# United States Department of the Interior
# Bureau of Land Management

---

**Environmental Assessment**
**DOI-BLM-CO-S010-2014-0004**

---

**June, 2014**

# Rabbit Mountain Fuels Treatment Project

**La Plata County, CO**
**Township 35N, Range 7W, Sections 19, 29, 31, 32, 33**
**Township 34N, Range 7W, Sections 4, 5, 6, 7, 8**

***Project Proponent:***
***USDI BLM***
***Tres Rios Field Office***

---

Tres Rios Field Office
29211 Highway 184
Dolores, CO, 81323
970-882-6841

# Rabbit Mountain Fuels Treatment Project
# DOI-BLM-SO10-2014-0004

# CHAPTER 1
# INTRODUCTION AND NEED FOR THE PROPOSED ACTION

## 1.1 INTRODUCTION

The Bureau of Land Management (BLM) is proposing to continue treatment for fuels reduction in the area known as Rabbit Mountain of La Plata County. See attached location map (Figure 1, Appendix A). The proposed treatment area is public land surrounded completely by private lands. Previous to this proposal the Rabbit Mountain Fuels Reduction Project CX and the Foxfire Fuels Reduction Project CX were implemented between 2005 and 2008 in the same area. These earlier projects were mechanical mastication of 870 acres of pine understory consisting mostly of oakbrush along with mastication of some pinyon/juniper and other shrubs. This initial mastication project was conducted with support and funding from BLM hazardous fuels reduction accounts as well as the Rocky Mountain Elk Foundation and Colorado Parks and Wildlife Habitat Partnership program.

The Bureau of Land Management (BLM) proposes to further reduce the fuels in this Wildand Urban Interface area and continue the big game habitat improvement work previously conducted by utilizing 600-800 acres of prescribed burning across portions of the masticated area as well as within some of the non-masticated areas. Additionally, isolated hand thinning (lop and scatter) prior to broadcast burning would also be beneficial to the health, vigor, and resiliency to fire of some of the denser, young ponderosa pine stands.

## 1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

### 1.2.1 Need for action

The Federal Land Policy and Management Act (FLPMA) of 1976 requires BLM to manage the multiple-uses of the public lands, including fuels, wildland fire, wildlife and natural values, and rangeland health without permanent impairment. Additionally, the project is intended to meet the goals of the San Juan/San Miguel RMP (September 5, 1985) which directs management of the area proposed for treatment to ensure that management of native plant species enhances, restores, and does not reduce the biological diversity of natural ecosystems.

### 1.2.2 Purpose of the action

BLM's purpose for this action is to reduce the risk to public and private lands and improve the resistance to disturbance and the sustainability of ponderosa pine and oakbrush stands by treating fuels both mechanically and with prescribed fire within the identified area.

The initial mechanical treatments (2005-2008) in this area modified understory fuels and some tree densities toward a more natural condition that was beneficial in reducing wildfire risk and for improving big game winter habitat. Additionally, the health and vigor of the stands was improved compared to pre-treatment conditions. However, fuels were rearranged and were not entirely removed or reduced by the previous mechanical treatment and shrubs (primarily oakbrush), are beginning to grow large enough again to potentially have a substantial impact on future fire behavior. Given the proximity of this area to private lands with homes, outbuildings, and associated human presence, along with the presence of gas wells, pipelines, and access roads, and powerlines, it would be prudent to further reduce fire risk by reducing the existing fuel loads and resistance to control. Broadcast burning would accomplish these objectives as well as improve wildlife habitat and vegetative structure, and would also begin to restore fire as a natural process to the fire dependent ponderosa pine in the area.

### 1.2.3 Decision to be made

The BLM will decide whether or not to implement the Rabbit Mountain Fuels Treatment Project, and if so under what terms and conditions.

## 1.3 CONFORMANCE WITH BLM LAND USE PLAN(S)

The proposed action identified within this assessment is in conformance with the San Juan/San Miguel Resource Management Plan (RMP), approved September 5, 1985, amended (1991). The proposed action is consistent with the terms and goals of the following; livestock grazing management (page 5-6), timber management (page 21-22), managing habitats to provide forage for wildlife (page 12).

