FINDING OF NO SIGNIFICANT IMPACT/RATIONALE

DOI-BLM-NM-P010-2010-081-EA

FINDING OF NO SIGNIFICANT IMPACT: I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined the proposed action will not have significant impacts on the human environment and that preparation of an Environmental Impact Statement (EIS) is not required.

Rationale for Recommendations: The proposed action would not result in any undue or unnecessary environmental degradation. The proposed action will be in compliance with the 1007 Roswell Resource Management Plan and Record of Decision and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

__/s/ J H Parman _____ __9/2/2010__
J H Parman Date
Assistant Field Manager, Resources

Proposed Decision: It is my decision to implement the proposed action as described in DOI-BLM-NM-P010-2010-081-EA and issue grazing permits for allotments analyzed in this document. The mitigation measures identified in the attached EA have been formulated into terms and conditions that will be attached to the grazing permits. This decision incorporates, by reference, those conditions identified in the attached Environmental Assessment. A summary table follows.

Allotment Number	Allotment Name	Percent Public Land	Grazing Period	Animal Unit	AUMs
62004	Anton Chico East	100%	3/1-2/28	1	12
62044	Canon Pintada	100%	3/1-2/28	1	12
62045	Leoncito Draw	100%	3/1-2/28	12	144
62046	Vaughn SE	100%	3/1-2/28	18	216
62048	Del Curto	100%	3/1-2/28	3	36
62032	Little Muniz Mill	100%	3/1-2/28	10	120
62033	Old Boney	100%	3/1-2/28	30	360
62028	Montoya Ranch	100%	3/1-2/28	2	24
62076	Borica Draw	100%	3/1-2/28	5	60
62058	Evanola Windmill	100%	3/1-2/28	10	120
62023	ZR Ranch	100%	3/1-2/28	2	26
62082	Arroyo San Juan	100%	3/1-2/28	1	12
62019	Lake Sumner	100%	3/1-2/28	1	12
62010	One Horshoe Ranch	100%	3/1-2/28	2	24
62008	Bull Canyon	100%	3/1-2/28	12	144

61003	Woody's Acres	100%	3/1-2/28	10	120
62005	Cottonwood Springs	100%	3/1-2/28	1	8
62036	Pastura Ranch	100%	3/1-2/28	20	240
62055	Gillum Mill	100%	3/1-2/28	12	144
65002	North Gambil Tank	100%	3/1-2/28	4	48

Rationale: Based on the rangeland health assessments (RHAs) and previous monitoring, resource conditions on these allotments are sufficient and sustainable to support the level of use outlined in the ten (10) year grazing permit.
The Proposed Action is in conformance with the 1997 Roswell Resource Management Plan, and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

Right of Protest and Appeal: If you wish to protest this proposed decision, you are allowed 15 days from receipt of this notice within which to file a protest with the Field Manager, Bureau of Land Management, 2909 West 2nd, Roswell, NM 88201, under Sec. 43 CFR 4160.1 and 4160.2. This protest should specify, clearly and concisely, why you think the proposed action is in error.
In the absence of a protest within the time allowed, the above decision shall constitute my final decision, in accordance with 43 CFR 4160.3 (a). In accordance with 43 CFR 4160.3(b) upon a timely filing of a protest, after a review of protests received and other information pertinent to the case, the authorized officer shall issue a final decision.
Any applicant, permittee, lessee or other person whose interest is adversely affected by the final decision may file an appeal in accordance with 43 CFR 4.470 and 43 CFR 4160.4. The appeal must be filed within 30 days following receipt of the final decision, or within 30 days after the date the proposed decision becomes final as provided for in 43 CFR 4160.3(a). The appeal may be accompanied by a petition for a stay of the decision. The appeal and petition for a stay must be filed in the office of the authorized officer, as noted above. The appeal shall clearly and concisely state the reasons why the appellant thinks the final decision is in error, and otherwise complies with the provisions of 43 CFR 4.470.

Appeals can be filed at the following address:

Field Office Manager
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, NM 88201

_____ _____

J H Parman Date
Assistant Field Manager, Resources

ENVIRONMENTAL ASSESSMENT

GRAZING AUTHORIZATIONS

For

ALLOTMENTS
Section 15 allotments
(See Map)

DOI-BLM- NM- P010- 2010- 81 - EA

3/24/2010

U.S. Department of the Interior
Bureau of Land Management
Roswell Field Office
Roswell, New Mexico

I. BACKGROUND

Purpose And Need For The Proposed Action

The purpose of issuing a new grazing lease would be to authorize livestock grazing on public range on Allotments [See table on next page]. When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) must conduct a site-specific NEPA analysis before issuing a lease to authorize livestock grazing. This environmental assessment fulfills the NEPA requirement by providing the necessary site-specific analysis of the effects of issuing a new grazing lease on these allotments. The lease would be needed to specify the types and levels of use authorized, and the terms and conditions of the authorization pursuant to 43 CFR §§4130.3, 4130.3-1, 4130.3-2, and 4180.1.

The scope of this environmental assessment is limited to the effects of issuing a new grazing lease on these allotments. Over time, the need could arise for subsequent management activities which relate to grazing authorization. These activities could include vegetation treatments (e.g., prescribed fires, herbicide projects), range improvement projects (e.g., fences, water developments), and others. Future rangeland management actions related to livestock grazing would be addressed in project-specific NEPA documents as they are proposed.

Though this environmental assessment specifically addresses the impacts of issuing a grazing lease on these allotments, it does so within the context of overall BLM management goals. Allotment management activities would have to be coordinated with projects intended to achieve those other goals. For example, a vegetation treatment designed to enhance watershed condition or wildlife habitat may require rest from livestock grazing for one or more growing seasons. Requirements of this type would be written into the lease as terms and conditions.

Conformance with Land Use Planning

The proposed action conforms to the 1997 Roswell Approved Resource Management Plan (RMP) and Record of Decision; and the 2000 New Mexico Standards for Public Land health and Guidelines for Livestock Grazing Management and Record of Decision as required by 43 CFR 1610.5-3.

Relationships to Statutes, Regulations, or Other Plans

The proposal to renew the livestock grazing lease on this allotment is in conformance with the 1994 Environmental Impact Statement for Rangeland Reform; the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1700 et seq.); the Taylor Grazing Act of 1934 (TGA) (43 U.S.C. 315 et seq.); the Public Rangelands Improvement Act of 1978 (PRIA) (43 U.S.C. 1901 et seq.).

II. PROPOSED ACTION AND ALTERNATIVES

Proposed Action (No Action) - Current Livestock Management

The proposed action is to issue a grazing lease to graze cattle, sheep and horses on these allotments. In accordance with the BLM National Environmental Policy Act Handbook (H-1790-1 p 52), the No Action alternative for grazing permit renewal environmental assessment is "to issue a new permit with the same terms and conditions as the expiring permit."
Current permitted use is based on long-term monitoring and rangeland conditions. Additionally a rangeland health assessment has been completed and all allotments meet the Standards for Public Land Health.

Because of the small amount and percentage of BLM public land, the BLM does not set the stocking rate for the entire allotment, but only bills the lessee for the number of animals the public land can support. See table 1 for the current billed livestock numbers for the allotments.

