

DECISION RECORD

DOI-BLM-NM-P010-2015-0035-EA

Proposed Decision: It is my decision to implement the BLM-Preferred Alternative as described in DOI-BLM-NM-P010-2015-035 and to issue permit for the allotments analyzed in this document. The mitigation measures identified in the 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
63087	Largo South Canyon	320		100	5	Cattle	60
63287	Gallinas	80		100	1	Cattle	12
Totals		400			6	Cattle	72

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 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/ Kyle S. Arnold
Kyle Arnold
Assistant Field Manager, Resources

12/16/2015
Date

DOI-BLM-NM-P010-2015-0035-EA

FINDING OF NO SIGNIFICANT IMPACT:

I have determined that the BLM Preferred Alternative (Alternative A), as described in the Environmental Assessment (EA) will not have any significant impact, individually or cumulatively, on the quality of the human environment. Because there would not be any significant impact, an environmental impact statement is not required. The NEPA handbook (p. 83) indicates that the FINDING OF NO SIGNIFICANT IMPACT (FONSI) must succinctly state the reasons for deciding that the action will have no significant environmental effects. It also recommends that the FONSI address the relevant context and intensity factors.

In making this determination, I considered the following factors:

1. The activities described in the BLM Preferred Alternative (Alternative A) do not include any significant beneficial or adverse impacts (40 CFR 1508.27(b)(1)). The EA includes a description of the expected environmental consequences of issuing a 10 year term grazing permit on Allotments 63087 and 63287.
2. The activities included in the proposed action would not significantly affect public health or safety (40 CFR 1508.27(b)(2)).
3. The proposed activities would not significantly affect any unique characteristics (40 CFR 1508.27(b)(3)) of the geographic area such as prime and unique farmlands, caves, wild and scenic rivers, designated wilderness areas or wilderness study areas.
4. The activities described in the proposed action do not involve effects on the human environment that are likely to be highly controversial (40 CFR 1508.27(b)(4)).
5. The activities described in the proposed action do not involve effects that are highly uncertain or involve unique or unknown risks (40 CFR 1508.27(b)(5)).
6. My decision to implement these activities does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration (40 CFR 1508.27(b)(6)).
7. The effects of issuing a ten year permit would not be significant, individually or cumulatively, when considered with the effects of other actions (40 CFR 1508.27(b)(7)). The EA discloses that there are no other connected or cumulative actions that would cause significant cumulative impacts.
8. I have determined that the activities described in the proposed action will not adversely affect or cause loss or destruction of scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8)). Cultural resource surveys in the allotment have been generally limited to inspections ahead of oil and gas related activities, such as well locations and pipelines. Many areas of the allotment have been generally inventoried for cultural resources. The existing cultural data for the allotment and adjacent areas seems to be a good example of what can be reasonably expected to occur in the remainder of the allotment. No site-specific situations are known to exist where current grazing practices conflict with cultural resource preservation and management. Some mitigation is included in the proposed action to protect cultural resources from

grazing practices, such as: “In the event that grazing practices are determined to have an adverse effect on cultural resources within the allotment, the BLM, in consultation with the permittee, will take action(s) to mitigate or otherwise negate the effects. This may include but is not limited to installing physical barriers to protect the affected cultural resources, relocating the livestock grazing practice(s) that is (are) causing the adverse effect(s), or any other treatment as appropriate. Pages 17-18 of the EA describe the affected environment and impacts of the proposed action and alternatives on cultural resources.

9. The proposed activities are not likely to adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (40 CFR 1508.27(b)(9)). Within the allotment there are no known populations of threatened and endangered species, or designated critical habitat within the allotment.

10. The proposed activities will not threaten any violation of Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10)). Page 8 of the EA describes the conformance with land use plans and relationships to statutes, regulations, or other plans.

APPROVED:

/s/ Kyle S. Arnold
Kyle S. Arnold
Assistant Field Manager, Resources

12/16/2015
Date

United States Department of the Interior Bureau of Land Management

BLM

Environmental Assessment DOI-BLM-NM-P010-2015-035-EA

Issuance of Term Grazing Leases on Gallinas, Allotment Number 63287 And Largo South Canyon Allotment Number 63087

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Roswell Field Office

Confidentiality Policy

Any comments, including names and street addresses of respondents, you submit may be made available for public review. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.



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1.0 Purpose and Need for Action

1.1 Introduction

This environmental assessment is limited to the effects of issuing a new grazing lease on allotment 63087 Largo South Canyon and allotment 63287 Gallinas. 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 grazing leases on the 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 permit or lease as terms and condition.

To qualify for a grazing lease the 43 Code of Federal Regulation (CFR) Section 4100 §4110.2-1(a) the authorized officer shall find land or water owned or control by an applicant to be base property if: (1) It is capable of serving as a base of operation for livestock use of public lands within a grazing district; or (2) It is contiguous land that is capable of being used in conjunction with a livestock operation which would utilize public lands outside of a grazing district.

