

**ENVIRONMENTAL ASSESSMENT FOR 20 BLM ALLOTMENTS
LOCATED IN THE UPPER RIO GRANDE WATERSHED
DOI-BLM-NM-F020-2010-0030-EA**

PURPOSE AND NEED

One of the major uses of public lands administered by the Bureau of Land Management (BLM) has traditionally been the grazing of cattle, sheep or horses for the benefit of individuals and communities throughout the western United States. Livestock grazing is a provision of public land legislation, including the Taylor Grazing Act, the Endangered Species Act, the Federal Land Policy and Management Act, and the Public Rangelands Improvement Act. To ensure legislative compliance, the BLM needs to provide for livestock grazing in a manner that promotes healthy, sustainable rangeland ecosystems.

This document provides information necessary to determine whether, and under what conditions, the BLM should renew permits for cattle grazing on 20 allotments within the Upper Rio Grande watershed for an additional 10 years. The 20 allotments are being analyzed in one document in order to consider the cumulative effects of livestock on the BLM parcels within the Upper Rio Grande watershed and to improve the efficiency of the permit renewal process. The allotments addressed in this Environmental Assessment include: #515 Glen Woody Bridge, #528 Arroyo del Palacio, #529 Canada Ancha, #531 North Chimayo Community, #534 La Puebla-Potrero Community, #535 Cundiyo Community, #578 La Segita NE, #586 Pinabetoso, #594 Ute Mountain, #595 Trujillo Peak, #597 Punche, #602 La Segita Community, #603 South Chiflo, #605 East Punche, #629 Tres Piedras, #647 No Agua, #648 Cerrito Negro, #651 South Ute, #908 Skarda and #959 Mendius. Individual allotment maps are available at the Taos Field Office or can be obtained by visiting www.geocommunicator.gov.

CONFORMANCE WITH PLANS

The proposed permit renewals within this document are in conformance with the Taos Resource Area Management Plan (1988). Livestock grazing impacts were analyzed on a Resource Area wide basis in the Taos Resource Management Plan. An Allotment Evaluation (AE) document has been prepared for each allotment and is available for review at the Taos Field Office.

SCOPE / IDENTIFICATION OF ISSUES

In January of 2009 a meeting was held with the BLM interdisciplinary team to inform them that these permits were under consideration for renewal, and this warranted a field visit to determine if standards and guidelines are being met in the subject allotments. Also, a letter was sent to the affected lessees (04/10/09 or 05/28/2009) and all interested publics (03/02/09) to inform them that the subject allotments were being visited to assess standards and guidelines. Field evaluations were conducted between 04/03/2009 and 04/20/2009. After the field evaluations were completed and Allotment Evaluations were prepared, the affected lessees and interested public were given an opportunity to provide comments on evaluations from July 12, 2010 through August 11, 2010.

Based on these efforts, the following issues have been determined relevant to the analysis of this action and are addressed in the Affected Environment / Environmental Impacts section:

- Air Quality
- Climate
- Water Quality
- Special Designations
- Vegetation
- Noxious Weeds
- Wildlife
- Threatened or Endangered Species
- Cultural Resources
- Social / Economic Issues
- Wetlands / Riparian Areas
- Standards for Rangeland Health

The following issues were considered but dismissed from analysis:

- **Wild and Scenic Rivers:** A small portion of allotments 515, 594, 595, 603 and 651 are within the Rio Grande Wild and Scenic River boundary. In accordance with the Rio Grande Corridor Plan, no livestock grazing is permitted within the river corridor; consequently the issue was dismissed.
- **Native American Religious Concerns:** There have been no areas of concern identified within the subject allotments. All tribes within the Field Office boundary have received the opportunity to provide information on any areas of concern in or near the subject allotments.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action

Re-issue a 10-year term grazing permits with changes to allotments 578 and 602. Allotment 578 has had new fences built and the waters established to allow a 4 pasture rotation and a change of season to June 1 – Jan 1 with a reduction of livestock from 600 to 312 head. Allotment 602 is being modified to allow for spring grazing rest every third year (starting by not grazing the spring of 2011, as well as an administrative change in Active AUMs due to an Exchange of Use Agreement, increasing AUMs by 33. Permits would be issued as outlined in Table 1. For additional information, refer to Allotment Evaluation and Exchange of Use Agreements documents available for each allotment at the Taos BLM Field Office.

Table 1. Outline of allotment guidelines for permit renewal

Allotment Number	Livestock Type	Livestock Number	Season of Use	Total Federal Acres	Pastures	Grazing System	Proposed Improvements
515	Cattle	10	12/01 - 2/28	912	1	Winter	Possible vegetation manipulation by fire, herbicide, or mechanical means **
528	Cattle	269	12/01 - 5/10	13,439	5	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
529	Cattle	100	11/01 - 3/05	7,938	4	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
531	Cattle	9 7 7	4/15 - 10/14	6,089	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
534	Cattle	4 5 1 7 1 1 8 5 4 4 1 4	4/16 - 10/15	7,755	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
535	Horse Cattle Horse Cattle Horse Cattle Horse Cattle Cattle Horse Cattle	3 10 7 6 2 6 2 3 10 2 5	5/01 - 10/31 11/01 - 1/31 6/01 - 8/31 6/01 - 8/31 5/01 - 10/31 11/01 - 2/28 5/01 - 10/31 5/01 - 10/31 11/01 - 3/31 6/01 - 8/31 11/01 - 1/31	6,747	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **

	Cattle	11	11/01 - 2/28				
	Cattle	2	5/01 - 10/31				
	Cattle	19	11/01 - 2/28				
	Horse	3	12/01 - 2/28				
	Cattle	11	11/01 - 1/31				
578	Cattle	312	6/01 - 1/01	14,546	4	Rotational	N/A
586	Sheep	500	5/02 - 6/14 11/02 - 1/29	6,363	2	Rotational	N/A
594	Cattle	81	5/01 - 6/30 10/15 - 2/28	3,823	1	Spring / Winter	Possible vegetation manipulation by fire, herbicide, or mechanical means **
595	Cattle	300	5/02 - 9/15	9,115	6	Rotational	N/A
597	Cattle	300	9/16 - 11/14	9,646	1	Fall / Winter	N/A
602	Cattle	20 27 30 40 35 47	5/15 - 7/15 10/16 - 11/29 5/15 - 7/15 10/16 - 11/29 5/15 - 7/15 10/16 - 11/29	2,942	1	Spring / Fall with spring rest every third year	N/A
603	Cattle	40	3/19 - 6/30 10/16 - 11/15	3,164	1	Rotational	N/A
605	Cattle	40	7/01 - 10/15	2,940	1	Rotational	N/A
629	Cattle	4	5/15 - 9/30	480	1	Summer / Fall	Possible vegetation manipulation by fire, herbicide, or mechanical means **
647	Cattle Cattle Horse	64 6 6	5/1 - 10/31 4/1 - 1/31 6/1 - 10/31	4,292	3	Rotational	N/A
648	Cattle	600	10/01 - 10/28	6,512	1	Fall	Possible vegetation manipulation by fire, herbicide, or mechanical means **
651	Cattle	50	11/01 - 12/06	760	2	Winter	Possible vegetation manipulation by fire, herbicide, or mechanical means **
908	Cattle	2	4/01 - 1/31	200	1	Rotational	N/A
959	Cattle	30	5/15 - 9/30	4,079	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **

Monitoring: BLM would continue the rangeland monitoring study program, continue to consult with the grazing permittee on placement of mineral and supplemental feed and continue monitoring for new populations of noxious weeds.

