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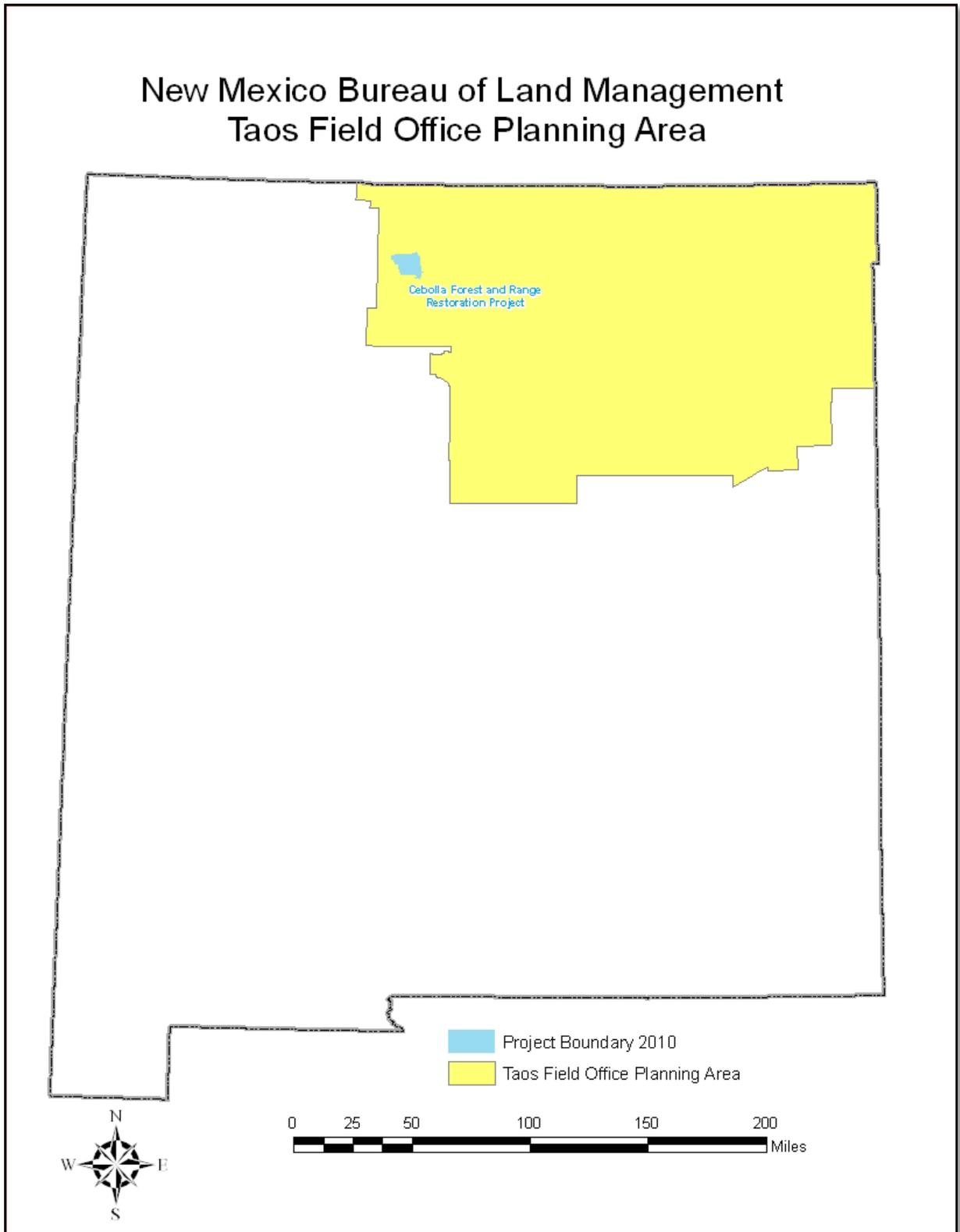
Cebolla Forest and Rangeland Restoration Treatment Project

DOI-BLM-NM-F020-2009-0027-EA

U.S. Department of the Interior
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Project Map and Planning Area



***Note:** See Appendix 1 for additional project maps.

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Chapter 1: Purpose and Need

1.1 Introduction

In August 2009, an administrative review was initiated for implementing the Cebolla Forest and Range Restoration Treatment Project for the Cebolla/Abiquiu 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 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 Cebolla/Abiquiu 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 Cebolla Forest and Range Restoration Treatment project area, expansion of big sagebrush (*Artemisia tridentata*), pinyon pine (*Pinus edulis*) and juniper (*Juniperus spp.*), has decreased other native vegetation communities and has impacted wildlife habitat areas.

The project is designed to increase biodiversity in the area by treating existing monocultures of pinyon-juniper and big sagebrush. 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 throughout the entire area.

The Taos Field Office disked and shaved 800 acres of similar habitat in the North and South Chiflo management areas in the spring of 2008, and successfully eliminated most of the aggressive big sagebrush with minimal disturbance and positive response from native grasses and shrubs following a prescribed broadcast burn conducted in 2009.

