. Diet consists of birds, insects, and small mammals.	Grazing will not affect habitat
Sage Thrasher	PIF	Sagebrush obligate species that prefers sage-dominated grasslands and shrubby arid lands. Prefers nesting substrates larger than 70 cm (2.2'), with minimal bare ground present. Nests are placed in areas of dense shrubland with a concealing vegetative canopy cover.	Grazing will not affect habitat
Bendire's Thrasher	PIF/ FWS	Prefers relatively open grassland with large scattered shrubs and/or trees (junipers or sagebrush are usually present); may use dense vegetated washes or riparian areas. Breeds in relatively open, degraded grasslands with a moderate to dense shrub component. Nests are typically placed 2 feet to 5 feet in height above the ground in semidesert shrubs or trees.	Grazing will not affect habitat
Sage Sparrow	PIF	Prefers semi-open habitat with tall (3-7 feet), evenly spaced, large canopy shrubs of big sagebrush either alone or interspersed with butterbush, saltbush, shadscale, rabbitbrush or greasewood, occasionally in sagebrush-juniper habitat	Grazing will not affect habitat

## Cultural Resources

Cultural resources within Cibola County range from Paleoindian special activity sites; through many kinds of Archaic residential and special activity sites; the full range of Ancestral Puebloan sites; colonial Spanish sites; Navajo sites; and later Hispanic and Anglo sites, including homesteads. More complete information can be found in *Cultural Resources Overview: Mount Taylor Area, New Mexico* by Joseph A. Tainter and David "A" Gillio, published in 1980 by the Bureau of Land Management and the USDA Forest Service.

Cultural resources within McKinley County range from Paleoindian special activity sites; through many kinds of Archaic residential and special activity sites; the full range of Ancestral Puebloan sites; colonial Spanish sites; Navajo sites; and later Hispanic and Anglo sites, including homesteads. More complete information can be found in *Cultural Resources Overview: Mount Taylor Area, New Mexico* by Joseph A. Tainter and David "A" Gillio, published in 1980 by the Bureau of Land Management and the USDA Forest Service; and *A Class II Cultural Resources Inventory of the Southern Portion of the Chaco Planning Unit, McKinley and Sandoval Counties, New Mexico* by Alan R. Dulaney and Steven G. Dosh, published in 1981 by the Bureau of Land Management.

### Petoch Wash Allotment

BLM and Museum of New Mexico ARMS electronic records for the Petoch Wash Allotment (#221) were reviewed in July, 2012. The 7,844-acre allotment includes 5,048 acres of public land. These records reflect 3 cultural resources inventories totaling about 9 acres of intensive inventory on the public land in

this allotment: 2 inventories for range management activities; and 1 inventory for a prescribed burn. Three sites have been recorded on public land in the allotment: 1 undated rock alignment; and 2 Ancestral Puebloan artifact scatters.

Cultural resources that are especially vulnerable to the effects of grazing are not particularly likely to be found on public land in the Petoach Wash Allotment (#221).

### **Tafoya Canyon Allotment**

BLM and Museum of New Mexico ARMS electronic records for the Tafoya Canyon Allotment (#431) were reviewed in September, 2012. The 6,890-acre allotment includes 2,700 acres of public land. These records reflect 7 cultural resources inventories totaling about 2,566 acres of intensive inventory on the land in this allotment: 5 inventories for road construction and maintenance; 1 inventory for an electric transmission line; and 1 inventory for a proposed observatory. Sixty-nine sites with 91 components have been recorded on public land in the allotment: 5 undated structural features; 5 undated artifact scatters; 2 undated hearths; 7 Archaic lithic scatters; 32 Ancestral Puebloan artifact scatters; 8 Ancestral Puebloan residential sites; 3 Ancestral Puebloan agricultural sites; 17 Navajo residential sites; 1 Navajo corral; 1 Navajo petroglyph or pictograph; 1 Historic hearth; 1 Historic residence; 1 Historic artifact scatter; 4 Historic livestock facilities; 1 Historic cemetery; 1 Historic petroglyph or pictograph; and 1 possible Historic brush shelter.

Cultural resources that are especially vulnerable to the effects of grazing are not particularly likely to be found on public land in the Tafoya Canyon Allotment (#431).

### **Arroyo del Puerto Allotment**

Bureau of Land Management and Museum of New Mexico ARMS electronic records for the Arroyo del Puerto Allotment (#6006) were reviewed in September, 2012. The 10,703-acre allotment includes 3,323 acres of public land. These records reflect 13 cultural resources inventories totaling about 523 acres of intensive inventory and 637 acres of reconnaissance on the public land in this allotment: 7 inventories for mineral exploration and development; 3 inventories for road and highway maintenance; 1 survey for telecommunications cables; 1 survey for general cultural resource management; and 1 reconnaissance for resource planning activities. Forty-three sites have been recorded on public land in the allotment: 20 Ancestral Puebloan artifact scatters; 14 Ancestral Puebloan residential sites; 1 Historic house foundation; 1 Historic livestock facility; and 7 Historic mining sites.

Cultural resources that are especially vulnerable to the effects of grazing are not particularly likely to be found on public land in the Arroyo del Puerto Allotment (#6006).

### **Ruby Well Allotment**

BLM and Museum of New Mexico ARMS electronic records for the Ruby Well Allotment (#6032) were reviewed in September, 2012. The 7,583-acre allotment includes 318 acres of public land. These records reflect 3 cultural resources inventories totaling about 205 acres of intensive inventory on the public land in this allotment: 2 inventories for mineral exploration and development; and 1 inventory for general cultural resource management. No sites have been recorded on public land in the allotment. Sites recorded in surrounding allotments generally include a variety of Ancestral Puebloan residential sites, Ancestral Puebloan artifact scatters, and Navajo residential sites and livestock facilities.

Cultural resources that are especially vulnerable to the effects of grazing are not particularly likely to be found on public land in the Ruby Well Allotment (#6032).

### **Crockett Draw Allotment**

BLM and Museum of New Mexico ARMS electronic records for the Crockett Draw Allotment (#6092) were reviewed in September, 2012. The 6,068-acre allotment includes 342 acres of public land. These records reflect 3 cultural resources inventories totaling about 163 acres of intensive inventory on the public land in this allotment: 1 inventory for road construction; 1 inventory for range management activities; and 1 inventory for powerline construction. Six sites with 7 components have been recorded on public land in the allotment: 1 undated lithic scatter; 3 Ancestral Puebloan residential sites; 1 recent Navajo artifact scatter; 1 Navajo livestock facility; and 1 undated livestock facility.

