

**DECISION RECORD
DOI-BLM-NM-P010-2011-090 EA**

Proposed Decision: It is my decision to implement the proposed action as described in DOI-BLM-NM-P010-2011-090-EA and to issue permit for the allotment 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 permit. This decision incorporates, by reference, those conditions identified in the attached Environmental Assessment. A summary table follows:

| Table 1. Animal Units/Animal Unit Months | | | | | | | |
|---|-----------------------|-----------------------------|----------------------------|--------------------------------|--------------------------------------|------------------|-------------------------|
| Allotment Number | Allotment Name | Acres of Public Land | Percent Public Land | Animal Units Authorized | Animal Unit Months Authorized | Livestock | Livestock Number |
| 64071 | Price Ranch | 720 | 16 | 81 | 156 | Cattle | 81 |
| 64071 | Price Ranch | | 16 | 1 | 2 | Horse | 1 |
| Totals | | 720 | | 82 | 158 | | |

Rationale: Based on the rangeland health assessments (RHAs) and previous monitoring, resource conditions on this allotment are sufficient and sustainable to support the level of use outlined in the term grazing permit.

The Proposed Action will be in compliance with the 1997 Roswell Resource Management Plan and Record of Decision and the 2001 New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management.

If you wish to protest this proposed decision in accordance with 43 CFR 4160.2, you are allowed 15 days to do so in person or in writing to the authorized officer, after the receipt of this decision. Please be specific in your points of protest.

The protest shall be filed with the Field Manager, Bureau of Land Management, 2909 West 2nd, Roswell, NM 88201. 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. Should this notice become the final decision, you are allowed an additional 30 days within which to file an appeal for the purpose of a hearing before the Interior Board of Land Appeals, and to petition for stay of the decision pending final determination on the appeal (43 CFR 4.21 and 4.410). If a petition for stay is not requested and granted, the decision will be put into effect following the 30-day appeal period. The appeal and petition for stay should be filed with the Field Manager at the above address. The appeal should specify, clearly and concisely, why you think the decision is in error. The petition for stay should specify how you will be harmed if the stay is not granted.

/s/ J. Howard Parman
J H Parman
Assistant Field Manager

06/21/2011
Date

FINDING OF NO SIGNIFICANT IMPACT/RATIONALE

DOI-BLM-NM-P010-2011-090-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 Roswell Resource Management Plan and Record of Decision (October, 1997).