Big sagebrush expansion into native vegetation communities was also previously described in the *Cerro Montoso Vegetation Treatment Project Environmental Assessment*, EA# NM-220-08-053. The expansion of big sagebrush throughout the area, and many other places within the Southwest United States, is well documented (Miller et al, 1994).

The combination of settlement, fire suppression, and overgrazing in the early 1900s has resulted in the reduction of native vegetation communities from most of these areas within and around Cebolla, NM. As a result, big sagebrush continues to expand, replacing the herbaceous communities which provide important habitat and forage for a variety of habitat and 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. Increased fire suppression and other management practices on these lands for the last century have contributed to an augmented density of pinyon and juniper (Miller et al, 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. Current forest conditions on public

lands create wildfire threats to nearby residential areas and do not support the wildlife populations they once did (Miller et al, 1994). The Cebolla/Abiquiu FMU 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 Purpose and Need for Action

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

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 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 into native grasslands, and pinyon-juniper woodland areas of the Taos Field Office creating a high density monoculture. As sagebrush cover increases, native grasses and some perennial herbaceous understory species decline.

1.3 Land Use Plan Conformance

The Proposed Action is in conformance with the *1988 Taos Field Office Resource Management Plan* (RMP), as required by the Federal Land Policy and Management Act of 1976 (FLPMA), and the *2005 Taos Field Office Fire Management Plan* (FMP), which was updated in 2010.

In addition, the standard operating procedures and guidelines for the herbicide treatments proposed in the project area are detailed in the *Vegetation Treatments on Bureau 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.

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 Cebolla/Abiquiu Fire Management Unit (FMU).

1.4 Identification of Issues

On November 9, 2009, the proposed project was discussed by Taos Field Office resource specialists at a monthly NEPA coordination meeting. Issues discussed included wildlife, consultation requirements on threatened and endangered species, and needs related to archaeological clearance. Follow-up staff

meetings and consultations were held with field office resource specialists to further discuss the scope of this analysis.

The proposed project was posted in the on-line NEPA log on May 27, 2009, inviting the public to submit comment and concerns related to the scope of this project.

Based on public scoping, as well as the internal scoping efforts, the following issues are considered relevant to the analysis of this management action:

1. Air Quality - *How would the Proposed Action and Alternatives affect the quality of air within the project area?*
2. Climate – *What impacts would the Proposed Action have on climate change?*
3. Cultural Resources - *How would the Proposed Action and Alternatives impact the condition and integrity of cultural resources present in the area?*
4. Livestock Management - *What impact would the Proposed Action and Alternatives have on forage within the area?*
5. Migratory Birds - *How would the Proposed Action and Alternatives affect bird nests, including habitat for migratory birds within the project area?*
6. Riparian/Aquatic - *How would the Proposed Action and Alternatives affect the quality and quantity of water resources within and adjacent to the project area?*
7. Soils - *What impact would the Proposed Action and Alternatives have on the integrity and stability of soil within the project area?*
8. Threatened and Endangered Species Including Special Status Species - *How would the Proposed Action and Alternatives affect threatened and endangered species within the project area?*
9. Vegetation - *How would the Proposed Action and Alternatives affect the quality, extent of grasses, including other native vegetation available within the project area?*
10. Visual Resources - *How would the character of the view shed be maintained by the Proposed Action and Alternatives?*
11. Wildlife - *How would critical mule deer and big game winter range habitat be affected by the Proposed Action and Alternatives?*

Chapter 2: Description of Alternatives

2.1 Alternative A: 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 Cebolla Forest and Rangeland restoration project include maintaining the long-term health of the Cebolla/Abiquiu FMU, improving herbaceous growth, understory recovery, and winter range forage by removing the big sagebrush and hazardous fuels within the 64,978 acre project area. Treatment on BLM land within the project area would be given highest priority, while treatments on State and Private land would not occur until consultations and agreements have been established.

The project area is located within the Cebolla/Abiquiu FMU, in Rio Arriba County, New Mexico.

Management activities are proposed for sections 2, 3, 4, 9, 10, and 11 of T25N R04E; section 1, and 12 of T26N R02E; sections 1, 2*, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16*, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 33, 34, 35, and 36* of T26N R03E; sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16*, 17*, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32*, 33, 34, and 35 of T26NR04E; sections 23, 24, 25, 26,

35 and 36* of T27NR02E; sections 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32*, 33, 34, 35, and 36* of T27NR03E; sections 15, 16, 17, 18, 19, 20, 21, 22, 26, 27, 28, 29, 30, 31, 32*, 33, 34, and 35 of T27N R04E.

*denotes sections owned by the 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. Areas with a higher density of vegetation would be given priority for treatments. Based on implementation of recent comparable projects it is expected that the total number of acres treated per year would not exceed 5,000 for herbicides and 1,000 for thinning. Broadcast burns would be determined on a case by case basis and would not exceed 6,000 acres per year. The total amount of treatment acres combined would not exceed 12,000 acres per year. Other factors such as environmental conditions, timing, and availability of personnel could also impact project progress and development.

