UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Farmington District
EA #NM-220-08-053 Title Page

CERRO MONTOSO VEGETATION TREATMENT PROJECT
Forest and Range Restoration

Applicant (if any):	Proposed Action: Treat several sections of sagebrush and high density woodland areas that are encroaching into grassland communities.			EA No. **NM-220-08-053**
State: **NEW MEXICO**	County: **TAOS**	District: **FARMINGTON**	Field Office: **TAOS**	Authority: **NEPA**
Prepared By: **HURTADO**	Title: **BIOLOGICAL TECHNICIAN**			Report Date: **JUNE 2008**

LANDS INVOLVED

Meridian	Township	Range	Sections	Acres
TAOS	**28,29,30N**	**10,11E**	**Multiple**	**29,000**

Consideration of Critical Elements	N/A or Not Present	Applicable or Present, No Impact	Discussed in EA
Air Quality			**x**
Areas of Critical Environmental Concern	**x**		
Cultural Resources			**x**
Environmental Justice (E.O. 12898)	**x**		
Farm Lands (prime or unique)	**x**		
Floodplains	**x**		
Migratory Birds			**x**
Native American Concerns	**x**		
Invasive, Nonnative Species			**x**
Wastes, Hazardous or Solid	**x**		
Threatened or Endangered Species	**x**		
Social and Economic	**x**		
Water Quality (Ground)			**x**
Wetlands/Riparian Zones	**x**		
Wild and Scenic Rivers (Eligible)		**x**	
Wilderness Study Areas	**x**		

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Introduction

In June 2008, an administrative assessment was initiated for implementing the Cerro Montoso Vegetation Treatment project for the North Unit/ Pot Mountain Fire Management Unit (FMU). The decision to move forward with the design and evaluation of this project was developed collaboratively by the Taos Field Office (TAFO) manager and resource staff.

The project identifies goals and objectives designed to maintain, improve, and increase native grass habitat, herbaceous understory, and overall forest health in the North Unit/ Pot Mountain FMU. It also describes threats to vegetation communities in the state of New Mexico, and conservation measures designed to reduce, eliminate, or mitigate those threats. The preservation of native grass species in this area is an important component to maintain wildlife habitats and grazing allotments in the FMU. Within the Cerro Montoso Vegetation Treatment project area, expansion of big sagebrush (*Artimesia tridentata*), pinyon pine (*Pinus edulis*) and juniper (*Juniperus spp.*), has decreased native vegetation communities and has impacted wildlife habitat areas.

The project is designed to increase biodiversity in the area by treating existing monoculture stands of big sagebrush and pinyon-juniper. It is intended that the result will benefit both wildlife and livestock by not only increasing forage production, but also providing greater edge or transitional habitat and structural diversity.

1.1 Need for and Purpose of the Proposed Action

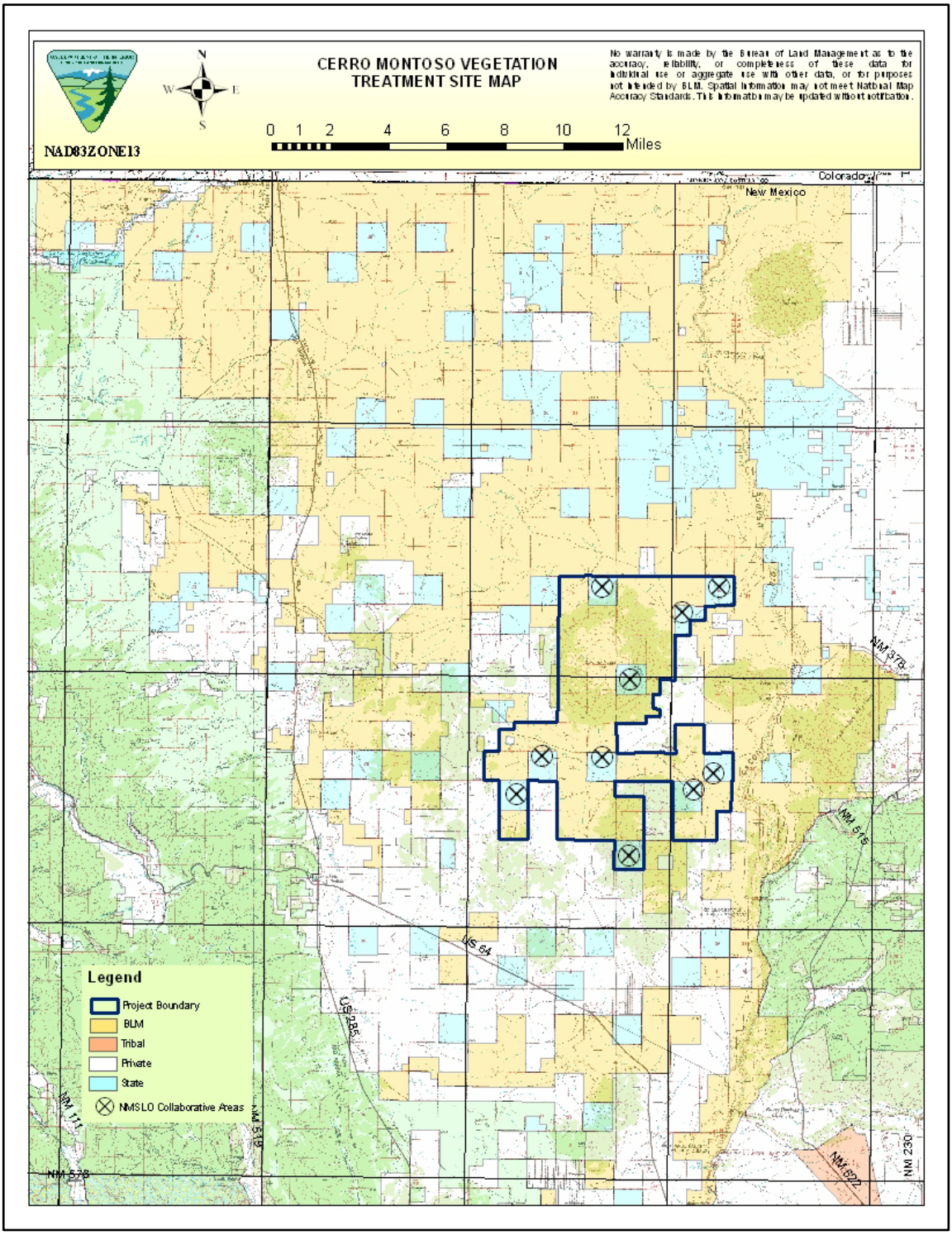
Adaptive resource management would be the vegetation management strategy used to meet desired conditions. The Proposed Action is intended to meet the following goals: hazardous fuels reduction, forest/grassland restoration, wildlife habitat enhancement, and watershed restoration. Management goals would be accomplished through prescribed fire, wildland fire use, herbicide weed treatments, thinning, and mechanical vegetation treatments.

The proposed action is needed because:

• The woodland stands now have a high density of pinyon-juniper, with little grass and forb production, low regeneration of healthy stem species, and continuous distribution of ladder fuels which could lead to a stand-replacing burn in the event of wildfire.

• Big sagebrush continues to expand well beyond its range into native grasslands, and pinyon-juniper woodland areas of the Taos Field Office. As sagebrush cover increases, native grasses and some perennial herbaceous understory species decline.

Figure 1. Cerro Montoso Vegetation Treatment Project Area



The purpose of the Proposed Action is to augment understory and native grasses to benefit/improve existing habitat for wildlife and livestock whose habitats are being encroached by big sagebrush, pinyon pine, and juniper .

The Taos Field Office disked and shaved an adjacent 500 acres of similar habitat in the South Chiflo management area in the spring of 2008, and successfully eliminated most of the aggressive big sagebrush with minimal disturbance, with positive response from native grasses and shrubs.

Big sagebrush expansion into native vegetation communities was also previously described in the *Windy Mountain Management Area Forest and Range Restoration Environmental Assessment*, EA# NM-020-02-020. The expansion of big sagebrush throughout the North Unit, and many other places within the Southwest, is well documented (Miller et al. 1994).

The combination of settlement, fire suppression, and livestock overgrazing in the early 1900s has resulted in the reduction of native vegetation communities from most of these areas within and around Cerro Montoso. As a result, big sagebrush continues to expand beyond its range, replacing the herbaceous communities which provide important habitat for a variety of wildlife species.

In the past, fire maintained native grasslands and pinyon-juniper forests in Northern New Mexico. Pinyon-juniper woodlands exhibited a greater diversity of forest stand structures, with a higher abundance of park-like stands with native grass dominated understory and sparse tree cover. Fire suppression and other management practices on these lands for the last century have contributed to an increased density of pinyon and juniper (Miller and Wigand, 1994).

Forest stands in the project area now have a high density of pinyon-juniper woodland species, with little grass and forb production, low regeneration of ponderosa pine, and continuous distribution of ladder fuels which could lead to a stand-replacing burn in the event of wildfire. What was once a pinyon-juniper savannah is now a continuous and dense woodland, with little grass production and greater susceptibility to stand-replacement fires. Current forest conditions on public lands create wildfire threats to nearby residential areas and do not support the wildlife populations they once did (Miller and Wigand, 1994).

This area is high priority for treatment because it is one of the largest areas of high density woodlands in the Taos Field Office and contains critical winter range for big game species, such as elk, mule deer, and pronghorn, as well as important migratory corridors for these species.

1.2 Summary of Proposed Action

The Proposed Action is to apply prescribed fire, wildland fire use, herbicide weed treatments, thinning and mechanical vegetation treatments to address monocultures of sagebrush or pinyon/juniper stands and increase vegetative diversity which would have beneficial affects to wildlife and watershed health, as well as livestock grazing in key areas on the North Unit/Pot Mountain FMU of the Bureau of Land Management Taos Field Office within Taos County.

Objectives for this project are taken directly from the vegetation objectives outlined in the *1988 Taos Resource Management Plan* and the *2005 Taos Field Office Fire Management Plan*. The most relevant objectives for this project are as follows:

Overall Treatment Objectives:

• Maintain, enhance, or restore native grass and herbaceous understory, and continuity of habitats, at multiple spatial scales.

• Manage New Mexico's landscape to foster a dynamic rangeland ecosystem that includes a diverse species composition of native grasses, open savannas, herbaceous understory and forbs; and incorporates structural characteristics that promote rangeland health in general, and native grass species recovery in particular.

Mid-scale treatment sub-objectives:

• Manage sagebrush and unhealthy woodlands so that the native vegetation is well distributed on the landscape, as ecological site conditions allow. Emphasis should be placed on maintaining and restoring contiguous core areas or blocks of native grass communities that have the necessary components and age diversity of species and herbaceous components to produce a sustainable ecosystem.