/s/ J. Howard Parman
Assistant Field Manager, Resources

06/21/2011
Date

ENVIRONMENTAL ASSESSMENT

GRAZING AUTHORIZATION

For

ALLOTMENT 64071
Price Ranch

DOI-BLM-NM-P010-2011-090 EA

January 2011

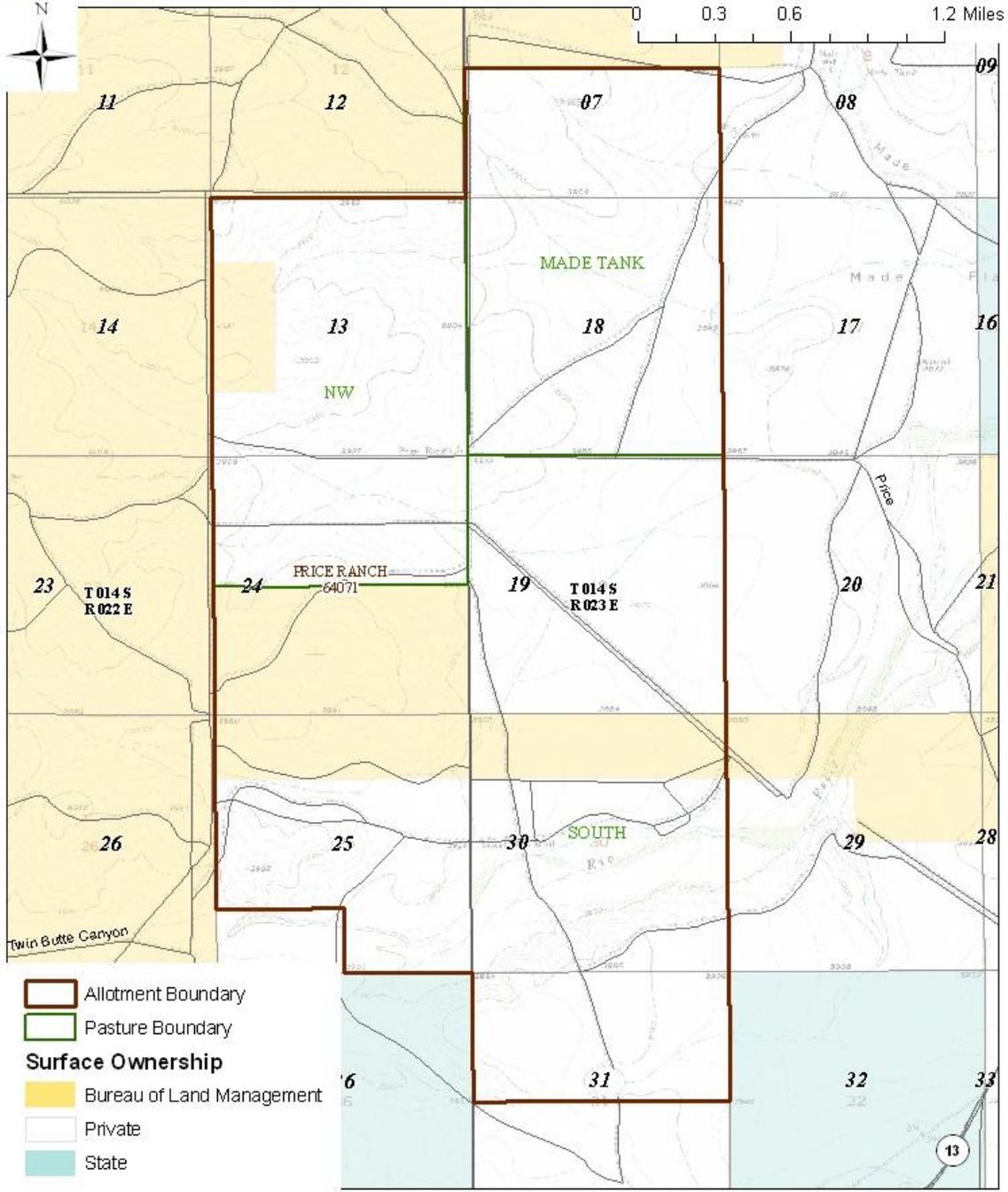
U.S. Department of the Interior
Bureau of Land Management
Roswell Field Office
Roswell, New Mexico



Allotment #64071



0 0.3 0.6 1.2 Miles



- Allotment Boundary
- Pasture Boundary
- Surface Ownership**
- Bureau of Land Management
- Private
- State

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

I. BACKGROUND

Purpose and Need for the Proposed Action

The purpose of issuing a new grazing permit would be to authorize livestock grazing on public range on the Price Ranch allotment #64071. When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) must conduct a site-specific NEPA analysis before issuing a permit 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 permit on this allotment. The permit 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 permit on this allotment. 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 permit on this allotment, 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; 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 permit 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 - Current Livestock Management

The proposed action is to issue a ten-year permit to graze 81 cattle and 1 horse on this allotment. Current permitted use is based on long term monitoring and rangeland conditions. Additionally a rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. See Table 1 below for details of this allotment.

Table 1. Animal Units/Animal Unit Months

| Allot Number | Allotment Name | Acres of Public Land | Percent Public Land | Animal Units Authorized | Animal Unit Months Authorized | Permitted Animal Units | Permitted Animal Unit Months |
|---------------------|-----------------------|-----------------------------|----------------------------|--------------------------------|--------------------------------------|-------------------------------|-------------------------------------|
| 64071 | Price Ranch | 720 | 16 | 82 | 158 | 82 | 158 |
| | | | | | | | |
| Totals | | 720 | 16 | 82 | 158 | 82 | 158 |

There would be no changes from current livestock management as conducted by the permittee, or to existing range improvements already in place. Future projects or activities identified by the permittee 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 permit would not be issued for this allotment. 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 allotment, approximately 4.5 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 this allotment. Grazing with reduced numbers would produce impacts similar to the proposed action. Additionally, this allotment meets 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

This allotment is located in Chaves County, approximately 30 miles south of Roswell, NM.

The mixed desert shrub community and arroyo/floodplain type community dominate allotment #64071. Annual precipitation for this region averages 8-13 inches. These communities are in the Canadian Plains major land resource system between elevations of 2,800 and 4,500 feet.

The grassland vegetative community and the drainage/draws vegetative communities are identified in the Roswell Resource Management Plan/Environmental Impact Statement (RMP/EIS). Vegetative communities managed by the Roswell Field Office are identified and explained in the RMP/EIS. Appendix 11 of the draft RMP/EIS describes the Desired Plant Community (DPC) concept and identifies the components of each community.