The project area is located approximately 7 miles west of Cebolla, NM in Rio Arriba County covering several sections of land and various range allotments. Elevation on the site ranges from 6,811 feet in the lowlands to 7,966 feet at the peaks. (See Appendix 1 for additional project maps).

2.1.1 Project Design and Management Actions

The following design features and management action 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 for resource benefit, herbicide treatments, thinning, and mechanical vegetation treatments that would improve ground cover while promoting vegetation diversity. An adaptive management approach would be used for implementation of the project by using the best available research on treatments and results from past treatments as well as input from resource specialists.

Prioritization

Treatment would first focus on the areas managed by the 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 priority.

Treatments

Various treatments may be conducted to some extent on all sections and include prescribed fire, wildland fire for resource benefit, herbicide 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 occur 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 prescribed burn boss. Both

broadcast burns and pile burning would continue throughout the duration of the project and to some extent on all sections.

Wildland fire for resource benefit is the action of allowing a natural ignition (lightning) to burn under a pre-determined set of environmental conditions. Areas proposed for wildland fire for resource benefit include sections that are entirely under BLM ownership in the north and central portions of the project area. These areas are predominantly pinyon-juniper savannah and pinyon-juniper woodland, including several small and isolated stands of ponderosa pine.

Mountain and mesa tops are typically identified for wildland fire for resource benefit primarily because of the success observed in such cases. For example, in the year 2000 a natural wildfire occurred on the Pot Mountain, mountain top, 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 15,000 acres (less than 25 % of the project area). 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 (1 lb a.e./acre) may decrease perennial grasses and allow annual grasses, as well as other cool season species to increase (Clary et al. 1975). Tebuthiuron may damage and reduce production of desirable 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 0.3 lbs a.e./acre. Standard Operating Procedures for this Environmental Assessment were adopted from the Standard Operating Procedures for applying Herbicides (Table B-2) in the Record of Decision for the Final PEIS (BLM 2007).

Following herbicide 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 species.

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 2010 Farmington District Fire Management Plan. Fuelwood gathering of down 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 10,000 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 vetch, Indian ricegrass, side-oats grama, and sand dropseed. The need for follow-up treatments will be determined by the BLM resource specialists including 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 the BLM in consultation with affected Tribes and the New Mexico State Historic Preservation Office.

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 2008 Farmington District Fire Monitoring Protocol 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

2.2 Alternative B: No Action

Under the No Action alternative there would be no vegetative treatments conducted in the Cebolla/Abiquiu FMU. The No Action alternative 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 for reasons discussed below.

They include:

-Eliminating the use of herbicides as a treatment method. The purpose of the Proposed Action is to augment understory and native grasses to benefit and improve existing habitat for wildlife and livestock whose habitats are being encroached by big sagebrush, pinyon pine, and juniper. The Proposed Action considers a range of treatment options that would be considered during implementation based on resource conditions. Herbicide use for management of habitat is consistent with the goals and objectives of the

Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic EIS mentioned above which has analyzed the public health effects of herbicide use. This document prescribes appropriate procedures for herbicide use that would be applied to minimize impacts to resources.

Not using herbicides as a treatment method would be ineffective at meeting the purpose and need of the project—to maintain a native and balanced biologically diverse community by treating and controlling big sagebrush from this area. Additionally, the use of herbicides as a treatment method along with prescribed fire to accomplish the Proposed Action will have a more effective result at removing big sagebrush. Encroaching sagebrush is overpowering and very aggressive in this area and will require a holistic management approach.

-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 above mentioned plans (1988 Taos Resource Management Plan and the 2010 Farmington District 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.

Chapter 3: Affected Environment

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.

The proposed treatment area occupies approximately 64,978 acres which are identified in the Taos Resource Management Plan as key native grasslands with major over populated forests and big sagebrush encroachment. The project area is located inside the perimeter of the Cebolla/Abiquiu Fire Management Unit and includes approximately 10 sections of New Mexico State Land Office lands. The entire project area lies in Rio Arriba County, New Mexico. Ownership breakdown in acres includes 20,701 of BLM, 37,386 of Private, and 6,891 of State.

The affected environment of the project area is also generally discussed in the 2010 Farmington District Fire Management Plan. A legal description of the Project area is provided under section 2.1.

Elevations range from approximately 6,811 to 7,966 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 Chama and Rio Nutrias 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.

The project area has a limited range of vegetation zones and habitat types. The canopy is a mix of Ponderosa Pine (*Pinus ponderosa*), juniper (*Juniperus spp.*), and pinyon pine (*Pinus edulis*). The understory is composed of various grasses, forbs, and shrubs, including blue grama (*Bouteloua gracilis*), side-oats grama (*Bouteloua curtipindula*), longleaf squirreltail (*Elymus longifolius*), lupine (*Lupinus spp.*), broom snakeweed (*Gutierrezia sarothrae*), gambel oak (*Quercus gambelii*), and mountain mahogany (*Cercocarpus montanus*).