Prescribed burning would be implemented as a follow-up treatment to designated areas to mimic historic wildfires, improve wildlife habitat, and increase the propagation of native plants and forage to shift vegetation from dominance of big sagebrush to herbaceous vegetation.

Fine-scale sub-objectives

• Projects will contribute to the maintenance, restoration, or rehabilitation of native vegetation communities throughout the North Unit/Pot Mountain FMU.

1.3 Conformance with Applicable Land Use Plans

The proposed action is in conformance with the *1988 Taos Field Office Resource Management Plan* (RMP), and the *Taos Field Office Fire Management Plan* (FMP), which was developed and approved in 2005.

Relevant objectives include:

• Manage 29,000+ acres in the North Unit/Pot Mountain FMU to improve herbaceous growth, understory recovery, and winter range forage for wildlife and big game species such as elk, mule deer, and pronghorn.

• Manage all public lands to protect visual qualities, provide for enhancement consistent with management policies, and rehabilitate lands which presently do not meet the visual quality standards of surrounding lands.

• Designate a consistent corridor on each side of treatment area as a travel influence zone, where activities will preserve or enhance the scenic quality.

• Remove trees that must be cleared for other purposes which could include wildland hazardous fuels reduction in the wildland urban interface.

The Taos RMP also includes the following objective with respect to wildlife management: "The objective of the wildlife program is to maintain, improve, and expand wildlife habitat on the public lands for both consumptive and non-consumptive use" (P.2-26).

Project objectives are consistent with the intent in the Resource Management Plan's recommendations to manipulate vegetation cover on federal land to enhance native grass species by restoring healthy vegetative grassland and forest communities.

Project objectives are also consistent with findings that the exclusion of fire is resulting in unmanaged sagebrush expansion and pinyon-juniper expansion throughout much of the North Unit/Pot Mountain FMU. Specifically, big sagebrush is increasing on dry grasslands and cool open savannas, reducing herbaceous understory.

1.4 Relationship to Regulations, Policies, or Other Plans

The control of encroaching vegetation and hazardous fuels reduction activities through active management is consistent with statewide goals in the *New Mexico Forest and Watershed Health Plan* (NM Forest and Watershed Committee et al. 2004).

In addition, the standard operating procedures and guidelines for the herbicide weed treatments proposed in the project area are detailed in the Vegetation Treatments on Bureaus of Land Management Lands in 17 Western States Programmatic Environmental Report (USDI BLM FES 07-21 June 2007). Portions of the programmatic EIS are incorporated into this analysis, including the recommended herbicides under consideration.

1.5 Scoping and Development of Issues

On October 15, 2008 a thirty day scoping letter was sent to all interested publics of record which included a description of the proposed action, the purpose and need for the proposed action, project objectives, and potential issues associated with the proposed action. The scoping period ended on November 15, 2008. A response to the comments received can be found in section 4.7.

Relevant information received through comments helped to define the scope of this analysis. This information is either: 1) incorporated into the *Project Design and Standard Operating Procedures*; 2) identified as *Other Alternatives Considered*; or 3) used to identify relevant issues to be addressed in the effects analysis.

Based on public scoping, as well as internal scoping by an interdisciplinary team of Bureau of Land Management specialists, the following issues are considered relevant and analyzed in detail:

- Vegetation, including Invasive Species and Special Status Plants
- Air Quality
- Soils, Watersheds, and Water Quality
- Wildlife, including Special Status Species and Migratory Birds
- Visual Resources
- Cultural Resources
- San Antonio Special Management Area

2 Proposed Action and Alternatives

2.1 Proposed Action

The Proposed Action would take place within the boundaries of the areas outlined in this environmental assessment. Treatment Objectives of the Proposed Action for the Cerro Montoso Vegetation Treatment project include maintaining the long-term health of the North Unit/Pot Mountain FMU management area, improving herbaceous growth, understory recovery, and winter range forage by removing the big sagebrush and hazardous fuels within the 29,000 acre project area.

The project area is located within the North Unit/Pot Mountain Fire Management Unit (FMU), in Taos County, New Mexico. Management activities are proposed for sections 2* and 11 T28N, R10E, sections 25, 26, 34, 35, and 36* T29N, R10E, sections 1, 2*, 4, 5, 6, 7, 8, 9, 11, 12, and 16* T28N, R11E, sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 16*, 17, 18, 19, 20, 21, 22, 26, 29, 30, 31, 32*, 33, 34, 35 and 36* T29N, R11E, sections 31, 32*, 33, 34, 35, and 36* T30N, R11E, and grazing allotments 596, 605, 610, 612, 630, 641, 642, 645, and 930. Elevation on the site ranges from 7500 ft in the lowlands to 8655 ft at the peak of Cerro Montoso.

*denotes sections owned by New Mexico State Land Office (NMSLO)

Funding will be the primary constraint in determining the rate at which the projects are developed and targets met. Other factors such as timing, inclement weather, and personnel issues could also impact progress.

The project area is located approximately 15 miles northwest of Taos, NM in Taos County (Map 2) covering several sections.

2.1.1 Project Design and Standard Operating Procedures (SOP)

The following design features and standard operating procedures would be incorporated into the project to attain the resource objectives described above. The proposed action would include one or a combination of the following treatment methods: prescribed fire, wildland fire use, herbicide weed treatments, thinning, and mechanical vegetation treatments that would improve ground cover while promoting vegetation diversity.

Prioritization

Treatment would first focus on the areas managed by Bureau of Land Management Taos Field Office with the highest occurrence of big sagebrush, pinyon pine, and juniper encroachment. Areas within the project boundaries with higher levels of overgrown vegetation would also be evaluated by Taos Field Office management specialists.

Treatments

Various treatments would be conducted to some extent on all sections and include prescribed fire, wildland fire use, herbicide weed treatments, thinning, and mechanical vegetation treatments to accomplish resource objectives described in this environmental assessment.

Prescribed fire would include broadcast burns, and pile burns, and would most likely occur in the early spring, summer, or fall or at any time of the year as conditions allow and when fuels are dry and able to carry a fire. Broadcast burns would be implemented in areas encroached by sagebrush and/or pinyon-juniper, encouraging grass recolonization of the site and maintaining the grassland. On selected portions of pre-thinned pinyon-juniper forest with heavy sagebrush understory, fire would be used to burn out pockets of continuous pinyon-juniper forest to create more suitable habitat for deer and elk.

Following thinning activities, pile burning would be used to eliminate high concentrations of surface fuels, then broadcast burning of the understory would be implemented to reduce duff and litter accumulations on the forest floor. Pile burning would most likely occur in the late fall and winter. All burn operations would be conducted under the supervision of a certified fuels foreman and would be implemented by the Taos Field Office fuels crew. Both broadcast burns and pile burning would continue throughout the duration of the project and to some extent on all sections.

Wildland fire use is the action of allowing a natural ignition (lightning) to burn under a pre-determined set of environmental conditions. Areas proposed for wildland fire use include mountain tops that are entirely under BLM ownership in the north and central portions of the project area. (Map 3) These areas are predominantly pinyon-juniper savannah and pinyon-juniper woodland, including several small and isolated stands of ponderosa pine. Mountain tops are identified for wildland fire use primarily because of the success observed in such cases. For example, in 2000 a natural wildfire occurred on

Pot Mountain and since then, the area has seen tremendous recovery and a diversity of native plant species. The area has also served as an effective natural fuel-break in containing potential wildfire starts and could be used as a fuel-break for project burns.

Herbicide treatments would be used to treat big sagebrush in the project area on approximately 2,500 acres. Tebuthiuron, a broad-spectrum herbicide, has a long period of activity in the soil and may be more effective than 2,4-D in controlling sagebrush. Initial decreases in perennial grass production should probably be expected after most tebuthiuron applications. Application of high rates of tebuthiuron (1lb a.e./acre) may decrease perennial grasses and allow annual grasses, as well as other cool season species to increase (Clary et al. 1985). Tebuthiuron may damage and reduce production of desirable and undesirable shrubs associated with sagebrush. In general, it should be expected that sagebrush would be more impacted than many associated shrubs and grasses at moderate tebuthiuron application rates of 0.5 lb a.e./acre.

Following herbicide weed treatment, the use of prescribed fire, drill seeding, shaving, seeding, or rangeland disking would be implemented to eliminate unwanted species while stimulating herbaceous recovery amongst native grasses.

Thinning would be done by chainsaw, and would be conducted by BLM fuels crew or contract crews who are trained in proper thinning protocol and under direct supervision of a fuels foreman. Thinning would be conducted in areas with high concentrations of pinyon pine, and juniper. All thinning prescriptions would be developed by the Taos Field Office Fire management staff in collaboration with resource specialist for wildlife and would include mitigation measures outlined in the 2005 Taos Field Office Fire Management Plan. Fuelwood gathering of downed wood on pre-thinned sites would be allowed on selected areas to assist in excess fuel removal and provide further opportunities for public fuelwood harvest.

Mechanical vegetation treatments would be implemented on approximately 19,000 acres of the project area. Areas currently occupied by sagebrush could be treated to assist in the establishment of the grasslands after prescribed fire and herbicide applications. Mechanical vegetation treatments would provide opportunity to increase vegetation competition against non-native and encroaching species such as big sagebrush and would serve as a way to provide conditions where grass could be used as a carrier fuel for future prescribed fires used to maintain the grassland.

Mechanical vegetation treatments could include one or more of the following techniques in any sequence and during any time of the year: shaving, mowing, rangeland disking, drill seeding, Dixie Harrow/seeding, chipping, mulching, pruning, or plowing. If seeding is required following treatment, only a certified weed-free mix of native grasses, shrubs and forbs would be used.

Similar treatments in the area have been reseeded with a mix of blue grama, western wheatgrass, milk vetche, Indian ricegrass, side-oats grama, and sand dropseed. The need for follow-up treatments will be determined by the BLM range, fire and wildlife staff.

2.1.2 Inventory and Monitoring

The Proposed Action includes the following inventories and monitoring efforts: Pretreatment inventories in the treatment areas would include rangeland transects, permanent vegetation plots, and cultural clearance inventories. Class III intensive level cultural inventories will be conducted as determined by BLM in consultation with affected Tribes and the New Mexico State Historic Preservation Office.

The purpose for establishing a monitoring and inventory protocol in the Farmington District is to mandate a minimum level of documentation of management effects, to insure that monitoring methods and inventory assessments will be repeatable and consistent over time, and to establish a documentation program to ensure that information is organized, available, and protected.

The project area will be monitored indefinitely following project completion for unauthorized vehicle use, successful reclamation of access routes, possible noxious weed infestation, or any other resource concerns which may be affected either directly or indirectly by the proposed project.