Cultural resources that are especially vulnerable to the effects of grazing are not particularly likely to be found on public land in the Crockett Draw Allotment (#6092).

### **Cerro Bandera Allotment**

BLM and Museum of New Mexico ARMS electronic records for the Cerro Bandera Allotment (#22338) were reviewed in June, 2012. The 433-acre allotment is comprised entirely of public land. These records reflect 5 cultural resources inventories totaling about 28 acres of intensive inventory and 56 acres of reconnaissance on the public land in this allotment: 2 inventories for road construction and maintenance; 1 inventory for wildfire planning and mitigation; 1 inventory for a telecommunications cable; and 1 reconnaissance for a forest fuels thinning project. No sites have been recorded on public land in the allotment. Sites recorded in surrounding allotments generally include a variety of lithic scatters, historic hunting camps, and Historic livestock facilities.

Cultural resources that are especially vulnerable to the effects of grazing are not particularly likely to be found on public land in the Cerro Bandera Allotment (#22338).

## **American Indian Uses**

### **Petoch Wash Allotment**

There is no specific information about American Indian uses of the public land in the Petoch Wash Allotment. It is within the traditional use area claimed by Laguna Pueblo, Acoma Pueblo, and the Navajo Nation (Alamo Chapter).

### **Tafoya Canyon Allotment**

There is no specific information about American Indian uses of the public land in the Tafoya Canyon Allotment. It is within the traditional use area claimed by Acoma Pueblo, Zuni Pueblo, Laguna Pueblo, and the Navajo Nation.

### **Arroyo del Puerto Allotment**

There is no specific information about American Indian uses of the public land in the Arroyo del Puerto Allotment. It is within the traditional use area claimed by Zuni Pueblo, Acoma Pueblo, and the Navajo Nation (Baca/Prewitt Chapter).

### **Ruby Well Allotment**

There is no specific information about American Indian uses of the public land in the Ruby Well Allotment. It is within the traditional use area claimed by the Navajo Nation (Whitehorse Lake Chapter).

### **Crockett Draw Allotment**

There is no specific information about American Indian uses of the public land in the Crockett Draw Allotment. It is within the traditional use area claimed by Zuni Pueblo and the Navajo Nation (Ramah Chapter).

### **Cerro Bandera Allotment**

There is no specific information about American Indian uses of the public land in the Cerro Bandera Allotment. It is within the traditional use area claimed by Zuni Pueblo, Acoma Pueblo, and the Navajo Nation (Ramah Chapter).

## **Environmental Consequences of the Proposed Action**

### **Livestock Grazing/Rangeland Health Standards and Guidelines**

Proposed Action: Permitted AUM levels and season of use would remain the same. There are additional stipulations being added to the terms and conditions of the permits to improve livestock distribution, reduce grazing intensity and to continue to promote biotic integrity, soil stability, and hydrologic function on the allotments. Specifically, livestock utilization levels would be added to the terms and conditions of the permits. This adaptive management strategy would allow for rest and recovery of the allotments as well as critical adjustments to overall grazing intensity, therefore conditions will begin to transition towards desired levels as recovery occurs.

No Action: Under this alternative current grazing management would continue without changes to the terms and conditions of the permits

No Grazing: Under this alternative, livestock grazing would no longer be authorized on the public lands within the seven grazing allotments. All applications to graze livestock on the allotments would be denied. Any livestock found on the public lands within the allotment would be in trespass. The planning documents for the Field Office would be amended to show the change in use of these lands. The allotment would be classified as "closed to grazing" and all allocated AUM's would be set aside for other resource uses. Unauthorized use would be dealt with administratively as needed without the assistance of permittees.

## Noxious Weeds and Invasive Native Species

The proposed action is expected to sustain or improve soil conditions, soil fertility and vegetative conditions on the allotment. Therefore, the threat of new introductions and or distribution of existing populations would be minimized. Invasive plant stipulations would be part of all authorized grazing activities allowing for a reduced risk of introduction of new species as well as spread of existing populations.

**No Action Alternative:** Under this alternative the potential for weed infestations would remain the same as under current livestock management.

**No Grazing Alternative:** Weeds would continue to spread at the current rates and livestock management practices would not contain any additional stipulations to reduce the risks of introduction and or spread of invasive species.

## Soil

The proposed action would increase vegetative cover and litter amounts on the allotments where changes are proposed. Corresponding increases in infiltration and reduction in runoff would be expected. As such, this would maintain or decrease the soil loss potential on these allotments. Some localized soil compaction would occur where livestock congregate in limited areas, such as around waters or supplement barrels. The proposed action would result in maintaining, or progressing toward meeting, the Standards for Rangeland Health, particularly the Upland Sites standard.

**No Action Alternative:** Under this alternative soil stability would remain the same as would current livestock management practices.

**No Grazing Alternative:** This alternative would allow for the greatest production and retention of vegetative cover, litter, and root mass, which would facilitate greater improvement in infiltration and reduction surface runoff than the proposed action.

## Vegetation

The proposed action is expected to improve soil conditions, soil fertility and vegetative conditions on the allotment. The proposed action would add additional terms and conditions to the permit that would include:

1. Salt and/or mineral supplements for livestock would be located no closer than 1/4 mile from water sources. Use of nutritional supplements (not forage) would be encouraged to improve the ability of cattle to utilize forage in the winter months and to improve livestock distribution across the allotment.
2. Maximum allowable use levels would be established as follows:
  - Key forage species: 50% use of the current year's growth.

*This use level is necessary to allow desirable key herbaceous species to 1) develop above ground biomass for protection of soils, 2) to contribute to litter cover, and 3) develop roots to improve carbohydrate storage for vigor, reproduction, and improve/increase desirable perennial cover.*

- Perennial shrubs, half-shrubs and forbs: 40% use on current annual production.

*This use level is necessary to allow desirable perennial key browse species to develop woody stature able to withstand the pressure of grazing use.*

No Action Alternative: Under this alternative vegetation production would continue to decrease and the composition would continue to transition to sub-dominant species such as shrubs (sagebrush, broom snakeweed). Furthermore, this would increase the potential for non-native vegetation to invade the site.