The current allotment 63087 lies outside of the Roswell Grazing District and is considered to be a "Section 15 allotment". The owner of the private lands has sold a portion of the private lands lying adjacent to one of the two small tracts of public land within the current allotment. He has proposed to split the allotment into two, one with 80 acres of public land (Township 2 South, Range 12 East, Section 2, NW 1/4 SW 1/4; Section 10 NE ¼ SE ¼) which would become the Gallinas allotment (63287) and the remaining tract of public land lying in T. 2 S., R. 11 E., Sec. 28 S 1/2 to be placed in the other allotment, Largo South Canyon (63087). A majority of the Gallinas allotment sits just east of NM Hwy 54, approximately 9 miles south of Corona, NM. The public land in the Largo South Canyon allotment is approximately 5 miles west of NM Hwy 54, and 15 miles south of Corona, NM. Elevations are about 6,700 feet on both allotments. See Location Map.

Preparing Office:

Pecos District, Roswell Field Office
2909 W. Second Street
Roswell, NM 88201

1.2 Purpose and Need for Action

The purpose of issuing a new grazing lease would be to authorize livestock grazing on public range on Allotment 63087 Largo South Canyon and Allotment 63287 Gallinas. 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 each allotment. The leases 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.

1.3 Decision to be Made

The Decisions to be made upon the completion of this Environmental Assessment are: to issue Grazing leases and authorize grazing on Allotment 63087, Largo South Canyon and 63287 Gallinas; to authorize the level of grazing on these allotments and to authorize the classes of livestock grazing on the allotments.

1.4 Conformance with Applicable Land Use Plan(s)

The proposed action conforms to the 1997 Roswell Approved Resource Management Plan (RMP) and Record of Decision; 2008 Special Status Species Resource Management Plan Amendment (2008 RMPA), 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.

1.5 Relationship to Statutes, Regulations or Other Plans

The proposal to issue the livestock grazing leases on these allotments is in conformance with the 1994 Environmental Impact Statement for Rangeland Reform/ the Federal Land Policy and Management Act of 1979 (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 Improvements Act of 1978 (PRIA)(43 U.S.C. 1901 et seq.); and the Federal Cave Resources Protection Act of 1988.

1.6 Scoping, Public Involvement, and Issues

The applicant is proposing to sell the base property for the Gallinas allotment, and has made his proposal to split the original allotment (63087, Erramouspe).

2.0 Proposed Action and Alternative(s)

The BLM is proposing to issue a grazing lease on each of the allotments. If the proposed action is selected, the Decision would be implemented to offer a new term grazing lease on each of the allotments at the end of the Protest & Appeal Period.

Allotment Number	Allot Name	Acres of Public Land	Acres of Private & State Land	% Public Land	Animal Units Authorized	Class of Livestock	Animal Unit Months
63087	Largo South Canyon	320		100	5	Cattle	60
63287	Gallinas	80		100	1	Cattle	12
Totals		400			6	Cattle	72

See Attached Maps.

2.1 Alternatives Considered but Not Analyzed in Detail

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, the allotments met the Standard for Public Land Health and monitoring studies do not indicate changes are necessary. Therefore, BLM will not analyze this alternative.

2.2 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 these allotments under this alternative. Under this alternative and based on the land status pattern within the allotments, approximately 4.5 miles of new fences would be required to exclude grazing on the federal land

3.0 Affected Environment, Environmental Consequences, and Cumulative Impacts

During the analysis process, the interdisciplinary team considered several resources and supplemental authorities. The interdisciplinary team determined that the resources discussed below would be affected by the proposed action.

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, Solid Mineral Resources, Floodplains, Fluid Mineral Resources, Visual Resources, Prime or Unique Farmland, Minority/Low Income Populations, Public Health and Safety, Hazardous or Solid Wastes, Realty, Wild and Scenic Rivers, Wetlands and Riparian Zones, Threatened or Endangered Species, 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 several known cultural resources within these allotments. Affected resources and the impacts resulting from livestock grazing are described below.

3.1 Soil / Water/Air

➤ 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 permitted allotment 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.

Impacts from the No Action (Proposed Action) Alternative

Direct and Indirect 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 Action 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.

Impacts from the No Grazing Action

Direct and Indirect Impacts

There will be no direct or indirect impacts to climate if a no grazing action is selected.

Cumulative Impacts of All Alternatives

The incremental impact of issuing a grazing permit on climate 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 on climate resources 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.

Mitigation Measures and Residual Impacts

A rangeland health assessment has been completed and the allotments met the Standards for Public Land Health. Rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion which would decrease dust levels resulting from allotment management activities.