Only resources that are actually impacted by the Proposed Action will be addressed in this document.

3.1 Air Quality

3.1.1 Degradation of air quality in portions of the field office is the result of pollutants such as nitrogen dioxide, hydrocarbons, carbon monoxide, and particulate matter from motor vehicles, blowing dust, and dirt roads. Automobile exhaust from the more densely populated areas contributes to air pollution. This is especially evident during the winter when temperature inversions prevent the escape and dispersion of polluted air to higher altitudes. These inversions are usually of short duration because of storm fronts and unstable cold air masses moving through the area.

Summer inversions last longer. Convective columns can occur at any time of the year when solar radiation stabilizes the air close to the ground and produces air turbulence that can disperse trapped auto emissions.

Wind action on exposed or disturbed soils is a primary source of air pollution in this area. The soil particles create dust storms of various magnitudes, depending on wind velocity. Early spring winds cause blowing dust, which contributes to air pollution. Extensive preparation for spring planting is the source of much of the blowing dust.

3.2 Climate

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

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

3.3 Cultural Resources

3.3.1 In general the area was used in prehistoric times for hunting and gathering activities. Within the Cebolla 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.

Prior consultation with cultural resources specialist during initial planning stages will be constituted as an integral component in the proposed implementation of any resource management activity that might pose an adverse affect to known or unknown cultural resources.

3.4 Livestock Management

3.4.1 There are 20 livestock grazing allotments within the project areas with over 5,300 animal unit months (AUMs) allocated to these allotments. Designated grazing allotments found within the project area include allotments 556, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 579, 744, 864, and 936.

3.5 Migratory Birds

3.5.1 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.

3.6 Riparian/Aquatic

3.6.1 Identified aquatic areas found within the project area include the Rio Cebolla, Canada de la Lagunita, Canada del Humo, Canada del Policarpo, and the Rio Nutrias located north of the project area. Wetlands and riparian areas provide important ecological functions, including flood water attenuation, sediment trapping, and nutrient transformation and retention (Westbrooks 1998).

3.7 Soils

3.7.1 Soils across the Cebolla/Abiquiu FMU have a wide range of variability. They include shallow-to-deep and fine-to-coarse-textured soils. And vary in salt content, and organic matter content. These areas are distinguished by unstable amounts of precipitation, elevation, soil temperature, and soil parent material. Most soils throughout the project area support vegetation that is used by livestock and serves as wildlife habitat.

3.8 Threatened and Endangered Species Including Special Status Species

3.8.1 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 as Appendix 3 is a summary list of the special status species considered in this analysis.

Federally listed threatened (T) and endangered (E) species in Rio Arriba County include: Arkansas River shiner (*Notropis girardi*) (T); black-footed ferret (*Mustela nigripes*) (E); least tern (*Sterna antillarum*) (E); Mexican spotted owl (*Strix occidentalis lucida*) (T); Rio Grande silvery minnow (*Hypognathus marus*) (E); and Southwestern willow flycatcher (*Empidonax traillii extimus*) (E). 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. Federal candidate (C) species, that could potentially be found within the project area include Rio Grande cutthroat trout (*Oncorhynchus clarki virginalis*) (C); and the yellow-billed Cuckoo (*Coccyzus americanus*). There is no designated critical habitat for any species listed by the USFWS within the project area.

3.9 Vegetation

3.9.1 A wide range of vegetative zones and habitat types occur within the project area (see Land Fire existing vegetation 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 rabbit brush (*Chrysothamnus spp.*). Mature ponderosa pine (*Pinus ponderosa*) stands with interspersed mature Douglas fir (*Pseudotsuga menziesii*) 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.

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 severely impacted 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.

3.10 Visual Resources

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

The Cebolla/Abiquiu FMU is located west of the village of Cebolla, NM. 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 Chama and Rocky Mountains are also spectacular.

3.11 Wildlife

3.11.1 Wildlife is abundant and diverse throughout the 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), 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.

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.

Chapter 4: Environmental Effects

4.1 Direct and Indirect Effects

This chapter describes the anticipated effects on the resource issues 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.

4.1.1 Alternative A: Proposed Action

As described in chapter 2, the Proposed Action is located on several sections of the Cebolla/Abiquiu FMU area. Management Actions of the Proposed Action for the Cebolla Forest and Rangeland Restoration project include maintaining the long-term health of the Cebolla/Abiquiu FMU, improving herbaceous growth, understory recovery, and winter range forage by removing the big sagebrush and hazardous fuels within the 15,500 acre project area.

4.1.1.1 Air Quality

Issue: The greatest impacts on air quality would be moderate noise from vehicles. Impacts would be temporary, small in scale, and quickly dispersed throughout the area. These factors, combined with standard operating procedures (SOPs), minimize the significance of potential impacts. Federal, State, and local air quality regulations would not be violated. Standard management practices for ground-based application of herbicides would limit the amount of drift into non-target areas.