No Grazing Alternative: This alternative is expected to allow for the greatest production of vegetative cover, litter, and root mass, which facilitates improvement in soil structure, soil fertility and vegetative condition. Litter would be available to reduce surface runoff and to facilitate infiltration of moisture into the soil profile.

## **Wildlife**

Proposed Action: Livestock impact wildlife in a variety of ways: by their presence, through behavioral impacts, and by their use of forage species. Behavioral impacts resulting from inter-specific encounters (including human and livestock) are difficult to quantify, as they vary by species and by type of interaction. Wildlife currently present on the allotments have, to varying degrees, acclimated to the presence of livestock and associated human disturbances. Impacts to wildlife and habitat components include, but are not limited to; cover and forage removal, soil disturbance and erosion, reduction of fine fuels available to carry fire (altered fire regime), addition of artificial water, food and mineral sources; habitat fragmentation, changes in overland and channel flow regimes, and long-term vegetative community conversion.

Current livestock presence and management dictates habitat condition relative to the stable state vegetative community that has developed on each site as a result of the long term grazing impacts. Issuing the permits under the proposed action would not result in an increase or decrease in wildlife density or diversity from the current level in the foreseeable future. Rather, it would perpetuate the current level of habitat impact and current population levels.

Fences can impede big game movement and pose the risk of entanglement. The BLM has developed fence height and wire spacing specifications designed to reduce the potential for any new fences constructed on public land to impact wildlife. All of the fences within the allotments surveyed had 3 to 4 strands of barbed wire, it was not noted whether the fences on any of the allotments had smooth wire either at the top or the bottom of the fence. The fences examined during the field trip for this analysis pre-dated the stipulations and varied in height, number of wires, wire spacing and distance from the ground to the bottom wire strand. However, the fences conform to the general existing situation in the region. No new fences are proposed and any future needed fence would be analyzed separately. Maintenance of existing systems would be completed to current BLM standards.

The provision of artificial water sources benefits some species. Many species that have adapted to the arid climate either don't require water on a regular basis, or not at all, and derive no benefit. Other species may be negatively impacted by habitat fragmentation resulting from the high use areas around waters or non-indigenous species being able to occupy the area because of the water source. Any open top storages and troughs that might be present are a drowning risk to small mammals and birds, especially to juveniles and during migration. BLM policy requires waters on public lands to include a wildlife escape ramp or floating device (16 sq. ft. minimum). As long as the permittee is in compliance, this potential source of mortality is essentially eliminated.

Implementation of the proposed action was analyzed for impacts that would occur to Threatened, Endangered and Sensitive wildlife species (as discussed below).

There is no quantified data to measure or estimate impacts of forage removal as a result of the proposed action to wildlife on these allotments.

Within the allotments considered in this EA, issuing a permit to graze livestock would *not* have a measurable impact on wildlife populations at more than the immediate local level because of the regional and long-term scale of habitat impacts. Permit associated human disturbance is low on public land and the continuation of this disturbance would have no impact.

No Action Alternative: The effects of this alternative would be similar to that of the proposed action. Selection of the no action alternative would not likely result in measurable changes to regional population levels of any T, E & S species because of the presence of livestock related impacts in surrounding areas and over the region.

No Grazing Alternative: A decision to not issue permits to graze public land would have few direct impacts to TES species on these allotments. Grazing permit associated human disturbance is quite low on public land and the cessation of this disturbance would have little to no impact. Species susceptible to cowbird parasitism may benefit from the removal of livestock concentration areas.

In the long term, the no graze alternative would be expected to favor loggerhead shrikes as interspace between shrubs becomes occupied with herbaceous species. In the span of the permit, there would likely not be a measurable change in loggerhead shrike use of the area.

Indirect impacts would occur through time, depending on the site, with changes in habitat. Species tied to, or that benefit from, dense herbaceous cover would benefit on sites where grass cover increased (loggerhead shrike).

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

### **Loggerhead Shrike (*Lanius ludovicianus*)**

#### Proposed Action

Loggerhead shrikes could occur on any of the allotments where grassland or open shrub and woodland savannah habitat persist. The potential for the proposed action to impact this species indirectly is through forage removal and subsequent change of grassland communities, which are limited within the area being covered by this EA. Habitat that presently exists on the allotments is the result of long term grazing

impacts. Forage removal at levels expected under the proposed action would not change the amount of habitat currently available to this species or make prey unavailable. Human disturbance associated with the proposed action would be of low magnitude and frequency. The potential for direct impacts through human disturbance associated with the proposed action is negligible.

According to Bock et al (1992) Loggerhead shrikes are "unresponsive" or show "mixed responses" to grazing. Changes in location, timing and intensity of grazing could still decrease the predictability of habitat suitability (Luukkonen 1987). Consequently, active grazing regimes should be maintained at the nest site, or if stock use is rotated between fields, there should be adjacent fields so that foraging activity will require minimal changes. Herbaceous vegetation that is allowed to grow too tall or woody vegetation that becomes too dense eliminates the area as potential foraging habitat. Thorny shrubs, barbed-wire fences, and other objects suitable for impaling prey are also significant features of habitat that should be maintained (Nature Preserve). These activities would not be expected to have an impact on this species or habitat.

The implementation of the proposed action has potential to impact individual shrike. However, it would not have a measurable negative effect to their populations.

#### Cumulative Effects

Beyond the direct/indirect effects addressed associated with proposed activities under the proposed action, there are no activities that are reasonably certain to occur within the allotments that would result in cumulative effects to habitat for shrike.

No action alternative: Under this action conditions currently found on the allotments for shrike would remain the same; therefore the direct, indirect, and cumulative effects of this alternative would be similar to those described above for the proposed action.

No grazing alternative: The aforementioned data showed that grazing impacts on the shrike are equivocal; therefore the direct, indirect, and cumulative effects of a no grazing alternative would not likely greatly improve habitat, the number, or density of shrike on the allotments.

#### Determination

The proposed activities on these grazing allotments may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population (MIIH). This determination is based on the management strategies that will maintain forage utilization at conservative use levels, and maintaining good to excellent range conditions within key areas necessary for cover for prey species.