** These would be addressed in a subsequent NEPA document if and when funding is available.

Alternative 1: No Action Alternative

Re-issue a 10-year term grazing permit without any changes as outlined in Table 2. For additional information, refer to Allotment Evaluation documents available for each allotment at the Taos BLM Field Office.

Table 1. Outline of allotment guidelines for permit renewal

Allotment Number	Livestock Type	Livestock Number	Season of Use	Total Federal Acres	Pastures	Grazing System	Proposed Improvements
515	Cattle	10	12/01 - 2/28	912	1	Winter	Possible vegetation manipulation by fire, herbicide, or mechanical means **
528	Cattle	269	12/01 - 5/10	13,439	5	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **

529	Cattle	100	11/01 - 3/05	7,938	4	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
531	Cattle	9 7 7	4/15 - 10/14	6,089	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
534	Cattle	4 5 1 7 1 1 8 5 4 4 1 4	4/16 - 10/15	7,755	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
535	Horse Cattle Horse Cattle Horse Cattle Horse Cattle Cattle Horse Cattle Cattle Cattle Cattle Horse Cattle	3 10 7 6 2 6 2 3 10 2 5 11 2 19 3 11	5/01 - 10/31 11/01 - 1/31 6/01 - 8/31 6/01 - 8/31 5/01 - 10/31 11/01 - 2/28 5/01 - 10/31 5/01 - 10/31 11/01 - 3/31 6/01 - 8/31 11/01 - 1/31 11/01 - 2/28 5/01 - 10/31 11/01 - 2/28 12/01 - 2/28 11/01 - 1/31	6,747	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
578	Cattle	600	5/01 - 6/15 10/29 - 12/20	14,546	4	Rotational	N/A
586	Sheep	500	5/02 - 6/14 11/02 - 1/29	6,363	2	Rotational	N/A
594	Cattle	81	5/01 - 6/30 10/15 - 2/28	3,823	1	Spring / Winter	Possible vegetation manipulation by fire, herbicide, or mechanical means **
595	Cattle	300	5/02 - 9/15	9,115	6	Rotational	N/A
597	Cattle	300	9/16 - 11/14	9,646	1	Fall / Winter	N/A
602	Cattle	20 27 30 40 35 47	5/15 - 7/15 10/16 - 11/29 5/15 - 7/15 10/16 - 11/29 5/15 - 7/15 10/16 - 11/29	2,942	1	Spring / Fall	N/A
603	Cattle	40	3/19 - 6/30 10/16 - 11/15	3,164	1	Rotational	N/A
605	Cattle	40	7/01 - 10/15	2,940	1	Rotational	N/A
629	Cattle	4	5/15 - 9/30	480	1	Summer / Fall	Possible vegetation manipulation by fire, herbicide, or mechanical means **
647	Cattle Cattle Horse	64 6 6	5/1 - 10/31 4/1 - 1/31 6/1 - 10/31	4,292	3	Rotational	N/A

648	Cattle	600	10/01 - 10/28	6,512	1	Fall	Possible vegetation manipulation by fire, herbicide, or mechanical means **
651	Cattle	50	11/01 - 12/06	760	2	Winter	Possible vegetation manipulation by fire, herbicide, or mechanical means **
908	Cattle	2	4/01 - 1/31	200	1	Rotational	N/A
959	Cattle	30	5/15 - 9/30	4,079	1	Rotational	Possible vegetation manipulation by fire, herbicide, or mechanical means **
Monitoring: BLM would continue the rangeland monitoring study program, continue to consult with the grazing permittee on placement of mineral and supplemental feed and continue monitoring for new populations of noxious weeds.							
** These would be addressed in a subsequent NEPA document if and when funding is available.							

Alternative 2, No Grazing:

Do not issue grazing permits for these allotments, thereby suspending livestock grazing (No Action).

Location and Maps

515 - Located approximately 3 miles southwest of Pilar, in Taos County, New Mexico. Elevation on this allotment is roughly between 5,900 and 6,800 feet. The allotment is located on the USGS Carson and Trampas 7.5 minute series topographic maps. T. 23 N., R. 10 E. Sec 1, 2, 11, 12 and 14.

528 - Located approximately 3 miles northwest of Chimayo, in Santa Fe and Rio Arriba Counties, New Mexico. Elevation on this allotment is roughly between 5,800 and 7,200 feet. The allotment is located on the USGS Chimayo, Cundiyo, Española and San Juan Pueblo Quadrangle 7.5 minute series topographic maps. T. 22 N., R. 09 E. Sec 31-35; T. 21 N., R. 09 E. Sec 2-21 and 28-33; T. 20 N., R. 09 E. Sec 4-6.

529 - Located approximately 3 miles northeast of Chimayo, in Rio Arriba County, New Mexico. Elevation on this allotment is roughly between 6,500 and 7,600 feet. The allotment is located on the USGS Chimayo Quadrangle 7.5 minute series topographic map. T. 22 N., R. 09 E. Sec 35 and 36; T. 21 N., R. 09 E. Sec 1, 2, 12, 13 and 24; T. 22 N., R. 10 E. Sec 31-33; T. 21 N., R. 10 E. Sec 4-9, 16-21 and 28.

531 - Located just north of Chimayo, in Rio Arriba County, New Mexico. Elevation on this allotment is roughly between 6,000 and 7,200 feet. The allotment is located on the USGS Chimayo Quadrangle 7.5 minute series topographic map. T. 21 N., R. 09 E. Sec 22-27, 33, 34 and 36; T. 31 N., R. 10 E. Sec 19, 20, 29-31 and 33.

534 - Located just southwest of Chimayo, in Santa Fe County, New Mexico. Elevation on this allotment is roughly between 6,000 and 6,600 feet. The allotment is located on the USGS Chimayo and Cundiyo Quadrangle 7.5 minute series topographic maps. T. 20 N., R. 09 E. Sec 1-4, 9-15 and 22-24; T. 20 N., R. 10 E. Sec 7 and 18.

535 - Located just north, west and south of Cundiyo, in Santa Fe County, New Mexico. Elevation on this allotment is roughly between 6,300 and 7,800 feet. The allotment is located on the USGS Chimayo and Cundiyo Quadrangle 7.5 minute series topographic maps. T. 20 N., R. 09 E. Sec 24 and 25; T. 20 N., R. 10 E. Sec 4-9, 16-20 and 29-32; T. 19 N., R. 10 E. Sec 5.

578 - Located approximately 20 miles northeast of Tres Piedras in Taos County, New Mexico. The allotment lies on the Colorado border. Elevation on this allotment is roughly between 7,600 and 8,100 feet. The allotment is located on the USGS Cerro de la Olla, La Segita Peaks NE and Pinabetoso Peaks Quadrangle 7.5 minute series topographic maps. T. 32 N., R. 10 E. Sec 21-28 and 32-36; T. 31 N., R. 10 E. Sec 1-13, 24, 25 and 36; T. 31 N., R. 11 E. Sec 6, 7, 18-21 and 28-33; T. 30 N., R. 11 E. Sec 5 and 6.

586 - Located approximately 16 miles north of Tres Piedras, NM, in Taos and Rio Arriba Counties, New Mexico. Elevation on this allotment is roughly between 8,100 and 10,200 feet. The allotment is located on the USGS La Segita Peaks, Los Pinos, Pinabetoso Peaks and San Antonio Mountain Quadrangle 7.5 minute series topographic maps. T. 31 N., R. 09 E. Sec 25-28 and 33-36; T. 30 N., R. 09 E. Sec 1-4.