In regards to Fire Management, general guidance in the RMP states, "Provide level of protection from wildfire that will result in least total cost and will generally enhance range management values. Use prescribed fire to enhance forage production" (Page 28). With regards to hazardous fuels reduction and prescribed fires the RMP states, "Provide a level of protection from wildfire that will result in a least total cost and will enhance forest resources. Use prescribed fire when possible to enhance forest management objectives" (Page 54). A Red book amendment to this RMP was issued in 1997 authorizing the use of prescribed fire.

## 1.4 RELATIONSHIPS TO STATUTES, REGULATIONS AND OTHER PLANS

- Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.)
- Healthy Forests Restoration Act of 2003 (16 USC 6501 et seq.)
- Sikes act of 1960 (16 USC sec. 670a)
- Clean Air Act of 1977 (USC 7401 et seq.)
- Colorado Department of Public Health and Environment Air Quality Control Commission Regulation No. 1
- Archaeological Resource Protection Act of 1974
- American Indian Religious Freedom Act of 1978
- National Historical Preservation Act of 1966 as Amended
- National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)
- 1973 Endangered Species Act, as amended
- Migratory Bird Treaty Act of 1918 (16 USC 703711)

- Bald and Golden Eagle Protection Act (1962)
- Standards for Public Land Health: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands.

The 1999 U.S. General Accounting Office (GAO) report, Western National Forests: A Cohesive Strategy Needed to Address Catastrophic Wildland Fire Threats concludes, "The most extensive and serious problem related to health of the nation forests in the interior west is the over-accumulation of vegetation."

In response to the catastrophic fire season of the year 2000, Laverty and Williams prepared a report to Chief Dombeck called, Protecting People and Sustaining Resources in Fire Adapted Ecosystems, A Cohesive Strategy (October, 2000). In it they discuss how the absence of fire had led to an over-accumulation of shrubs and small tress thereby "diminishing the ecosystem diversity, health, and resiliency and fuels conditions for unnaturally intense fires that threaten communities, air, soil, water quality, and plant and animal species." It calls for the use of maintenance prescribed burning, where fire is used to maintain forest conditions, and mechanical thinning followed by prescribed burning.

There are two Community Wildfire Protection Plans (CWPPs) that cover this area or areas adjacent to it.

The first is the La Plata County CWPP (2006), which identifies the project area as having a high and moderate level of concern relative to wildfire risk. Within that plan two goals pertinent to this proposed action are to 1) Reduce risk in the wildland urban interface and 2) Increase the number of fuel reduction projects on federal lands in the WUI and other priority areas. A recommended strategy contained within that CWPP to help meet these goals is to 'Initiate fire mitigation projects on Federal Lands identified in the CWPP planning process after appropriate review processes are completed, and assist other fire managers with fire management activities in their jurisdictions. These projects will be carried out by the Bureau of Land Management and the United States Forest Service, in partnership with local communities, the local fire departments, the Colorado State Forest Service, and the Bureau of Indian Affairs. (USFS and BLM, with community partners).

The second CWPP is the Timberdale Ranch CWPP (July, 2012), which covers an area of WUI immediately northeast of the project area. Within that plan there are several recommendations, primarily aimed at treatments within the subdivision, but which also have application on adjacent properties, including BLM lands covered by this proposal. These include: 1)Tree stocking is generally over-dense so recommended treatments are aimed at reducing density and removing ladder fuels to reduce the opportunity for crown fires in close proximity to the residences, 2)Oak clumps should be spaced no closer than two times shrub height to other clumps or trees, 3)Wind-driven crown fires are the primary type of stand replacement wildfire in ponderosa pine forests, so thinning over-dense clumps to stand densities of 60 to 80 square feet of basal area or no more than 70 trees over 15 feet tall per acre and reducing downed woody fuels can reduce wildfire risk, 4)An adjacent shaded fuel break outside the subdivision is also recommended, totaling 49

acres, 5)Work with surrounding landowners to apply shaded fuel break treatments to adjoining properties.

## 1.5 IDENTIFICATION OF ISSUES

The proposed action was internally scoped with the Tres Rios Field Office Interdisciplinary Team on November 13, 2013. The following issues were identified as warranting further review to determine whether detailed analysis is required (Interdisciplinary Team Checklist, Administrative Record). The detailed analysis of these issued can be found in Chapters 3 and Chapters 4.