Ongoing efforts to control noxious weeds are currently being done in the region. Known noxious weed populations will be recorded, treated, monitored, and retreated as long as they persist. Additional noxious weeds may exist which have not been detected. Therefore, noxious weeds inventories would be conducted prior to treatment within the proposed treatment areas. The effectiveness of weed control would be monitored using site-specific and landscape level monitoring and would be done by the TAFO weed specialist.

Site-specific monitoring would involve assessing the effectiveness of the treatment or control method on specific species relative to application rate, method, and treatment area. Monitoring methods may be qualitative or quantitative and would be commensurate with the level of treatment complexity and size and extent of the project.

The methods used to monitor treated areas may include field observations, photo plots, and/or density plot methods and will be conducted in accordance with the *Farmington District Fire Monitoring Protocol* (2008) to gather pre-treatment and post-treatment information within the project area.

Landscape level monitoring would be accomplished over the long term by tracking various vegetative species' occurrences through Geographic Information System (GIS) mapping and would be inventoried and mapped on-the-ground to monitor the effectiveness of the treatment.

2.1.3 Mitigation Measures

Allotment Use

• Areas that have been treated with herbicides would receive at least two years of rest before grazing resumed.

• Burned areas would be deferred from use until ground cover was adequately established.

• Managed grazing would resume in all areas at levels that would ensure maintenance of native grass and natural grassland ecosystems, and protection of soils and water quality.

• These conditions would be demonstrated by achieving sufficient percent of ground cover, plant maturity, vegetation diversity, and plant density.

Vehicle Use

• Rubber tire All Terrain Vehicles (ATV) may travel off-road to access various locations throughout the project site. However, ATV use may be restricted where needed to protect sensitive plant populations and cultural resources. ATVs would not access the targeted areas directly from designated non-treatment areas. Instead minor roads would be used to access these off-road treatment areas.

• Pickups and larger vehicles associated with treatment activities as well as support vehicles would be restricted to established roads and trails.

Road Use

• All roads would remain passable for wildland fire emergencies. The decision to close a road in the area would be based on road condition and recovery of the road after management activities.

• Methods of road closure and reclamation would include gate installation, water bars, blocking of roads with large immovable (except by heavy equipment) rocks, transplanting of trees to prevent access, and pull back of debris onto roads.

• Road closures for reclamation would not occur on existing rights of way.

Other Factors

The following types of areas would not be treated:

• Areas on sites dominated by exposed bedrock and/or large pieces of rock rubble
• Vegetation stands with bird nest boxes
• Big game migratory corridors
• Culturally significant areas, and
• Areas which contribute to the visual resource values as identified in the Taos Field Office Resource Management Plan.

Treatment exclusionary areas would be marked by Bureau resource specialists and project managers.

All treatment implementation would be directed and overseen by a designated Taos Field Office resource specialist or Environmental Monitor lead.

2.2 Alternative B – No Action

Under the no action alternative there would be no vegetative treatments conducted in the North Unit/Pot Mountain Fire Management Unit area. The no action would likely result in the natural succession of the pinyon/juniper and sagebrush vegetation types towards plant communities where herbaceous species are generally absent or severely under-represented. The premise in making this assertion is that over time the competition for soil moisture, nutrients and sunlight from the overstory of pinyon/juniper and sagebrush would exceed the herbaceous and shrubby browse plant species' ability to compete for these elements (Bates et al. 1998). From an overall ecological perspective, succession of this sort within these plant communities would also have a negative impact to wildlife.

2.3 Alternatives Considered but not Analyzed in Detail

Other alternatives were considered by BLM staff or were suggested by the public through scoping. These alternatives were considered but not analyzed in detail, because they did not address the purpose and need for action, were ineffective at addressing the purpose and need for action, or were cost prohibitive.

They include:

Leaving significant numbers of acres of big sagebrush for wildlife and other sagebrush associated species. The main objective of the project is to maintain and enhance native grasslands which are undergoing big sagebrush expansion, as identified in the state and abovementioned plans (Taos RMP, TAFO Fire Management Plan). Retaining big sagebrush beyond those already designated zones would not meet the purpose and need of the project—to maintain a native and balanced biologically diverse community by removing portions of the big sagebrush from this area. Also, the encroaching sagebrush is overpowering and too aggressive.

Not burning debris. During scoping the need for prescribed burning was questioned and some concern was expressed that broadcast burning would heat the soil and impact the perennial grass understory. Recent studies by Bates and Svejcar (2006) found that in dense sagebrush areas unburned debris tended to smother perennial forbs and most perennial grasses, and reduced their establishment because of reduced light levels. They also found that perennial grass density and cover increased faster under burned debris than unburned debris. Leaving unburned debris would therefore negatively affect the perennial grass understory in the limited areas where sagebrush treating is necessary. Additionally, leaving the treated sagebrush debris on site can present a fuel load problem

for several years following treatment (Miller et al. 2005). Therefore, this alternative was dismissed.

Domestic grazing and non-grazing of livestock. During the design of the project the need to use biological agents as a method to meet the proposed action was discussed. This treatment method included the use of livestock to remove decadent vegetation. The proposed action states that the use of mechanical vegetation treatments and prescribed fire to meet the objectives outlined in the environmental assessment (EA) would be the preferred method of treatment used to meet desired conditions. Using biological agents as a method for meeting the proposed action was inconsistent with the overall objectives and methods outlined in the EA. Furthermore, the EA was not referenced to any Allotment Management Plans or Land Use Plans associated with Domestic grazing or non-grazing.

3 Affected Environment and Environmental Consequences

This chapter describes the affected environment (resources that are affected by the alternatives), and the environmental consequences which indicate the anticipated effects on the resources if the alternatives are implemented. The general effects of each alternative on resource categories are addressed. Direct effects are caused by an action and occur at the same time and place. Indirect effects are caused by an action and occur later in time or farther removed in distance. Cumulative effects (CE) are defined as the effects on the environment which result from the incremental effect of an action when added to other past, present, and reasonable foreseeable future actions regardless of what agency or person undertakes such other actions.

The proposed treatment area occupies approximately 29,000 acres which are identified in the Taos Resource Management Plan as key native grasslands with major over populated forests and big sagebrush encroachment. This area is located along the western edge of the Rio Grande Gorge and west of Cerro Chiflo (approximately 15 miles northwest of Taos, NM) (Map) and includes approximately nine sections of New Mexico State Land Office lands.

The project area is located within the North Unit/Pot Mountain Fire Management Unit (FMU), in Taos County, New Mexico. Management activities are proposed for sections 2* and 11 T28N, R10E, sections 25, 26, 34, 35, and 36* T29N, R10E, sections 1, 2*, 4, 5, 6, 7, 8, 9, 11, 12, and 16* T28N, R11E, sections 3, 4, 5, 6, 7, 8, 9, 10, 15, 16*, 17, 18, 19, 20, 21, 22, 26, 29, 30, 31, 32*, 33, 34, 35 and 36* T29N, R11E, sections 31, 32*, 33, 34, 35, and 36* T30N, R11E, and grazing allotments 596, 605, 610, 612, 630, 641, 642, 645, and 930. Elevation on the site ranges from 7500 ft in the lowlands to 8655 ft at the peak of Cerro Montoso.

*denotes sections owned by State of New Mexico and administered by the New Mexico State Land Office (NMSLO)

Elevations range from approximately 7,500 to 8,600 feet. Annual precipitation is approximately 16 inches with the majority of accumulation in late summer. Sagebrush and pinyon juniper woodland communities dominate the area. The dominant understory species consist of blue grama, western wheatgrass, needle-thread, and Indian rice grass. Riparian communities are located along the Rio Grande, and a few scattered aspen stands also occur in higher elevations.

Road access throughout most of the project area is limited to primitive 2-track roads accessible by high-clearance 2wd vehicles during dry weather driving conditions. These primitive roadways provide at least one access point to all sections of the project area.

3.1 Vegetation, Invasive Species

3.1.1 Affected Environment – Vegetation/Invasive Species

Vegetation: A wide range of vegetative zones and habitat types occur in the project area (Map). The lowlands are dominated by relatively unbroken pockets of high-density pinyon-juniper woodlands, consisting of pinyon pine (*Pinus edulis*) and juniper (*Juniperus spp.*), and grasslands with encroachment by big sagebrush (*Artimesia tridentata*) and rabbitbrush (*Chrysothamnus spp.*). Mature ponderosa pine (*Pinus ponderosa*) stands with interspersed mature Douglas fir (*Pseudotsuga menziesiii*) and moderate to light pinyon-juniper encroachment exist in the middle elevations and in the drainages of the lower elevations. Higher elevations are dominated by low density pinyon-juniper savannah and scrub grassland.

Prior to European settlement, various disturbances, mainly wildfires maintained the grassland communities by restricting forest density, overgrowth of big sagebrush distribution to ridges and other areas with minimal understory (Miller and Wigand, 1994).

Most of the plant communities are undergoing a stage of species expansion in which big sagebrush and high density pinyon-juniper forests continue to dominate the vegetation that influences the ecological processes on the site. For the most part, the composition of understory vegetation has been fairly affected by the high cover of big sagebrush. Through much of the project area sagebrush is fairly dispersed and does generally occur in dense stands making up a majority of the vegetation in this area.

Annual Weeds: Isolated black henbane currently occurs in small patches around soil disturbance areas under some juniper and pinyon pine trees, and other limited disturbed sites, but has shown not to be very competitive on these intact high elevation rolling hills communities.

Noxious Weeds: Since 2007, one species has been found in the region, Cheatgrass. The species was found within the boundary of the Double D Fire and was first identified by Taos Field office staff. Since then, the area has been monitored for potential spread and recolonization of this species. Multiple, annual applications at a site are uncommon and

not likely to occur; however chemical control of some noxious weeds such as Cheatgrass may require repeat treatment for years to be effective in controlling existing infestations. It is anticipated that treatment of the same noxious weed areas year after year will be the norm due to the difficulty in eradicating them.

3.1.2 No Action Environmental Consequences – Vegetation/Invasive Species

Vegetation: No direct effects would result by not treating overpopulated woodlands and big sagebrush. Over the long-term, continued expansion of sagebrush, pinyon pine, and juniper would result in the eventual loss of herbaceous recovery, and grassland communities.

Annual Weeds: Over the long term the increased sagebrush density and subsequent loss of understory species would result in accelerated soil erosion and possible increase in invasive species.

Noxious Weeds: Over the long term, increased sagebrush density and subsequent loss of understory species could result in accelerated soil erosion and possible increase in non-native invasive species.

3.1.3 Proposed Action Environmental Consequences – Vegetation/ Invasive Species

Vegetation: The proposed treatments would have a short and long term direct effect of eliminating most sagebrush and hazardous fuels material from the proposed project area landscape.