➤ Soils

Affected Environment

The Soil Conservation Service, now the Natural Resource Conservation Service (NRCS), has surveyed the soils in Lincoln County. Complete soil information is available in the Soil Survey of Lincoln County, New Mexico, and online at <http://websoilsurvey.nrcs.usda.gov/app/>. The soil map units represented in the project area are:

Plack-Dioxice association, gently sloping (63) (Gravelly CP-3) Slopes of this association range from 0 to 15 percent and are found on valleys and on valley sides. The association is made up of 60 percent Plack loam, (3 to 15 percent slopes), found on landform remnants in valleys and 20 percent Dioxice loam with 0 to 5 percent slopes, usually found on valley sides. The Plack soils are very shallow to shallow, and well drained. Permeability is moderate with an effective rooting depth of 4 to 20 inches. Available water capacity is very low; runoff is rapid and the hazard of water erosion is high. The hazard of soil blowing is also high. The Dioxice soil is very deep and well drained, permeability is moderately slow. Effective rooting depth is 60 inches or mores. Available water capacity is high; runoff is medium and the hazard of water erosion is moderate. The hazard of soil blowing in the Dioxice soil area is high.

Tortugas-Asparas-Rock outcrop association , moderatly sloping (89) (Shallow Limestone CP-3) This map unit is found on uplands, valleys and on knobs and breaks. Slopes are from 0 to 15 percent. This soil association is 40 percent Tortugas very cobbly loam with 0 to 15 percent slopes, usually on the uplands; 25 percent Asparas loam with 0 to 3 percent slopes found on the floors and sides of valleys; and 15 percent rock outcrops on knolls and breaks. The Tortugas soil is very shallow to shallow and well drained. The Asparas soil is very deep and well drained. Both soils have a moderate to moderately slow permeability; effective rooting depth is from 6 to 60 inches. Available water capacity varies from very low to very high. Runoff is rapid to medium. The hazard of water erosion is high on the Tortugas soils to moderate on the Asparas soil. The hazard of soil blowing varies from slight to high. Rock outcrops consist of areas of exposed limestone with rapid surface runoff.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Under the No Action – Alternative A, the Proposed Alternative, 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 Alternative A, 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.

Impacts from the No Grazing Action

Direct and Indirect Impacts

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.

Cumulative Impacts of All Alternatives

The incremental impact of issuing a grazing permit on soil 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; water well development, 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. 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 to soil resources, 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.

Cumulative long term monitoring data reflect the soils are being adequately protected.

Mitigation Measures and Residual Impacts

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Continued rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion.

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 allotment is 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.

Air quality in the region is generally good, with winds averaging 10 to 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.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect 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 Alternative A 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 (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. 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 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 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.

Impacts from the No Grazing Action

Direct and Indirect Impacts

There will be no direct or indirect impacts to air quality if a no grazing action is selected.

Cumulative Impacts of all Alternatives

The incremental impact of issuing a grazing permit on air 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 on air resources 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.

Mitigation Measures and Residual Impacts

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion which would decrease dust levels resulting from allotment management activities.

➤ 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 power lines.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect 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 range improvement projects. 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 Alternative A, the Preferred Alternative, 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.

Impacts from the No Grazing Action

Direct and Indirect Impacts

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.

Cumulative Impacts of all Alternatives

The incremental impact of issuing a grazing permit on watershed hydrology 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 on watershed hydrology resources 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.

Mitigation Measures and Residual Impacts

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Continued rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion.

➤ Water Quality-Surface

Affected Environment

No perennial surface water is found on the Public Land on this allotment. Ephemeral streams occur on Public Land on these allotments.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Direct and indirect impacts to surface water quality would be minor, short-term impacts during stormflow events.

Impacts from the No Grazing Action

Direct and Indirect Impacts

There will be no direct or indirect impacts to surface water quality if a no grazing action is selected.

Cumulative Impacts of all Alternatives

The incremental impact of issuing a grazing permit on surface water 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 on surface water resources 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.

Mitigation Measures and Residual Impacts

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion which would decrease dust levels resulting from allotment management activities.

➤ **Water Quality-Ground**

Affected Environment

Fresh water sources are located in the Quaternary Shallow Alluvial. The approximate depth to water in area ranges from 700 to 1000 feet in the San Andres Aquifer (New Mexico Office of the State Engineer Data).

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

The proposed action of offering a grazing lease under Alternative A 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 Alternative A, the Preferred Alternative, 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.

Impacts from the No Grazing Action

Direct and Indirect Impacts

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.

Cumulative Impacts of All Impacts

The incremental impact of issuing a grazing permit on groundwater 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 on groundwater resources 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.

Mitigation Measures and Residual Impacts

A rangeland health assessment has been completed and the allotment meets the Standards for Public Land Health. Rangeland monitoring would help ensure that adequate vegetation cover is maintained to protect the soil from erosion which would decrease dust levels resulting from allotment management activities.