Treatment with prescribed fire would have an immediate, but short term impact on air quality in the immediate area due to smoke.

4.1.1.2 Climate

Issue: The assessment of GHG emissions, their relationship to global climatic patterns, and the resulting impacts is an ongoing scientific process. It is currently not feasible to know with certainty the net impacts from the Proposed Action on climate—that is, while BLM actions may contribute to the climate change phenomenon, the specific effects of those actions on global climate are speculative given the current state of the science. The BLM does not have the ability to associate a BLM action's contribution to climate

change with impacts in any particular area. The technology to be able to do so is not yet available. The inconsistency in results of scientific models used to predict climate change at the global scale coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level and determining the significance of any discrete amount of GHG emissions is beyond the limits of existing science. When further information on the impacts to climate change is known, such information would be incorporated into the BLM's planning and NEPA documents as appropriate. It is not, however, possible at this time to predict with any certainty the causal connection of site specific emissions from the Proposed Action or other alternatives in this EA to impacts on the global and regional climate.

There is an assumption, however, that certain related activities in the alternatives (e.g. mechanical, herbicidal, and fire treatments) would contribute to short-term emissions of GHGs for the duration of a given project. Examples of some of these short term activities or sources, which may contribute to GHS, include small particulates from chainsaw usage, smoke from prescribed fires, and vehicle emissions.

4.1.1.3 Cultural Resources

Issue: 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 to inventoried sites can be reduced or eliminated through protective measures taken during the burning operation, such as foaming or black-lining around existing sites.

As discussed in section 2.1, archaeological inventories would be performed before prescribed fire and non-fire fuels treatment projects. The intensity of archaeological inventory would be determined for each proposed project based on the potential for earth disturbing activities, fuel types, projected site types, etc. Inventory methods would help mitigate potential impacts to cultural resources.

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 would likely have a positive effect on cultural resources due primarily to forest, grassland and watershed restoration which should reduce long term erosion.

4.1.1.4 Livestock Management

Issue: The goals of rangeland treatment methods for livestock include treating plant species that are undesirable and improving forage production by controlling competing vegetation.

Rangeland restoration treatments to enhance forage, prescribed broadcast burns, and other vegetation restoration projects would result in direct surface and vegetation disturbance. These treatments in the short term would remove vegetation and could potentially impact grazing allotments within the project area. Treatments would be completed when livestock are not in the project area.

Following treatments from chemical/mechanical application and/or prescribed burning, the treated areas would be rested from livestock grazing to allow regeneration of vegetation. This post-treatment rest could be considered a negative impact to livestock operators as alternative grazing must be located for their livestock.

4.1.1.5 Migratory Birds

Issue: 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 September) 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.

4.1.1.6 Riparian/Aquatic

Issue: Short-term direct impacts would be similar to those described in Section 4.1.1.9 (Vegetation) of this EA, meaning non-target species would not be affected by treatment methods. Long-term and indirect impacts would be beneficial habitat within riparian/wetland areas due to the removal or control of unwanted vegetation infestations.

Due to the scope and scale of the Proposed Action, mechanical treatments would be unlikely to have an adverse effect on riparian and aquatic areas. In most cases, unwanted vegetation near a riparian area could be removed without disturbing more desirable species. Fuel and lubricant spills that could result from using chainsaws and trimmers would be contained or cleaned up before contamination spread to surrounding areas. With mechanical treatments erosion can be a problem on slopes greater than 20%. Thus, mechanical methods would be avoided on steep slopes near riparian areas.

The effect of prescribed fire as a treatment method in riparian areas would be dependent on the natural fire regime of the area, the time of year that burning occurred, and the extent of the prescribed fire. In riparian areas where vegetation density is usually high, the potential for hotter, more extensive burns is elevated (Thompson and Shay, 1984). However, the likelihood that most prescribed burns in riparian areas would consist of pile burns and mid-scale broadcast burns, the effect to riparian systems would be minimal.

The use herbicide treatments would have a limited compounded effect to riparian systems because of the scope of the Proposed Action and location of riparian areas in relation to herbicide treatment areas. An increase in soil erosion and surface water runoff could result from vegetation reduction near riparian and wetland areas, which could lead to streambank erosion and sedimentation (Ott 2000). The amount and likelihood of streambank erosion and sedimentation would be directly proportional to the size of the treatment area.

Some herbicides such as sulfometuron methyl which absorbs into soil particles could be carried offsite by surface runoff. This could increase the risk to native vegetation in riparian areas.

Additional impacts could include unintentional applications of herbicides in riparian areas. Accidental spills of herbicides could be very damaging to native riparian vegetation and could degrade water quality in these areas. The Standard operating procedures for applying herbicides found in the Record of Decision for the PEIS (BLM 2007, Appendix B table B-2) outline further considerations that should be applied prior to implementing herbicide treatments in riparian and aquatic areas.

4.1.1.7 Soils

Issue: 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 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.