#### **Ferruginous hawk (*Buteo regalis*)**

##### Proposed Action

The implementation of the proposed action has potential to impact individual hawks. As mentioned above, livestock, can weaken nest trees by excessive rubbing or trampling (Houston 1982, Olendorff 1993). Bock et al. (1993) suggested a negative response to grazing in shrubsteppe habitats, based on the ground cover requirements of their prey. However, in many cases these areas provided a combination of grazing and soil type (typic borolls) that resulted in abundant prey populations. Therefore the proposed action would likely have little to no direct or indirect negative effect on ferruginous hawks.

##### Cumulative Effects

Beyond the direct/indirect effects addressed associated with proposed activities under the proposed action, there are no activities that are reasonably certain to occur within the allotments that would result in cumulative effects to habitat for hawks.

No action alternative: Under this action conditions currently found on the allotments for hawks would remain the same; therefore the direct, indirect, and cumulative effects of this alternative would be similar to those described above for the proposed action.

No grazing alternative: The direct, indirect, and cumulative effects of a no grazing alternative would not likely greatly improve habitat, the number, or density of hawks on the allotments. There may be, over time, an slight increase in the forage for prey species that could improve the prey base for the species. Other positive or negative effects would be minimal.

#### Determination

The proposed activities on these grazing allotments **may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population (MIIH)**. This determination is based on the management strategies that will provide the woody and herbaceous vegetation for cover, maintaining forage utilization at conservative use levels, and maintaining good to excellent range conditions within key areas necessary for cover for prey species.

#### **Burrowing owl (*Athene cunicularia hypugaea*)**

##### Proposed Action

This species may occur on all of the allotments considered in this EA. Forage removal at levels consistent with the proposed action would not make habitat or prey unavailable to burrowing owls, but it may. Direct threats may include trampling of burrows, and overgrazing; while indirect threats may include a decrease the available forage for their prey (large insects and small mammals), thus making prey scarce and avoidance of the grazing animal. However, these owls appear to be affected only minimally by grazing animals. In addition, human disturbance associated with the proposed action would be of low magnitude and frequency.

The implementation of the proposed action has potential to impact individual burrowing owls. However, it would not likely have a measurable negative effect to their populations.

##### Cumulative Effects

Beyond the direct/indirect effects addressed associated with proposed activities under the proposed action, there are no activities that are reasonably certain to occur within the allotments that would result in cumulative effects to the burrowing owl.

No action alternative: Under this action conditions currently found on the allotments for owls would remain the same; therefore the direct, indirect, and cumulative effects of this alternative would be similar to those described above for the proposed action.

No grazing alternative: The direct, indirect, and cumulative effects of a no grazing alternative may slightly improve habitat conditions for the owl and its prey species. If additional forage were available, there would be a greater chance of increased populations of rodents and large insects that owls may use for their prey base.

### Determination

The proposed activities on these grazing allotments **may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population (MIIH)**. This determination is based on the management strategies that will provide the woody and herbaceous vegetation for cover, and maintaining forage utilization at conservative use that would be beneficial to burrowing owl habitat and species.

### **Migratory Landbirds**

Please see tables 7 and 8 in the in Description of the Affected Environment portion of this document for effects to migratory landbirds from the proposed action.

### **Cultural Resources**

#### **Direct and Indirect Effects of the Proposed Action**

The direct and indirect effects to the cultural resources expected in these allotments, including traditional cultural properties, of limited numbers of domestic livestock grazing on public rangelands are expected to be slight. Direct impacts to sites such as site disturbance could result from the construction of grazing-related improvements such as fences and watering systems. These projects, which would require additional NEPA compliance, would also create indirect impacts if they concentrated livestock or vehicular traffic in sensitive areas. These impacts would be mitigated by following the practices listed in Appendix III.

#### **Cumulative Effects**

Long-term impacts from continued livestock grazing would consist of some trampling of artifacts and features, and perhaps some increased surface erosion from ground disturbance.

#### **Direct and Indirect Effects of the No Action Alternative**

Under the No Action Alternative, the effects to cultural resources, including traditional cultural properties are expected to be the same as those for the Proposed Action.

#### **Direct and Indirect Effects of the No Grazing Alternative**

Under the No Grazing Alternative, whatever slight impacts to cultural resources now result from limited numbers of domestic livestock grazing on public rangelands would be eliminated. However, activities associated with constructing livestock enclosure fences on fixed public land boundaries could disturb cultural resources. The cattle and game trails and roads that often develop along fence lines could further disturb cultural resources. These impacts would be mitigated by following the practices listed in Appendix III.

#### **Cumulative Effects**

No cumulative effects to cultural resources would be anticipated as a result of the No Grazing Alternative.

## **American Indian Uses**

### **Direct and Indirect Effects of the Proposed Action**

No direct impacts to American Indian uses resulting from continued grazing in these allotments have been identified. However, any proposals for grazing-related development such as fence lines, spring developments, etc. or other proposals with the potential to affect traditional cultural practices would be closely coordinated with the affected tribes (see Appendix III).

#### **Cumulative Effects**

No cumulative effects to American Indian uses would be anticipated under the Proposed Action.

### **Direct and Indirect Effects of the No Action Alternative**

Under the No Action Alternative, the effects to American Indian uses are expected to be the same as those for the Proposed Action.

### **Direct and Indirect Effects of the No Grazing Alternative**

Under the No Grazing Alternative, no impacts to American Indian uses are anticipated, except where enclosure fences are constructed, which could present physical barriers on traditional pilgrimage routes.

#### **Cumulative Effects**

No cumulative effects to American Indian uses would be anticipated under the No Grazing Alternative.

## **Cumulative Impacts**

Cumulative impacts are impacts on the environment that result from the incremental impact of an action, when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. They can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative effects of livestock grazing have been assessed in the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management Environmental Impact Statement (2001). Additional cumulative impacts from the proposed action are addressed in more detail in the Rio Puerco Resource Management Plan Environmental Impact Statement (1989).

Cumulative impacts include not only those identified as pertaining to the proposed action and/or the no-action alternative, but those actions planned or occurring in the environment of the project area which have impacts on the human environment. A general discussion of past, present, and reasonably foreseeable future actions follows as they pertain to the major issue of rangeland and habitat health.

## **Past Actions**

Past activities occurring on and near the allotments include livestock and wildlife grazing, recreation, hunting, mining, interstate highway travel, and construction of the allotment boundary fence, pasture fences, pipelines, troughs, roads, and earthen reservoirs. Minerals and salt have been distributed in various areas, to influence livestock movement.