TABLE 1

Allotment Number	Allotment Name	Percent Public Land	Grazing Period	Animal Unit	AUMs
62004	Anton Chico East	100%	3/1-2/28	1	12
62044	Canon Pintada	100%	3/1-2/28	1	12
62045	Leoncito Draw	100%	3/1-2/28	12	144
62046	Vaughn SE	100%	3/1-2/28	18	216
62048	Del Curto	100%	3/1-2/28	3	36
62032	Little Muniz Mill	100%	3/1-2/28	10	120
62033	Old Boney	100%	3/1-2/28	30	360
62028	Montoya Ranch	100%	3/1-2/28	2	24
62076	Borica Draw	100%	3/1-2/28	5	60
62058	Evanola Windmill	100%	3/1-2/28	10	120
62023	ZR Ranch	100%	3/1-2/28	2	26
62082	Arroyo San Juan	100%	3/1-2/28	1	12
62019	Lake Sumner	100%	3/1-2/28	1	12
62010	One Horshoe Ranch	100%	3/1-2/28	2	24
62008	Bull Canyon	100%	3/1-2/28	12	144
61003	Woody's Acres	100%	3/1-2/28	10	120
62005	Cottonwood Springs	100%	3/1-2/28	1	8
62036	Pastura Ranch	100%	3/1-2/28	20	240
62055	Gillum Mill	100%	3/1-2/28	12	144
65002	North Gambil Tank	100%	3/1-2/28	4	48

There would be no changes from current livestock management as conducted by the lessee. Future projects or activities identified by the lessee or the BLM can still be considered for

implementation. Rangeland monitoring would continue on the allotment and changes to livestock management would be made as necessary. If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken to mitigate those impacts.

No Grazing Alternative

Under this alternative a new grazing lease would not be issued for these allotments. No grazing would be authorized on federal land on this allotment under this alternative. Under this alternative and based on the land status pattern within the allotments, many miles of new fences would be required to exclude grazing on the federal land.

Alternatives Considered But Not Analyzed

Grazing with reduced numbers – BLM considered authorizing grazing with reduced numbers on these allotments. Grazing with reduced numbers would produce impacts similar to the proposed action. Additionally, these allotments meet the Standard for Public Land Health and monitoring studies do not indicate changes are necessary. Therefore, BLM will not analyze this alternative.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

General Setting

These allotments are located in areas Northeast of Roswell, Vaughn, Ft. Sumner, and Santa Rosa, NM. These allotments fall within the counties of Chaves, Roosevelt, De Baca, and Guadalupe. See Map.

The climate is semi-arid with normal annual temperatures ranging from 42^0F to 73^0F at Santa Rosa, NM (Western Regional Climate Center). Average annual precipitation is approximately 14.5 inches, primarily as rainfall.

Affected Resources

The following resources or values are not present or would not be affected by the authorization of livestock grazing on these allotments: Areas of Critical Environmental Concern, Floodplains, Native American Religious Concerns, Visual Resources, Prime or Unique Farmland, Minority/Low Income Populations, Hazardous or Solid Wastes, Wild and Scenic Rivers, and Wilderness.

Cultural resources are not usually adversely affected by livestock grazing. Although concentrated livestock activity such as around livestock water troughs can have adverse effects on the cultural resource. As such all livestock water troughs should not be located within 100 feet of a known archaeological site. Prior to authorizing range improvements, a Class III Cultural Survey must be completed ensuring cultural resources will not be affected. Controlled

livestock grazing affect on cultural resources is limited within the allotment due to the type of cultural resources present.

Affected resources and the impacts resulting from livestock grazing are described below.

Vegetation

Affected Environment

The allotments are comprised of several vegetation community types arranged in a mosaic over the allotment. Grassland and Mixed Desert Shrub communities dominate. There are small inclusions of the Drainages, Draws and Canyons (DDC) associated with the draws running through the allotments.

General objectives or guidelines for each vegetation community are described in the Roswell Approved RMP and Record of Decision (BLM 1997) and the Roswell Draft RMP/EIS (BLM 1994).

Grasslands are intermixed with all community types. Sand dropseed, three-awn, black grama, bush muhly and fluffgrass are common in the sandy uplands. Alkali sacaton is the dominant species in the bottomlands where it is interspersed with saltcedar. Tobosa is found in both sandy uplands and bottomlands. Grassland sites also have a mesquite or broom snakeweed shrub component. Blue grama is primarily found on loamy soils and black grama on more gravelly soils. Gyp grama is common on the gypsiferous soil types found throughout the allotment.

Grassland communities on the uplands and shallow breaks support a large percentage of shrub species. Mesquite, broom snakeweed, fourwing saltbush, and yucca are common shrub species. The primary grasses are sand dropseed, bush muhly,, vine mesquite and black grama.

The Mixed Desert Shrub community is found primarily on the rough breaks with gypsiferous and gravelly soils. This community type also supports a larger percentage of shrub species than the other types, including pockets of creosote, juniper, and javelina bush. Gyp grama and tobosa are interspersed with the shrubs.

The DDC Community is comprised of the major drainages crossing the allotments.

The Rangeland Health assessments indicate a slight problem with invasive plants, most notably mesquite, cholla, and juniper. The Rangeland Health assessments for these allotments can be viewed by the public at the website:
www.blm.gov/nm/st/en/fo/Roswell_Field_Office/roswell_document_library.html

Rangeland monitoring studies have been established in key areas within the allotments. Table 2 below lists the key areas, identified by the vegetation ID number, within each allotment as

well as the ecological site associated with each key area. These permanent sites are used to track vegetation changes.

TABLE 2

Allotment Number	Allotment Name	RHA Completion Month/Year	Meets/ Does not meet	Site Name	Ecological Site
62004	Anton Chico East	3/2010	Meets	A012	Loamy—CP-3
62044	Canon Pintada	3/2010	Meets	A051	Breaks—CP-3
62045	Leoncito Draw	3/2010	Meets	A052	Hills—CP-3
62046	Vaughn SE	3/2010	Meets	A053	Hills—CP-3
62048	Del Curto	3/2010	Meets	A055	Loamy—CP-3
62032	Little Muniz Mill	3/2010	Meets	A040	Loamy—CP-3
62033	Old Boney	3/2010	Meets	A041	Loamy—CP-3
62028	Montoya Ranch	3/2010	Meets	A036	Shallow limestone—CP-3
62076	Borica Draw	3/2010	Meets	A077	Loamy—CP-2
62058	Evanola Windmill	3/2010	Meets	A063	Sandy—CP-3
62023	ZR Ranch	3/2010	Meets	A031	Shallow Sandstone—CP-2
			Meets	A032	Sandy Loam—CP-2
62082	Arroyo San Juan		Meets		
62019	Lake Sumner	3/2010	Meets	A027	Gravelly—CP-2
62010	One Horshoe Ranch	3/2010	Meets	A018	Loamy—CP-2
62008	Bull Canyon	3/2010	Meets	A016	Loamy--HP-2
61003	Woody's Acres	3/2010	Meets	A002	Sandy--HP-3
62005	Cottonwood Springs	3/2010	Meets	A013	Breaks South CP-2
62036	Pastura Ranch	3/2010	Meets	A043	LoamyCP-3
62055	Gillum Mill	3/2010	Meets	A060	Sandy CP-3
65002	North Gambil Tank	3/2010	Meets	C007	Sandy Loam—CP-2
			Meets	C008	Deep Sand—CP-2
			Meets	C009	Sandy Loam—CP-2

The description for these ecological sites was developed by the Soil Conservation Service (now referred to as the National Resource Conservation Service) in their ecological site guides. Ecological site descriptions are available for review at the Roswell BLM office, any Natural Resources Conservation Service office or accessed at www.nm.nrcs.usda.gov.