594 - Located approximately 12 miles northwest of Cerro, NM, in Taos County, New Mexico. Elevation on this allotment is roughly between 7,500 and 8,100 feet. The allotment is located on the USGS Ute Mountain Quadrangle 7.5 minute series topographic map. T. 31 N., R. 11 E. Sec 11-14 and 23-25; T. 31 N., R. 12 E. Sec 17-20, 29 and 30.

595 - Located approximately 18 miles northeast of Tres Piedras, NM, in Taos County, New Mexico. Elevation on this allotment is roughly between 7,500 and 7,750 feet. The allotment is located on the USGS Cerro de la Olla, La Segita Peaks NE, Sunshine and Ute Mountain Quadrangle 7.5 minute series topographic maps. T. 31 N., R. 11 E. Sec 21, 22, 25-28 and 33-36; T. 31N., R. 12 E. Sec 30 and 31; T. 30 N., R. 11 E. Sec 1-4, 8-17, 20-23, 26 and 27; T. 30 N., R. 12 E. Sec 6, 7 and 18.

597 - Located approximately 15 miles northeast of Tres Piedras, NM, in Taos County, New Mexico. Elevation on this allotment is roughly between 7,650 and 7,800 feet. The allotment is located on the USGS Cerro de la Olla Quadrangle 7.5 minute series topographic map. T. 30 N., R. 10 E. Sec 1, 10-15 and 22-27; T. 30 N., R. 11 E. Sec 6-8, 17-20, 29 and 30.

602 - Located approximately 10 miles north of Tres Piedras in Taos and Rio Arriba Counties, New Mexico. Elevation on this allotment is roughly between 8,300 and 8,700 feet. The allotment is located on the USGS La Segita Peaks Quadrangle 7.5 minute series topographic map. T. 30 N., R. 09 E. Sec 23-28 and 33-35.

603 - Located approximately 6 miles west of Questa in Taos County, New Mexico. Elevation on this allotment is roughly between 7,500 and 9,000 feet. The allotment is located on the USGS Guadalupe Mountain Quadrangle 7.5 minute series topographic map. T. 29 N., R. 11 E. Sec 13, 24 and 25; T. 29 N., R. 12 E. Sec 18-20 and 29-31.

605 - Located approximately 10 miles northwest of Questa in Taos County, New Mexico. Elevation on this allotment is roughly between 7,600 and 8,200 feet. The allotment is located on the USGS Cerro de la Olla and Sunshine Quadrangle 7.5 minute series topographic maps. T. 30 N., R. 11 E. Sec 20-22, 27-29, 33 and 34.

629 - Located approximately 6 miles northeast of Tres Piedras in Taos County, New Mexico. Elevation on this allotment is roughly between 8,400 and 8,800 feet. The allotment is located on the USGS Los Cordovas and Tres Orejas Quadrangle 7.5 minute series topographic maps. T. 29 N., R. 10 E. Sec 29.

647 - Located approximately 9 and 12 miles north of Tres Piedras in Taos and Rio Arriba Counties, New Mexico. The allotment contains three parcels – two separated by another allotment and one separated by Highway 285. Elevation on this allotment is roughly between 8,000 and 8,600 feet. The allotment is located on the USGS La Segita Peaks Quadrangle 7.5 minute series topographic map. T. 30 N., R. 09 E. Sec 10-15, 22-25, 35 and 36; T. 30 N., R. 10 E. Sec 30 and 31; T. 29 N., R. 09 E. Sec 1-4, 10 and 11; T. 29 N., R. 10 E. Sec 6.

648 - Located approximately 10 miles northeast of Tres Piedras, NM, in Taos County, New Mexico. Elevation on this allotment is roughly between 7,700 and 8,300 feet. The allotment is located on the USGS Cerro de la Olla, La Segita Peaks, Tres Piedras and Tres Piedras NE Quadrangle 7.5 minute series topographic maps. T. 30 N., R. 10 E. Sec 32-34; T. 29 N., R. 10 E. Sec 1-15, 17, 18 and 22-24; T. 29 N., R. 11 E. Sec 18 and 19.

651 - Located approximately 13 miles north northwest of Questa in Taos County, New Mexico. Elevation on this allotment is roughly between 7,500 and 7,650 feet. The allotment is located on the USGS Sunshine and Ute

Mountain Quadrangle 7.5 minute series topographic maps. T. 31 N., R. 12 E. Sec 26-34.

908 - Located approximately 9 miles north of Tres Piedras in Taos County, New Mexico. Elevation on this allotment is roughly between 8,200 and 8,400 feet. The allotment is located on the USGS La Segita Peaks Quadrangle 7.5 minute series topographic map. T. 29 N., R. 09 E. Sec 10 and 11. This allotment consists of two parcels.

959 - Located approximately 4 miles northeast of Tres Piedras in Taos County, New Mexico. Elevation on this allotment is roughly between 8,000 and 8,600 feet. The allotment is located on the USGS Tres Piedras Quadrangle 7.5 minute series topographic maps. T. 29 N., R. 09 E. Sec 23, 26, 27, 34 and 36; T. 29 N., R. 10 E. Sec 31 and 32; T. 28 N., R. 09 E. Sec 1-3, 10 and 11; T. 28 N., R. 10 E. Sec 5 and 6.

See Figure 1 for a map of the subject allotments.

AFFECTED ENVIRONMENT / ENVIRONMENTAL IMPACTS

Special Designations

Multiple allotments are within one or more special designation areas, they are as follows: Allotment 515 is within the Lower Gorge Area of Critical Environmental Concern (ACEC); Allotments 528, 529 and 531 are within the Fun Valley Special Management Area (SMA); Allotment 531 is within the Ojo del Zorro Pueblo SMA; Allotments 534 and 535 are within the Santa Cruz Lake Recreation Area; Allotment 534 is within the Sombrillo ACEC; Allotments 586, 602, 605, 629, 647, 648 and 959 are within the San Antonio SMA; and Allotment 603 within the Wild Rivers Recreation Area. In accordance with the management prescriptions for these areas no increase in grazing preference is proposed in **any alternative**.

Air Quality

The Clean Air Act Amendments in 1990 required that all federal actions conform to State Implementation Plans for air quality. The subject allotments are not located in or near a non-attainment area.

Although the subject allotments are not within a non-attainment area, greenhouse gas emissions from non-renewable sources often occur from ranching operations. Greenhouse gases (GHG), including carbon dioxide (CO₂) and methane (CH₄), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, greenhouse gas emissions are linked to climate change.

Under the **proposed action**, GHG emissions are expected to be generated primarily from vehicles used to manage cattle operations and may be estimated to be about 10 tons of relevant emission. The BLM recommends using best management practices to reduce these emissions, such as reducing number of trips, keeping vehicles well maintained and purchasing more fuel efficient vehicles. There would be no effect under the **no grazing alternative**.

Climate

In 2001, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures. It is not, however, possible at this time to predict with any certainty the causal connection of site specific emissions from the Proposed Action or

other alternatives in this EA to impacts on the global/regional climate.

Mean annual temperatures have risen across New Mexico and the southwestern U.S. since the early 20th century. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. Warming was greatest in the northwestern, central, and southwestern parts of the state. Recurrent research has indicated that predicting the future effects of climate change and subsequent challenges of managing resources in the Southwest is not feasible at this time (USFS, 2008). However, it has been noted that forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue, the habitats and identified drought sensitive species in these forested areas and higher elevations may also be affected by climate change (Enquist and Gori).