3.2 Archaeology

➤ Cultural and Historical Resource

Affected Environment

The project falls within the Southeastern New Mexico Archaeological Region. This region contains the following cultural/temporal periods: Paleoindian (ca. 12,000-8,000 B.C.), Archaic (ca. 8000 B.C. –A.D. 950), Ceramic (ca. A.D. 600-1540) Protohistoric and Spanish Colonial (ca. A.D. 1400-1821), and Mexican and American Historical (ca. A.D. 1822 to early 20th century). Sites representing any or all of these periods are known to occur within the region. A more complete discussion can be found in *Living on the Land: 11,000 Years of Human Adaptation in Southeastern New Mexico An Overview of Cultural Resources in the Roswell District*, Bureau of Land Management published in 1989 by the U.S. Department of the Interior, Bureau of Land Management.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Concerning cultural resources, grazing has the potential for impacts. The Roswell Field Office reviews the local office and NMCRIS databases for every grazing permit or leasing action at all levels of NEPA. In situations where sensitive sites lie within an allotment, site specific visits may be conducted to assess the presence of effects. Three surveys and eight sites have been reported in both these allotments.

Cumulative Impacts

There is no evidence that grazing activities at this intensity has adversely impacted any cultural resources; however, unforeseen impacts may occur.

Mitigation Measures and Residual Impacts

Any future range improvement involving earth disturbing activities will require a cultural inventory prior to approval.

Impacts from the No Grazing Action

Direct and Indirect Impacts

There will be no direct or indirect impacts to cultural resources if a no action alternative is selected.

Cumulative Impacts

There will be no cumulative impacts to cultural resources if a no action alternative is selected.

Mitigation Measures and Residual Impacts

There will be no mitigation measures and residual impacts to cultural resources if a no grazing action is selected.

➤ Native American Religious Concerns

Affected Environment

Native American groups may have places that can be described as Traditional Cultural Properties or other places that are important to their religions or cultures. The BLM uses the New Mexico Department of Cultural Affairs list of tribes/nations/pueblos concerned for individual counties to determine which of these groups may have concerns for projects. To date, the areas to be affected by the current project have not been identified by interested tribes as being of tribal concern.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

The BLM conducts tribal consultation for many projects while preparing planning documents such as the Resource Management Plan and Resource Management Plan Addendums. A review of existing information indicates the proposed action is outside any known Traditional Cultural Property.

Cumulative Impacts

Unknown

Mitigation Measures and Residual Impacts

Any future range improvement involving earth disturbing activities will require a review of existing information concerning Traditional Cultural Places or other places of religious or cultural importance.

Impacts from the No Grazing Action

Direct and Indirect Impacts

There will be no direct or indirect impacts to Native American Religious Concerns if a no action alternative is selected.

Cumulative Impacts

There will be no cumulative impacts to Native American Religious Concerns if a no action alternative is selected.

Mitigation Measures and Residual Impacts

There will be no mitigation measures and residual impacts for Native American Religious Concerns if a no grazing action is selected.

3.3 Range

➤ Vegetation

Affected Environment

The allotments are comprised of one major vegetation community type (Grassland) arranged in a mosaic over the allotments. Mixed grasslands with interspersed shrubs and half shrubs and grassland savannah communities dominate. Perennial and annual forb production fluctuates widely from year to year. 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). The major community type is Grasslands, with inclusions of the Mixed Desert Shrub Community and the Draws, Drainages and Canyons Community.

In the Grassland Community Type the primary consideration in listing range sites under this community type is the flat to moderately rolling topography with 75 percent and higher composition of grasses in the description of potential plant community.

Grassland is the climax vegetative aspect for large portions of the resource area. The grassland community type is the most widespread. It can be further subdivided into grass rolling upland, grass hill, grass flat, and mesquite grassland subtypes, depending on topographic relief or seral stage. In many areas the subtypes may overlap. For the purpose of the RMP, the subtypes are grouped into the grassland community type. Vegetation is primarily dominated by warm season short- and midgrasses. Large areas of grassland climax communities have dropped in successional stage due to misuse and have become a dis-climax mixed shrub community.

The grass rolling uplands is the predominant shortgrass habitat subtype in the resource area. It is found on broad, nearly level or gently undulating plains to rolling hills at elevations between 3800 feet to 5000

feet. Slopes are 0 to 9 percent. Vegetation is dominated by blue grama, black grama, galleta, tobosa, sideoats grama, dropseeds, muhlys, threeawns, burrograss and fluffgrass.

Woody shrub species are scarce but include mesquite, fourwing saltbush, wolfberry, sumac, and cactus species such as yucca and cholla. Invasions of broom snakeweed, a halfshrub, are common in some areas. Forbs are a minor component of the subtype except following periods of rainfall. Ground cover may be too sparse in much of this subtype to provide the cover requirements of certain small mammals or ground-nesting birds.