## **Present Actions**

Present activities include various types of recreation, road travel, woodcutting, piñon nut gathering, mining, livestock grazing and associated livestock management activities. These activities are associated with some degree of ground disturbance and erosion. Some taking of part of the animal population (deer, elk, etc.) would occur, due to hunting.

## **Reasonably Foreseeable Future Actions**

There are no anticipated increases, woodcutting, piñon nut gathering, or OHV use in the area in the reasonably foreseeable future. Rangeland monitoring would be expected to continue at the present level on the Allotments. In addition to brush treatments in order to restore native vegetation, the Rio Puerco Field Office will treat invasive plant species throughout the allotments in order to maintain watershed and native plant health.

A new resource management plan and environmental impact statement (RMP/EIS) is currently being developed for the Rio Puerco Field Office BLM area. All future land management activities within the allotments would be in coordination with this planning document.

## **Cultural Resources**

In general, the effects to cultural resources as a result of grazing have already taken place. Ancestral Puebloan sites have long been reduced to mounds and do not have standing walls that would be vulnerable to the effects of grazing. Historic homesteads from the early part of the twentieth century are deteriorating naturally and few still have standing walls that could be damaged by cattle. Long-term impacts to cultural resources from continued livestock grazing would consist of some trampling of artifacts and features, and perhaps some increased surface erosion from ground disturbance.

No cumulative effects to cultural resources would be anticipated as a result of the No Grazing alternative.

### **American Indian Uses**

No cumulative effects to American Indian Uses would be anticipated under either the Proposed Action or the No Grazing Alternative.

## **Cumulative Impacts Summary**

Cumulative effects were assessed in terms of how the alternatives would add to the past, present, and reasonably foreseeable future activities, within and around the analysis area. Existing conditions reflect the past and present actions that have occurred on the analysis area.

Past activities occurring on and near the allotments include livestock and wildlife grazing, recreation, hunting, interstate highway travel, and construction of the allotment boundary fences, roads, construction of a major pipeline and water developments. Minerals, salt and molasses licks have been distributed in various areas, to influence livestock movement.

Present and reasonably foreseeable activities include various types of recreation, hunting, wildlife habitat enhancement projects, livestock grazing and associated livestock management activities. These activities are associated with some degree of ground disturbance and erosion. Some taking of part of the animal population (quail, deer etc.) would occur, due to hunting.

If the proposed action were implemented, rangeland conditions would be expected to remain static or improve, and no new impacts would be expected. Implementation of the proposed action would not result in any substantial cumulative impacts.

If the no action alternative were implemented, rangeland conditions would be expected to improve on some range sites. Implementation of this action would not result in any substantial adverse cumulative environmental impacts.

### **Socio-economic Effects**

The proposed action and the No Action Alternative as outlined in this document are not anticipated to alter the socio-economic conditions for the permittee. Should the No Grazing Alternative be adopted, socio-economic impacts would occur. If all BLM grazing was eliminated in the Field Office, the economic impacts may be insignificant for permittees/ lessees who have 25 AUMs or less. However, the significance of losing the use of public lands for grazing could be high for those who depend on public lands for a great part of their total AUMs. The permitted or leased AUMs may be used by live-stock operators to help secure operation loans. Also, the AUMs contribute to the value of the private lands at the time of sale. Loss of AUMs on public lands can have a profound impact on property value if the operation is no longer a viable economic unit without them.

A major component of a permittee's income comes from ranching in the Field Office. This is true for all but the smallest ranches that may produce more income from outside sources. An elimination of BLM grazing would have a direct effect upon personal income. Even with large cuts in income, most ranchers would continue ranching in the short term. One of the major determining factors in how long an operation can sustain itself through depreciation, deferred maintenance, or use of equity capital is the operator's current debt load.

In accordance with NEPA Guidance on Environmental Justice analyzes, "Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes present in the area are affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes." The guidance further states as a goal the preservation of important historic, cultural, and natural aspects of our natural heritage, and maintain whenever possible, an environment which supports diversity and a variety of individual choices. CEQ regulations under 40 CFR part 433(b) (4) define "effect" or "impact" to include ecological...aesthetic, historic, cultural, economic, social or health, whether direct, indirect or cumulative.

Greater than 50% of the authorized operators under the analyzed Field Office are Hispanic ranchers of Spanish descent dating back to the European entry into the New World in the Southwestern part of the United States+. Adopting the No Grazing alternative would have an obvious disproportional social, economic, historic and cultural effect on a minority population. Given the current economic and social climate for the Hispanic minority livestock industry, the No Grazing alternative would likely be viewed as one more step in forcing small Hispanic family ranchers out of business. It could be expected that widespread resentment toward BLM policies would grow and persist for the foreseeable future.

### **Proposed Mitigation Measures**

The Operating Procedures and Terms and Conditions in Appendix II serve as appropriate mitigation and are reference in the proposed action. No additional mitigation is proposed based on this environmental analysis. Items in Appendix III would be included as part of the term grazing permit for the proper management of livestock on the public lands within the eight allotments

### **Suggested Monitoring**

Rangeland monitoring data would continue to be gathered for the allotments. Data would be used to determine if livestock management practices are in conformance with the Guidelines and achieving the Standards for Rangeland Health as well as other multiple use objectives for the allotment. Monitoring studies may include cover, key forage plant method for utilization, ecological condition, weed detection and identification, repeat photography, and professional observations. If a future monitoring assessment results in a determination other than "Meeting the Standard" for the Standards for Rangeland Health, the grazing permit would be reissued subject to revised terms and conditions. Baseline data collection may be conducted associated with future watershed assessments.

Prior to authorizing annual grazing use, monitoring may be conducted to determine forage availability, grazing use areas and range readiness. Following the grazing period, monitoring may be conducted to determine overall utilization levels and grazing use patterns.

### **Consultation and Coordination**

The Pueblo of Laguna, the Pueblo of Acoma, the Pueblo of Zuni, and the Navajo Nation (Alamo Chapter, Baca/Prewitt Chapter, Ramah Chapter, Whitehorse Lake Chapter), the Navajo Traditional Cultural Program, and the Navajo Nation Historic Preservation Department were consulted with for this environmental assessment.