Under the **proposed action** and the **no action alternative**, monitoring efforts will indicate vegetation shifts, allowing for site specific management modifications to address global climate change impacts.

Standards for Rangeland Health

Field crews completed the Rangeland Health Evaluation Summary Worksheet for all the subject allotments, with subdivision by parcel or distinct ecological site. Results are summarized in Table 3 by Soil/Site Stability, Hydrologic Function and Biotic Integrity and averages by site. In Table 3 each percent is a percent similar indicator score. The indicator score is created by multiplying an assigned value for departure from site descriptions/reference areas by the number of indicators at the level. Departure scores are categorized as: none to slight = 5, slight to moderate = 4, moderate = 3, moderate to extreme = 2 and extreme = 1, thus giving the most similar sites the highest score. For example, if all indicators under Soil/Site Stability were rated none to slight (5), the equation would be: (score) (nine indicators) / 45 X 100 = 100% similarity, or what is expected based on an Ecological Site Description.

Table 3. Summary of indicators by allotment.

Allotment Number	Observers	Survey Date	Percent of Soil/Site Stability	Percent of Hydrologic Function	Percent of Biotic Integrity	Average Percentage
515	Harmon, Young	6/01/2009	80%	76%	78%	78%
528	Harmon, Young	5/20/2009	82%	84%	93%	86%
529	Harmon, Young	5/22/2009	78%	74%	82%	78%
531	Harmon, Young	5/21/2009	84%	84%	91%	86%
534	Harmon, Young	5/21/2009	82%	80%	80%	81%
535	Harmon, Young	5/21/2009	82%	84%	91%	86%
578	Young	6/17/2009	90%	92%	95%	92%
586	Young	7/21/2009	94%	94%	93%	94%
594	Young	9/22/2009	72%	72%	78%	74%
595	Young	9/30/2009	96%	96%	95%	96%
597	Young	9/30/2009	90%	90%	98%	93%
602	Young	7/22/2009	78%	78%	84%	80%
603	Young	9/28/2009	82%	80%	84%	82%
605	Young	9/29/2009	88%	88%	95%	90%
629	Young	7/30/2009	72%	70%	78%	73%
647	Young	7/15/2009	96%	96%	100%	97%
648	Young	9/25/2009	78%	80%	84%	81%
651	Young	8/04/2009	74%	72%	80%	75%
908	Young	7/15/2009	86%	86%	91%	88%
959	Young	7/15/2009	84%	82%	87%	84%

The Standards are a tool for assessing range condition and are not analyzed under **any alternative** here. The Taos Field Office uses this tool to identify rangelands that may need extra management attention to maintain or improve health. If an allotment or pasture falls below 80% in the Soil Site Stability, Hydrologic, or Biotic indicators, monitoring should be established to determine the cause(s) of the low rating. When the casual factor is determined to be livestock, grazing would be manipulated and/or range improvements would be implemented to improve conditions. The BLM in consultation with the lessee and various other agencies, through an interdisciplinary effort would develop goals and objectives for the areas that are falling below 80% to improve the condition. These improvements would take place after further planning and proper NEPA analysis is completed.

Soils

The following soils are identified as occurring on the allotments analyzed in the watershed:

Antonito-Travelers association, gently sloping. These soils consist of loams to very stony loams, with rooting depths between 20 and 40 inches. Parent material of weathered basalt and eolian material comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, needle and thread, black sagebrush, Indian ricegrass, blue grama, fringe sage and winter fat.

Alire loam, 2 to 6 percent slopes. This soil consists of loams with rooting depths greater than 60 inches. Parent materials include: Alluvium derived granite, schist, gneiss, loess, and volcanic ash. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by blue grama, black grama, ring muhly, Galleta and broom snakeweed.

Buckhorse-Altazano complex, 2 to 8 percent slopes, non-flooded and flooded. These soils consist of coarse and gravelly sandy loams with rooting depths greater than 60 inches. Parent materials include: Alluvium derived from fanglomerate, sandstone, granite and mudstone. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by blue grama, black grama, ring muhly, Galleta, oneseed juniper and broom snakeweed.

Chimayo-Rock outcrop-Quapaw complex, 50 to 90 percent slopes. This soil consists of gravelly sandy loams with a rooting depth between 20 and over 60 inches. Parent materials include: Colluvium derived from granite, gneiss, and schist over residuum weathered from granite, gneiss, and schist. Average annual precipitation in that area ranges from 14 to 16 inches. Vegetation is characterized by Arizona fescue, blue grama, mountain muhly, sedge, twoneedle pinyon.

Chita loam, 0 to 5 percent slopes. These soils consist of loams, with rooting depths over 60 inches. Parent material of alluvium and eolian sediments derived from metamorphic and igneous rocks comprise these soils. Average annual precipitation in this area ranges from 12 to 16 inches. Vegetation is characterized by blue grama, galleta, threeawn and sideoats grama.

Depolvo-Sueleros very fine sandy loams, 2 to 15 percent slopes. This soil consists of fine sandy loams with a rooting depth greater than 60 inches. Parent materials include: Loess derived from micaceous sandstone and siltstone over alluvium derived from pumice, schist, gneiss, and granite. Average annual precipitation in that area ranges from 9 to 12 inches. Vegetation is characterized by blue grama, sand dropseed, black grama, Bigelow's rubber rabbitbrush, Galleta and spike dropseed.

Dermala-Roced complex, 20 to 50 percent slopes. These soils consist of very gravelly loams, with rooting depths over 60 inches. Parent material of alluvium and colluvium derived for igneous and metamorphic rock comprise these soils. Average annual precipitation in this complex ranges from 12 to 14 inches. Vegetation is characterized by pinyon, juniper, blue grama, galleta, side oatsgrama, and muttongrass.

El Rancho silt loam, 1 to 3 percent slopes. This soil consists of silt loams with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from mudstone, sandstone, and micaceous siltstone. Average annual precipitation in that area ranges from 9 to 12 inches. Vegetation is characterized by blue grama, black grama, Galleta, ring muhly and broom snakeweed.

Encantado very cobbly sandy loam, 25 to 45 percent slopes. This soil consists of very cobbly sandy loam with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from granite, quartzite and residuum weathered from granite, fanglomerate, and sandstone. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by black grama, blue grama, New Mexico feathergrass, oneseed juniper, sideoats grama, Galleta, pinyon pine.

Enmedio-Atalaya-Rock outcrop complex, 5 to 60 percent slopes. This soil consists of gravelly and cobbly sandy loams with a rooting depth between 40 and 60 inches. Parent materials include: Colluvium derived from granite, gneiss, and schist over residuum weathered from granite, gneiss, and schist. Average annual precipitation in that area ranges from 14 to 16 inches. Vegetation is characterized by oneseed juniper, sideoats grama, black grama and little bluestem.

Fernando-Hernandez association, nearly level. The soil consists of loam and clay loams, with rooting depths over 60 inches. Parent materials of alluvium derived from mixed sources comprise this soil. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, galleta, blue grama, winter fat, fourwing saltbush and sagebrush.

Florita-Rock outcrop complex, 15 to 45 percent slopes. These soils consist of gravelly and sandy loams with rooting depths over 60 inches and sandstone outcrops. Parent material of alluvium and eolian derived from sandstone comprise these soils. Average annual precipitation in this complex ranges from 10 to 12 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, black grama, blue grama, needleandthread and muttongrass.