**Air Quality**

- Concerns were expressed that the proposed action could produce excess smoke to the area.

**Vegetation Resources**

- Concerns were expressed that the proposed action would affect the vegetation in the area and reduce wildlife habitat for some period of time.

- The proposed action could contribute to the spread of noxious weeds within treatment units..

**Fuels/Fire Management**

- Concerns regarding the effectiveness of the proposed action on future fire behavior were expressed.

**Soils/Water Resources**

- Concerns were expressed that the proposed action would affect soils and water resources in the area through a reduction in vegetative cover and organic debris.

**Visual Resources**

- How the proposed action would affect visual resource management was identified.

**Wildlife**

- Hand-line is proposed to be constructed in mapped critical winter range for mule deer and elk and during spring.
- Golden eagles are known to nest in the area. Other raptors, specifically Northern goshawks and red-tailed hawks, could be temporarily impacted.

In addition, an interested public scoping letter describing the project proposal was mailed to interested publics on January 31, 2014. The letter was sent to groups or individuals who have expressed an interest in participating in habitat improvement and hazardous fuels reduction projects as well as State and Federal wildlife agencies. The project proposal was also posted on the Tres Rios NEPA website on January 31, 2014.

Two letters were received as a result of external scoping. Colorado Parks and Wildlife expressed support for the proposed project and recommended treatments occur in early spring or preferably, or after mid-November to reduce effects to hunters accustomed to hunting the area. Upper Pine River

Fire Protection District also expressed support for the proposed project and recommended further coordination when the prescribed fire portion or broadcast burning is implemented.

### 1.6 Issues Considered but Eliminated from Detailed Analysis

#### Wildlife

#### Migratory Birds

- The project area covers various and diverse habitat types that include mountain shrub communities, pinyon pine and juniper woodlands and ponderosa pine forest. These multiple vegetation types provide habitat for numerous migratory bird species that are found on the Tres Rios field office proposed action may affect migratory birds, based on implementation schedule.
  The wildlife clearance report describes some of the species that are likely present in the project area. Effects to the various species that may be present in the project area would be minimized through the implementation of the design features outlined in section 2.2.1. Habitat fragmentation to migratory birds would be temporary, and in the long-term, the proposed action with design features is anticipated to have a positive effect on migratory bird habitat by creating age class diversity. There are no anticipated long-term effects or threats to individual migratory birds or to the viability of any migratory bird species from this proposed action. Effects to migratory birds will not be analyzed further in this EA because of the design features part of the proposal see section 2.2.1.

#### Sensitive Bat Species

- Several sensitive bat species are likely to occur in the project area. Due to the timing and duration of the project, these effects will be minimal. Sensitive bat species will not be analyzed.

#### Threatened and Endangered Species

- Potential effects to federally listed species were disclosed in the wildlife clearance report. There are no effects to listed and proposed species from this proposed action and these species will not be analyzed further.

# CHAPTER 2
# DESCRIPTION OF ALTERNATIVES

## 2.1 INTRODUCTION

This EA analyzes the Proposed Action and the No Action Alternative. No other alternatives, which would most likely have included more mechanical treatment, were considered due to the amount of mastication that has already been completed in the area; broadcast burning, along with minor amounts of pine thinning, is the only remaining treatment that should be completed in this area to reduce fuel loads and fire risk, as well as to improve habitat and vegetation structure and to improve natural processes.

The No Action Alternative is considered and analyzed to help provide a baseline for comparison of the effects of the Proposed Action.

## 2.2 PROPOSED ACTION

The BLM proposes to utilize broadcast burning on approximately 600-800 acres of previously masticated ponderosa pine and oakbrush with minor amounts of pinyon/juniper and other shrubs. The larger Project Area is 2,200 acres, consisting entirely of BLM lands. The primary objective of the project is to reduce future fire intensity and resistance to control in this area with the goal of reducing risk to private lands and improvements.

The burns would be low to moderate intensity with the objectives of 1) reducing surface fuels, 2) reducing ladder fuels, primarily shrubs and lower branches of ponderosa pine, 3) reinvigorating grasses, forbs and some shrubs, 4) improving wildlife habitat, particularly for deer and elk, and 5) improving stand structure by reintroducing fire as a natural process to a fire dependent vegetation type.