From 1978 to 1999 agencies were using the traditional range condition methodology to depict range condition. This compared collected rangeland monitoring information with the potential

vegetation community in terms of species composition by weight. The rating is based on a scaled of 0 to 100 with 100 being the actual representative site.
In 1999 the National Resource Conservation Service (NRCS) revised the methodology for comparing the existing vegetation community with the potential vegetation community and to aid in the determination of ecological condition. This methodology is called the Similarity Index (SI) the BLM is currently incorporating this revision into the monitoring and evaluation processes. The SI compares existing vegetation data (collected from rangeland monitoring) with the potential vegetation community described in the NRCS ecological site guide for that site. The index is based on a scaled of 0 to 100 with 100 being the actual representative site. For the Sandy SD-3 ecological (range) site, the normal year production is about 900 pounds per acre. The index takes into account vegetation species present and the relative amount of production for each species when compared to the potential for the range site.

The Roswell Field Office is currently in the process of integrating the revised methodology into current monitoring and evaluation processes. The traditional range condition rating method (used from 1980 to 1998) is retained for comparison purposes.

The percent bare ground and rock found on the allotment fall within the parameters established by the RMP/EIS for this vegetative community. Copies of the monitoring data and the analysis of the data are available at the Roswell Field Office.

Rangeland Health Assessment data has been collected in fiscal year 2010. Analysis of the rangeland health assessments indicates that all three indicators (biotic, hydrology, and soils) have been met for all allotments. Table 3 briefly summarizes resource conditions in each allotment; for a more detailed analysis please refer to the actual data sheets listed at the above web address or the web address below. The long term vegetative production, ground cover and trend data for these allotments are also available at the following website address: http://nm.blm.gov/rfo/index.htm.

Noxious and Invasive Weeds: Noxious weeds affect both crops and native plant species in the same way, by out-competing for light, water and soil nutrients. Losses are attributed to decreased quality and quantity of agricultural products due to high levels of competition from noxious weeds and infestations. Noxious weeds can negatively affect livestock productivity by making forage unpalatable to livestock thus decreasing livestock productivity and potentially increasing producer's feed costs. Potential noxious weed species include musk thistle and Russian knapweed.

Environmental Impacts

Under the proposed action the vegetation in the Grassland community will continue to be grazed and trampled by domestic livestock as well as other herbivores. The area has been grazed by livestock since the early part of the 1900's, if not longer. Ecological condition and

trend is expected to remain stable and/or improve over the long term at the permitted number of livestock.

Because of the small amount and percentage of BLM public land, the BLM does not set the stocking rate for the entire allotment, but only bills the lessee for the number of animals the public land can support.

The Mixed Desert Shrub vegetation community found in portions of the allotment would reflect lighter use because primary forage species are not well represented in these drier areas, and livestock will not concentrate on steeper slopes.

Upland sites would reflect a static ecological condition trend at the existing lease level. Some grassland areas would remain static due to the high composition of mesquite. In the long term, upland vegetation would continue to improve in all pastures from the implementation of a rest-rotation system.

Range monitoring data indicate that the vegetation is sustainable to meet multiple resource requirements and forage at the permitted use level under the Proposed Action and Alternative B. Data indicate that livestock grazing is compatible with vegetation cover and composition objectives.

Under the No Action Alternative, No new impacts to vegetation would occur on public lands from authorized livestock grazing. The permitted use as described in the proposed action is not anticipated to have any adverse impacts to the current vegetation conditions.

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from authorized livestock grazing. Vegetation cover (outside the OHV area) would increase over the long term in some areas. Grasslands in the uplands would increase in cover and composition, but composition would be tempered by mesquite somewhat dominating the shrub component. Alkali sacaton in the bottomlands would, in the short term, increase in cover and composition but would then taper off in the long term, becoming decadent from the lack of standing vegetation removal by grazing.

Soils

Affected Environment

The Soil Survey of North Chaves, De Baca, and Guadalupe Counties, New Mexico (USDA Soil Conservation Service 1983) was used to describe and analyze impacts to soils on these allotments. There are multiple soil map units represented within the allotments: The soil units covering the most area are described below, more in depth information can be found in the soil survey.

TABLE 3

Soil	Description
Guadalupe	
32	32—Regnier-Lacoca-Rock outcrop complex, 3 to 25 percent slopes Permeability of the Regnier soil is moderately slow. Runoff is High and the hazard of water erosion is high. Permeability of the Lacoca soil is moderate. Runoff is high and the hazard of water erosion is severe.
34	34--Palo-Neso Comples, 0 to 2 Percent slopes Permeability of the Palo soil is moderate. Runoff is medium and the hazard of water erosion is slight. The hazard of soil blowing is severe. Permeability of the Neso soil is moderately rapid. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is severe.
36	36—Alama silt loam, 1 to 5 percent slopes Permeability of the Alama soil moderately slow. Runoff is medium and the hazard of water erosion is moderate. The hazard of soil blowing is severe.
37	37—Hollomex-Reeves complex, 1 to 10 Percent slopes Permeability of the Hollomex soil is moderate. Runoff is Medium and the hazard of water erosion is moderate. The hazard of soil blowing is severe. Permeability of the Reeves soil is moderate. Runoff is Medium and the hazard of water erosion is moderate. The hazard of soil blowing is severe.
71	71—Clovis Fine Sandy Loam, 0 to 3 Percent slope Permeability of the Clovis sandy loam is moderate. Runoff is slow and the hazard of erosion by water is slight. The hazard of soil blowing is severe.
72	72—Harvey-Davey complex, 1 to 5 percent slope Permeability of the Harvey soil is moderate. Runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is severe. Permeability of the Darvey soil is Moderate. Runoff is slow and the hazard of erosion by water is slight. The hazard of soil blowing is severe.
73	73—Winona-Gabaldon complex, 0 to 15 percent slopes Permeability of the Winona soil is moderate. Runoff is rapid and the hazard of erosion by water is severe. The hazard of soil blowing is severe. Permeability of the Gabaldon soil is moderately slow. Runoff is very slow and the hazard of soil blowing is severe.
75	75—Pastua-silver-gabaldon complex, 0 to 5 percent slopes Permeability of the Pastura soil is moderate. Runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is severe. Permeability of the Silver soil is moderately slow. The Runoff is very slow and the hazard of erosion by water is slight. Hazard of soil blowing is severe. Permeability of the Gabaldon soil is moderately slow. Runoff is very slow and the hazard of erosion by water is slight. The hazard of soil blowing is severe.
76	76—Pastura-Clovis Association, 0 to 8 percent slopes Permeability of the Pastura soil is moderate. Runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is severe.
77	77—Cardenas-Palma loamy fine sands, 0 to 3 percent slopes Permeability of the Cardenas soil is moderately rapid. Runoff is slow and the hazard of erosion by water is slight. Hazard of soil blowing is severe. Permeability of the Palma soil is moderately rapid. Runoff is slow and the hazard of erosion by water is slight. The hazard of soil blowing is severe.