Grass hills are found primarily on hills, low mountains, or lower foot slopes of higher mountains. Slopes are rolling to steep and average about 25 percent. Elevations range from 4500 feet to 6000 feet. Short- and mid-grasses dominate this subtype, including hairy grama, fluffgrass, three-awn, and red lovegrass. Shrubs, halfshrubs and cacti include little leaf sumac, beargrass, ocotillo, hedgehog cactus, cholla and broom snakeweed. The structured diversity of the vegetation in this subtype provides more diverse bird nesting habitat than adjacent grasslands. This is the preferred habitat for mule deer, which also use the brushy draws for browse and cover.

The grass flats subtype occurs on nearly level to gently sloping upland plains as broad swales between uplands, or as isolated pockets in shallow depressions, playas, along drainages or in sinks. These areas receive significant runoff from adjacent sites, which produces more dense and taller vegetation. Vegetation is dominated by mid- and tall-grasses with occasional shrubs or half shrubs. The primary grasses are tobosa and galleta, which may occur on large expanses between upland sites, and alkali and giant sacaton, which usually are found along drainages or in depressions. Shrubs sparsely associated with the sacaton type are mesquite and fourwing saltbush. A few scattered yuccas or cholla may be interspersed in the tobosa swales. Forb diversity and abundance is low due to the density of the grass cover.

The mesquite grassland type could best be described as a dis-climax stage in a desert shortgrass climax. The mesquite invasion results from disturbance of natural successional processes. The type is generally located between the grassy plains and the Pecos River, including the breaks adjacent to the floodplain. Terrain is level to gently undulating with slopes generally less than 5 percent, or hummocky with numerous sand dunes scattered throughout the area. The elevation varies from 3,000 feet to 6,000 feet. Mesquite is found on most soil types, but the main invasion occurs on sandy soils. The predominant shrub is honey mesquite, which has invaded what at one time was a shortgrass dominated type. Few other shrub species are associated with mesquite, although some creosote, yucca and Opuntia occur.

Vegetation is dominated by black grama, blue grama, dropseeds, muhlys, tobosa and galleta, fluffgrass, and alkali sacaton on undulating terrain, with higher percentages of dropseeds, three-awn and muhlys on sandy sites. Halfshrubs include sand sage and broom snakeweed. Forbs may be abundant following periods of rainfall.

The Rangeland Health assessment notes some invasive plants, most notably juniper, with scattered pockets of cholla. The Rangeland Health assessment for these allotments can be viewed at the Roswell Field Office. Rangeland monitoring studies have been established in key areas within the allotments. These permanent sites are 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 Natural 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 current times agencies are 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. Rangeland Health Assessment data was collected in fiscal year 2010. Analysis of the rangeland health assessments indicates that all three indicators (biotic, hydrology, and soils) have been met for the allotment.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Under Alternative A 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.

Upland sites would reflect a static ecological condition trend at the existing permit level. Some grassland areas would remain static due to the influence of juniper, mesquite and cholla. In the long term, juniper or mesquite treatments may be necessary to ebb the encroachment onto historical grassland sites.

Range monitoring data indicate that the vegetation is sustainable to meet multiple resource requirements and forage at the permitted use level under the Alternative A Proposed Action. Data indicate that livestock grazing is compatible with vegetation cover and composition objectives. In addition to the static trend in ecological condition, monitoring data show the vegetative resources have been maintained and sustained since monitoring began in 1981.

Impacts from the No Grazing Action

Direct and Indirect Impacts

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from the 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 juniper or mesquite somewhat dominating the shrub component. Spike dropseed 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.

Cumulative Impacts

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. Cattle grazing combined with drought conditions will continue to decrease native vegetation root structure increasing soil erosion and loss of wildlife habitat. 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.

Mitigation Measures and Residual Impacts

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

➤ Livestock Grazing

Affected Environment

In the past, these allotments have been permitted to be grazed yearlong by cattle. Generally there are only enough horses authorized to work stock. The leases authorized 6 Animal Units (AUs). This is the equivalent of 9.6 head per section.

The allotments contain about 400 acres of public land (see Location Map) and 21,245 acres of private and state land. Public landownership is intermingled with private and 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.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Under Alternative A, Proposed (No Action) Alternative, livestock would continue to graze public lands within the allotments. Existing pasture configurations and water developments would remain the same. Livestock management would still follow the single-herd rotation system or in dry conditions would be scattered across each of the allotments.

Impacts from the No Grazing Action

Direct and Indirect 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 4.5 miles of new fence at an approximate cost of \$20,250.00 (\$4,500/mile). This expense would be borne by the private landowners. 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. The overall livestock operation could

be reduced by 6 AUs (those attached to the public lands) to approximately 315 AUs. This would have an adverse economic impact on the lessees and Lincoln County would lose the tax revenue for the stock associated with the public lands.

Cumulative Impacts

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

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 activity began in the early part of the 20th century. These activities are still occurring today, and are expected to continue into the foreseeable future. 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.