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## ***Appendix I***

### **Summary of Evaluations and Determinations by Allotment**

#### **Petoch Wash Allotment**

##### **Standard #1: Upland Sites**

##### **Conclusion: Standard Achieved**

The data at all three trend plots shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological sites. The ESD for TP-1 describes the Historical Climax Plant Community (HCPC) as *“Grass cover is uniform with bare patches typically > 30 cm in width. Black grama and/or blue grama is dominant. Litter covers much of interspaces such that raindrop impact on the soil surface is low.”* Conditions at PWTP-1 are stable with little to no soil movement due to the appropriate cover of native vegetation and litter content as described within the ESD. The ESD for TP-2 and 4 describes the Ecological Dynamics of the site as *“Giant sacaton and/or alkali sacaton dominates (often more than 50% basal cover) and cover is uniform. Open patches are few and less than 2 m in length, most ground is covered with litter. Mesquite is generally absent.”* Conditions at PWTP-2 and 4 reflect these conditions as described. The presence of both primary and secondary grass species within the allotment and with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

##### **Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species**

##### **Conclusion: Standard Achieved**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. The frequency of desirable native primary grammanoid species is what is recommended in the ESD, the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are an indicators that the overall ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

#### **Tafoya Canyon Allotment**

##### **Standard #1: Upland Sites**

##### **Conclusion: Standard Achieved**

The data at the trend plot shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for TP-1 describes the Ecological Dynamics of the site as *“Grass and litter cover is evenly distributed with few large bare areas present. Shrubs are a minor component averaging six percent or less canopy cover. Evidence of erosion is minimal.”* Conditions at TCTP-1 reflect these conditions as described. Monitoring data at the trend plot shows a reduction in frequency of primary grammanoid species, Primary grass species were observed within the allotment but did occur within the transects but at a reduced frequency as recommended by the ESDs. The reduction of these cool season grasses is a direct result of historical livestock grazing and drought throughout the

western United States. The presence of both primary and secondary grass species within the allotment and with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

**Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species.**

**Conclusion: Standard Achieved**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. The frequency of desirable native primary grammanoid species is what is recommended in the ESD, the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are an indicators that the overall ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

**Arroyo Del Puerto Allotment**

**Standard #1: Upland Sites**

**Conclusion: Standard Achieved**

The data at all three trend plots shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for TP-1, 2 and 3 describes the Historical Climax Plant Community (HCPC) as *“Grass and litter cover is evenly distributed with few large bare areas present. Shrubs are a minor component averaging six percent or less canopy cover. Evidence of erosion is minimal.”* The key areas reflect these conditions as described within the ESD. However, monitoring data at all three trend plots show a reduction in frequency of primary grammanoid species, Primary grass species were observed within the allotment but did not occur within the transects. The reduction of these cool season grasses is a direct result of historical livestock grazing. The current permit is for year round grazing which allows grazing during critical growing season of cool season grasses. This is not conducive to allow these grasses to propagate within the range sites. Also contributing to the decline of these primary species is the drought throughout the western United States which has resulted in a decrease of primary grasses, mainly cool season species. The presence of preferred grass species both primary and secondary within the allotment along with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

**Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species**

**Conclusion: Standard Achieved**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. Though the frequency of desirable native primary grammanoid species is less than what is recommended in the ESD the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are an indicators that the overall

ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

### **Ruby Well Allotment**

#### **Standard #1: Upland Sites**

**Conclusion: Standard Achieved:** The data at the trend plot shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for TP-1 describes the Ecological Dynamics of the site as “This site has a plant community made up primarily of midgrasses, shortgrasses, some shrubs, and a minor amount of forbs. The reference plant community contains a mixture of cool-season and warm-season grasses.” Conditions at RWTP-1 reflect these conditions as described. Monitoring data at the trend plot shows a reduction in frequency of primary grammanoid species, Primary grass species were observed within the allotment and did occur within the transects but at a reduced frequency as recommended by the ESDs. The reduction of these cool season grasses is a direct result of historical livestock grazing and drought throughout the western United States. The presence of both primary and secondary grass species within the allotment and with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

#### **Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species**

##### **Conclusion: Standard Achieved**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. The frequency of desirable native primary grammanoid species is what is recommended in the ESD, the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are an indicators that the overall ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

### **El Tintero Allotment**

#### **Standard #1: Upland Sites**

##### **Conclusion: Standard Achieved**

The data at the trend plot shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for ELTP-1 describes the Historical Climax Plant Community (HCPC) as “*Grasses are dominant and cover is fairly uniform with few large bare areas present. Shrubs are noticeable as well as a few scattered pinyon-juniper with a combined average canopy cover of 10%. Evidence of erosion such as pedestalling of grasses, rills, and gullies is infrequent.*” The monitoring site reflects these conditions as described. At ELTP-2 the ESD describes the HCPC as “*Grass cover is uniform with few large bare areas present. Shrubs are scattered with canopy cover averaging five percent. Evidence of erosion such as pedestalling of grasses, rills and gullies is infrequent.*” It further states that “*Continuous heavy grazing will cause a decrease in western wheatgrass and vine mesquite. A*

*community dominated by alkali sacaton or blue grama and galleta with western wheatgrass as the subdominant may result.”* This is the conditions as described at TP-2. The site is dominated by blue gramma and galleta grasses. Primary grass species were observed within the monitoring area but did not occur in the monitoring plot. The reduction of these cool season grasses is a direct result of livestock grazing, both current and historical. Also contributing to the declined of these primary species is the drought throughout the western United States which has resulted in a decrease of primary grasses, mainly cool season species. The presence of preferred grass species both primary and secondary within the allotment along with the absence of rill/gulley or pedestalling of plants indicates that the allotment appears to functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

## **Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species**

### **Conclusion: Standard Achieved**

The current vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. The Ecological Site Description (ESD) for EITP-1 further states that a Historic Climax Plant Community (HCPC) should be *“Grass cover is uniform with few large bare areas present. Shrubs are scattered with canopy cover averaging five percent. Evidence of erosion such as pedestalling of grasses, rills and gullies is infrequent”* The current composition by groups is listed in the tables above. *Bouteloua gracilis* and *Pleuraphis jamesii* were the dominant herbaceous species on the monitoring sites. Though the frequency of desirable native primary grammanoid species is less than what is recommended in the ESD the presence of the species within the allotment is an indicator that the overall ecological condition within the community is functioning within the parameters of the ESD’s. There are no threatened and or endangered species within the allotment at this time