Jaconita-Xenmack complex, 25 to 60 percent slopes. These soils consist of very gravelly coarse sandy loams and extremely gravelly sandy loams with rooting depths 20 inches to greater than 60 inches. Parent materials include: alluvium derived from schist, gneiss, granite and micaceous sandstone and siltstone. Average annual precipitation in this area ranges from 9 to 12 inches. Vegetation is characterized by blue grama, black grama, New Mexico feathergrass, sideoats grama, Galleta and juniper.

Junebee gravelly sandy loam, 5 to 15 percent slopes. This soil consists of gravelly sandy loam with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from mudstone, fanglomerate, sandstone. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by Indian ricegrass, blue grama, sand dropseed and Galleta.

Koshare very fine sandy loam, 2 to 8 percent slopes. This soil consists of sandy loams with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from granite, gneiss, schist, and micaceous sandstone and siltstone. Average annual precipitation in that area ranges from 9 to 12 inches. Vegetation is characterized by blue grama, sand dropseed, black grama, Bigelow's rubber rabbitbrush, Galleta and spike dropseed.

Latierra-Lamesilla-Levante complex, 2 to 15 percent slopes, non-flooded and flooded. These soils consist of gravelly coarse sandy loams with rooting depths greater than 60 inches. Parent materials include: Alluvium derived from schist, gneiss and granite. Average annual precipitation in that area ranges from 12 to 14 inches. Vegetation is characterized by blue grama, black grama, New Mexico feathergrass, oneseed juniper, pinyon pine, sideoats grama, Galleta, oak, sand dropseed, Bigelow's rubber rabbitbrush and spike dropseed.

Luhon-Travelers complex, 3 to 7 percent slopes. These soils consist of loams, with rooting depths between 20 to

60 inches. Parent material of residuum of basalt and eolian sediments comprise these soils. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, Indian ricegrass, and winter fat.

Montecito-Rock outcrop complex, moderately steep. The soil consists of loams, with rooting depths over 60 inches. Parent materials of weathered basalt and eolian materials comprise this soil and the rock outcrops consist of folded, broken and exposed basalt flows. Average annual precipitation ranges between 13 and 15 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, galleta, western wheat, and blue grama.

Orejas-Montecito association, strongly sloping. The soil consists of loams, with rooting depths between 20 and over 60 inches. Parent materials of weathered basalt and eolian materials comprise this soil. Average annual precipitation ranges between 13 and 15 inches. Vegetation is characterized by pinyon, juniper, sideoats grama, sagebrush, muttongrass and blue grama.

Ohke sandy loam, 1 to 3 percent slopes. This soil consists of sandy loams with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from schist, gneiss, and granite. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by blue grama, oak, oneseed juniper, Galleta and black grama.

Ojito-Koshare-Quarteles complex, 5 to 50 percent slopes. This soil consists of fine sands and loams with a rooting depth between 20 to greater than 60 inches. Parent materials include: Eolian material, alluvium, and residuum derived from micaceous sandstone and siltstone. Average annual precipitation in that area ranges from 9 to 12 inches. Vegetation is characterized by Indian ricegrass, New Mexico feathergrass, sand dropseed, blue grama, black grama, Bigelow's rubber rabbitbrush, Galleta, spike dropseed, sideoats grama, mountain mahogany, oak and oneseed juniper.

Parida-Palacid very gravelly sandy loams, 10 to 40 percent slopes. These soils consist of very gravelly loams, with rooting depths over 60 inches. Parent material of alluvium and colluvium derived for sedimentary and metamorphic rock comprise these soils. Average annual precipitation in this complex ranges from 10 to 12 inches. Vegetation is characterized by sideoats grama, black grama, blue grama, and galleta.

Petaca-Prieta complex, 1 to 8 percent slopes. These soils consist of clay loams, with rooting depths between 10 to 20 inches. Parent materials of weathered basalt and eolian sediments comprise these soils. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by western wheat, blue grama, sideoats grama, and winterfat.

Predawn loam, 1 to 4 percent slopes. This soil consists of loams with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from granite, schist, and quartzite and eolian material derived from volcanic ash. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by blue grama, Galleta, ring muhly, black grama and broom snakeweed.

Quarteles-Rock outcrop complex, 25 to 90 percent slopes. This soil consists of gravelly loams with a rooting depth of up to 10 inches. Parent materials include: Colluvium and residuum derived from micaceous sandstone, siltstone, and fanglomerate. Average annual precipitation in that area ranges from 9 to 12 inches. Vegetation is characterized by sideoats grama, blue grama, Indian ricegrass, mountain mahogany, oak and oneseed juniper.

Rock outcrop-Raton complex, moderately steep. These soils consist of stony silt loams, with rooting depths up to 20 inches. Parent material of basalt residuum and mixed eolian sediment comprise these soils. Average annual precipitation in this complex ranges from 14 to 16 inches. Vegetation is characterized by pinyon, juniper, muttongrass, Arizona fescue and western wheat.

Sedillo-Silva association, strongly sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material formed from mixed alluvium and eolian material comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, and rabbitbrush.

Sedillo-Orthents association, strongly sloping. These soils consist of gravelly loams, with rooting depths over 60 inches. Parent material formed from gravelly alluvium. Average annual precipitation in this area ranges from 11 to 13 inches. Vegetation is characterized by western wheat, blue grama, galleta, Indian ricegrass and sagebrush.

Servilleta-Prieta complex, 1 to 5 percent slopes. These soils consist of clay loams, with rooting depths between 10 to 40 inches. Parent materials of mixed material derived from weathered basalt and eolian comprise these soils. Average annual precipitation ranges between 10 and 14 inches. Vegetation is characterized by blue grama, western wheat and sagebrush.

Silva-Sedillo association, gently sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material formed from mixed alluvium and eolian material comprises this soil. Average annual precipitation in this area ranges from 11 to 13 inches. Vegetation is characterized by western wheat, blue grama, galleta and fourwing saltbush.

Sipapu-Yuzarra-Kachina complex, 5 to 65 percent slopes. These soils consist of gravelly sandy loams and fine sandy loams with rooting depths up to 20 inches as well as greater than 60 inches. Parent materials include: Colluvium and residuum derived from granitic sandstone, siltstone, and mudstone and Alluvium derived from granite, gneiss, and schist over residuum from granite, sandstone, and fanglomerate. Average annual precipitation in that area ranges from 12 to 14 inches. Vegetation is characterized by blue grama, black grama, mountain mahogany, little bluestem, oneseed juniper, pinyon pine, sideoats grama and eriogonum.

Stunner cobbly loam, 1 to 5 percent slopes. This soil consists of cobbly loams, with rooting depths over 60 inches. Parent material of mixed alluvium and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and winter fat.

Stunner-Luhon association, gently sloping. These soils consist of loams, with rooting depths over 60 inches. Parent material of mixed alluvium and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and rabbitbrush.

Stunner-Travelers association, gently sloping. These soils consist of stony loams, with rooting depths between 20 and over 60 inches. Parent material of mixed alluvium, residuum of basalt and eolian sediment comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, threeawn and winter fat.

Tanoan-Encantado complex, 5 to 25 percent slopes. These soils consist of gravelly sandy loams with rooting depths greater than 60 inches. Parent materials include: Alluvium derived from schist, gneiss, granite and basaltic tuff, as well as Colluvium and residuum, derived from granite, fanglomerate, and sandstone. Average annual precipitation in that area ranges from 13 to 15 inches. Vegetation is characterized by blue grama, black grama, ring muhly, New Mexico feathergrass, sideoats grama, Galleta and oneseed juniper.