89	89—Clovis-Pastura association, 0 to 3 percent slopes Permeability of the Clovis soil is moderate. Runoff is slow and the hazard of erosion by water is slight. The hazard of soil blowing is moderate. Permeability of the Pastura soil is moderate. Runoff is slow and the hazard of erosion by water is slight. The hazard is soil blowing is severe.
91	91—Pastura-Harvey Association, 0 to 8 Percent slopes Permeability of the Pastura soil is moderate. Runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is moderate. Permeability of the Harvey soil is moderate. Runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is severe.
98	98—LaFonda-Palma fine sandy loams, 5 to 15 percent slope Permeability of the LaFonda soil is moderate. The runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is severe. The permeability of the Palma soil is moderately rapid. The runoff is medium and the hazard of erosion by water is moderate. The hazard of soil blowing is severe
De Baca	
34	Gallen-Torriorthnts association (34) 15 to 35 Percent slopes. Permeability of the Gallen soil is moderately rapid. Runoff is rapid and the hazard of water erosion is high. The hazard of soil blowing is moderate
50	Berwolf-Chispa-Armesa association (50), 0 to 5 percent slopes. Permeability of the Berwolf soil is moderately rapid. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is very high. Permeability of the Chispa soil is moderate. Runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is high. This soil is nonsaline to slightly saline. Permeability of the Armesa soil is moderate. Runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is high.
60	Chispa-Armesa-Rdona association (60), 2 to 7 percent slopes. Permeablitly of the Chispa soil is moderate. Runoff is slow and the hazard of wate erosion is slight. The hazard of soil blowing is high. This is nonsaline to slightly saline. Permeability of the Armesa soil is moderate. Runoff is Medium and the hazard of water erosion is moderate. The hazard of soil blowing is high. Permeability of the Redona soil is moderate. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is high. This unit is used for livestock grazing and wildlife habitat
63	Neso-Kolar association (63), 0 to 5 percent slopes Permeability of the Neso soil is moderately rapid. Runoff is slow nad the hazard of water erosion is light. The hazard of soil blowing is high. Permeability of the Kolar soil is moderately rapid. Runoff is slow and the hazard of water erosion is light. The hazard of soil blowing is high.
67	Kolar-Neso-Pojo Complex (67), 0 to 5 percent slopes Permeability of the Kolar soil is moderately rapid. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is high. Permeability of the Neso soil is moderately rapid. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is high. Permeability of the Pojo soil is moderately rapid. Runoff is slow and the hazard of water erosion is slight. The hazard of soil blowing is high. This Unit is used for livestock grazing and wildlife habitat.

Chaves	
FaA	Faskin-fine sand, 0 to 2 percent slopes (FaA) Permeability of the Faskin soil is moderate. Runoff of the unit soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high. Permeability of the Malmstrom soil is moderately rapid. Runoff of the unit soil is medium and the hazard of water erosion is moderate and the hazard of soil blowing is high.
RBA	Ratliff Redona association, 0 to 2 percent slopes (RBA) Permeability of the Ratliff soil is moderate. Runoff of the Ratliff soil is slow and the hazard of water erosion is slight and the hazard of soil blowing is high. Permeability of the Redona soil moderate. Runoff of the Redona soil is slow and the hazard of water erosion is slight and soil blowing is high.
TvA	Tucumacari clay loam, 0 to 2 percent slopes (TvA) Permeability of the Tucumcari Clay loam is moderately slow. Runoff of the soil is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is high.

Environmental Impacts

Under the Proposed Action, livestock would remove some of the cover of standing vegetation and litter, and compact the soil by trampling. If livestock management were inadequate, these effects could be severe enough to reduce infiltration rates and increase runoff, leading to greater water erosion and soil losses (Moore et al. 1979, Stoddart et al. 1975). Producing forage and protecting the soil from further erosion would then be more difficult. The greatest impacts of removing vegetation and trampling would be expected in areas of concentrated livestock use, such as trails, waters, feeders, and shade.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion. Low/moderate forage quality plants provide protection to the soils resource. Cumulative long term monitoring data reflect the soils are being adequately protected. The ground cover data is shown at the end of this document.

Under the No Action Alternative, No new impacts to soils would occur on public lands from authorized livestock grazing. The permitted use as described in the proposed action is not anticipated to have any adverse impacts to the current soil conditions.

Under No-Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Watershed – Hydrology

Affected Environment

The watershed and hydrology in the area is affected by land and water use practices. The degree to which hydrologic processes are affected by land and water use depends on the location, extent, timing and the type of activity. Factors that currently cause short-lived alterations to the hydrologic regime in the area include livestock grazing management, recreational use activities, groundwater pumping and also oil and gas developments such as well pads, permanent roads, temporary roads, pipelines, and powerlines.

Environmental Impacts

Livestock grazing management and range improvement projects can result in long term and short term alterations to the hydrologic regime. Peak flow and low flow of perennial streams, ephemeral, and intermittent rivers and streams would be directly affected by an increase in impervious surfaces resulting from the construction of the well pad and road. The potential hydrologic effects to peak flow is reduced infiltration where surface flows can move more quickly to perennial or ephemeral rivers and streams, causing peak flow to occur earlier and to be larger. Increased magnitude and volume of peak flow can cause bank erosion, channel widening, downward incision, and disconnection from the floodplain. The potential hydrologic effects to low flow is reduced surface storage and groundwater recharge, resulting in reduced baseflow to perennial, ephemeral, and intermittent rivers and streams. The direct impact would be that hydrologic processes may be altered where the perennial, ephemeral, and intermittent river and stream system responds by changing physical parameters, such as channel configuration. These changes may in turn impact chemical parameters and ultimately the aquatic ecosystem.

Long-term direct and indirect impacts to the watershed and hydrology would continue for the life of the livestock grazing management and range improvement projects and would decrease once reclamation of the range improvement projects has taken place. Short term direct and indirect impacts to the watershed and hydrology from access roads that are not surfaced with material would occur and would likely decrease in time due to reclamation efforts.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the hydrologic regime. Low/moderate forage quality plants provide protection to the soils resource and hydrologic regime. Cumulative long-term monitoring data reflect the hydrologic regime is being adequately protected.

Under the No Grazing Alternative, any adverse impact from livestock grazing management and range improvement projects would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Floodplains

Affected Environment

Portions of the grazing allotments are located in the 100-year floodplain.
For administrative purposes, the 100-year floodplain serves as the basis for floodplain management on public lands. It is based on Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (1983) which describes a Zone A as the "Area of the 100-year flood". Current development on the floodplain consists of two-track roads and several miles of boundary fence in the area.

Environmental Impacts

Surface disturbance from the development of surface facilities and buried pipelines can result in impairment of the floodplain values from removal of vegetation, removal of wildlife habitat, impairment of water quality, decreased flood water retention and decreased groundwater recharge.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the floodplain values. Low/moderate forage quality plants provide protection to the floodplain values. Cumulative long-term monitoring data reflect the floodplain values are being adequately protected.

Under the No Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Water Quality

Affected Environment – Surface Water

No perennial surface water is found on the Public Land on these allotments. Ephemeral stream occur on Public Land on these allotments.

Environmental Consequences – Surface Water

Direct impacts to surface water quality would be minor, short-term impacts during stormflow. Indirect impacts to water-quality related resources, such as fisheries, would not occur.

Affected Environment - Ground Water

Fresh water sources are in the Quaternary Shallow Alluvium Aquifer. Approximate depth to water in area ranges from 50 to 100 feet in shallow alluvial aquifer and 400 to 600 feet in the San Andres Aquifer (New Mexico Office of the State Engineer Data).

Environmental Impacts – Ground Water

The proposed action would not have a significant effect on ground water. Livestock would be dispersed over the allotment, and the soil would filter potential contaminants.

Under the Proposed Action rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect surface and groundwater. Low/moderate forage quality plants provide protection to the surface and groundwater. Cumulative long-term monitoring data reflect the surface and groundwater are being adequately protected.