## **Mesa Montanosa 30 Allotment**

### **Standard #1: Upland Sites**

#### **Conclusion: Standard Achieved**

The data at both trend plots shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for TP-1 and 2 describes the Historical Climax Plant Community (HCPC) as *“Grass and litter cover is evenly distributed with few large bare areas present. Shrubs are a minor component averaging six percent or less canopy cover. Evidence of erosion is minimal.”* The key areas reflect these conditions as described within the ESD. However, monitoring data at both trend plots show a reduction in frequency of primary grammanoid species, Primary grass species were observed within the allotment but did not occur within the transects. The reduction of these cool season grasses is a direct result of both current and predominantly historical livestock grazing. The current permit is for year round grazing which allows grazing during critical growing season of cool season grasses. This is not conducive to allow these grasses to propagate within the range sites. Also contributing to the decline of these primary species is the drought throughout the western United States which has resulted in a decrease of primary grasses, mainly cool season species. The presence of preferred grass species both primary and secondary within the allotment along with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the

Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

**Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species**

**Conclusion: Standard Achieved**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. Though the frequency of desirable native primary grammanoid species is less than what is recommended in the ESD the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are an indicators that the overall ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

**Crockett Draw Allotment**

**Standard #1: Upland Sites**

**Conclusion: (Standard Achieved).**

The data at the trend plot shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for TP-1 describes the Ecological Dynamics of the site as *“Grass and litter cover is evenly distributed with few large bare areas present. Shrubs are a minor component averaging six percent or less canopy cover. Evidence of erosion is minimal.”* Conditions at CDTP-1 reflect these conditions as described. Monitoring data at the trend plot shows a reduction in frequency of primary grammanoid species. The reduction of these cool season grasses is a direct result of historical livestock grazing and drought throughout the western United States. The presence of both primary and secondary grass species within the allotment and with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site.

**Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species**

**Conclusion: (Standard Achieved).**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. The frequency of desirable native primary grammanoid species is below what is recommended in the ESD, the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are all indicators that the overall ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

**Cerro Bandera Allotment:**

**Standard #1: Upland Sites**

**Conclusion: (Standard Achieved).**

The data at the trend plot shows that cover is adequate to ensure soil stabilization, and appropriate permeability rates within the ecological site. The ESD for TP-1 describes the Historical Climax Plant Community (HCPC) as *“This site is a grassland characterized by warm-season and cool-season mid-grasses and bunch grasses, which make up approximately 80 percent of the composition of the plant community. Woody shrubs and half-shrubs are widely scattered throughout the site and make up approximately 5 percent of the composition of the plant community.”* A condition at CBTP-1 reflects these conditions as described. The ESD for TP-1 further describes the Ecological Dynamics of the site as *“Tree species associated with this site which are seen widely scattered are ponderosa pine, pinyon pine and oneseed juniper. The overstory canopy is less than 5 percent.”* Conditions at CBTP-1 are stable with little to no soil movement due to the appropriate cover of native vegetation and litter content as described within the ESD. The presence of preferred grass species both primary and secondary within the allotment along with the absence of rill/gulley or pedestalling of plants along with appropriate litter content to shield/protect the soils all indicates that the allotment appears to be functioning within the parameters as described within the Ecological Site Descriptions. Overall the soils are productive, stable and in a sustainable condition within the capability of the ecological site

**Standard #2: Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species.**

**Conclusion: (Standard Achieved).**

Vegetative composition of native species within the allotment is appropriate for the range site and is conducive to allow a hydrologic cycle and energy flow that will support a productive and a diverse native biotic community. The frequency of desirable native primary grammanoid species is what is recommended in the ESD, the presence of both primary and secondary native grass species within the allotment as well as appropriate litter content and bare ground are an indicators that the overall ecological condition within the community is appropriate to support a proper functioning hydrologic cycle, nutrient cycle and energy flow. There are no known threatened and or endangered species within the allotment at this time.

## **APPENDIX II**

### **Fundamentals of Rangeland Health and Standards and Guidelines**

The Standards and Guidelines for livestock grazing on Bureau of Land Management lands in New Mexico were approved in January 2001. The standards were written to accomplish the four fundamentals of rangeland health.

The fundamentals of rangeland health are basic components of healthy rangelands. The four fundamentals of rangeland health, as identified in 43 CFR 4180.1 are:

- Watersheds are in, or are making significant progress toward, properly functioning condition.
- Ecological processes are maintained, or there is significant progress toward their attainment.
- Water quality complies with, or is making significant progress toward achieving, state standards.
- Habitats of protected species are maintained or are making significant progress toward being restored.

Standards for public land health are expressions of the level of physical and biological condition or degrees of function required for healthy and sustainable lands, and define minimum resource conditions that must be achieved. The New Mexico Standards are:

- Upland Sites Standard:* Upland ecological sites are in a productive and sustainable condition within the capability of the site. Upland soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate and landform. The kind, amount, and/or pattern of vegetation provide protection on a given site to minimize erosion and assist in meeting State and Tribal water quality standards.
- Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard:* Ecological processes such as hydrologic cycle, nutrient cycle, and energy flow support productive and diverse native biotic communities, including special status, threatened, and endangered species appropriate to the site and species. Desired plant community goals maintain and conserve productive and diverse populations of plants and animals, which sustain ecological functions and processes.
- Riparian Sites Standard:* Riparian areas are in a productive, properly functioning, and sustainable condition, within the capability of that site. Adequate vegetation of diverse age and composition is present that will withstand high stream flow, capture sediment, provide for groundwater recharge, provide habitat and assist in meeting State and Tribal water quality standards.

Guidelines are practices, methods or techniques determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting those standards.

Assessments of rangeland health interpret the degree to which the integrity of the soil, biotic (vegetative), and hydrologic processes of rangeland ecosystems are sustained. An interdisciplinary team (ID team) conducts a field assessment(s) to examine the current soil site stability, biotic integrity, and hydrologic function attributes that are present on the allotment. Seventeen individual factors (indicators) are assessed to rate the soil, biotic and hydrologic attributes. These indicators are examined and assigned one of five

condition categories based upon the degree of departure from the range site description. The possible degrees of departure range from “none to slight” to “extreme”.