The primary long term indirect effect of the proposed action would be maintenance of the existing native grasses, herbaceous recover, and wildlife habitat communities. Since the area consists of intact grassland communities which are being impacted by the expanding sagebrush and high density woodlands, significant increases in perennial grass cover would not be expected. However, in approximately 10% of the area where woodland cover is greater than 5%, increases in perennial grass and shrub cover may be expected. Treatments on a site dominated with big sagebrush will result in five fold increases in perennial grass density six years after treating (Brockway et al. 2002).

A short-term loss of vegetative cover could result from the burn treatments within that 0.1% area. Bates and Svejcar (2006) found that perennial grass density and cover increased faster under burned debris than unburned debris, particularly needlegrass and crested wheatgrass. It appeared that reduced light levels inhibited germination and/or establishment of some plants. Unburned debris will smother perennial forbs and grasses and reduce their establishment. Based on these findings, no long-term direct loss and a slight long-term indirect increase in perennial grass cover and density would be expected especially in the areas where big sagebrush would be treated.

Although fire has a direct short term effect of disturbing plant communities, its long-term indirect effect is of maintaining the natural vegetation landscape by reducing overpopulated and aggressive species encroachment/expansion.

Annual Weeds: Disturbed sites containing musk thistle and Russian knapweed may experience a short term increase in these species following treatment. This indirect effect could result from the increased light and water made available from eliminating the competing sagebrush. The proposed project area with its intact grassland communities and its warmer, moister climate should not experience the weed flush.

Noxious Weeds: Off road ATV travel by treatment crews may have a slight temporary indirect effect of increased risk of noxious weed establishment. However, because the proposed action restricts ATVs and full sized vehicles to existing roads and trails, the likelihood of increased noxious weed establishment is expected to be low and would not increase the risk of noxious weed establishment over other current human activities taking place in the area. The pre and post treatment inventories to locate and treat any newly discovered weeds would help reduce the risk of noxious weed establishment and may result in the discovery and control weeds which have not yet been detected in this area.

3.2 Air Quality

3.2.1 Affected Environment - Air Quality

Limited data is available on the air quality of the project area due to the fact that no air quality stations are operating in this portion of Taos County. Other parameters, though not monitored, are believed to be below any standards due to no available source of emissions. National Ambient Air Quality Standards (NAAQS) are expected to be met under the existing conditions in the area. The Clean Air Act establishes a national goal of preventing any further degradation or impairment of visibility within federally designated areas. Attainment areas are classified by the New Mexico Air Quality Bureau.

3.2.2 No Action Environmental Consequences - Air Quality

No effects.

3.2.3 Proposed Action Environmental Consequences - Air Quality

Impact to air quality by this action would be caused typically by the production of smoke from the prescribed burns. During the burning operation, smoke would be released into the atmosphere. The timing, size of burn, fuel arrangement, fuel moisture, ignition techniques and patterns, and weather conditions will be specified to keep smoke amounts within acceptable limits. These acceptable limits will be defined in the burn plan which will follow the guidelines established in the BLM Prescribed Fire Handbook.

All emissions will occur during on-site management activities. Burning will proceed

during stable and unstable atmospheric conditions with expected smoke suspension to be short lived and scattered over small areas.

The communities of Cerro and Questa would not be directly or indirectly impacted by the smoke from this burning. Smoke will be noticeable for 1-2 days following the burn (mainly due to smoldering of the sagebrush debris). Due to the small volume of fuels expected to be consumed, particulate emissions are projected to be well under the NAAQS, and no violations are anticipated.

3.3 Soils/Watershed/Water Quality

3.3.1 Affected Environment - Soils/Watersheds/Water Quality

Soils in the Cerro Montoso Area are: Fernando-Hernandez (FHB), Orthens-Calciorthids (OSG), Petaca-Silva-Prieta (PGC), Rock outcrop-Raton (RRE), Rock outcrop (RcG), Stunner-Luhon (SUC), Travelers-Luhon-Stunner (SVC). FHB soils are moderately erodible due to wind and water. OSG soils are highly erodible due to water and very slightly to not erodible due to wind. RRE and RcG soils are not subject to wind erosion and have low erodibility due to water. SUC soils are moderately erodible due to water and slightly to not erodible due to wind. SVC soils are very slightly to not at all erodible due to water and wind.

Detailed soil information can be found at http://soils.usda.gov/survey and follow prompts to the above online soil survey of Taos County.

The proposed action does not directly affect water quality, due to the fact that it does not affect any drainages flowing into the Rio Grande and would not proceed to a depth where ground water quality could be affected. Prescribed fire may have short term effects including increased stream nutrients, storm flows, and sediment loads. In general, the amount of increase depends on fire severity. The severity of prescribed burns would be light to moderate, so slight increases may occur until the following growing season when grasses and forbs recolonize the site. Over the long term, increased herbaceous cover will stabilize the area as both soil erosion and corresponding sediment loading to streams would be decreased. Carbon particulates and volatile hydrocarbons given off in the burning process would mobilize and to a limited extent may find their way into distant streams via atmospheric transport.

3.3.2 No Action Environmental Consequences - Soils/Watershed/Water Quality

No direct effects would result to the soil. The long term indirect effect of continued big sagebrush expansion would result in the transition to an aggressive big sagebrush type system, where interspatial plant communities are reduced or absent. Over the long term the increased vegetation density and subsequent loss of understory species would result in accelerated soil erosion, loss of site productivity, decreased watershed function, and reduced nutrient and energy cycling (Wilcox et al. 1996).

Under the No Action, portions of the planned sections with the North Unit would continue to decline and contribute to sedimentation to the Rio Grande watershed at an above-normal rate. Big sagebrush and high density woodlands consisting of pinyon and juniper would continue to dominate the region, contributing to the decline of herbaceous vegetation without some form of disturbance (fire, herbicide, or mechanical).

3.3.3 Proposed Action Environmental Consequences - Soils/Watershed/Water Quality

Overall, the removal of encroaching sagebrush, pinyon pine, and juniper would be beneficial to the soils and watershed components of these lands. Preventing the long-term decline in ecological conditions that accompanies vegetation encroachment would result in better watershed function (hydrologic, nutrient, and energy cycles). Healthy native grass and bunchgrass communities would stabilize soils, improve infiltration and storage, and maintain soil productivity.

Direct and indirect impacts from the actual implementation operations would be minimal. Some physical soil disturbance would occur from vehicle use, but would only affect small localized areas (totaling less than 3 percent of the area) and natural recovery would occur within two to five years of the disturbance. Direct impacts from burning, intense surface heating causing soil sterilization, would be minimal in the project area. Although herbicides would not alter a soil's physical properties, they may have indirect effects on soil microorganisms. Herbicide application rates would be adjusted to prevent soil organism mortality.

Total surface area affected would be minimal. There are adequate seed sources of native perennial plant species to allow rapid colonization of any localized areas that could become impacted which would decrease the amount of erosion, resulting in improved water quality.

3.4 Wildlife/Special Status Species/Migratory Birds

3.4.1 Affected Environment - Wildlife/Special Status Species/Migratory Birds

Wildlife: Wildlife is abundant and diverse throughout the Cerro Montoso Vegetation Treatment project area. A wide range of large and small mammals can be found, including the big game species Rocky Mountain elk, mule deer, antelope, Rocky mountain bighorn sheep, black bear, and mountain lion, as well as various bat species, skunk, badger, fox, coyote, bobcat, squirrels, chipmunks, pocket gophers, Gunnison's prairie dogs, various mice and rat species, porcupine, cottontail, and jackrabbit.

Avian species are varied and include over 100 different species (Hawks Aloft 2008), including: turkey vulture, Swainson's hawk, band-tailed pigeon, black-chinned

hummingbird, broad-tailed hummingbird, vesper sparrow and Bullock's oriole. Various reptiles, amphibians, and insects can also be found through the project area.

Management goals and objectives for wildlife in this area, as described in the *Taos Resource Management Plan* (1988), and *San Antonio/Pot Mountain Habitat Management Plan* (1992), include improving browse vigor and availability; increasing density and composition of cool season herbaceous species for deer, elk and antelope; and improving habitat for small mammals and big game by improving structural diversity and increasing edge and cover.

Within the project area, there are two key wildlife habitat types (NMDGF 2005) that are important to local and regional biodiversity, consisting of approximately 260 acres of Rocky Mountain Montane Mixed Conifer Forest and Woodland and 16,210 acres of Inter-Mountain Basins Big Sagebrush Shrubland (Figure 2).

These habitats are important because they contain certain obligate species, such as the sage thrasher, sage sparrow and pronghorn (Paige and Ritter 1999); capture a broad range of indicative species, such as rattlesnakes, coyotes, and raptors; are limited within the state in that sagebrush occurs primarily only in the north-central/northwest portion of New Mexico; provide key breeding or foraging habitat for special status species such as elk, deer and migratory birds; host wide-ranging species that are not found in other habitats, like deer and elk; and function as an indicator of the quality of the system and thus have a greater ecological value.

The project area contains critical winter range, summer range and a migratory corridor for elk, mule deer and pronghorn. Winter range is considered the most limiting habitat type for elk and mule deer, and includes sagebrush-steppe, pinyon-juniper woodlands, mountain shrub, and ponderosa pine below 7,500 feet. Winter diets for mule deer are a combination of forbs, browse, and new growth on cool-season grasses. Browse becomes an increasing portion of the diet as snow accumulates or forbs and grasses become depleted.

In northern New Mexico, mule deer become concentrated on winter ranges with densities of 20-100 deer/square miles in suitable habitat (Watkins and Bishop et al. 2007). Winter ranges are critical because these areas support higher densities of mule deer and elk on less available forage, are less tolerant of high herbivore rates, are prone to non-native weed invasion, and are potential areas for development of energy, minerals or residential subdivisions.

<u>Special Status Species</u>: To determine presence or absence of special status species in the project area, information was obtained from the U.S. Fish and Wildlife Service (USFWS) *New Mexico Ecological Services Field Office Listed and Sensitive Species in Taos County*; the NMDGF for State of New Mexico threatened and endangered wildlife species and BLM Sensitive wildlife species; and the New Mexico Rare Plant Technical Council *New Mexico Rare Plants in Taos County* for special status plant species.

Attached within Appendix 2 is a summary list of the special status species considered in this analysis.

Federally listed threatened (T) and endangered (E) species in Taos County include: black-footed ferret (*Mustela nigripes*) (E); Southwestern willow flycatcher (*Empidonax traillii extimus*) (E); and Mexican spotted owl (*Strix occidentalis lucida*) (T). It is determined that there is no habitat for these species within or adjacent to the project area and, therefore, there are no federally listed threatened or endangered species likely to be found in the project area. There is a sub-species of the Gunnison's prairie dog (montane) (*Cynomys gunnisoni*), listed as a federal Candidate species, that could potentially be found within the project area. There is no designated critical habitat for any species listed by the USFWS within the project area.