Affected Resources

The following resources or values are not present or would not be affected by the authorization of livestock grazing on these allotments: Cultural Resources, Native American Religious Concerns, Floodplains, 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. Prior to authorizing range improvements, a Class III Cultural Survey must be completed ensuring cultural resources will not be affected. There are no known cultural resources within

the allotment on which controlled livestock grazing will have an effect. Affected resources and the impacts resulting from livestock grazing are described below.

Vegetation

Affected Environment

The allotment is comprised of a mixed desert shrub and drainage communities. General objectives or guidelines for this vegetation community is described in the Roswell Approved RMP and Record of Decision (BLM 1997) and the Roswell Draft RMP/EIS (BLM 1994).

A distinguishing feature for the desert mixed shrub community is that grass species typically comprises 30-40 of the potential plant community, and shrubs typically comprise 20-35 percent of the potential plant community. The percentages of grasses, forbs, and shrubs actually found at a particular location will vary with recent weather factors, past resource uses and the potential of the site. The mixed desert shrub community is found throughout the whole allotment.

A grassland/shrub mixed community is dominated by black grama with sideoats grama as the sub-dominant grass. Blue grama, hairy grama, bush muhly and sand dropseed also occur in significant amounts. Sideoats grama can occur as the dominant grass with black grama as sub-dominant on the western side of the Land Resource Unit SD-3. Threeawns may become the dominant grass species due to a decline in more palatable grasses or because of its ability to quickly recover following drought. The common shrubs associated with this site include creosotebush, mesquite, and catclaw mimosa.

The drainage/draw community occurs as desert drainageways that dissects hills and transports run-off water from remote higher elevations and adjacent sites to larger watercourses or closed basins. Vegetation on the site varies dynamically with parent material, distance away from the channel, and amount of gravel and cobble in the soil profile. Trees and shrubs are typically dominant along the channel border, but grasses dominate the floodplain. A wide variety of woody species can occur on this site including, Apache plume, brickellbush, desert willow, mesquite, catclaw mimosa, viscid acacia, and New Mexico walnut. Cane bluestem and silver bluestem are typical dominants on the western side of the resource unit. Alkali sacaton and giant sacaton tend to dominate more on the eastern side. Other important grasses common to both areas include vine mesquite, sideoats grama, tobosa, Arizona cottontop, and twoflower trichloris.

The rangeland health assessments (RHA) indicate a problem with litter movement. While the correct amount of litter is present, water flow is causing litter displacement and deposition against obstructions and in depressional areas. The RHA's also indicate that while most of the correct grass species are present, the grama grass species are conspicuously absent. This can result from drought, overgrazing, or lack of fire.

A rangeland monitoring study has been established within the South pasture of the allotment. This key study location is situated in a Shallow SD-3 ecological site complex. This permanent site is used to track vegetation changes and to determine proper stocking rates.

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 Hills CP-2 ecological (range) site, the normal year production is about 1700 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 percent bare ground and rock found on the allotment fall within the parameters established by the RMP/EIS for this vegetative community.

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 African rue, non native thistles (*Cirsium* spp.), leafy spurge, goldenrod. There are no known populations of noxious weeds on surrounding allotments.

Environmental Impacts

Under the proposed action the vegetation in the Grassland communities 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.

Upland sites would reflect a static ecological condition trend at the existing permit level. 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. Data indicate that livestock grazing is compatible with vegetation cover and composition objectives. In addition to the upward trend in ecological condition, monitoring data show the vegetative resources have been improved and sustained since monitoring began in 1981.

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from authorized livestock grazing. Vegetation cover 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.

Soils

Affected Environment

The Soil Conservation Service, now the Natural Resource Conservation Service (NRCS), has surveyed the soils in Chaves County. Complete soil information is available in the Soil Survey of Chaves County, New Mexico, Southern Part (USDA Soil Conservation Service 1980). The soil map units represented in the project area are:

Bigetty loam, moderately saline, 0 to 1 percent slopes, (BP); Runoff is slow, and the hazard of erosion is slight. A few areas along the stream channel are commonly flooded.

Lozier-Tencee complex, 1 to 9 percent slopes (Lt) For the Lozier and Tencee soil, runoff is medium and the hazard of water erosion is slight or moderate, and the hazard of soil blowing is slight.

Pecos silty clay loam, nonsaline, 0 to 3 percent slopes, (PGB) Runoff is medium or slow. The hazard of water erosion is moderate, and the hazard of soil blowing is slight. Gullies are few.

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.

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.

Water Quality

Affected Environment - Ground Water

Fresh water sources are in the Quaternary Shallow Alluvium Aquifer. Depth to water in nearby wells in the shallow aquifer ranges from 200 to 400 feet (Depth to Water Data, New Mexico Office of the State Engineer).

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.