A range site is a distinctive kind of rangeland which in the absence of abnormal disturbance and physical site deterioration has the potential to support a native plant community typified by an association of species capable of occupying the site. The Soil Conservation Service (now Natural Resource Conservation Service) developed range site descriptions based on relic areas and historical knowledge. A range site description identifies the soil characteristics, potential natural plant community, and potential cover by species, potential annual production, and other pertinent information for each site.

The interdisciplinary rangeland health assessment is used to determine if the site (watershed, allotment or pasture) meets the New Mexico standards and the fundamentals of rangeland health. The final determination of whether a site does or does not meet the New Mexico standards and fundamentals of rangeland health is based on 1) the degree of departure from the range site description for the soil site stability, biotic integrity, and hydrologic function attributes; 2) how well the site meets the definition of a fundamentally healthy site, as identified in 43 CFR 4180.1 and; 3) other information such as monitoring data. If an allotment, or a portion of the allotment, is determined to be in a condition that does not meet the New Mexico standards and /or the fundamentals of rangeland health, the causal factor(s) is identified. If current livestock management is determined to be a causal factor, the authorized officer is required to take appropriate management action, no later than the start of the next grazing year, to make significant progress towards achieving the fundamentals of rangeland health and New Mexico standards (43 CFR 4180.1 and 4180.1(c)).

## ***APPENDIX III***

### **STANDARD OPERATING PROCEDURES & TERMS AND CONDITIONS**

#### **STANDARD OPERATING PROCEDURES**

These provide mitigating measures to decrease or eliminate potential environmental impacts. The following list includes some of the more important mitigating measures for managing livestock grazing on BLM lands administered by the Rio Puerco Field Office.

1. The BLM will continue to identify and inventory riparian areas. As these areas are inventoried, appropriate measures will be implemented to allow them to attain properly functioning condition. The BLM's Cooperative Agreements and standard stipulations will apply to any range improvement affecting riparian areas.
2. Before placing range improvements on BLM lands, the BLM will consult with the New Mexico Department of Game and Fish, and the U.S. Fish and Wildlife Service where special-status species are a concern.
3. The BLM will provide wildlife escape devices for installation by the permittee on new and existing livestock drinking troughs.
4. The BLM may modify existing fences located on or bordering BLM land to allow for easier wildlife movement.
5. The BLM will continue to identify and document cultural resources. Where vulnerable properties are found, appropriate mitigation will be completed. For every new range improvement project proposed, site-specific environmental analyses will be completed, including National Historic Preservation Act (NHPA) compliance before project development. NHPA procedures require full consideration of cultural resources, usually consisting of Class III inventory and avoidance of all Category 2 sites.
6. The BLM will continue to consult with Pueblo and Tribal governments regarding traditional American Indian cultural properties and uses.
7. All new range improvements will be built to BLM standards and stipulations.
8. Maintenance will be assigned by Administrative Decision in accordance with BLM policy when new Cooperative Agreements cannot be developed, or existing Cooperative Agreements cannot be amended, to provide maintenance of range improvements.
9. The BLM will identify and inventory piñon-juniper woodland areas where treatment is needed to reduce the crown canopy. As these areas are inventoried, appropriate measures will be implemented to allow them to enhance the long-term functioning conditions. The BLM's Cooperative Agreements and standard stipulations will apply to any range improvement.
10. Flexibility and deviations in livestock numbers, areas of use and periods of use may be determined on a seasonal or annual basis where such deviations are warranted. Authorization of deviation would not

prevent attainment of shared goals, the multiple-use objectives and the standards for grazing administration. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.

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- 11. If a future assessment results in a determination that changes are necessary for achieving the Standards and conforming to the Guidelines, the permit would be reissued subject to revised terms and conditions

## **TERMS AND CONDITIONS**

Livestock grazing permits and leases contain terms and conditions to ensure conformance with Title 43 of the Code of Federal Regulations (CFR), Part 4100, while providing for the achievement of management and resource condition objectives for the BLM lands. Compliance with 43 CFR 4100 is a requirement for grazing on BLM-administered public lands.

1. Supplemental feeding shall be defined as providing cattle a small amount of high protein feed (containing at least 15-30% protein and provided at a rate of no more than 3 lbs./day/head) to assist cattle in the metabolism of dry forage. To use and place supplemental feed on BLM lands, the grazing permittee must make a written request for authorization from the BLM. Requests must state the type of supplemental feed, the amounts to be provided, the duration of placement, and the reasons for providing such feed on BLM lands. Current Rio Puerco Field Office policy states that any supplemental feed placed on BLM land will be certified as weed free. Enforcement of this policy is pending the New Mexico Department of Agriculture's establishment of a weed-free certification program for feeds and supplemental forage. Maintenance feeding of livestock with access to public lands is prohibited. Maintenance feeding shall be defined as providing livestock with feed to assist in meeting their basic caloric needs, provided at a rate of more than 3 lbs./day/head.
2. Mineral supplement, including salt, will not be placed within ¼ mile of water.
3. The Terms and Conditions specified in Cooperative Agreements for rangeland improvements will be followed.
4. Maximum allowable use levels would be established as follows: Key forage species: 50% use of the current year's growth; Perennial shrubs, half-shrubs and forbs: 40% use on current annual production.
5. Fenced wildlife waters including spring developments, catchments and pipeline drinkers are excluded from use by livestock.
6. Weed Prevention Schedule for Rio Puerco Field Office (RPFO)
  - When working in areas with noxious weeds, take reasonable measures to avoid spread of noxious weeds including: avoid driving through weed patches; equipment and vehicles should be cleaned before moving off site.
  - Seeding work will use species specified by the RPFO. All seed will be certified weed free.
  - The area will be monitored to determine the success of the revegetation. The monitoring of the revegetation will continue until successful.

- Supplemental feed will be certified weed free. Any permit allowing livestock on the site should have a stipulation that weed free feed be used. Require that all pack and saddle stock in Wilderness Study Areas, Areas of Critical Environmental Concern, Recreation Areas or sensitive areas use only certified weed free feed. Encourage the use of weed free feed in all areas.
- In allotments with infestations and weed free areas, control timing of animal movement to prevent movement from infested sites to non-infested sites after seed set. Avoid grazing any vegetative treatment site (brush control, sagebrush shaving, seeded sites or prescribed burn sites) until vegetation is well established.

## ***APPENDIX IV***

### **ALLOTMENT MAPS**