Special status species that could likely be found within the project area include Western burrowing owl (*Athene cunicularia hypugea*), Mountain plover (*Charadrius montanus*), and Loggerhead shrike (*Lanius ludovicianus*). During winter months there are two state-listed threatened species that could be in the area, the Bald eagle (*Haliaeetus leucocephalus*) and Baird's sparrow (*Ammodramus bairdii*). The American peregrine falcon (*Falco peregrinus anatum*), a state-listed threatened species, could use the area as foraging grounds as there are occupied territories adjacent to the project area in the Rio Grande gorge. It is possible that Ferruginous hawk (*Bufeo regalis*), a BLM Sensitive species, could be found in the area, however, there have been no accounts of this species in or adjacent to the project area to date.

Various bat species, all listed as BLM Sensitive, could be using the project area either as roosting or foraging habitat due to its proximity to the Rio Grande. Ripley milk vetch (*Astragalus ripleyi*), a plant that is a BLM Sensitive and Federal Species of Concern, could be found inside the project area, however, there are no current accounts. Approximately six miles west of the project area a population of Ripley milk vetch was identified in similar habitat (Braun 1988).

Migratory Birds: The project area is located within a migratory flyway and avian concentration area (NMAPWG 2004) and adjacent to an Important Bird Area as designated by the National Audubon Society. BLM migratory bird species of conservation concern that have the potential to occur in the project area include golden eagle, peregrine falcon, ferruginous hawk, prairie falcon, Western burrowing owl, black-throated gray warbler, juniper titmouse, mountain bluebird, olive-sided flycatcher, mountain plover, loggerhead shrike, mourning dove, pinyon jay, Brewer's sparrow, and sage sparrow.

3.4.2 No Action Environmental Consequences - Wildlife/Special Status Species/Migratory Birds

Wildlife: Under the no action alternative, there may be competition between elk or deer and livestock in limited areas in the spring, depending on climatic conditions. Without a disturbance regime to provide vegetation in a variety of successional stages, climax

vegetation conditions will continue to persist. Monocultures of vegetation result in habitat conditions suitable to only a small subset of interior habitat specialists. The No Action alternative would result in reduced biodiversity and increased risk to the stability of wildlife habitat in the area.

Special Status Species: Because there are no federally listed T&E species present in the project area, there would be no affect on T&E species from the No Action Alternative.

There could be a negative impact to some special status species without a disturbance regime to provide a more diverse habitat and balance to the current co-dominant vegetation situation. Under the No Action alternative, there would not be an opportunity for expansion of prairie dog towns, due to existing sagebrush stands and high canopy cover conditions. Without expansion of these colonies, there could be no potential increase of habitat for Western burrowing owl and/or mountain plover.

Under the No Action Alternative, there would be no expansion of grassland habitat that could potentially provide a larger prey base and foraging area for bald eagle, American peregrine falcon, or ferruginous hawk. It is possible a larger and more diverse macroinvertebrate community would exist under a more varied matrix of vegetation, which could provide more prey for bat species.

Migratory Birds: The No Action alternative could benefit some species, specifically sagebrush or woodland obligates that prefer climax vegetation conditions, while negatively impacting grassland species that are precluded from these habitat conditions. Generally, migratory birds will find fewer habitat niches within existing conditions and, therefore, the No Action alternative would have a negative impact on these species.

3.4.3 Proposed Action Environmental Consequences - Wildlife/Special Status Species/Migratory Birds

Wildlife: The proposed action would affect the following habitats which support local wildlife populations: grasslands, shrublands, pinyon-juniper forests, ponderosa pine forests, and mixed conifer forests. The restoration of these habitats to historic conditions, which are described in chapter one of this environmental assessment, would provide long-term benefits to the native wildlife populations that are dependent upon them. Prescribed fire, thinning activities, and seeding would accomplish the following habitat management goals: an increased understory production of native grasses and forbs (Brockway et al. 2002), establishment of a higher amount of “edge”, or transition zone between different habitat types, and creation of a mosaic. An increased understory production of native grasses and forbs would also provide increased forage opportunities for deer, elk, pronghorn and small mammals, as well as provide nesting habitat for ground nesting birds, and would support insect populations which many bird species require for food.

The creation of more edge in large unbroken blocks of the pinyon-juniper forests would provide more forage and cover opportunities in close proximity to one another. Edge is

an important structural component for many species' habitats, and benefits deer, elk, and many other mammal and bird species. Creation of a mosaic in the burn areas would provide habitat for cavity-nesting birds and support insect populations which many bird species would use for food and be more natural.

Short term effects of the proposed management actions on wildlife populations include disturbance from machinery, administrative motor vehicle use, and prescribed fire. There would also be short-term impacts to individual birds due to disturbance during the implementation phase of the project; there would be long-term benefits from an increase in diversity of vegetation. There could also be a slight reduction in the quantities of seeds and berries produced in the project area due to reduction of pinyon pine and juniper, decreasing the amount of forage available for birds dependent on those resources.

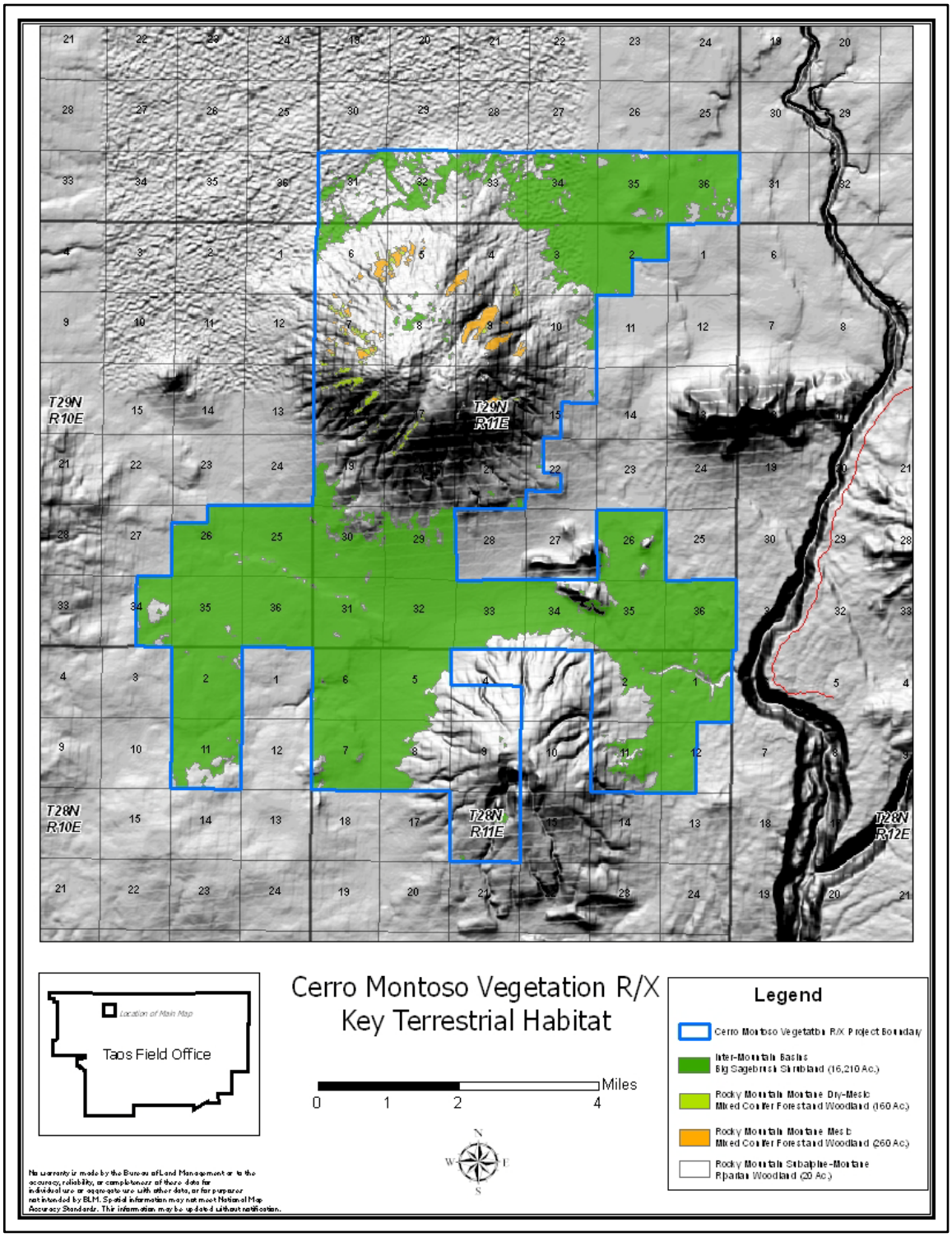
Special Status Species: No federally listed species are likely to occur in the project area. No suitable habitat for any federally listed species is found in the project area. Because no federally listed species are found in the project area, the Proposed Action will have no affect on federally listed threatened or endangered wildlife species.

There could be a positive result for special status species by implementing a disturbance regime that would provide a more diverse habitat. Under the Proposed Action, it is possible Gunnison's prairie dog could expand into existing sagebrush habitat converted to grasslands. With expansion of these colonies, there could be a potential increase of habitat for Western burrowing owl and/or mountain plover. Under the Proposed Alternative, there could be a larger prey base and foraging area for hawk and eagle species and a larger macroinvertebrate community to provide food for bat species.

Migratory Birds: Increase in vegetative diversity and control of nonnative invasive vegetation may positively affect local macroinvertebrate populations, resulting in an increase in the avian prey base, indirectly benefiting migratory birds in and adjacent to the project area.

If the proposed action is implemented during the primary breeding season (April through August) there is the potential to impact reproductive and/or foraging activities, resulting in a negative effect on individual birds, eggs, young and/or nesting habitat due to trampling, sagebrush removal or disturbance from human noise and commotion. This would not have a measurable negative effect at the population or species level due to the amount of similar habitat in the area.

Figure 2. Cerro Montoso Vegetation Key Terrestrial Habitat



3.5 Visual Resources

3.5.1 Affected Environment - Visual Resources

Visual inventories within the project area are predominately Class III with some small sections of Class IV. There are no current management objectives for this area so the inventory classes will serve as interim management objectives.

The north unit is located west of Taos and in geologic terms lies within the wide and spacious Taos Plateau. It is bisected by the Rio Grande Rift buried deep beneath the surface. Many isolated peaks formed from extinct volcanoes rim the plateau at intervals. On the plateau human modifications include; two track routes, and wildlife drinkers and tanks. Vegetation typically changes from yellow and pastel green grasses with grey/green sage on the flats to silhouetted dark green and blue conifers gradually climbing up the slopes of the volcanic domes. Texture of vegetation is medium to dense in the project area. Coarseness increases, from the base and heading upslope of peaks, as vegetation changes from grass and shrubs to conifers. Where visible the landform or soil is tan, beige with rusts pink and dark grey. Views are relatively homogenous and uninteresting but for the space and remoteness of vast acres with no visible development. Adjacent views of the Rio Grande Gorge and Sangre de Christos are also spectacular.