Mitigation Measures and Residual Impacts

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

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

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

➤ Invasive, Non-Native Species

Affected Environment

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. There are no known populations of noxious weeds on these allotments.

3.4 Wildlife Biology

Wildlife habitat in the area of analysis is diverse and influenced by geomorphological characteristics of the area and ecotonal effects between the Chihuahuan Desert biome typically found within the Tularosa Basin and topography (elevation and landform). A description of wildlife and habitat is presented for only the public lands on the allotments which are isolated parcels totaling about 400 acres. There are no known populations of threatened or endangered species or special status species on the public lands. No Wetland-Riparian habitats are on the parcels being evaluated.

➤ Wildlife

Affected Environment

The primary habitat type is a pinyon-juniper grassland located in low rolling hills on both allotments. The 320-acre parcel (Largo South Canyon allotment) west of Highway 54 is relatively undisturbed by any other developments and remains a rangeland in character. The two 40-acre parcels (Gallinas allotment) are also pinyon-juniper grassland and impacted by Highway 54.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Because the public lands are not segregated from private and state lands wildlife would continue to compete with domestic livestock for forage and browse. Cover and other habitat requirements for wildlife would remain the same as the existing situation. Proper utilization levels may be exceeded on public lands since there would be no control of livestock with fencing. Potential grazing may impact cover and forage for wildlife species, since the amount of public land is small, impacts would remain negligible.

Impacts from the No Grazing Action

Direct and Indirect Impacts

If the public lands are segregated from private and state lands (fenced off), it is expected that ground cover would increase along with the potential for an increase of woody vegetation from the lack of grazing. There would be no competition between livestock for habitat factors such as food, cover and water. Wildlife would essentially remain the same as the amount of public lands taken out of grazing is relatively negligible when compared to the amount of private and state lands that would continue to have livestock grazing use.

Cumulative Impacts

Because of the small amount of public land acreage on the allotments, cumulative impacts are insignificant.

Mitigation Measures and Residual Impacts

Because of the isolated nature and size of the public land parcels on the allotments, it is recommended that any rangeland projects in support of livestock grazing management are located on private or state lands.

3.5 Recreation

Affected Environment

The area around the proposed action site is primarily used by recreational visitors engaged in hunting, off-highway vehicle use and other recreational activities.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Activities would have little or no effect on recreational opportunities within this area. Large blocks of public land would allow recreationists to use public land and avoid facilities within the area.

Impacts from the No Grazing Action

Direct and Indirect Impacts

Same as above

Cumulative Impacts

None anticipated

Mitigation Measures and Residual Impacts

None anticipated

3.6 Visual Resources

Affected Environment

The landscape at the locations is flat with rolling hills. The affected environment presents a winter gray color pattern and in warm months, with foliage, a gray to gray-green color pattern. Wide-area landscape tends to be horizontal in line and flat in form, with a smooth texture. The Visual Resource Management (VRM) attributes of form, line, color, texture are:

Form – flat to rolling

Line – generally horizontal

Color – brownish-grey in winter and grey-green in summer

Texture – smooth to the escarpment, then medium, then smooth again to the west.

The proposed action is located in an area designated VRM Class IV.

Class IV for visual resources management - VRM objective 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.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

The basic landscape elements of form, line color and texture would not change under any management alternative. Potential impacts to visual resources would be analyzed and mitigated as allotment management activities are proposed in the future. To blend favorably with the setting tanks would be painted a grey-green color. Facilities that rise above eight feet, would provide a geometrically strong vertical and horizontal visual contrast in form and line to the characteristic landscape and vegetation, which have flat, horizontal to slightly rolling form and line. The construction of an access road or other ancillary facilities would slightly modify the existing area visual resources.

Impacts from the No Grazing Action

Direct and Indirect Impacts

Same as above

Cumulative Impacts

Cumulative adverse visual impacts can thus be avoided by moving to the more appropriate vegetative/landform setting color scheme, such as Oil Green.

Mitigation Measures and Residual Impacts

Through color manipulation, by painting well facilities to blend with the rolling to flat vegetative and/or landform setting with a gray-green to brownish color, the view is expected to favorably blend with the form, line, color and texture of the existing landscape. The flat color **Oil Green** from the Standard Environmental Supplemental Colors (March 2007) also closely approximates the grey to grey-green setting. All facilities, including the meter building, would be painted this color. The paint formula is 17-0115 TPX (Pantone for Architecture and Interior Colors Guide 2003).

3.7 Cave and Karst

Affected Environment

Both grazing allotments (63287 and 63087) are located in gypsum karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Gypsum karst terrain may contain sinkholes, sinking streams, caves, and springs. Sinkholes leading to underground drainages and voids are common. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region.