Prior to broadcast burning isolated areas of dense, young ponderosa pine may be hand thinned with lop and scatter of the debris in order to improve the health and vigor of these areas and to help protect the residual overstory trees from fire. Not more than 50 acres of thinning would occur throughout the burn units, and no single thinning area would be greater than 5 acres. Broadcast burning would consist of low to moderate intensity understory burns with an average flame length of 2-4' with approximately 70-90% of each burn unit being burned. There will be a mosaic of burned (70-90%) and unburned (10-30%) patches throughout each burn unit with burned patches ranging from 5-50 acres in size; this will ensure that various vegetation structures, species compositions, and age classes remain available for the needs of different wildlife species. The burns would remove 40-60% of the litter and duff across the stands, opening up additional areas for new grasses and forbs to become established within 1-2 years of the burn.

Up to six miles of handline and/or ATV plowline would be needed to implement the 800 acre upper limit of burning. Handline and/or ATV plowline could be implemented anytime, outside of wildlife timing restrictions, except when the biologist recommends exceptions. Any control line would be rehabilitated post-burn with water bars and pullback of soil/debris as necessary to reduce erosion and eliminate the use of the control lines as unplanned trails. The project would be implemented starting in the Fall of 2014 and possibly continuing through the Fall of 2016, depending on available burn windows. The project would be implemented primarily by BLM

personnel with assistance from the USFS and the Southwest Conservation Corp Veteran's Fire Crew. A burn plan would be developed and approved by the Field Office Manager prior to implementation of the broadcast burn. A smoke permit would be obtained from the State of Colorado, Air Pollution Control Division; the smoke permit would identify standards and conditions under which the burn could be implemented.

### 2.2.1 DESIGN FEATURES FOR THE PROPOSED ACTION

**Air Quality:**

1) The BLM will obtain a Smoke Permit from the State of Colorado, Environmental Health Department, Air Pollution Control Division, prior to burning. The BLM will abide by the 'standards and conditions' of the permit, including the maximum daily burn acreage, wind direction, dispersion index, and daily ignition cutoff time.

2) The Burn Boss will consider smoke effects to public safety, including roads, airports, and health care facilities.

3) The Burn Boss will consider effects to viewsheds, particularly if effects could occur over multiple consecutive days.

**Soils:**

1) Any constructed control line on slopes greater than 20% will have water bars constructed post-burn and will also have debris (logs, branches, rocks, etc) pulled back across the line post-burn to keep soil movement to a minimum.

**Noxious Weeds:**

1) Treatment areas will be inventoried for noxious weeds prior to treatment. If noxious weeds are present weed treatment may occur prior to fuels treatment activities and in subsequent years as needed based on treatment effectiveness monitoring.

2) In areas where noxious weed control measures are completed, effectiveness monitoring by BLM weed specialists will occur following treatments.

3) In areas where noxious weed populations were not present at the time of the prescribed fire treatments, monitoring will be completed during the growing season following the treatment to ensure that no new populations of noxious weeds become established.

4) Areas of ground disturbance associated with control lines would be re-habilitated and seeded if necessary following completion of treatment activities.

**Wildlife:**

1) Migratory birds:

- Avoid treatments during the migratory bird nesting season from May 1 – July 15. If a treatment is to be implemented during the nesting season, a BLM Wildlife Biologist

would determine the appropriate survey methods (timing, frequency, etc.) and restrictions needed prior to implementation to minimize effects to migratory birds.

- Any snags over 16" diameter at breast height (DBH) would be retained throughout project implementation. Additionally, snags that meet this DBH requirement would be lined or otherwise avoided when burning occurs in units with these snag components. However, snags that pose a safety hazard to firefighters near control lines would be felled to mitigate the hazard.

**2) Raptors:**

- Burning and thinning treatments would occur only after raptor surveys have been conducted for nesting raptors. If surveys are not possible, implementation in these units would occur outside of the raptor breeding period, March 1- August 31.
- If an eagle nest or roost site is discovered within the project area at any time, a BLM Wildlife biologist will be contacted immediately and notified of the location. Within ½ miles around known eagle nests, implementation of burning and thinning treatments would occur outside of the breeding period; February 1st – July 15th. Burning and thinning implementation would only occur inside this time period if field surveys were conducted in the project area.