Tinaja-Rock outcrop complex, 45 to 75 percent slopes. These soils consist of loam and sandy clay loams, with rooting depths between over 60 inches. Parent materials of colluvium derived from sandstone comprise these soils. Average annual precipitation ranges between 13 and 15 inches. Vegetation is characterized by pinyon, juniper, blue grama, sideoats grama, muttongrass and mahogany.

Travelers very stony loam, 1 to 8 percent slope. This soil consists of very stony loams, with rooting depths up to 20 inches. Parent material formed of residuum and eolian material on basalt flows comprises this soil. Average annual precipitation in this area ranges from 10 to 12 inches. Vegetation is characterized by western wheat, blue grama, rabbitbrush and winter fat.

Walkibout-Innacutt complex, 2 to 80 percent slopes, non-flooded and flooded. This soil consists of sandy loams with a rooting depth greater than 60 inches. Parent materials include: Colluvium and alluvium derived from micaceous sandstone, fanglomerate, siltstone, and mudstone. Average annual precipitation in that area ranges from 9 to 12 inches. Vegetation is characterized by western wheatgrass, Galleta, winterfat, Indian ricegrass, blue grama, sand dropseed and fourwing saltbush.

Yarts sandy loam, 1 to 4 percent slopes. This soil consists of sandy loams, with rooting depths over 60 inches. Parent material of alluvium derived from sedimentary rocks comprises this soil. Average annual precipitation ranges from 10 to 12 inches. Vegetation is characterized by western wheatgrass, Indian ricegrass, blue grama, galleta, and fourwing saltbush.

Zia fine sandy loam, 0 to 2 percent slopes. This soil consists of fine sandy loams with a rooting depth greater than 60 inches. Parent materials include: Alluvium derived from pumice, volcanic ash, granite, and schist. Average annual precipitation in that area ranges from 10 to 13 inches. Vegetation is characterized by black grama, blue grama, ring muhly, broom snakeweed and Galleta.

Under current management, soil indicators for the allotments point to good soil condition with exception of allotment 594, 629 and 651. The lowest Soil and Site Stability rating was 72% (see the ‘Standards for Rangeland Health’ portion and Table 3). The lower ratings have been attributed to influences of historic grazing coupled with the lack of fire and subsequent sagebrush dominance and or piñon / juniper encroachment, not to current grazing management. Soil and Site Stability would ameliorate with the treatments recommended in Table 1 and 2.

Based on current knowledge and current management practices, the **proposed action** would result in no impact or have a positive impact with changes in grazing rotations in allotment 578 and 602. The **no action alternative** would have little or no impact. The **no grazing alternative** would remove livestock from the area and eliminate both the positive and negative impacts of livestock.

Water Quality

These allotments are located in Hydrologic Unit Code (HUC) 13020101, or the Upper Rio Grande Watershed, which comprise 1,979,220 acres along the Rio Grande and its tributaries and is further divided into smaller HUCs. The allotments analyzed in this document occur in six of these smaller HUCs (Table 4).

Table 4. Summary of BLM allotments by 10 Digit HUC (subwatershed and NMED evaluation unit).

NMED Assessment Unit	Subwatershed	Allotments	BLM Acreage	Percent of Subwatershed
NM-2219_05	Latir Creek – Rio Grande	586, 578, 594, 595, 597, 605, 651	32,443	19.4%
NM-2219_05	Red River – Rio Grande	586, 595, 597, 602, 603, 605, 629, 647, 648, 908, 959	31,398	21.8%
NM-2111_10	Arroyo Aguaje de la Petaca	602, 629, 647, 908, 959	4,986	3.2%
NM-2111_10 NM-2120.A_300	Rio Chama – Rio Grande	515, 528, 529, 531	16,903	9.5%
NM-2111_10	Rio Tesuque - Rio Grande	534, 535	4,608	3.6%
NM-2118.A_53 NM-2118.A_52 NM-2118.B_00 NM-2111_50	Santa Cruz River	528, 529, 531, 534, 535	20,972	18%

The New Mexico Environment Department surveyed and evaluated perennial reaches in the Upper Rio Grande watershed in 2008 and identified impairments for stream reaches not meeting water quality standards for designated uses. The following impairments are identified for five of the seven units:

NM-2119_05, Rio Grande (Red River to CO border) – Includes 63,841 acres of BLM land in allotments 586, 578, 594, 595, 597, 602, 603, 605, 629, 647, 648, 651, 908 and 959. This reach was assessed in 2008 as not supporting coldwater fishery use. Probable causes were water temperature and pH with probable sources including removal of riparian vegetation, recreation and tourism Activities (other than boating), hydromodification, habitat modification and watershed runoff following forest fire.

NM-2111_10, Rio Grande (non-pueblo Santa Clara to Embudo Creek) – Includes 26,497 acres of BLM land in allotments 515, 528, 529, 534, 535, 602, 647, 908 and 959. This reach was assessed in 2008 as not supporting marginal coldwater and warmwater fishery use. Probable causes were turbidity, PCB in fish tissue and benthic macroinvertebrates (impaired biota) with probable sources including atmospheric deposition, inappropriate waste disposal, removal of riparian vegetation, range grazing, irrigated crop production, highway/road/bridge runoff, contaminated sediments, agriculture and habitat modification.

NM-2111_50, Santa Cruz River (Santa Clara boundary to Santa Cruz Dam) - Includes 4,623 acres of BLM land in allotment 528, 529, 531, 534 and 535. This reach was assessed in 2008 as not supporting marginal coldwater and warmwater fishery use. Probable causes were sedimentation with probable sources including dam construction, flow alterations from water diversions and irrigated crop production

Based on Rangeland Health Evaluation surveys, there would not likely be increased water quality impairments resulting from the **proposed action** or the **no action alternative**. This conclusion is based on the site assessments showing some indicators of surface erosion as a factor to reduce water quality, but the causal factors were determined to be sources other than livestock grazing. Allotment 629 had the lowest ratings for Soil/Site Stability and Hydrologic Function, 72% and 70% respectively. The averages were 83% and 83%, respectively, across the allotments. It was identified that the most likely reason contributing to reduced similarity in allotment 629 was the influence of woody species encroachment coupled with the lack of fire. The **no grazing alternative** may or may not reduce probable sources of impairment.

Wetlands / Riparian Areas

There is riparian vegetation along the Rio Quemado, Rio Medio and the Santa Cruz River and Lake within allotment 535. The Rio Quemado is along the northern boundary of the allotment in a steep canyon. It has been rated as properly functioning. The Rio Medio is an internal boundary between BLM land and private lands and has been rated Functioning at Risk with an upward trend. Santa Cruz River, above the lake, was rated as PFC and Santa Cruz Lake was rated as Unclassified due to the primary purpose of the lake, is for irrigation. Allotments 515, 528, 529, 531, 534 and 535 have scattered springs with occasional cottonwoods and Russian olive trees. Due to the functionality ratings of the riparian areas **no alternative** would have an adverse affect.