The BLM categorizes all areas within the Roswell Field Office as having either low, medium, high or critical cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to fresh water aquifers. This project occurs within a Medium karst zone and is located within 20 miles of 5 known caves or karst features. A Medium karst zone is defined as an area in known soluble rock types but may have a shallow insoluble overburden. These areas may contain isolates karst features such as caves and sinkholes. Groundwater recharge may not be wholly dependent on karst features but the karst features still provide the most rapid aquifer recharge in response to surface runoff.

Field notes from the on-site inspection indicate that there are no known cave or karst features. Unknown features may also exist. Due to these factors, this action is subject to mitigation measures designed to adequately protect known and potential cave/karst resources.

Sinkholes and cave entrances collect water and can accumulate rich organic materials and soils. This, in conjunction with the stable microclimate near cave entrances, support a greater diversity and density of plant life which provides habitat for a greater diversity and density of wildlife such as raptors, rodents, mammals, and reptiles.

The interior of the caves support a large variety of troglobitic, or cave environment-dependent species. The troglobitic species have adapted specifically to the cave environment due to constant temperatures, constant high humidity, and total darkness.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

Cave and karst features provide direct conduits leading to groundwater. These conduits can quickly transport surface and subsurface contaminants directly into underground water systems and freshwater aquifers without filtration or biodegradation. In addition, contaminants spilled or leaked into or onto cave/karst zone surfaces and subsurfaces may lead directly to the disruption, displacement, or extermination of cave species and critical biological processes.

In cave and karst terrains, rainfall and surface runoff is directly channeled into natural underground water systems and aquifers. Changes in runoff quantity/quality, drainage course, rainfall percolation factors, vegetation, surface contour, and other surface factors can negatively impact cave ecosystems and aquifer recharge processes. Focusing of surface drainages can lead to slow subsidence, sudden collapse of subsurface voids, and/or cave ecosystem damage.

BLM maintains up to date locations and surveys of known cave and karst features. Projects will be located away from these features whenever possible.

Impacts from the No Grazing Action

Direct and Indirect Impacts

Under the No-Grazing Alternative, no impacts to cave and karst resources would occur on public lands from authorized livestock grazing.

Cumulative Impacts

The incremental impact of issuing a grazing lease on cave and karst 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 the area, oil and gas activities on the uplands, rights-of-way crossing the area and recreational use, particularly off-highway vehicles. All authorized activities which occur on BLM land can also take place on state or private lands.

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 cave and karst resources from livestock grazing are insignificant.

Mitigation Measures and Residual Impacts

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

3.8 Geology

➤ Paleontology

Affected Environment

The BLM manages paleontological resources for their scientific, educational, and recreational values in compliance with the Paleontological Resources Preservation Act (PRPA) of 2009. The PRPA affirms the authority for many of the policies the Federal land managing agencies already have in place for the management of paleontological resources such as issuing permits for collecting paleontological resources, curation of paleontological resources, and confidentiality of locality data. The statute provides authority for the protection of paleontological resources on Federal lands including criminal and civil penalties for fossil theft and vandalism.

The BLM classifies geologic formations to indicate the likelihood of significant fossil occurrence (usually vertebrate fossils of scientific interest) according to the Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands (IM 2008-011). These classifications, Classes 1 to 5, determine the procedures to be followed prior to granting a paleontological clearance to proceed with a project. Most of the project area is designated as a Class 3 area (San Andres limestone and dolomite. Invertebrates fossils are possible over much of the area). Ground disturbing activities are not likely to disturb paleontological resources in these areas.

All paleontological resource stipulations will be followed as indicated in the attached COAs. These stipulations may include, but are not limited to, altering the location or scope of the project, permanent fencing or other physical, temporary barriers, monitoring of earth disturbing construction, project area reduction or specific construction avoidance zones, and fossil recovery. If the assessment of a proposed action indicates a reasonable expectation of adverse impacts to significant paleontological resources, a field survey will be necessary to properly document and recover any fossil material and associated data. Upon review, a determination for final project clearance and stipulations shall be issued by the BLM RFO.

Impacts from the No Action (Proposed) Alternative

Direct and Indirect Impacts

The Potential Fossil Yield Classification (PFYC) data indicate the Proposed Action is within an area designated as Class 3. The Proposed Action would not affect any known scientifically significant paleontological resources, however, surface disturbing activities and increased human access could produce unexpected discoveries and potential paleontological resource damage. Direct impacts could include damage or destruction during construction, with subsequent loss of information. Indirect impacts would include fossil damage or destruction by erosion due to surface disturbance.

Impacts from the No Grazing Action

Direct and Indirect Impacts

Under the No Grazing Action, grazing would not be permitted and therefore there would be no impacts to paleontological resources.

Cumulative Impacts

While it is likely that there will be no significant cumulative impact from the proposed action, surface-disturbing activities in this area may potentially have negative cumulative impacts on paleontological resources.