Under the No Grazing Alternative, any adverse impact from livestock grazing would be eliminated. However, it is possible that removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

Wildlife

Affected Environment

The allotment provides a variety of habitat types for terrestrial wildlife species. The diversity and abundance of wildlife species in the area is due to the presence of a mixture of grassland habitat and mixed desert shrub vegetation.

Numerous avian species use the area during spring and fall migration, including non-game migratory birds. Common bird species are mourning dove, mockingbird, white-crowned sparrow, black-throated sparrow, blue grosbeak, northern oriole, western meadowlark, Crissal thrasher, western kingbird, northern flicker, common nighthawk, loggerhead shrike, and roadrunner. Raptors include northern harrier, Swainson's hawk, American kestrel, and occasionally golden eagle and ferruginous hawk.

Common mammal species using the area include mule deer, pronghorn, coyote, gray fox, bobcat, striped skunk, porcupine, racoon, badger, jackrabbit, cottontail, white-footed mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat.

A variety of herptiles also occur in the area such as yellow mud turtle, box turtle, eastern fence lizard, side-blotched lizard, horned lizard, whiptail, hognose snake, coachwhip, gopher snake, rattlesnake, and spadefoot toad.

Environmental Impacts

Under the Proposed Action, livestock grazing management and range improvement projects designed with consideration for wildlife would generally enhance the quality of wildlife habitat. Vegetation condition, forage production, and habitat diversity would improve, and wildlife species distribution and abundance would increase. The construction of livestock waters in previously unwatered areas would promote increased wildlife distribution and abundance, but may potentially increase grazing pressure in those same areas. Short-term impacts of range improvement projects would be the temporary displacement of wildlife species during construction activities.

No new impacts to wildlife would occur on public lands from authorized livestock grazing. The permitted use as described in the proposed action is not anticipated to have any adverse impacts to wildlife.

Under No-Grazing Alternative, there would no longer be direct competition between livestock and wildlife for forage, browse and cover. Wildlife habitat would moderately improve. The limitation for improvement would continue to be the existing invading species component (e.g., mesquite, snakeweed) affecting plant composition. Since livestock grazing would not be permitted, range improvement projects that benefit wildlife, such as water developments, would be abandoned. New range improvement projects that would also benefit wildlife habitat, such as brush control, may not be implemented because these projects are primarily driven and funded through range improvement efforts.

Special Status Species, Including Threatened and Endangered Species

Affected Environment

Livestock grazing as a result of the grazing lease, may affect, but not likely adversely affect the bald eagle. With this determination, consultation with the US Fish and Wildlife Service is not required. It is expected that habitat and range condition would be maintained or improved by authorizing grazing conducive with vegetation production goals. Habitat for wintering bald eagles would not have significant negative impacts by livestock grazing since there is no presence of riparian habitats nearby, and no active or suitable nesting habitat. Positive impacts may result to the bald eagle from the proposed action by increasing the amount of carrion during the late winter and early spring on sheep allotments in the vicinity.

Surveys have been conducted in New Mexico for the mountain plover in 1995, for the New Mexico Department of Game and Fish. No known breeding populations or wintering locales were found in the Roswell Field Office area. In addition, mountain plover surveys were conducted in 1998 at BLM selected sites by New Mexico Natural Heritage Program. No mountain plovers were observed at the sites.

As mountain plovers prefer short vegetation and actually seek out grazed pastures, the cumulative impacts from grazing are not anticipated to adversely affect the bird. Grazing practices which maintain or improve ground cover to the greatest extent possible could decrease mountain plover habitat. The preferred alternative will continue to emphasize proper watershed management, but is unlikely to adversely affect this species or its habitat in the mixed desert shrub area.

Since no known wintering locales or breeding sites have been found and no known prairie dog towns are located within this allotment, proper grazing management is not likely to jeopardize, destroy or adversely modify the habitat for the mountain plover or the black-tailed prairie dog (the black-tailed prairie dog has been removed from the listing).

Environmental Impacts

Under any of the alternatives, there would be no change to habitat of special status species.

Air Quality

Affected Environment

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility.

The allotments are in an area that is considered a Class II air quality area. A Class II area allows moderate amounts air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soil and exhaust emissions from motorized equipment. Air quality in the area is generally good and is not located in any of the areas designated by the Environmental Protection Agency as “non-attainment areas” for any listed pollutants regulated by the Clean Air Act (CAA).

Air quality in the region is generally good, with winds averaging 10-16 miles per hour depending on the season. Peak velocities reach more than 50 miles per hour in the spring. These conditions rapidly disperse air pollutants in the region.

Environmental Impacts

Air quality would temporary be directly impacted with pollution from enteric fermentation (ruminant livestock), chemical odors, and dust. Dust levels resulting from allotment management activities would be slightly higher under the Proposed Action or Alternative B than No-Grazing Alternative. The cumulative impact on air quality from the allotment would be negligible compared to all pollution sources in the region.

The federal Clean Air Act requires that air pollutant emissions be controlled from all significant sources in areas that do not meet the national ambient Air quality standards. The New Mexico Air Quality Bureau is responsible for enforcing the state and national ambient air quality standards in New Mexico. At the present time, the counties that lie within the jurisdictional boundaries of the Roswell Field Office are classified as in attainment of all state and national ambient air quality standards as defined in the CAA of 1972, as amended.

The Environmental Protection Agency (EPA), on October 17, 2006, issued a final ruling on the lowering of the National Ambient Air Quality Standard (NAAQS) for particulate matter ranging from 2.5 micron or smaller particle size. This ruling became effective on December 18, 2006, stating that the 24-hour standard for PM2.5, was lowered to 35 ug/m^3 from the previous standard of 65 ug/m^3. This revised PM2.5 daily NAAQS was promulgated to better protect the public from short-term particle exposure. The significant threshold of 35 ug/m^3 daily PM2.5 NAAQS is not expected to be exceeded under the proposed action.

Climate

Affected Environment

Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. GHG's and the potential effects of GHG emissions on climate are not regulated by the EPA, however climate has the potential to influence renewable and non-renewable resource management.

Greenhouse gases, 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, climate has the potential to influence renewable and non-renewable resource management. The EPA's Inventory of US Greenhouse Gas Emissions and Sinks found that in 2006, total US GHG emissions were over 6 billion metric tons and that total US GHG emissions have increased by 14.1% from 1990 to 2006. The report also noted that GHG emissions fell by 1.5% from 2005 to 2006. This decrease was, in part, attributed to the increased use of natural gas and other alternatives to burning coal in electric power generation.

The levels of these GHGs are expected to continue increasing. The rate of increase is expected to slow as greater awareness of the potential environmental and economic costs associated with increased levels of GHG's result in behavioral and industrial adaptations.

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

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.

A 2007 US Government Accountability Office (GAO) Report on Climate Change found that, "federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others: 1) physical effects such as droughts, floods, glacial melting, and sea level rise; 2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and 3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and other resource uses." It is not, however, possible to predict with any certainty regional or site specific effects on climate relative to the proposed lease parcels and subsequent actions.

In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state.

Environmental Impacts

Climate change analyses are comprised of several factors, including greenhouse gases (GHGs), land use management practices, the albino effect, etc. The tools necessary to quantify climatic impacts from the Proposed or No Action Alternatives are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that may contribute to climate change. Qualitative and/or quantitative evaluation of potential contributing factors within the planning area is included where appropriate and practicable.

Livestock Management

Affected Environment

In the past, these allotments have been permitted to be grazed yearlong by cattle. The leases authorized 1882 AUMs, spread over 20 separate allotments, and this use level was based on a Livestock Use Agreement. Grazing is by a cow/calf operation.