**3) Big Game:**

- Avoid conducting treatments within big game critical and severe winter range, and winter concentration areas between December 1st and April 30th of each year. No project implementation would occur in units containing these ranges between December 1st and April 30th of each year.
- Burning would occur alongside roads to facilitate control during prescribed burning; however, a thirty feet set back from roads would be implemented as able and could result in a patchy, irregular strip of untreated fuels to shield sightlines from roads through units.

Exceptions and/or waivers for the mitigation measures listed above may be granted in coordination with Colorado Parks and Wildlife, depending on habitat conditions for any given year.

### 2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative the proposed action as described above, would not occur, there would be no broadcast burning, no thinning of young, dense pine, and no needed construction of control lines.

### 2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

No other alternatives were needed to address any unresolved resource conflicts.

## CHAPTER 3
## AFFECTED ENVIRONMENT

## 3.1 INTRODUCTION AND GENERAL SETTING

The affected environment was considered and analyzed by an interdisciplinary team as documented in the Interdisciplinary Team Checklist (Form 5, which can be found in the administrative record). The checklist indicates which resources of concern are either not present in the project area or would not be impacted to a degree that requires detailed analysis and rationale. Resources which could be impacted to a level requiring further analysis are described in more detail in this Chapter and the effects to these resources from the proposed action and the no action alternatives are analyzed in Chapter 4.

The project area is located on BLM managed lands approximately 3-10 miles northwest of Bayfield, Colorado in the vicinity of Rabbit Mountain. Access to the south side of the area is off Highway 160 north through Holman and Hartman Canyons and access to the north side is from the 502 Road in Wallace Gulch. Much of the access is across private lands with BLM easements. The project is entirely on Bureau of Land Management administered land. The project area is completely surrounded by private lands, most of which has been subdivided and developed; within 1 mile of the project area there are several hundred structures. There are also numerous natural gas wells within and adjacent to the project area as well as associated pipelines and access roads. The majority of the project area is on or near the top of a small mesa with elevations within the project area ranging from 7,000' to nearly 8,000'. There are several small ephemeral drainages that begin in the project area and flow to the south, including Homer, Holman, and Hartman Canyons. The northeast side of the project area is a steep northeast facing escarpment that drops off into, and is drained by, Wallace Gulch. All drainages ultimately flow into the Los Pinos River and then into the San Juan River. Vegetation in the area is dominated by ponderosa pine with an oakbrush understory that has been mechanically treated over the past 5-10 years. In the drainages and on southern facing slopes vegetation consists of oakbrush, mixed mountain shrub, and pinyon/juniper. Average annual precipitation in the project area ranges from 15" to 20".

The project area lies within an area of Colorado that was the homeland of numerous Native American tribes. More recent uses of the area include ranching, hunting, gas and oil exploration, mining, and logging, and firewood collection.

## 3.2 Air Quality

Air Quality in this area is generally very good with the following occasional exceptions: 1) during the late-winter and early-spring months there are occasional dust storms during frontal passages that carry dust from northwest New Mexico, Arizona, and southeast Utah into the area. There are anywhere from 1 or 2 to a dozen or more of these storms each spring, with each event lasting from a few hours to a couple of days. Visibility during these storms can be reduced to just a few miles, 2) occasionally there are wildfires in the region that may degrade air quality for a few hours to a few days, these fires may be local, i.e. SW Colorado, or may be in New Mexico, Arizona, Utah, or as far away as California or Northern Mexico, 3) occasionally there are inversions during the winter which may trap particulates in the valleys for a few days at a time.

Smoke sensitive areas near this project are limited to homes as well as roads with moderate amounts of use. The community of Bayfield is 3-10 miles southeast of the project area. There is

one assisted living facility in Bayfield. There are no airports within several miles of the project area.