3.5.2 No Action Environmental Consequences - Visual Resources

There would be no direct effects. A gradual transition in vegetation on the landscape to more of an overpopulated high density vegetation community would occur over time, but is unlikely to have an adverse effect on visual resources. Short term adverse effects of the vegetation treatment project, such as slash piles would not occur.

3.5.3 Proposed Action Environmental Consequences - Visual Resources

Retaining old growth pinyon and other scenic groupings of sagebrush would maintain the scenic quality along the eastern side of the Rio Grande gorge. Slash piles and cleared area would result in short term adverse but weak impacts to the line, color, and texture of vegetation. Edges of the treatment area may be visible as well as, greener, brighter, and finer vegetation of grasses.

Greater changes or contrasts to the characteristic landscape will be avoided by following natural contours, scalloping, and feathering of the treatment edges, planting with native grass seed, and burning and scattering slash piles. The project with the mitigating measures will meet the interim management Class III and IV objectives.

3.6 Cultural Resources

3.6.1 Affected Environment - Cultural Resources

In general the area was used in prehistoric times for hunting and gathering activities. Within the Cerro Montoso Vegetation Treatment area, sites have been recorded along arroyos, near natural lakes, on mountains or hills, and mesa tops. Historic uses of the area are predominantly concerned with livestock grazing and hunting activities.

Archaeological inventory for this proposed project was initiated during the summer of 2007 (Dicks et al. 2008). Approximately 9,500 acres were inventoried at the Class III level (100% inventory), and other areas were the subject of reconnaissance inventory. The level of inventory was based on proposed treatment within each area, taking into account possible earth disturbing activities (drill seeding, firewood collection, etc.), as well as potential damage to cultural resources due to prescribed fire.

3.6.2 No Action Environmental Consequences - Cultural Resources

Under the no action alternative archaeological sites not be disturbed and left untouched.

3.6.3 Proposed Action Environmental Consequences - Cultural Resources

Under the proposed action many of the proposed activities could have adverse effects on Cultural Resources. Most obviously, fire can destroy features constructed of wood. Intense, high temperature fires can alter archaeological features such as fire hearths and artifacts. However, these possible impacts can be reduced or eliminated through protective measures taken during the burning operation, such as foaming or black-lining around existing sites. Short term effects may include an increase in erosion due to the initial loss of vegetation cover. Erosion is a major cause for the loss of archaeological resources. Long term effects of the proposed project will likely have a positive effect on cultural resources due primarily to forest, grassland and watershed restoration which should reduce erosion.

As indicated in section 2, archaeological inventories will be performed before prescribed fire and non-fire fuels treatment projects. The intensity of archaeological inventory will be determined for each proposed project based on the potential for earth disturbing activities, fuel types, projected site types, etc.

3.7 San Antonio Special Management Area (SMA)

3.7.1 Affected Environment – San Antonio SMA

The Cerro Montoso Vegetation Treatment project area lies within the San Antonio Special Management Area (SMA). The San Antonio SMA totals 83,000 acres, and is located north of Tres Piedras, New Mexico. It runs south, from the Colorado State line near Los Pinos, and is bordered by the Carson National Forest on the west. It extends east to include the small, isolated volcanic mountains of Cerro de la Olla (Pot Mountain), Cerro Montoso, Cerro Chiflo, Brushy Mountain, Cerrito Negro, No Agua Peaks, and

Cerro del Aire (Wind Mountain). The area lies within the greater existing 783,000 acre San Antonio/Pot Mountain Wildlife Habitat Management Area.

The 1988 *Taos Resource Management Plan* identifies the following resource values in the San Antonio SMA: Rocky Mountain elk, mule deer, and pronghorn antelope winter habitat.

3.7.2 No Action Environmental Consequences - San Antonio SMA

The management prescriptions outlined in the1988 *Taos Resource Management Plan* for the San Antonio SMA which would be affected by the No Action alternative include the following: 11. Intensively manage and monitor all fuelwood sales to improve wildlife habitat. All forestry activities will be conducted in a manner to improve and expand thermal cover conditions. 13. Wildlife habitat improvement projects will continue to be planned and implemented throughout the SMA. The No Action alternative does not satisfy these management prescriptions for the SMA.

3.7.3 Proposed Action Environmental Consequences - San Antonio SMA

The management prescriptions outlined in the1988 *Taos Resource Management Plan* for the San Antonio SMA which would be affected by the proposed action include the following: 11. Intensively manage and monitor all fuelwood sales to improve wildlife habitat. All forestry activities will be conducted in a manner to improve and expand thermal cover conditions. (Page 5-6) 13. Wildlife habitat improvement projects will continue to be planned and implemented throughout the San Antonio Winter Range ACEC. (Page 5-6). Habitat objectives include improving both forage quality and vegetative cover, and increasing habitat diversity. (Page 5-5,6). The proposed actions are in compliance with these prescriptions.

3.8 Cumulative Effects

3.8.1 Vegetation

This analysis will examine the effect of the Proposed Action in conjunction with other actions that affect native habitat conditions including the following treatment methods: 1. Prescribed fire, 2. Wildland fire use, 3. Herbicide weed treatment applications, and 4. Thinning and Mechanical treatments. The focus of this analysis will be on the following two Cumulative effects:

- Cumulative Effect 1 (CE 1): Indicated by the maintenance of native grassland communities threatened by the expansion of sagebrush and over populated woodlands consisting of pinyon-juniper species within the Cerro Montoso Management planning area.

- Cumulative Effect 2 (CE 2): Indicated by the reduction of sagebrush expansion and over populated pinyon-juniper woodlands within the Cerro Montoso

Management planning area and, within the larger North Unit Planning area, Taos County, New Mexico.

Two *cumulative analysis areas* will be used in this analysis:

1. The first cumulative analysis area consists primarily of the native grassland communities in the early stages of sagebrush expansion within the planning zone, and the larger North Unit/Pot Mountain and Wind Mountain Fire Management Units (FMUs). This area encompasses approximately 365,004 acres and will address CE 1.

2. The second cumulative analysis area is a broader scale which contains the first cumulative analysis area plus the more overpopulated woodland dominated landscapes within the Ute Mountain and Wild Rivers FMUs. This area encompasses approximately 388,955 acres and will address CE 2.

No clear boundary exists between the grassland communities within the first cumulative analysis area, and the more sagebrush dominated landscapes to the west. However, these differences are reflected by the various FMUs that were developed for the Taos Field Office Fire Management Plan (USDI BLM 2005) to reflect differences in vegetation distribution, fire regimes, and fuel types.

Sagebrush distribution within the Cerro Montoso Management area occurs primarily in most of the Taos Field Office FMUs. The proposed project area is contained in the 365,004 acre North Unit/Pot Mountain and Wind Mountain FMUs which generally represents the expansion of high density big sagebrush and overpopulated pinyon juniper woodlands.

This 365,004 acre area will therefore serve as the first cumulative analysis area and will address CE1- *maintenance of the native grassland dominated communities threatened by sagebrush expansion and over populated woodlands consisting of pinyon-juniper within the Cerro Montoso planning area.*

Most of the vegetation within the North Unit Planning area occurs within the North Unit/Pot Mountain, Wind Mountain, Wild Rivers, and Ute Mountain FMUs, which comprise of 388,955 acres, and have 35% and 45% respectively of their landscape dominated by the various stages of pinyon juniper woodland and big sagebrush.

These FMUs will serve as the second cumulative analysis area and will address CE 2- *reduction of sagebrush expansion and over populated pinyon- juniper woodlands within the larger North Unit planning area.*

Cumulative Impacts to Vegetation in the First Cumulative Analysis Area

Table 1. Summary, in acres, of treatments within the first cumulative analysis area between 1998-2008, and foreseeable actions within the next ten years.

	Historic (1998 through 2008) Bureau of Land Management	**Future (2009 through 2019)** Bureau of Land Management	**Total Acres**
Prescribed Fire	792	6,900	7,692
Mechanical	1,379	3,641	5,020
Total Acres	2,171	10,540	12,712

Prescribed fires and mechanical treatments: From 1998 through 2008, approximately 792 acres of public have been prescribed burned (Table 1), mechanical treatments include about 1,379 acres within the North Chiflo, South Chiflo, Wind Mountain, and Pot Mountain Project Areas from 2003-2007.

Foreseeable actions: In addition to the 29,000 acre proposed vegetation treatment action, may include approximately 3,641 acres of mechanized treatments to restore the grassland communities in denser sagebrush dominant areas located north and east of the Cerro Montoso Project Site, and 6,900 acre prescribed burns in the North Unit Planning Area (Table 1). The grazing allotments for this area include portions of Allotments 596, 610, 612, and 641. They are all scheduled to undergo the Standards and Guidelines Assessment process this year (2008) for renewing 10 year grazing permits.

Summary for CE1: Native grassland habitat would be maintained over the short and long term by treating approximately 40,000 acres through prescribed fire, wildland fire use, herbicide weed treatments, thinning and mechanical vegetation treatment projects.

Increased diversity and productivity of perennial herbaceous species and improved sensitive plant species habitat would be a cumulative benefit of actions in the area. Grazing permit renewals should result in slight to moderate long-term improvements in Watersheds (Standard 1), Native Plant Communities (Standard 4), and Sensitive Species (Standard 8) in areas where standards are not currently being met (US BLM 1997).

Cumulative Impacts to Vegetation in the Second Cumulative Analysis Area

Table 2. Summary, in acres, of treatments within the Second Cumulative Analysis Area between 1998-2008, and foreseeable actions within the next ten years.

	Historic (1998 through 2008) Bureau of Land Management	**Future (2009 through 2019)** Bureau of Land Management	**Total Acres**
Prescribed Fire	3,069	11,315	14,384
Mechanical	2,844	7,326	10,170
Total Acres	5,913	18,641	24,554

Prescribed fires and mechanical treatments: From 1998 through 2008, approximately 3,069 acres of public have been prescribed burned (Table 2), mechanical treatments

include 2,844 acres within the Wild Rivers, Ute Mountain, and West Guadalupe Mountain Project Areas from 2003-2007.

Foreseeable actions: In addition to the 29,000 acre proposed vegetation treatment action, future actions may include approximately 7,326 acres of mechanized treatments to restore the grassland communities in denser sagebrush dominant areas located north, east, and west of the Cerro Montoso Project Site, and 11,315 acre prescribed burns in the larger Occurrence Zone North Unit Planning Area (Table 2).

The grazing allotments for this area include portions of Allotments 596, 610, 612, and 641. They are all scheduled to undergo the Standards and Guidelines Assessment process this year (2008) for renewing 10 year grazing permits.