4.1.1.8 Threatened and Endangered Species including Special Status Species

Issue: No federally listed species are likely to occur in the project area. Because no federally listed species are found in the project area, the Proposed Action will have no effect 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 black-footed ferret could expand into existing sagebrush habitat converted to grasslands. With expansion of these grassland colonies, there could also be a potential increase of habitat for yellow-billed Cuckoo and/or least tern.

4.1.1.9 Vegetation

Issue: Under the Proposed Action, target species in treated areas would be directly affected. Although, the degree to which vegetation would be affected would depend on the number of acres treated. The overall effect of treatments would be to achieve the desired successional stage, and to create a more stratified age structure for wildlife habitat improvement and livestock grazing.

Plants may vary greatly in their sensitivity to different treatment methods. Effectiveness may vary with different climatic and soil conditions. Soil-applied herbicides are less effective on fine textured soil relative to coarse-textured soil, because herbicide molecules may be adsorbed to clay colloids. Response of non-target plant species to herbicides depends not only on their susceptibility to the herbicide directly, but also on their response to a decrease of target plant species in the community.

Prescribed fire typically does not kill southwestern grass species (Warren et al 1999). This is because fires are usually fast moving and do not burn into the root crown. This allows the grass plants to re-sprout. Grass species recovery is dependent upon post-treatment precipitation, plant vigor prior to burning, relative humidity at time of burning, and post-treatment grazing pressure. Depending upon the amount of post-treatment precipitation, grasses can recover as quickly as the first growing season. Without sufficient post-treatment moisture, recovery could take several years to reach pre-treatment levels and support less desirable species during the interim.

4.1.1.10 Visual Resources

Issue: Retaining old growth pinyon and other scenic groupings of sagebrush would maintain the scenic quality along Rio Chama. 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.

4.1.1.11 Wildlife

Issue: 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.

4.1.2 Alternative B: No Action

Under the No Action alternative there would be no vegetative treatments conducted in the Cebolla/Abiquiu FMU project 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.

4.1.2.1 Air Quality

Issue: Taking no action would preclude nitrogen dioxide, hydrocarbons, carbon monoxide, and particulate matter from motor vehicles caused by project related travel to and from the site of the target species. Many roads within the Taos Field office are dirt roads that when disturbed by vehicles can cause blowing dust which contributes to air pollution.

4.1.2.2 Climate

Issue: It is currently not feasible to know with certainty the net impacts of the No Action alternative on climate—that is, while BLM actions may contribute to the climate change phenomenon the specific effects of those actions on global climate are speculative given the current state of the science. The assessment of GHG emissions, their relationship to global climatic patterns, and the resulting impacts is an ongoing scientific process.

4.1.2.3 Cultural Resources

Issue: The No Action alternative would have no short-term effects on noncombustible cultural resources. Combustible cultural resources could be at risk under the no action alternative due to the higher risk for wildfire associated with monocultures of non native invasive plants and vegetation. Long-term effects on cultural resources could include less opportunity for accurate surveys due to infestations.

4.1.2.4 Livestock Management

Issue: The No Action alternative could likely result in the succession of the pinyon/juniper and sagebrush vegetation types, allowing for undisturbed plant communities where herbaceous species are under-represented. Livestock could be affected by changes in forage due to the encroachment of invasive plants outcompeting herbaceous vegetation.

4.1.2.5 Migratory Birds

Issue: 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 would find fewer habitat niches within existing conditions and, therefore, the No Action alternative would have a negative impact on these species.

4.1.2.6 Riparian/Aquatic

Issue: Through a No Action alternative there would be increased vitality and higher stand density of non native invasive plants and vegetation found within riparian ecosystems. Long-term impacts would include a decline in native plant species, decreased biodiversity, and a reduction in the quality of the riparian ecosystems within the project area.

4.1.2.7 Soils

Issue: Under the No Action alternative, 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).

4.1.2.8 Threatened and Endangered Species including Special Status Species

Issue: A No Action alternative would create long term changes to the food base for threatened and endangered species such as the southwestern willow flycatcher. Big sagebrush and pinyon-juniper encroachments could out-compete native vegetation thus creating monocultures. Because of this change to the native vegetation composition the macro invertebrates and small mammals that utilize current native vegetation for habitat will be forced to find different native habitat or may decline due to lack of habitat. These macro invertebrates and small mammals are the food base for many threatened and endangered species as well as special status species.

4.1.2.9 Vegetation

Issue: With the No Action alternative invasive plants such as sagebrush and pinyon-juniper present within the project area would continue to exist and would likely expand their dominance. This would result in the vegetation moving more toward a monoculture of sagebrush and pinyon-juniper species instead of natural vegetation and native biodiversity. Biodiversity would likely be in decline under this no action alternative.

4.1.2.10 Visual Resources

Issue: Under the No Action alternative 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.