## 3.3 Vegetation

The dominate vegetation in the area is ponderosa pine with an understory of oakbrush, grasses, and forbs with occasional other shrubs. Much of the shrub component has been mechanically treated over the past 6-8 years and has resprouted and is now 2-3' tall. In some locations there was no mechanical treatment due to slope constraints, subsequently the shrubs in these areas are 5-8' tall in the understory. The pine/oak vegetation type is primarily located on the tops of the mesa's/ridges, on some of the northern slopes, and in the upper portions of the south facing drainages where slopes are less than 20%. Dominate surface fuels in these stands consists of pine litter, grasses, scattered masticated debris, and low, sprouting oakbrush.

On most southerly aspects, including SW to SE, pinyon/juniper and oakbrush/mountain shrub communities dominate. These areas have not been treated in the past but some of them would be included in this proposal as part of the broadcast burn units to facilitate the establishment of control lines on more open ridges, roads, and drainages as needed.

In the southern portion of the project area there are 3 stands of pinyon-juniper that were masticated in the mid-2000s. These areas currently contain scattered residual pinyon-juniper trees, some re-sprouting shrubs, and some grasses and forbs. There are significant amounts of masticated pinyon-juniper slash scattered throughout these areas with an estimated fuel loading of approximately 12-14 tons/acre.

### 3.3.1 Noxious/Invasive Weeds

Noxious weeds and other invasive vegetation species are aggressively competitive and can often out-compete native vegetation, especially on recently disturbed sites. A "noxious weed" is usually a non-native plant that has been designated by Federal or State law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new or not common to the United States. "Invasive vegetation", as defined by Executive Order 13112, is defined as "non-native plants whose introduction does, or is likely to, cause economic or environmental harm to human health."

Currently there has been very little noxious/invasive weed inventory that has been conducted within the project area. Although, the limited inventory that does exist documents small infestations of cheatgrass (*Bromus tectorum*) occurring in portions of the project area.

Although there has been little inventory conducted to date within the proposed project area it is very likely that other noxious weed infestations may occur due to the fact that this area currently has had ground disturbing activities associated with existing roads, well pads and past vegetation treatment projects.

## 3.4 Fuels/Fire Management

Between 2002 and 2010 there were 10 wildfires within 4-5 miles of the project area. The largest of these fires was 1.2 acres with the average size being 0.25 acres. Fires occurred between mid-March and early-October. The year 2002 had 3 fires, 2004 and 2010 each had 2 fires, 2003, 2005, and 2009 each had 1 fire, while no fires occurred near the project area in 2006, 2007, and 2008. The cause of 8 of these fires was lightning while one was caused by slash burning and another by equipment.

The 76,000-acre Missionary Ridge Fire burned within a few miles north of the project area in 2002. Other large wildfires have also occurred in La Plata County over the past twenty years. Examples include the Black Ridge Fire (1994) that burned over 10,000 acres in piñon/juniper approximately 25 miles southwest of the project area; the Sambrito 2 Fire (2011) that burned 500 acres of ponderosa pine and piñon/juniper 20 miles southeast of the project area; and the Red Creek Fire that burned approximately 45 acres of mixed conifer forest six miles northwest of the project area in 2010. Lightning scars are apparent on trees in the project area and across this landscape, indicating that lightning fires are possible and have likely occurred in the past. The last large fire in the immediate vicinity was documented in 1888. (revised from the Timberdale Ranch CWPP.)

Over the past 8-10 years numerous mechanical fuels treatment projects have occurred in the area. The most pertinent of these is the hyrdoaxe/mastication work that was done within the pine/oak mix within the project area between 2005 and 2008 (Rabbit Mountain Project). Approximately 800 acres were treated this way primarily to reduce the shrub (ladder fuel) component and to achieve some surface fuel reduction. A portion of the Foxfire project is in the southern portion of the project area; Foxfire was a mastication treatment in pinyon/juniper near the powerline. Other treatments in the surrounding areas of public land include Project 228, located 2 miles northwest, Forest Lakes, located 5 miles northeast, Foxfire, within the project area and 1 mile south, and Mayhan, located 3 miles southwest. All of these treatments were mows/mastications and total 2,000-3000 acres of treatment.

No broadcast burns have been conducted in this area by the BLM over the past 10 years. A pile burn was completed in a small stand near Road 502 in an area that had previously been open to personal use firewood cutting.