The allotments contain approximately 109,208 total acres (see Location Map). Landownership consists of approximately, 88,897 acres of private, 9,256 acres of federal land, and 11,054 acres of state land. Current range improvement projects for the management of livestock include earthen tanks, wells, and several drinking troughs with associated pipelines, pasture and boundary fences and corrals.

Environmental Impacts

Under the Proposed Action, livestock would continue to graze public lands within the allotments. Existing pasture configurations and water developments would remain the same. Current livestock management will continue.

Under the No Action, there would be no new impacts.

Under No-Grazing Alternative, there would be no livestock grazing authorized on public lands. The public lands would have to be fenced apart from the private lands or livestock would be considered in trespass if found grazing on public land (43 CFR 4140.1(b)(1)). Exclusion of livestock from the public land would require approximately 120 miles of new fence at an approximate cost of $5,400,000 ($4,500/mile). This expense would be borne by the private landowner. Range improvements on public land would not be maintained and the BLM would have to compensate the lessee if any of the improvements were cost shared at the time of their authorization.

Under No-Grazing Alternative, the overall livestock operation could be reduced by 1,882 AUMs (those attached to the public lands) to approximately 0 AUMs. This would have an adverse economic impact on the lessee.

Cumulative impacts of the grazing and no grazing alternatives were analyzed in Rangeland Reform '94 Draft Environmental Impact Statement (BLM and USDA Forest Service 1994) and in the Roswell Resource Area Draft RMP/EIS (BLM 1994). The no livestock grazing alternative was not selected in either document.

Recreation

Affected Environment

The allotment provides habitat for numerous game species including desert mule deer, pronghorn, mourning dove and scaled quail. Predator and feral pig hunting may occur on the allotment, as well as trapping for predators or furbearers.

General sightseeing, wildlife viewing and photography are non-consumptive recreational activities that may occur. Rock collectors find various minerals unique to the area, such as Pecos diamonds.

Environmental Impacts

Game and non-game wildlife species could realize long-term benefits through the improvement of habitat. It is expected that hunter success and wildlife viewing opportunities would be enhanced.

Under No-Grazing Alternative, no conflicts between ranching activities and recreational use would occur on public lands. Success of hunts and non-consumptive opportunities would remain the same or slightly improve. Vandalism could still occur to range improvements. Conflicts with OHV use would continue.

Cave and Karst

Affected Environment

This allotment is located within a designated area of medium Cave or Karst Potential. A complete significant cave or karst inventory has not been completed for the public land located in this grazing allotment. Presently, no known significant caves or karst features have been identified within this allotment.

Environmental Impacts
Since no caves or major karst features have been identified on this grazing allotment, grazing would not affect these resources. If a significant cave or karst feature were discovered on public land within this allotment, that cave or feature may be fenced to exclude livestock and off-highway vehicle use.

IV. CUMULATIVE IMPACTS

A cumulative impact is defined in 40 CFR 1508.7 as:

> "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The analysis of cumulative impacts focuses on the geographical area defined as the set of the allotments within the defined area as illustrated on the attached map and listed under Table 1. The specific resources being impacted are limited to those that are most important in terms of impacts resulting from remedial actions needing to be implemented to improve current environmental conditions.

The incremental impact of issuing a grazing lease on these resources must be analyzed in the context of impacts from other actions. Other BLM actions that could have impacts on the identified resources include: livestock authorization on other allotments in this area; oil and gas

activities on the uplands; rights-of way crossing the area; and recreation use, particularly off-highway vehicles. All authorized activities which occur on BLM land can also take place on state and private land.

Many of the actions which could contribute to cumulative impacts have occurred over many years. Impacts from open-range livestock grazing in the last century are still being addressed today. Oil and gas activities began in the early part of the 20th century. These activities are still occurring today, and are expected to continue into the foreseeable future to some degree.

The analysis of cumulative impacts is driven by major resource issues. The proposed action is the authorization of livestock grazing on these allotments. The cumulative impacts to these allotments and adjacent allotments are insignificant.

The Proposed Action would not add incrementally to the cumulative impacts to threatened and endangered species, or to water quality. The conclusions, that impacts to these resources, from grazing authorization would not be significant are discussed in detail in Section III of the EA.

The No Action Alternative, same as proposed action.

If the No-Grazing Alternative were chosen, some adverse cumulative impacts would be eliminated, but others would occur. Grazing would no longer be available as a vegetation management tool, and BLM lands within the allotment would be less intensively managed.

While global and national inventories of GHG are established, regional and state-specific inventories are in varying levels of development. Quantification techniques are in development – for example, there is a good understanding of climate change emissions related to fuel usage; however measuring and understanding the effects are less comprehensive. Analytical tools necessary to quantify climatic impacts are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined.

Due to the absence of regulatory requirements to measure GHG emissions it is not possible to accurately quantify potential GHG emissions in the affected areas as a result of renewing grazing leases. Some general assumptions however can be made: livestock, operating vehicles to support livestock grazing, and vehicles transporting livestock contribute to GHG emissions.

The New Mexico Greenhouse Gas Inventory and Reference Case Projection 1990-2020 (Inventory) states agricultural activities, including manure management, fertilizer use and livestock account for 7% of New Mexico's total GHG emissions. The Inventory estimates approximately 6.4 million metric tons GHG emission are projected by 2010 from all agricultural activities in the state. The Inventory states that GHG emissions from livestock, agriculture soil management and field burning were about 6.2 MMT of CO_2 equivalent in 2004. The Inventory makes the assumption that dairy cattle production will grow at the same rate as the general population and no growth in the other categories within agriculture.

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. However, potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated.

Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependant on historic water conditions. 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 more affected by climate change.

V. MITIGATION MEASURES

Vegetation monitoring studies will continue if a new grazing lease were issued under the Proposed Action. Changes to livestock management would be made if monitoring data showed adverse impacts to the vegetation.

If new information surfaces that livestock grazing is negatively impacting other resources, action will be taken at that time to mitigate those impacts.

VI. RESIDUAL IMPACTS

Residual impacts are direct, indirect, or cumulative impacts that would remain after applying the mitigation measures. Residual impacts following authorization of livestock grazing would be insignificant if the mitigation measures are properly applied.

VII. SOCIO-ECONOMIC FACTORS

The proposed action or No action, as outlined in this document are not anticipated to alter the socio-economic conditions for either the lessee or Chaves and Lincoln Counties. Should the no livestock grazing alternative be adopted, economic impacts would occur. Chaves and Lincoln Counties would lose tax revenues on cattle grazing annually.

Under the no livestock grazing alternative, it would be the responsibility of the lessee to prevent livestock from grazing on the public lands. To accomplish this, the lessee would most likely have to construct fences to exclude the public land. Approximately 120 miles of new

fence would be needed at a cost of approximately $5,400,000 ($4,500/mile). BLM would also have to provide compensation to the lessee for their interest in authorized range improvements due to the exclusion of livestock grazing. These costs could be reduced or mitigated by land exchanges with either the state or the lessee to block up the public land

VIII. BLM TEAM MEMBERS

Helen Miller - Rangeland Management Specialist
Adam Ortega - Rangeland Management Specialist
Shane Trautner - Rangeland Management Specialist
Kyle Arnold - Rangeland Management Specialist
Mike McGee - Hydrologist
Rebecca Hill - Archaeologist
Howard Parman – Environmental Coordinator
Bill Murry – Outdoor Recreation Planner
Dan Baggao – Wildlife Biologist
Randy Howard - Wildlife Biologist
Jerry Dutchover – Geologist
John Simitz – Geologist

IX. PERSONS AND AGENCIES CONSULTED

Chaves County Public Land Use Advisory Committee
New Mexico Department of Game and Fish
New Mexico Energy, Minerals, and Natural Resources Department
- Forestry and Resource Conservation Division
New Mexico Environment Department - Surface Water Quality Bureau
New Mexico State Land Office
U.S. Fish and Wildlife Service - Ecological Services
U.S. Fish and Wildlife Service - Fishery Resources Office

X. LITERATURE CITED

Bureau of Land Management. 1994. Roswell resource area draft resource management plan/environmental impact statement. BLM-NM-PT-94-0009-4410.