4.1.2.11 Wildlife

Issue: The No Action alternative would leave wildlife habitat in the management area in their current conditions, allowing them to degrade over time. Relative to the conditions that the Proposed Action is likely to create, current habitat conditions would exhibit a decreased production of native understory grasses and forbs and would produce larger unbroken blocks of sagebrush monocultures.

Under this alternative, the management area would also be more susceptible to large stand replacement pinyon-juniper encroachment, which could remove the native cover and forage that many wildlife species require.

4.2 Cumulative Effects Analysis

A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other action.

4.2.1 Cumulative Actions

4.2.1.1 Past and Present Actions

Past Actions that have affected the natural and human resources within the proposed Cebolla/Abiquiu FMU project area include ranching, forest thinning and small farming, large areas plowed and seeded with crested wheatgrass, development of roads and pipelines, and the use of herbicides to treat sagebrush encroachments.

Present actions including the aforementioned Proposed Action, may also include continued farming, ranching, recreational activities, hunting, fuelwood gathering, and road maintenance. Overall, the

cumulative impacts, and more specifically management actions mentioned in the Proposed Action of this project would be positive; this project would reduce overall density levels, reduce fuel loadings and lead to more diverse rangeland and woodland ecosystem use that is healthy and sustainable.

4.2.1.2 Reasonably Foreseeable Actions

In addition to the 64,978 acre proposed forest and rangeland restoration treatment actions, reasonably foreseeable actions may include a 12,500 acre BLM prescribed burn, as well as other mechanical treatments within the FMU (Table 1).

Table 1. Historic and foreseeable treatments in acres within the Cebolla/Abiquiu FMU.

Treatment	Historic (2000 through 2010) Bureau of Land Management	Future (2010 through 2020) Bureau of Land Management	Total Acres
Prescribed Fire	500	12,250	12,750
Mechanical	1,000	3,250	4,250
Herbicide (Spike)	5,800	10,000	15,800
Total Acres	7,300	25,500	32,800

4.2.2 Cumulative Effects

4.2.2.1 Air Quality

Treatments with prescribed fire would have an immediate, but short term impact on air quality in the immediate area due to smoke. Thinning treatments would have an immediate short-term impact on air quality due to chainsaw particulates and exhaust. Other impacts to air quality might come from nearby pollutants such as oil and gas developments, road maintenance and regular traffic.

4.2.2.2 Climate

The incremental contributions to global GHG gases as a result of the proposed alternatives cannot be translated into effects on climate change globally or in the area of this site-specific action. As stated in the direct/indirect effects section under climate change, the assessment of GHG emissions and the resulting impacts on climate is an ongoing scientific process. It is currently not feasible to know with certainty the net impacts from the proposed action on global or regional climate—that is, while BLM actions may contribute to the climate change phenomenon, the specific effects of those actions on global climate are speculative given the current state of the science. Therefore, the BLM does not have the ability to associate an action’s contribution in a localized area to impacts on global climate change.

4.2.2.3 Cultural Resources

BLM staff archaeologists have been integrated into the assessment process to promote proactive, long-term management of cultural resources. Proposed activity areas, which have not been intensively inventoried, and at-risk resources would be delineated for minimizing activity impacts with their perimeters. No cumulative impacts to cultural resources within the Project area would occur under either alternative.

4.2.2.4 Livestock Management

Cumulative impacts from rangeland restoration treatments to enhance livestock forage, prescribed broadcast burns, and other vegetation restoration projects would result in surface and vegetation disturbance. These treatments in the short term would disturb and remove vegetation and could potentially impact grazing allotments within the project area. In the long term, these management actions would assist with maintaining and improving the overall vegetation conditions for a variety of resource objectives including increases of forage of native grasses for livestock grazing.

4.2.2.5 Migratory Birds

While there would 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. Cumulative actions could also result in 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.

4.2.2.6 Riparian/Aquatic

Cumulative impacts to riparian and aquatic ecosystems from the actual implementation of operations would be minimal. Treatments in the short-term would disturb and remove vegetation. In the long-term, these management actions would assist with improving and restoring the overall conditions of the riparian and aquatic ecosystems.

4.2.2.7 Soils

Cumulative impacts from the actual implementation of operations would be minimal. Some physical soil disturbance would occur from vehicle use, but would only affect small localized areas 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.

4.2.2.8 Threatened and Endangered Species including Special Status Species

Cumulative impacts to threatened and endangered species include actions from forest and woodland and rangeland treatments to enhance wildlife forage, prescribed fire, and other vegetation restoration projects. These management actions would result in surface, ground, and vegetation disturbance. These treatments in the short term would disturb and remove vegetation. In the long term, these management actions would assist with maintaining and improving the overall vegetation conditions for a variety of resource objectives including propagation of native grasses and habitat restoration.

4.2.2.9 Vegetation

Forest and woodland treatments, rangeland treatments to enhance livestock and wildlife forage, prescribed fire, and other vegetation restoration projects would result in surface and vegetation disturbance. These treatments would, in the short term, disturb and remove vegetation. In the long term, these management actions would assist with maintaining and improving the overall vegetation conditions meeting a variety of resource objectives.