Table 3. Foreseeable treatment actions in the Cumulative Analysis Areas.

Treatment	Treatment Type	Planned Initiation	Planned Acres	Project Name
2009-10 Projects				
Mechanical	**Thinning**	**Fall 2009**	**625**	**Cerro Wildland Urban Interface HFR**
Mechanical	**Disking/shaving Seeding**	**Fall 2009**	**1400**	**North Chiflo Sagebrush Control**
Mechanical	**Seeding**	**Summer 2009-10**	**1,778**	**Ute Mountain Seeding**
Prescribed Fire	**Broadcast/Pile**	**Season 2009-10**	**2,675**	**Wind Mountain HFR**
Total			**6,478**	

Summary CE2: Past actions (wildfire and mechanical treatments) have not kept pace with post-European juniper expansion (Miller et al. 2005). In the absence of wildfires, pinyon-juniper dominated areas would be expected to expand well beyond its range. Most of the foreseeable treatments (Table 3) would occur in the 29,000 acre sagebrush and pinyon-juniper dominated areas.

Overall, the combination of treatments and wildfires would maintain vegetation at its current levels. These improvements would occur over a relatively small portion (<2%) of the entire area. Impacts related to livestock grazing permit renewals would be the same as described for the first cumulative analysis area.

The No Action Alternative would not treat any of the species within the 29,000 acre project area; therefore, the combination of treatments and wildfire would not be sufficient to maintain the overall grasslands at its current level, resulting in a loss of native habitat herbaceous communities over the long term.

4 Consultation and Coordination

4.1 List of Preparers

The Environmental Assessment was arranged by the following team:

NAME	TITLE	REVIEWED/TASK
Sam DesGeorges	Taos Field Office Manager	Assisted with Editing EA
Lynus Meyer	Rangeland Management Specialist	Reviewed Document
Rudolph Pacheco	FMO, Farmington District	Assisted with Editing EA
Raul E. Hurtado	Biological Technician	Lead preparer, miscellaneous
Greg Gustina	Fisheries Hydrologist	Riparian/Watershed
Valerie Williams	Wildlife Biologist	Wildlife/Migratory/TE/Editing
Pamela Herrera-Olivas	Wildlife Biologist	Wildlife/Reviewed Document
Merrill Dicks	Fire Archaeologist	Archaeological section/clearance
Jacob Young	Rangeland Management	Reviewed Document
James Harmon	Rangeland Management	Reviewed Document
Tami Torres	Outdoor Recreation Planner	Visual Resource Management
Patricio Martinez	Geographic Information Specialist	Maps, Arc GIS, Data
Kyle Sahd	Fire Management Specialist	Reviewed Document
Jonathan Reihn	Archaeological Technician	Archaeological clearance
Jessica Mrstick	Archaeological Technician	Archaeological clearance
Brad Higdon	NEPA Coordinator	Reviewed Document/Content

4.2 List of Agencies, Organizations, and Individuals Consulted

Persons and Agencies Consulted

The following people or agencies have been consulted for their comments in regards to the proposed action. The comments and suggestions expressed during the consultation have been incorporated into this EA.

Federal and State Agencies
USDA, U.S. Forest Service
USDI, U.S. Fish and Wildlife Service
New Mexico Department of Game and Fish
New Mexico Environmental Department
New Mexico State Land Office

County Level
Taos County Planning Department

Organizations
See attached list of organizations

Individuals
Grazing Permit holders

Allotment 641 and 605 operators:

Ronnie Salazar
Robert R. Ortega
Dr. William E. Droke
Lawrence Gallegos
Eliseo Rael

4.3 Public Participation

Scoping letter will be sent to interested public. See section 4.8 for a complete list of organizations.

4.4 Tribal Consultation

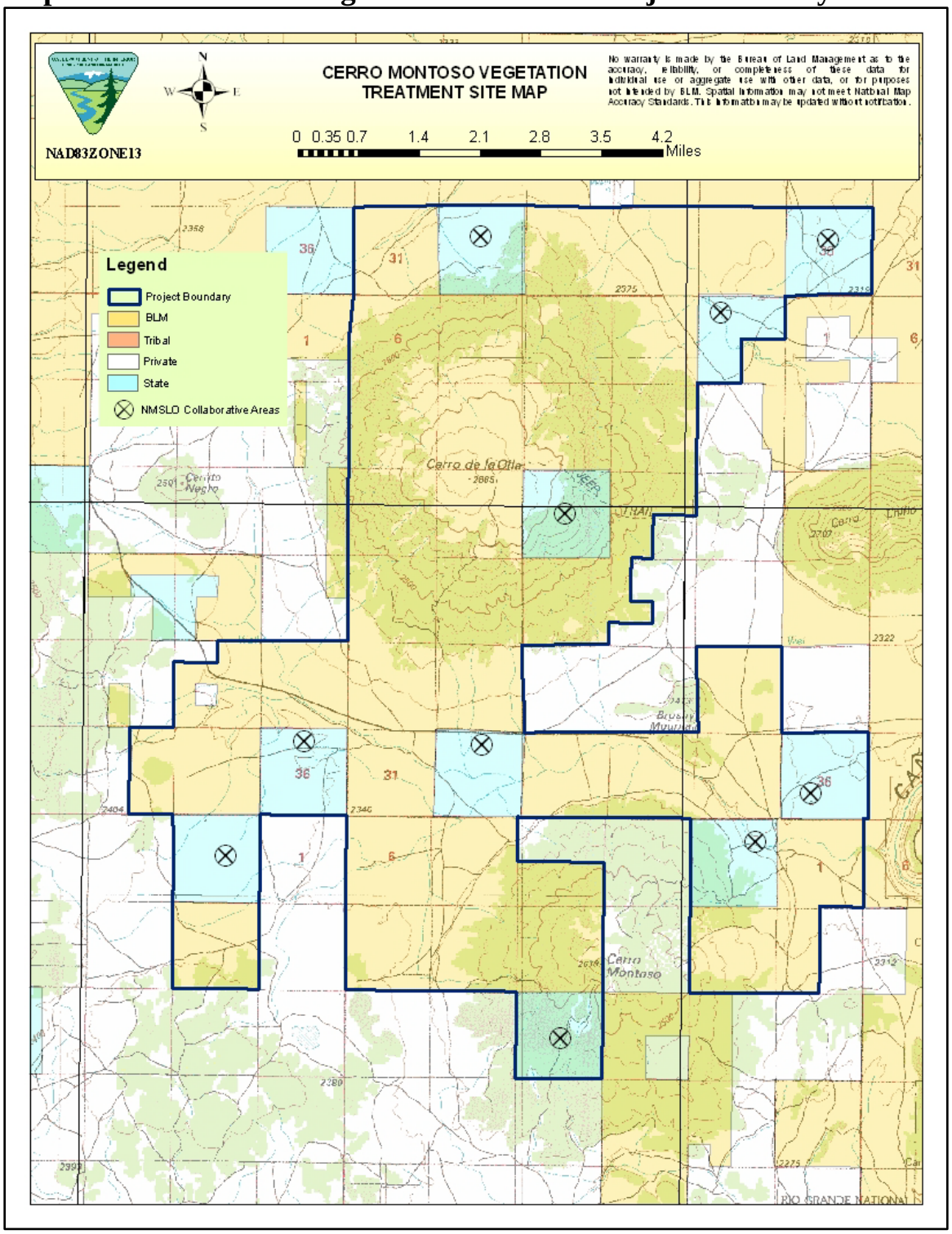
Local Tribes
Taos Pueblo

The Bureau of Land Management provided a comment form and scoping letter of the proposed project, and project map.