Bureau of Land Management. 1997. Roswell approved resource management plan and record of decision. BLM-NM-PT-98-003-1610. 71 pp.

Bureau of Land Management. 1998. Unpublished range monitoring data files for Railroad Mtn. Allotment [insert numbers].

Bureau of Land Management and USDA Forest Service. 1994. Rangeland reform '94, draft environmental impact statement.

Enquist, Carolyn and Gori, Dave. 2008. Implications of Recent Climate Change on Conservation Priorities in New Mexico. April 2008.

Federal Emergency Management Agency. 1983. Flood insurance rate map. Community-Panel Nos. 350125 0450B and 0475B.

Geohydrology Associates, Inc. 1978. Collection of hydrologic data, eastside Roswell range EIS area, New Mexico. Prepared for BLM under Contract No. YA-512-CT7-217. 97 pp.

GISS Surface Temperature Analysis, Analysis Graphs and Plots. New York, New York. (Available on the Internet: http://data.giss.nasa.gov/gistemp/graphs/Fig.B.lrg.gif.)

Goddard Institute for Space Studies. 2007. Annual Mean Temperature Change for Three Latitude Bands Datasets and Images.

Hogge, David. 1998. Personal communication. New Mex. Env. Dept., Surf. Water Qual. Bur.

Hudson, J.D. and R.L. Borton. 1983. Ground-water levels in New Mexico, 1978-1980. NM State Engr. Basic Data Rep. 283 pp.

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Basis (Summary for Policymakers). Cambridge University Press. Cambridge, England and New York, New York. (Available on the Internet: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf)

_____. Climate Change 2007, Synthesis Report. A Report of the Intergovernmental Panel on Climate Change.

Moore, E., E. Janes, F. Kinsinger, K. Pitney, and J. Sainsbury. 1979. Livestock grazing management and water quality protection - state of the art reference document. EPA 910/9-79-67. Environmental Protection Agency. Seattle, WA. 147 pp.

National Academy of Sciences. 2006. Understanding and Responding to Climate Change: Highlights of National Academies Reports. Division on Earth and Life Studies. National Academy of Sciences. Washington, D.C. (Available on the Internet: http://dels.nas.edu/basc/Climate-HIGH.pdf.)

New Mexico Department of Game and Fish. 1988. Handbook of species endangered in New Mexico. G-253:1-2. Santa Fe.

New Mexico Department of Game and Fish. 1997. Biota information system of New Mexico (BISON-M). Version 9/97.

New Mexico Environment Department. 1998a. Record of decision concerning the development of total daily maximum loads for segments 2206 and 2207 of the Pecos River. Surf. Water Qual. Bur., Plan. and Eval. Sec. Santa Fe.

New Mexico Environment Department. 1998b. 1998-2000 State of New Mexico §303(d) list for assessed river/stream reaches requiring total maximum daily loads (TMDLs), final record of decision (ROD) for river/stream listings. Surf. Water Qual. Bur. Santa Fe. 30 pp.

New Mexico State Engineer. 1995. Rules and regulations governing drilling of wells and appropriation and use of ground water in New Mexico. 166 pp.

New Mexico Water Quality Control Commission. 1996. Water quality and water pollution control in New Mexico. NMED/SWQ-96/4. 163 pp.

New Mexico Water Quality Control Commission. 1995 State of New Mexico standards for interstate and intrastate streams. 20 NMAC 6.1. 51 pp.

Rosgen, D. 1996. Applied river morphology. Wildland Hydrology. Pagosa Springs, CO.

Stoddart, L.A., A.D. Smith, and T.W. Box. 1975. Range management. Third Ed. McGraw-Hill, Inc. New York. 532 pp.

USDA Soil Conservation Service. 1983. Soil survey of Chaves County, New Mexico, northern part. 224 pp.

U.S. Environmental Protection Agency. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006. April 2008. USEPA #430-R-08-005.

_____. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Environmental Protection Agency. Washington, D.C.

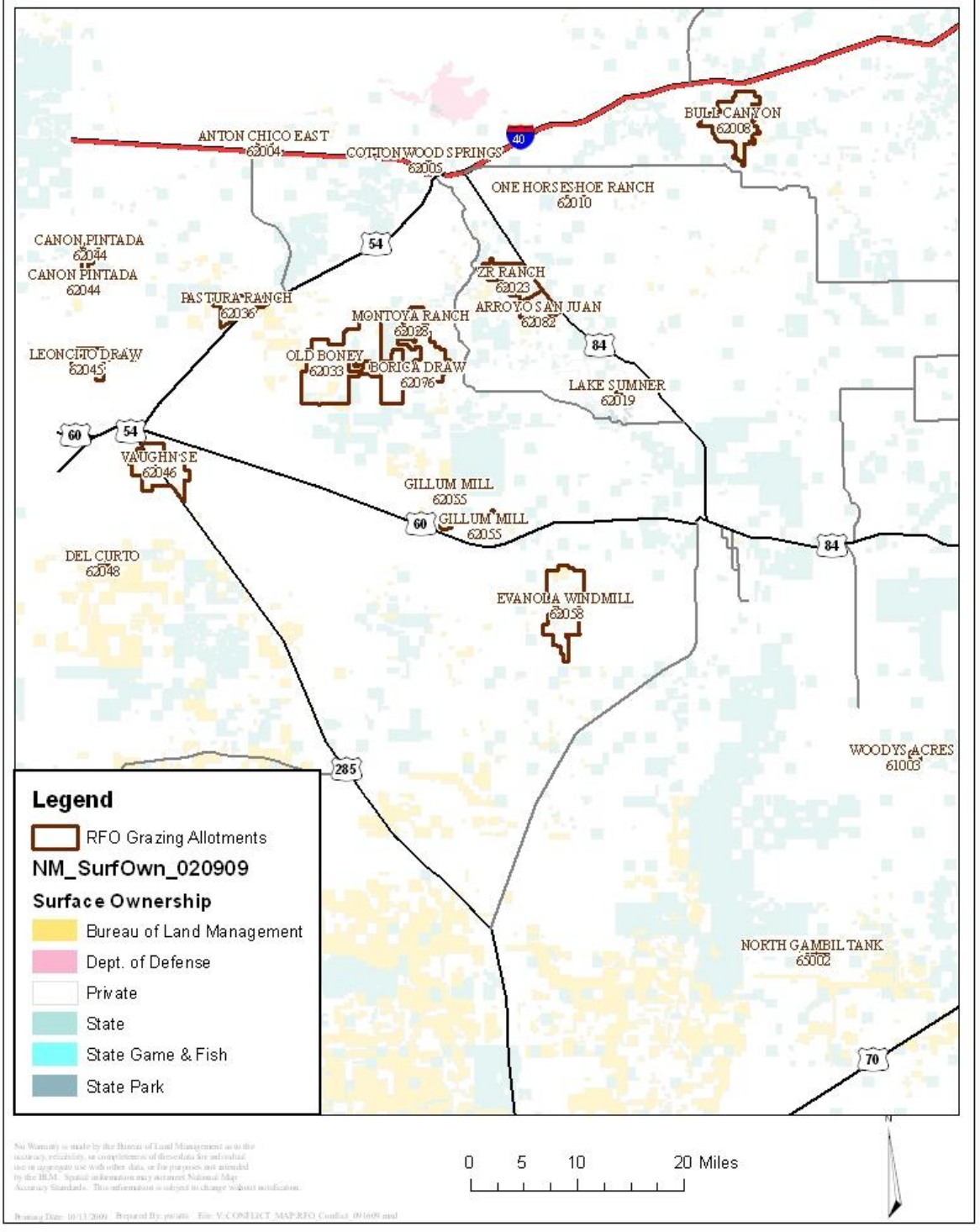
U.S. Fish and Wildlife Service. 1997. Biological opinion on the Roswell Resource Area Resource Management Plans. Consult. #2-22-96-F-102.