4.2.2.10 Visual Resources

No change in VRM classes would be anticipated by the cumulative actions.

4.2.2.11 Wildlife

Cumulative impacts 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 species due to disturbance during the implementation phase of the project; however, there would be long-term benefits from an increase in diversity of vegetation. In general, the cumulative impacts of this forest restoration project on wildlife would be positive; this project would reduce overall density levels, reduce fuel loadings and lead to more diverse woodland ecosystems that are healthy and sustainable.

Chapter 5: Consultation and Coordination

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 Environmental Assessment.

5.1 List of Consultation Participants

Federal and State Agencies

USDA FS – Carson National Forest, Canjilon Ranger District
USDA FS – Santa Fe National Forest, Cuba and Española Ranger Districts
USFWS – US Fish & Wildlife Service
NMDGF – New Mexico Department of Game and Fish
NMSLO – New Mexico State Land Office

See Appendix 2 for the complete list of contacts.

Organizations

See Appendix 2 for the complete list of organizations that were consulted.

Grazing Allotment Operators

Grazing allotment operators for allotments 556, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 579, 744, 864, and 936 were notified of this proposal.

5.2 Summary of Public Participation

On March 26, 2010 a scoping letter was sent to interested members of the public. The scoping letter presented a summary of the purpose and need for the proposed action, project objectives, a proposed action, and potential issues associated with the proposed action.

Relevant comments were dealt with in a number of ways. This information was either: 1) incorporated into the document; 2) identified as *Other Alternatives Considered*; or 3) used to identify relevant issues to be addressed in the effects analysis. During the initial scoping comment period members of the public provided constructive comments and words of support for the proposed action. The single comment of concern that was submitted was from the Wild Earth Guardians which questioned the use of herbicides “across such a large area” and recommended that the BLM consider a reduction in the use of Herbicides if not the elimination of herbicides altogether. Relevant information received through comments helped to define the scope of this analysis.

A pre-decisional Environmental Assessment will be posted on the BLM NM website for public commenting followed by a press release issued to the “Taos News, Rio Grande Sun, and the Santa Fe New Mexican.”

5.3 List of Preparers

Below is a list of individuals along with their job titles who assisted with preparing the EA.

<u>NAME</u>	<u>TITLE</u>	<u>REVIEWED/TASK</u>
Sam DesGeorges	Taos Field Office Manager	Assisted with Editing EA
Rudolph Pacheco	FMO, Farmington District	Assisted with Editing EA
Raul Hurtado	Lead Biological Technician (Fire)	Lead preparer
Greg Gustina	Fisheries Hydrologist	Riparian/Watershed
Valerie Williams	Wildlife Biologist	Wildlife/Migratory/TE/Editing
Merrill Dicks	Fire Archaeologist	Archaeology
Jacob Young	Rangeland Management Specialist	Reviewed Document
Tami Torres	Outdoor Recreation Planner	Visual Resource Management
Patricio Martinez	Geographic Information Specialist	Maps, Arc GIS, Data
Kyle Sahn	Fire Management Specialist	Reviewed Document
Peter Hoagland	Biological Technician (Fire)	Reviewed Document, misc.
Brad Higdon	NEPA Coordinator	Reviewed Document/Content

Chapter 6: References

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Appendix 1 – Project Maps

Appendix 2 – List of Organizations Consulted

List of Organizations Consulted

Amigos Bravos - P.O. Box 238, Taos, NM 87571

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

Hawks Aloft Inc. - P.O. Box 10028, Albuquerque, NM 87184

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

NM Wilderness Alliance - P.O. Box 25464 Albuquerque, NM 87125

New Mexico Department of Game and Fish - P.O. Box 25112, Santa Fe, NM 87504

Rocky Mountain Bird Observatory - 230 Cherry Street Suite 150, Fort Collins, CO 80521

Taos Land Trust - P.O. Box 376, Taos, NM 87571

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

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

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

Carson National Forest, Canjilon Ranger District - Box 488 Canjilon, NM 87515

Santa Fe National Forest, Espanola Ranger District - P.O. Box 3307, Española, NM 87532

Santa Fe National Forest, Cuba Ranger District - P.O. Box 130, Cuba, NM 87013

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

Taos Noxious Weed Committee - P.O. Box 1961, El Prado, NM 87529

Carson Forest Watch - Box 15 Llano, NM 87543

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

NM State Land Office - P.O. Box 1148, Santa Fe, NM 87504

Natural Heritage New Mexico - UNM Biology Department MSC03 2020 1UNM Albuquerque, NM 87131

Southern Ute Tribe - P.O. Box 737, Ignacio, CO 81137

Ute Mountain Ute Tribe - General Delivery, Towaoc, CO 81334

Jicarrilla Apache Nation - P.O. Box 507, Dulce, NM 87528

Navajo Nation - P.O. Box 9000, Window Rock, AZ 86515

Appendix 3 – Summary of Special Status Species