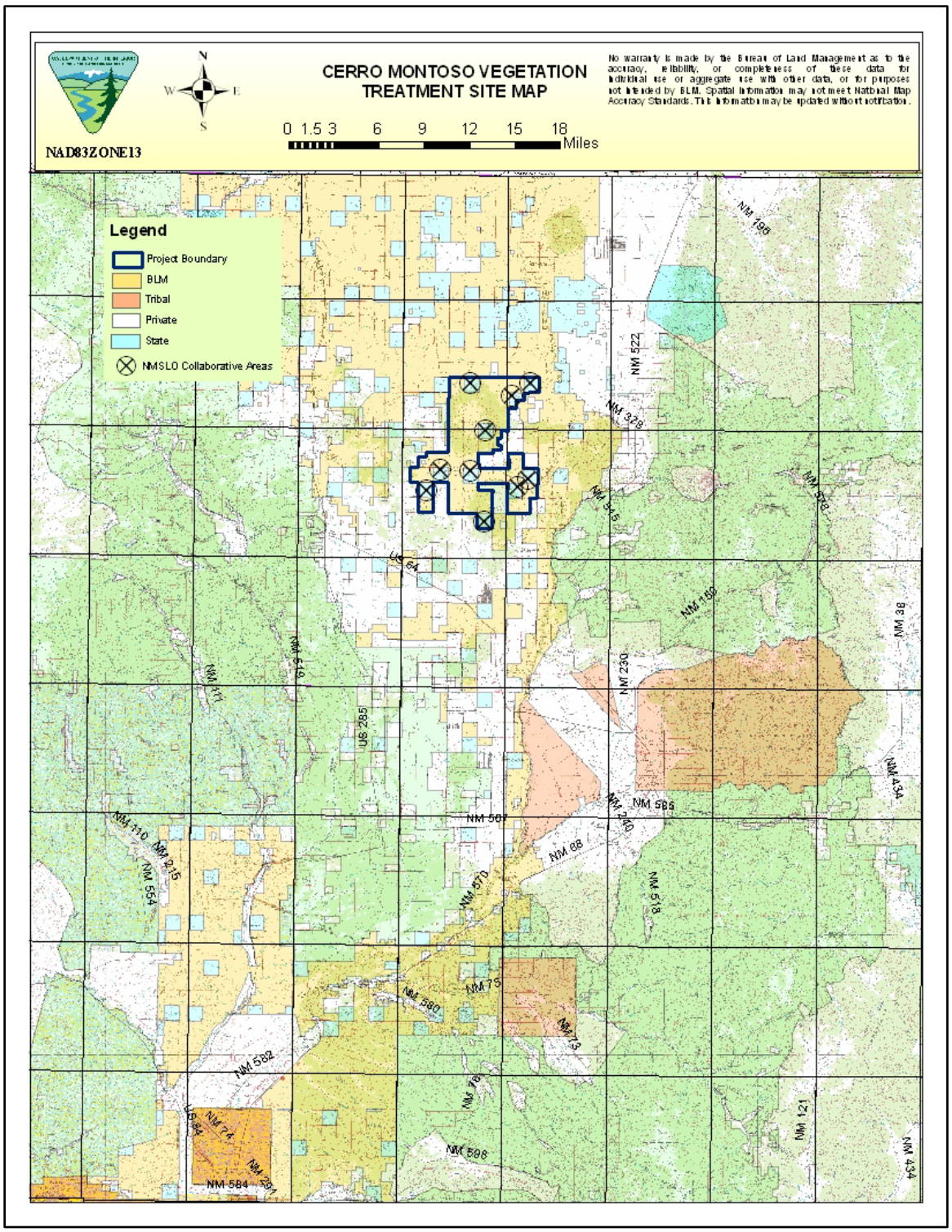
Appendix 1

4.5 Project Maps

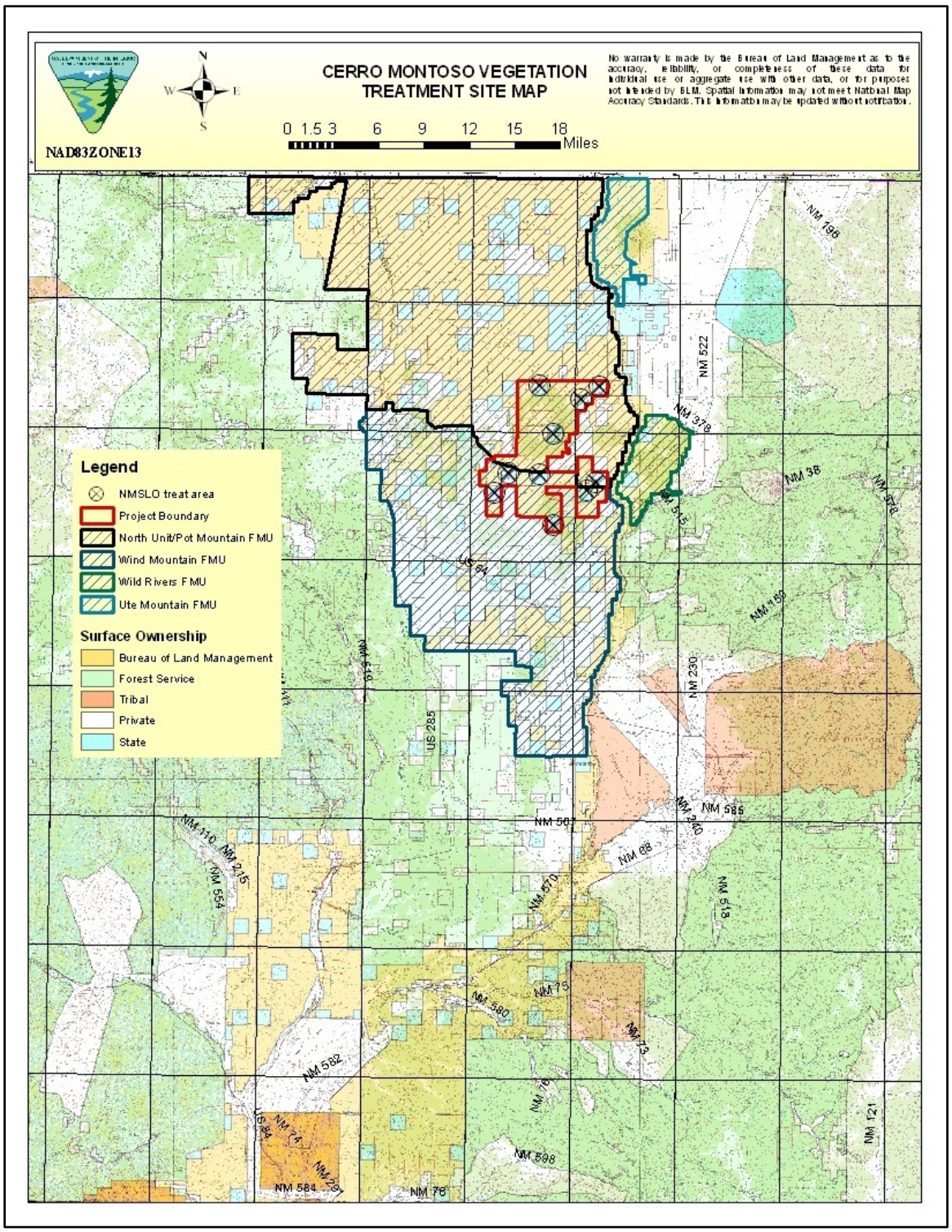
Map 1. Cerro Montoso Vegetation Treatment Project Boundary



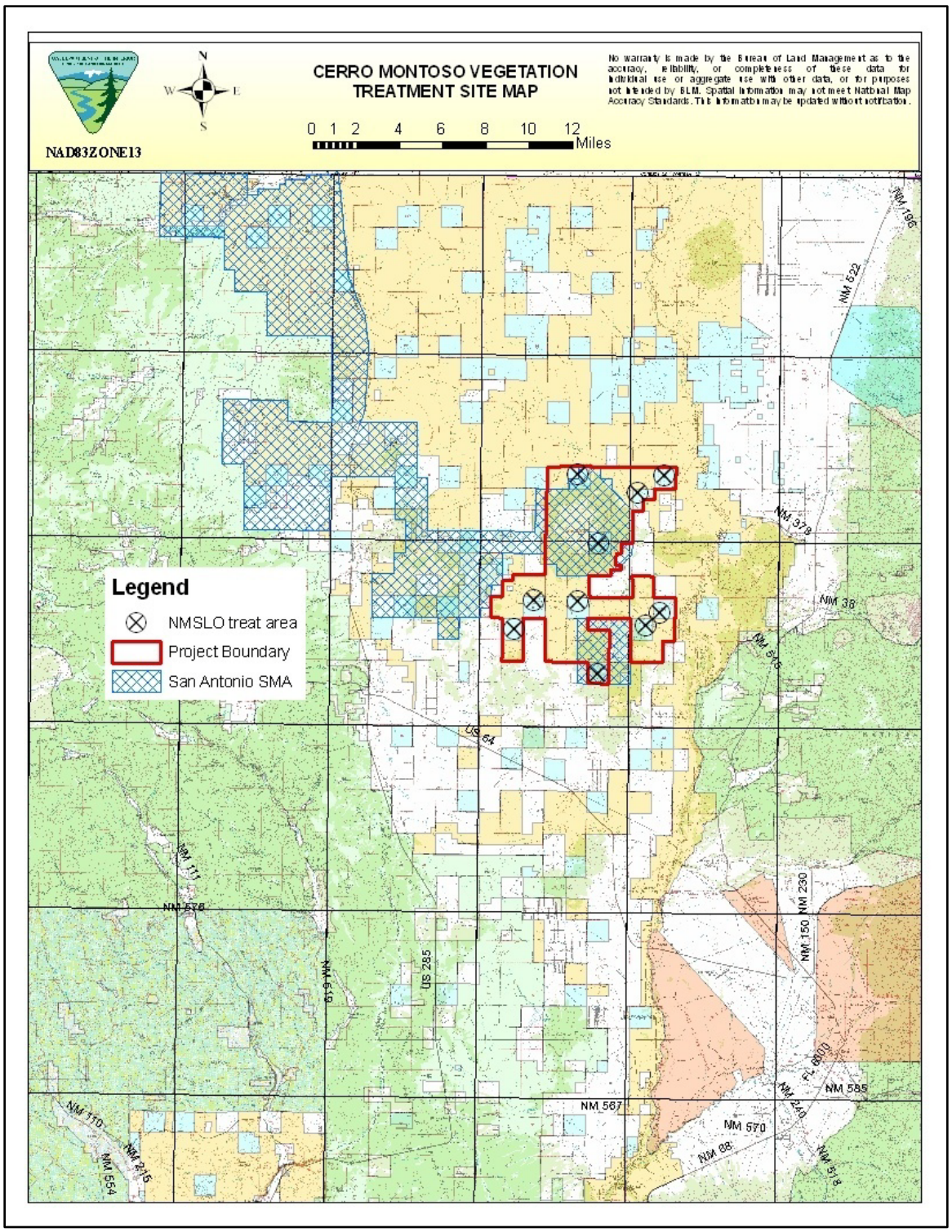
Map 2. Cerro Montoso Vegetation Treatment Vicinity Map



Map 3. Cumulative Effects Analysis



Map 4. San Antonio Special Management Area (SMA)



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Wilcox, B.P., Pitlick, J., Allen, C.D. and D.W. Davenport. *Runoff and erosion from a rapidly eroding pinyon-juniper hillslope*. Advances in Hillslope Processes, 1. 1996.

4.7 Consolidated Response to Comments

4.8 List of Organizations Consulted

Amigos Bravos, Rachel Conn, P.O. Box 238, Taos, NM 87571

Center for Biological Diversity, Michael Robinson, P.O. Box 53166, Pinos Altos, NM 88053

Hawks Aloft, Gail Garber, P.O. Box 10028, Albuquerque, NM 87184

Taos Native Plant Society, Judy Lister, P.O. Box 568, Arroyo Seco, NM 87514

NM Wilderness Alliance, Michael Scialdone, 202 Central SE, Suite 101, Albuquerque, NM 87102

NM Wilderness Alliance, 108B Civic Plaza Dr., Taos, NM 87571

*NMDGF, Matthew Wunder, Chief of Conservation Services, P.O. Box 25112, Santa Fe, NM 87504

Rocky Mountain Bird Observatory, David Hanni, 1510 S. College Avenue, Fort Collins, CO 80524

Taos Land Trust, Ernie Atencio, P.O. Box 376, Taos, NM 87571

Taos Soil and Water Conservation District, Peter Vigil, P.O. Box 2787, Ranchos de Taos, NM 87557

The Nature Conservancy, Ann Bradley, 212 E. Marcy Street, Santa Fe, NM 87501

Theodore Roosevelt Conservation Partnership, Dr. Terry Riley, 1 Calle De Carino, Tijeras, NM 87509

Upper Rio Grande Watershed Group, Rosemary Romero, 1350 San Juan Drive, Santa Fe, NM 87505

USDA – Northern Rio Grande RC&D, David Manzanares, 424 S. Riverside Drive, Espanola, NM 87532

USFS, Carson Supervisor's Office, Chirre Keckler, 208 Cruz Alta Road, Taos, NM 87571

Wild Earth Guardians, 312 Montezuma Avenue, Santa Fe, NM 87501

Taos Weed Committee, Sally Hoops, P.O. Box 1961, El Prado, NM 87529

Carson Forest Watch, Joanie Berde, Box 15 Llano, NM 87543

NM Cattle Growers Association, Caren Cowen, P.O. Box 7517, Albuquerque, NM 87194

Taos Pueblo Governor's Office, Paul Martinez, P.O. Box 1846, Taos, NM 87571

Taos Pueblo WarChief's Office, Office of Natural Resource Protection, P.O. Box2596, Taos, NM 87571

NM State Land Office, Marcus J. Garcia, P.O. Box 1148, Santa Fe, NM 87504

Appendix 2