Vegetation

Vegetation expected for the soils identified in the allotments include: western wheat, needle and thread, black sagebrush, Indian ricegrass, blue grama, fringe sage, winter fat, black grama, ring muhly, Galleta, broom snakeweed, oneseed juniper, Arizona fescue, blue grama, mountain muhly, sedge, twoneedle pinyon, sideoats grama, sand dropseed, threeawn, Bigelow's rubber rabbitbrush, spike dropseed, muttongrass, New Mexico feathergrass, little bluestem, fourwing saltbush, sagebrush, oak, mountain mahogany, eriogonum, and other species in smaller amounts.

Grazing may impact vegetation under adverse climate conditions or under poor grazing management. Other impacts to vegetation have been the lack of natural disturbance, such as fire. It has been determined that the

current grazing systems within the subject allotments are not adversely effecting the vegetation. The lowest biotic integrity rating for the subject allotments was 78% similarity to the Ecological Site Description (See section 'Standards for Rangeland Health and Table 3). The lower ratings were attributed to the lack of natural disturbance and subsequent sagebrush and/or piñon / juniper expansion. Residual impacts of livestock grazing would change negligibly under the **proposed action** due to the changes in allotments 578 and 602, but would remain the same in the **no action alternative** due to the moderate removal of current year's growth on forage species. Therefore, under the **proposed action** and **no action alternative**, no additional impacts to vegetation are expected. Under the **no grazing alternative**, there would be no measurable vegetative removal from the allotment.

Noxious Weeds

Any time livestock are grazed in other areas and then returned to the allotment or fed non-certified feed there is a risk of introducing exotic or noxious plant species to the allotment. The **proposed action** or the **no action alternative** would not pose additional risks of introduction or spread of noxious weeds beyond those already occurring. Under **all alternatives**, weeds could be introduced by road maintenance equipment or recreational activities.

Under the **proposed action** and **no action alternative**, weeds could be introduced to the allotment through livestock feces, emergency feed, watering equipment or vehicles associated with the management of livestock. The **no grazing alternative**, would limit the risk of new infestation to those caused by human activities and wildlife.

Cultural Resources

The Española Basin was inhabited at the time of the Spanish entrada by Tewa Pueblo people. The Pueblo villages of San Juan and Santa Clara are adjacent to the west and the Nambe and Pojoaque are located just to the south of allotments 528, 529, 531, 534 and 535. In these five allotments over 100 sites have been recorded. Most of them consist of lithic scatters, ceramic scatters, structures and features resembling structures. The Ojo del Zorro Pueblo and La Caja Pueblo are two of the better known pueblos within the allotments. Of the sites found none had been impacted by livestock, most likely due to the terrain of the locations.

In the remaining allotments to the north, lithic scatters were found in most of the allotments but in allotment 647 there were teepee rings found around Punche Lake as well. Through reconnaissance inventories and literature reviews it was determined that this area of the subject allotments was most likely used for hunting, gathering and periodic camping.

Under the **proposed action** and the **no action alternative** grazing intensity would remain nearly at current levels. Some grazing impacts to the teepee ring site could be trampling during high water in the Punche lake, although water has never been observed up to the site. Natural erosion due to ground disturbance could damage sites; these effects may be slightly less under the **no grazing alternative** than the **proposed action**.

Fish and Wildlife

The allotments are located in the Intermountain Basins Big Sagebrush Shrubland, Riparian, and Rocky Mountain Montane Mixed Conifer Forest and Woodland, key wildlife habitat types as identified in the Comprehensive Wildlife Conservation Strategy of the New Mexico Department of Game and Fish (2005). Existing habitat within the allotments include woodland and savanna vegetation and riparian areas (Dick-Peddie 1993), and supports seasonal home ranges for elk, mule deer, pronghorn, bighorn sheep, black bear, mountain lion, coyote, prairie dog, badger, black-tailed jackrabbit, desert cottontail, gopher, mice, bats, raptors, turkey vulture, American kestrel, common nighthawk, broad-tailed hummingbird, Say's phoebe, common raven, horned lark, rock wren, reptiles, amphibians and a variety of insects. Many of the subject allotments contain

critical winter and summer range for big game species, specifically elk, mule deer and antelope.

Judicious grazing practices can have positive effects on wildlife and can be a beneficial management tool, including increases in vegetation composition diversity and improvement of forage availability and quality for early to mid-successional wildlife species; creation of patchy habitat with high structural diversity for feeding, nesting and hiding; opening up areas of dense vegetation to improve foraging areas for a variety of wildlife; removing rank, coarse grass that would encourage regrowth and improve abundance of high quality forage for wild ungulates; stimulating browse production by reducing grass biomass; and improving nutritional quality of browse by stimulating plant regrowth (NMDGF 2005).

Studies in northern New Mexico have indicated that total elimination of grazing did not improve range condition on upland or lowland sites when compared with adjacent moderately grazed areas (Holecheck and Stephenson 1985). Smith et al. (1996) found that lightly grazed climax rangelands and conservatively grazed late seral rangelands had similar songbird and total bird populations. They also concluded that wildlife diversity was higher on the conservatively grazed late seral than the lightly grazed climax rangeland. Studies in southeastern Arizona by Bock et al. (1984) support the hypothesis that conservatively to moderately grazed areas in mid or late seral condition supported greater diversity of wildlife than ungrazed areas in climax condition. Livestock grazing was also shown to enhance forage for elk and manage their distribution by increasing availability and nutritional value of preferred grasses in early growth stages (Holecheck et al. 2004).

Best management practices would ensure that forage production within this area can support fish, wildlife and livestock on a sustained basis. The functionality assessment of habitat components is outlined in Table 5.

Table 5. Functionality assessment for Biotic Fauna.

Allotment	Biotic Fauna Rating	Summary
515	Proper Functioning Condition	N/A
528	Functioning at Risk-Upward Trend	N/A
529	Functioning at Risk-Upward Trend	N/A
531	Functioning at Risk-Upward Trend	N/A
534	Functioning at Risk-Upward Trend	N/A
535	Functioning at Risk-Upward Trend	N/A
578	Proper Functioning Condition	N/A
586	Proper Functioning Condition	N/A
594	Functioning at Risk-Downward Trend	Sagebrush dominance / lack of natural disturbance
595	Proper Functioning Condition	N/A
597	Proper Functioning Condition	N/A
602	Proper Functioning Condition	N/A
603	Functioning at Risk-Static	Sagebrush dominance / lack of natural disturbance
605	Proper Functioning Condition	N/A
629	Proper Functioning Condition	N/A
647	Proper Functioning Condition	N/A
648	Functioning at Risk-Static	Sagebrush dominance / lack of natural disturbance
651	Functioning at Risk-Downward Trend	Sagebrush dominance / lack of natural disturbance
908	Functioning at Risk-Upward Trend	N/A
959	Functioning at Risk-Upward Trend	N/A

The **proposed action** and **no action alternative** would not have a notable adverse impact on wildlife. The **no grazing alternative** would remove all possible competition between wildlife and livestock.

Threatened or Endangered Species

Federally listed threatened (T) and endangered (E) species in Taos, Rio Arriba and Santa Fe counties include: black-footed ferret (*Mustela nigripes*) (E); Southwestern willow flycatcher (*Empidonax traillii extimus*) (E); interior least tern (*Sterna antillarum*) (E); Rio Grande silvery minnow (*Hybognathus amarus*) (E); and Mexican spotted owl (*Strix occidentalis lucida*) (T). There is no designated critical habitat for any species listed by the U.S. Fish and Wildlife Service (USFWS) within the allotments. It is determined that there are no federally listed threatened or endangered species likely to be found in the subject allotments due to lack of the habitat required for these species to occur.