Mitigation Measures and Residual Impacts

If previously undocumented paleontological sites are encountered during development of the project, the project proponent will immediately stop all construction and surface disturbing activities in the immediate vicinity of the discovery. The proponent will then immediately notify the paleontological monitor (if required), or the BLM/RFO paleontology resource staff. It is necessary to protect fossil material and their geological context upon discovery during construction. The BLM would then evaluate the site. Should the discovery be evaluated as significant, it will be protected in place until mitigation measures can be developed and implemented according to guidelines set by the BLM. Mitigation measures such as data and fossil recovery may be required by the BLM to prevent impacts to newly identified paleontological resources.

4.0 Supporting Information

4.1 List of Preparers

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Michael McGee, Hydrologist
Michael Bilbo, Outdoor Recreation Planner & Cave Specialist
Knut Peterson, Outdoor Recreation Planner & Cave Specialist
Randy Howard, Wildlife Biologist
Dan Baggao, Wildlife Biologist
Phil Watts, GIS Specialist
Tate Salas, Realty Specialist
Howard Parman, Program Manager, Pecos District

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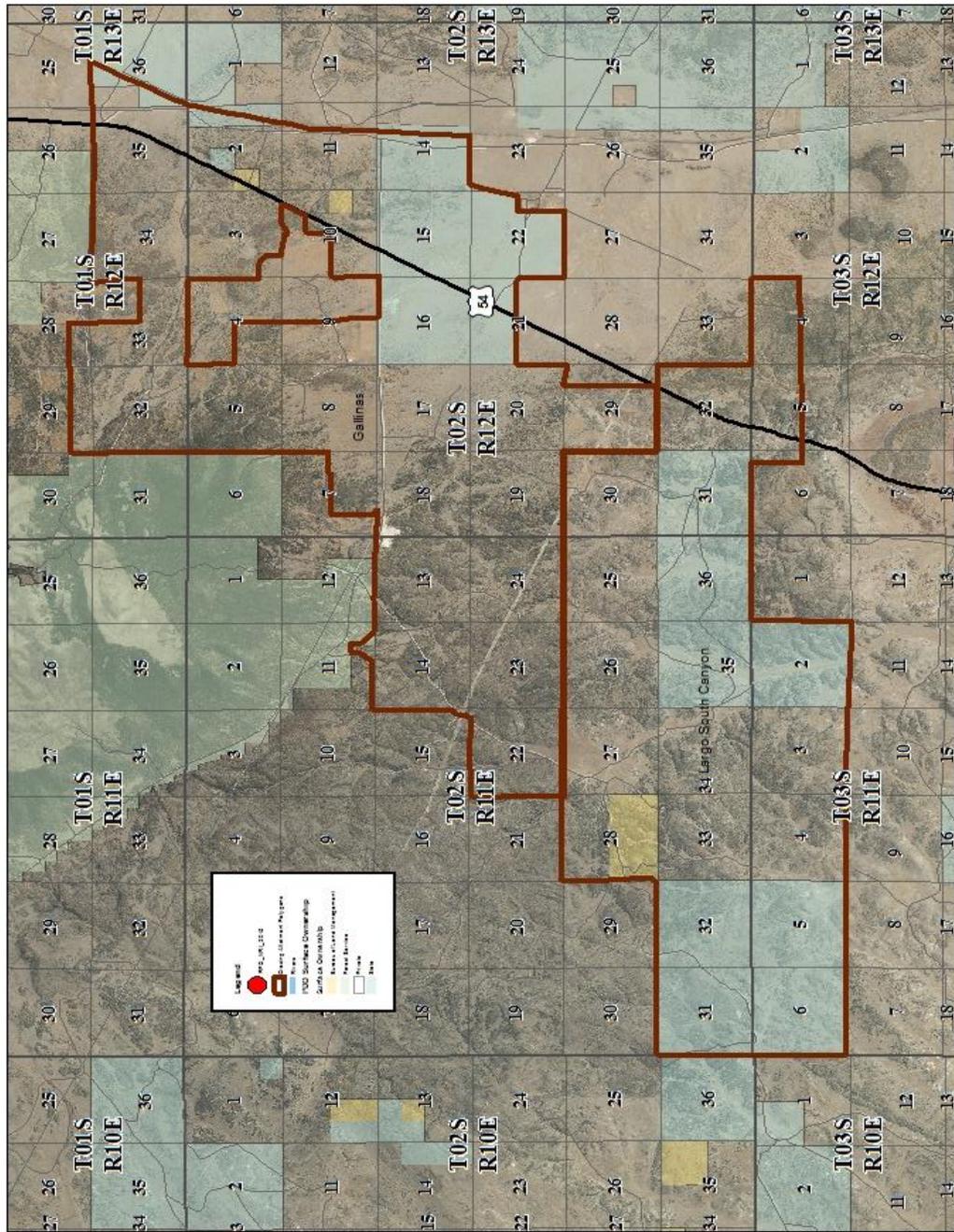
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Allotments 63087 - Largo South Canyon & 63287 - Gallinas



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