Affected Environment – Surface Water

No perennial surface water is found on the Public Land on this allotment.

Environmental Impacts – 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. .

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.

Common mammal species using the area include mule deer, pronghorn, coyote, gray fox, bobcat, striped skunk, porcupine, raccoon, badger, jackrabbit, cottontail, white-footed mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat. Resident bats in the area are Townsend's Western Big-eared (*Coryhinorinus townsendii*), Cave Bat (*Myotis velifer*) and Small-footed Bat (*Myotis celiolabrum*). None of these bat species are threatened or endangered.

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, burrowing owls and occasionally golden eagle and ferruginous hawk.

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.

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

Federally Listed Threatened/Endangered Species:

There are no species listed as endangered, threatened, or proposed for protection under the Endangered Species Act known on this allotment. Designated critical habitat for a listed species also does not occur on this allotment.

Other Special Status Species

There are no known special status species on this allotment.

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 area around the allotment is considered a Class II air quality area. A Class II area allows moderate amounts of 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.

The allotments are in a Class II area for the Prevention of Significant Deterioration of air quality as defined by the federal Clean Air Act. Class II areas allow a moderate amount of air quality degradation.

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 temporarily 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 No Action alternative, than the 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 Standard (NAAQS). The New Mexico Air Quality Bureau (NMAQB) is responsible for enforcing the state and national ambient air quality standards in New Mexico. Any emission source must comply with the NMAQB regulations (USDI, BLM 2003b). 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 Clean Air Act of 1972, as amended (USDI, BLM 2003b).

The Environmental Protection Agency (EPA), on October 17, 2006, issued a final ruling on the lowering of the 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 PM_{2.5}, was lowered to 35 ug/m³ from the previous standard of 65 ug/m³. This revised PM_{2.5} daily NAAQS was promulgated to better protect the public from short-term particle exposure. The significant threshold of 35 ug/m³ daily PM_{2.5} 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. Greenhouse gases (GHGs), 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 GHGs 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, this allotment has been permitted to be grazed yearlong by cattle, with only enough horses required to work stock. The permit authorizes 82 Aus yearlong/158 Animal unit months. Grazing is by a cow/calf operation.

The allotment contains about 4399 total acres (see Location Map). Landownership consists of approximately 3679 acres of private land and 720 acres of federal 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 allotment. Existing pasture configurations and water developments would remain the same. Livestock management would still follow the single-herd rotation system.

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 approximately cost \$54,000.00 (based on 4.50 miles at \$12,000/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 permittee 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 12 AUs (those attached to the public lands) to approximately 69 AUs. This would have an adverse economic impact on the permittee.

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.

Visual Resources Management

Affected Environment

The allotment is in a Class IV area for visual resources management. The objective of Class IV is to: "Provide for management activities which require major modification of the existing landscape character...Every attempt, however, should be made to reduce or eliminate activity impacts through careful location, minimal disturbance, and repeating the basic landscape elements."

Environmental Impacts

The basic elements of the landscape would not change within the allotment under any management alternative. Potential impacts to visual resources would be analyzed and mitigated as allotment management activities are proposed in the future.

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*. Caves and other karst features have been documented in this area. Karst features are derived from dissolved limestone and gypsum from which caves and sinkholes can form, under the definition of caves in the Federal Cave Resource Protection Act of 1988. Pursuant to Federal Register Notices, Vol. 76, No. 16, page 4373,

January 23, 2011, all known Roswell Field Office hibernacula are temporarily closed to public entry from January 25, 2011 to no later than January 25, 2013 to monitor for the presence of White Nose Syndrome and prevent its spread if it arrives. White Nose Syndrome) was first documented on hibernating bats in New York and by 2009 it had moved over 450 miles across eight states and had killed well over 1 million bats. By spring of 2010, White Nose Syndrome (WNS) had been found in Oklahoma on cave myotis (*Myotis velifer incautus*), the first evidence of it infecting a western bat species. Any proposed entry whatsoever of these caves must be formally proposed to BLM.

Environmental Consequences

While the proposed action is located in a *Medium Potential Karst Area*, no surface cave/karst features were observed in the immediate vicinity of the proposed action. Livestock grazing could be affected by the presence of karst features if livestock became entrapped in deep sinkholes, which has occurred with sheep grazing on karst land north of Roswell. This could be prevented by creating exclosures around identified karst features that pose a hazard to livestock. In the event that range improvement projects are proposed, the presence of karst features would be further analyzed in related environmental assessments.

A complete inventory of significant cave or karst features has been completed for public land located in this grazing allotment. If at a later date, more significant caves or karst features are found on public land within this allotment, that cave or feature may be fenced to exclude livestock grazing and Off Highway Vehicle Use. A separate Environmental Analysis would be prepared to construct such exclosure fence.