U.S. Government Accountability Office Report "Climate Change, Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources" GAO-07-863, August 2007 (1st paragraph, 1st page, GAO Highlights) at: http://www.gao.gov/news.items/d07863.pdf

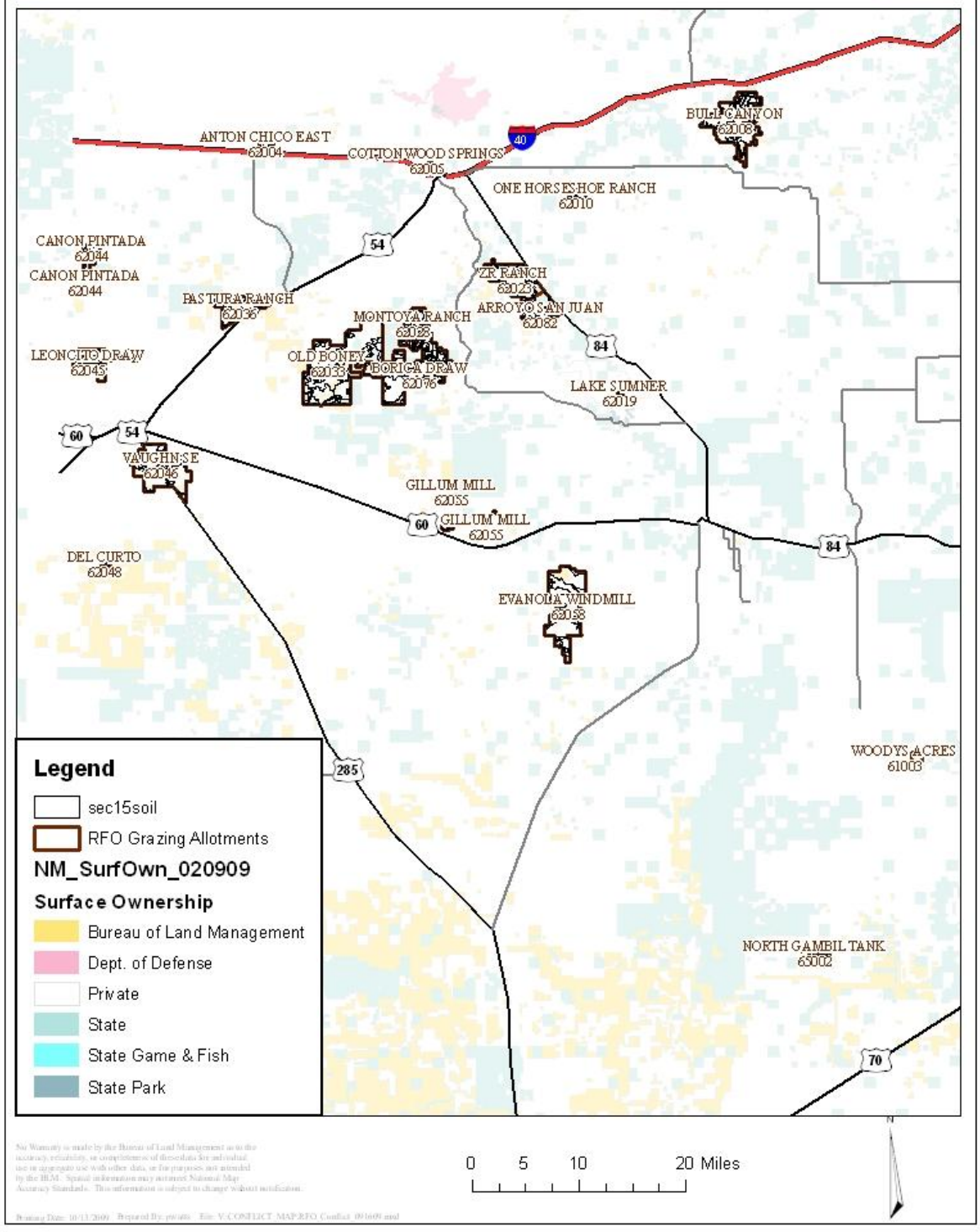
Wilkins, D.W. and B.M. Garcia. 1995. Ground-water hydrographs and 5-year ground-water-level changes, 1984-93, for selected areas in and adjacent to New Mexico. U.S. Geol. Survey Open-File Rep. 95-434. 267 pp.

Wilson, L. 1981. Potential for ground-water pollution in New Mexico. New Mex. Geol. Soc., Spec. Pub. No. 10

2010 Sec. 15 Permit Renewals



2010 Sec. 15 Permit Renewals



Bureau of Land Management, Roswell Field Office
Environmental Assessment Checklist, DOI-BLM- NM- P010- 2010- 81 - EA

Resources	Not Present on Site	No Impacts	May Be Impacts	Mitigation Included	BLM Reviewer	Date
Air Quality			X	X	SWA Spec/Hydro. /s/ Michael McGee	4/27/10
Soils			X	X		
Watershed Hydrology			X	X		
Floodplains			X	X		
Water Quality - Surface			X	X		
Water Quality - Ground			X	X	Geologist/Hydrologist /s/ Michael McGee	4/27/10
Cultural Resources			X	X	/s/Rebecca L. Hill Archeologist	13Apr2010
Native American Religious Concerns	X					
Paleontology	X					
Areas of Critical Environmental Concern	X				/s/J H Parman Plan & Env. Coord.	3/31/10
Farmlands, Prime or Unique		X			Realty /s/Tate Salas	3/24/10
Rights-of-Way		X				
Invasive, Non-native Species		X			/s/ Helen Miller Range Mgmt. Spec.	08/06/2010
Vegetation			X	X		
Livestock Grazing			X	X		
Wastes, Hazardous or Solid		X			/s/ Jared Reese Nat. Resource Spec.	3/29/2010
Threatened or Endangered Species	X				/s/ D Baggao Biologist	4/6/10
Special Status Species	X					
Wildlife			X			
Wetlands/Riparian Zones	X					
Wild and Scenic Rivers	X				/s/ Bill Murry Outdoor Rec. Plnr.	3/25/09
Wilderness	X					
Recreation		X				
Visual Resources		X				
Cave/Karst		X				
Environmental Justice	X				/s/ Jared Reese Nat. Resource Spec.	3/29/2010
Public Health and Safety		X				
Solid Mineral Resources		√			/s/ Jerry Dutchover Geo/SPS	03/25/10
Fluid Mineral Resources	X				/s/ John S. Simitz Geologist	04/1/2010