In Taos Santa Fe and Rio Arriba Counties, the New Mexico meadow jumping mouse (*Zapus hudsonius luteus*), Gunnison's prairie dog (*Cynomys gunnisoni*) (montane subspecies), yellow-billed cuckoo (*Coccyzus americanus*), and Rio Grande cutthroat trout (*Oncorhynchus clarki virginalis*) are federal Candidate species and BLM Sensitive species. The mountain plover (*Charadrius montanus*) is a federal Proposed species. Of these species, it is possible that Gunnison's prairie dog and mountain plover could be found on the subject allotments as they do occur in the region, however, grazing typically enhances habitat for these species.

Additional BLM Sensitive species that could occur in either allotment include several bat species, bald eagle (*Haliaeetus leucocephalus*), American peregrine falcon (*Falco peregrinus anatum*), ferruginous hawk (*Buteo regalis*), Western burrowing owl (*Athene cunicularia hyougaea*), and loggerhead shrike (*Lanius ludovicianus*).

It is determined that the **proposed action** and **neither alternative** would have no impact on federally listed threatened or endangered species, and no adverse affect on federal proposed, candidate or BLM Sensitive species.

Migratory bird species of conservation concern that have the potential to occur on the allotment include burrowing owl, ferruginous hawk, prairie falcon, golden eagle, mountain plover, loggerhead shrike, mourning dove, pinyon jay, Brewer's sparrow, and sage sparrow. The **proposed action** and the **no action alternative** has the potential to have a negative effect upon individual birds, eggs, young and/or the nesting habitat of ground nesting birds; however, there would be no noticeable impact to the population or to the species as a whole. The **no grazing alternative** could have either a beneficial or detrimental effect on individual migratory bird species of concern, depending on the response of range condition and individual species requirements, but affects at the population or species level would not be adverse.

Social / Economic Issues

BLM permits/leases are transferred to qualified applicants at the request of the current permittee/lessee; the BLM has had no influence on the social characterization of those who currently hold these permits. Therefore, it has been determined that neither the **proposed action** nor **either alternative** would be likely to result in impacts which would occur disproportionately in low-income groups, minorities or Indian tribes. With regard to economics, the **proposed action** and the **no action alternative** would allow the permittee to continue the lifestyle they have known and earn money from cattle operations on federal lands. Suspension of the grazing permit under the **no grazing alternative** would cause monetary losses to the permittee/lessee, in the form of increased costs to rent additional pasture or in purchasing feed.

Cumulative Impacts

Cumulative Actions

Livestock grazing is only one of several disturbance activities within the area. Other possible cumulative actions

in conjunction with livestock grazing on BLM administered lands include: historic grazing (grazing prior to the 1976 Federal Land Policy and Management Act and subsequent grazing policy), off-road vehicles use, other recreational use and road construction and maintenance.

Cumulative Effects

BLM land comprises only a small portion of the watershed, roughly 17.7% of the area within the Upper Rio Grande watershed. Also, the subject allotments cover only roughly 5.7% of the total land mass of this watershed (percentages are relative to lands within Taos Field Office). Based on current management the land health standards are not all being met. The upland sites standards that are not being met in some of the subject allotments are contributed to historic grazing coupled with sagebrush dominance. Current livestock is not directly contributing the standards not being met; therefore there would be no measurable cumulative impacts from the **proposed action** or the **no action alternative**, nor the **no grazing alternative**.

Consultation and Coordination

This Environmental Assessment has been mailed to all individuals or organizations who have notified the Taos Field Office of their interest. These individuals or organizations are given 15 days to make comments on the accuracy of this document.

Preparers

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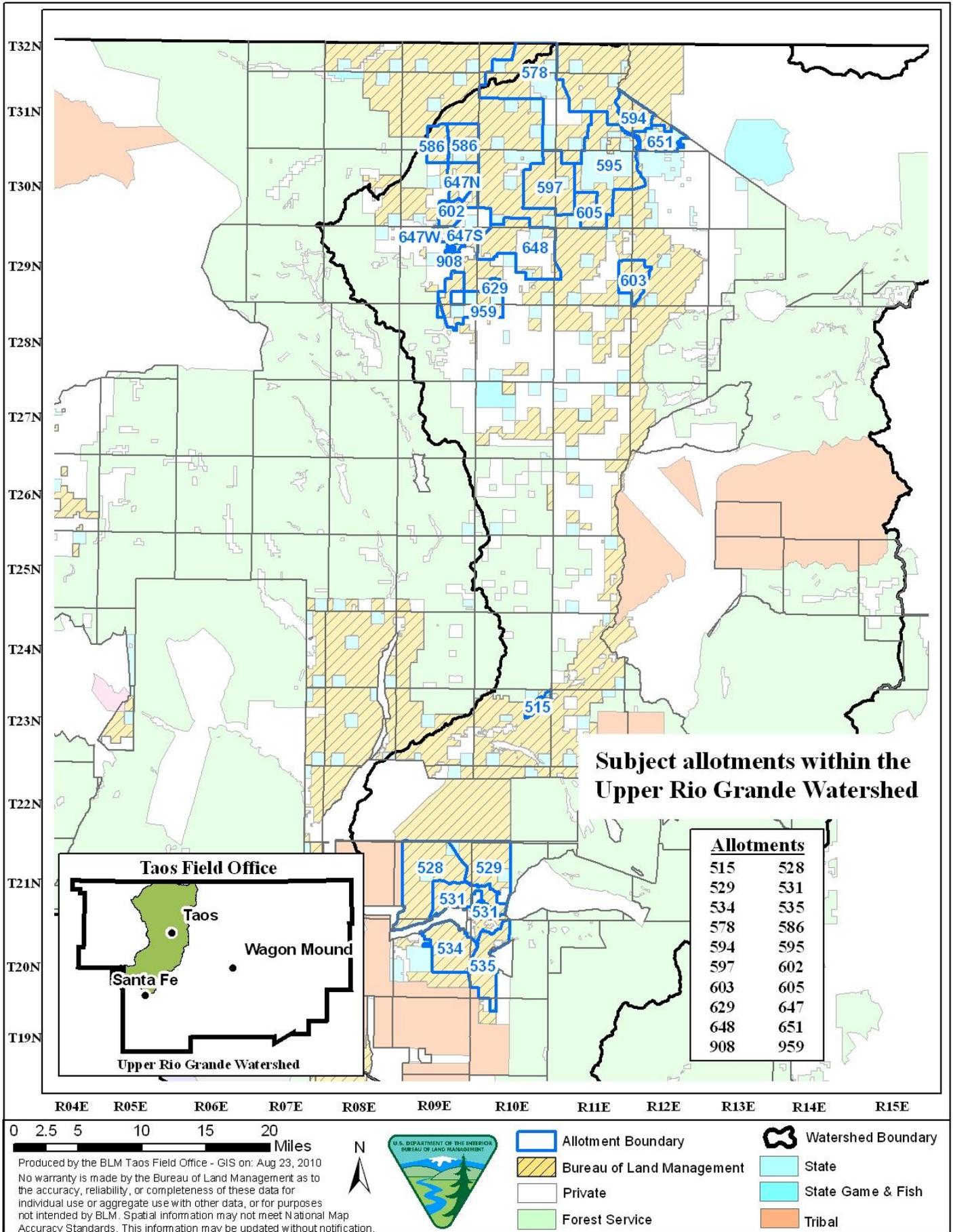


Figure 1. Map of subject allotments.