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 incremental impact of issuing a grazing permit 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.

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.

Wildlife: Wildlife, as well as domestic livestock, will continue to utilize the available forage and browse. The amount of cover available for the various wildlife species present on the allotment will fluctuate, based on livestock use levels and amount of precipitation. Maintenance and operation of existing waterings will continue to provide a dependable water source for wildlife, as well as livestock.

Livestock grazing may have an impact on the various habitat components of some wildlife species. Livestock select the herbaceous component, which provides a source of food for various neotropical migrants and upland game birds, first before other vegetative types such as browse or forbs.

Subsequently, impacts to the ground nesting birds and to the various food types utilized by avian species (seeds, green vegetative material, etc.) can range from beneficial to detrimental depending on specific livestock management scheme including season of use, pasture rotation system, annual precipitation and number of livestock.

V. MITIGATION MEASURES

Vegetation monitoring studies will continue if a new grazing permit 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 Alternative B as outlined in this document are not anticipated to alter the socio-economic conditions for either the permittees or Chaves County. Should the no livestock grazing alternative be adopted, economic impacts would occur. Chaves County would lose tax revenues on approximately 13 head of cattle annually.

Under the no livestock grazing alternative, it would be the responsibility of the permittees to prevent livestock from grazing on the public lands. To accomplish this, the permittees would most likely have to construct fences to exclude the public land. New fence would be needed at a cost of approximately \$12,000/mile. BLM would also have to provide compensation to the permittees 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 permittees to block up the public land.

IX. BLM Team Members

Helen Miller - Rangeland Management Specialist
Shane Trautner - Rangeland Management Specialist
Mike McGee – Hydrologist
Justin W. Peters – Archaeologist
Howard Parman – Environmental Coordinator
Bill Murry – Outdoor Recreation Planner
Randy Howard – Wildlife Biologist
Mike Bilbo – Cave Specialist

X. 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

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**Bureau of Land Management, Roswell Field Office
Environmental Assessment Checklist, DOI-BLM-NM-P010-2011-090 EA**

| Resources | Not Present on Site | No Impacts | May Be Impacts | Mitigation Included | BLM Reviewer | Date |
|---|----------------------------|-------------------|-----------------------|----------------------------|---|---------------|
| Air Quality | | | X | X | Hydrologist /s/ Michael McGee SWA Spec/Hydro. | 4/4/2011 |
| Soils | | | X | X | | |
| Watershed Hydrology | | | X | X | | |
| Floodplains | X | | | | | |
| Water Quality - Surface | | | X | X | | |
| Water Quality - Ground | | | X | X | Geologist/Hydrologist /s/ Michael McGee | 4/4/2011 |
| Cultural Resources | X | | | | Justin W. Peters | 20April2011 |
| Native American Religious Concerns | X | | | | /s/ Justin W. Peters | |
| Paleontology | X | | | | Archaeologist | |
| Areas of Critical Environmental Concern | X | | | | /s/ Phil Watts for Plan & Env. Coord. | 2/15/2011 |
| Farmlands, Prime or Unique | X | | | | /s/Tate Salas Realty Specialist | 2/10/2011 |
| Rights-of-Way | | X | | | | |
| Invasive, Non-native Species | X | | | | /s/ Helen Miller Range Mgmt. Spec. | 04/01/2011 |
| Vegetation | | | X | X | | |
| Livestock Grazing | | | X | X | | |
| Wastes, Hazardous or Solid | X | | | | /s/ Jared Reese Nat. Resource Spec. | 02/08/2011 |
| Threatened or Endangered Species | X | | | | /s/ D Baggao Biologist | 2/18/2011 |
| Special Status Species | X | | | | | |
| Wildlife | | | X | X | | |
| Wetlands/Riparian Zones | X | | | | | |
| Wild and Scenic Rivers | X | | | | /s/Bill Murry Outdoor Rec. Plnrr. | 2/7/2011 |
| Wilderness | X | | | | | |
| Recreation | | X | | | | |
| Visual Resources | | | X | X | Michael J. Bilbo Cave Specialist | 5/31/2011 |
| Cave/Karst | | | X | X | | |
| Environmental Justice | | X | | | /s/ Jared Reese Nat. Resource Spec. | 02/08/2011 |
| Public Health and Safety | | X | | | | |
| Solid Mineral Resources | | X | | | Jerry Dutchover Geo/SPS | 02/18/11 |
| Fluid Mineral Resources | | X | | | /s/ John S. Simitz Geologist | Feb. 15, 2011 |