**3.5 Soils, Water Resources, Water Quality**

There are two primary soils that cover ~80% of the target burn areas:

(30) Fortwingate-Rock outcrop complex, 6-25% slopes, derived from sandstone, well drained, high water capacity, unrated erosion (rock outcrop).

(82) Zyme-Rock outcrop complex, 12-65% slopes, derived from shale, well drained, very low H2O capacity, severe erosion rating.

There are two secondary soils that cover ~15% of the target burn areas:

(7) Archuleta-Sanchez complex, 12-65% slopes, derived from sandstone and shale, well drained, low H2O capacity, severe erosion rating.

(37) Herm loam, 6-25% slopes, derived from shale, well drained, very high H2O capacity, moderate erosion rating.

The majority of the target burn areas consist of slopes between 0 and 15%, some portions of the burn units range from 15-35%, and a very small portion of 2 burn units are greater than 35%.

All drainages within the Project Area are ephemeral or intermittent and flow with spring snowmelt in April-early June and then occasional intermittent flow during the July-August monsoon season. These drainages include Homer Canyon, Holman Canyon, and Hartman Canyon, which drain south from the area into Dry Creek. Additionally, some northeast facing slopes drain into Wallace Gulch. All of these drainages, when flowing, eventually drain into the Los Pinos River, then to the San Juan River, and eventually into the Colorado River.

### 3.7 Visual Resources

The project is located on BLM managed lands in the Rabbit Mountain area, which consists of moderately sized foothills (up to 7800 feet) rising up between Highway 160 and County Road 502. These foothills are penetrated by several relatively steep canyons such as Hartman and Homer Canyon, and flanked on the north/northeast by Wallace Gulch. The vegetation of the project area consists of a combination of dense stands alternating with more open, park-like stands of ponderosa pine. There are also irregularly shaped open pockets of grass, sage, and oak dominated meadow features. Primary colors found in the area range from the deep greens of the evergreen overstory to the lighter greens and tans of the grasses and exposed soils. Structural elements of the landscape exist in the form of houses, roads, power lines, and fences. Structural elements within the project area (BLM managed lands) itself include roads, gas pads, fences, and power lines. There is no Visual Resource Management (VRM) Class designation for this area at this time. A Visual Resource Inventory was completed resulting in an interim VRM Class II designation for this project.

### 3.8 Cultural Resources

The archaeological record of human occupation in the general vicinity of the analysis area dates from approximately 8,500 years ago to present. Cultural resources associated with archaic, formative, protohistoric, and historic period use are present. Prehistoric resources in the immediate vicinity of the analysis area typically consist of artifact scatters representing lithic tool manufacture associated with resource procurement. Historic era resources are generally related to timber and ranching activities. More detailed summaries of regional prehistory and history can be found in Colorado Prehistory: A Context for the Southern Colorado River Basin (Lipe et al. 1999) and Colorado History: A Context for Historical Archaeology (Church 2007).

A review of the existing BLM and Colorado Office of Archaeology and Historic Preservation records was conducted to identify previous incidences of archaeological survey and known cultural resources within the project area and the proposed action treatment units. Twenty two cultural resource inventories have been previously conducted within the proposed treatment units, resulting in a total of approximately 512 acres of survey. The majority of these acres are associated with surveys that were conducted in advance of prior fuels reduction treatments that have occurred within the current treatment units. Two sites and 15 isolated finds have been

previously recorded in the treatment units. Nine sites and 37 isolated finds have been previously identified within the project area. This data indicates a mean site density of one site per 225 acres within the project area, which represents a low site density in Southwest Colorado. All of the isolated finds and the sites within the proposed action treatment units are not eligible for the National Register of Historic Places (NRHP). Three sites within the portions of the project area outside of the proposed treatment units are eligible for the NRHP.

An additional 55 acres of new survey was conducted within the proposed treatment units and along the portions of fire control line proposed for construction that lack previous survey. Two isolated finds were newly recorded. The two previously recorded sites within the treatment units were revisited. Both sites were re-confirmed to be not eligible for the National Register.

### 3.9 Native American Religious Concerns

Native American religious concerns are associated with cultural practices or beliefs of a living community rooted in the history or religion of that community and are important in maintaining the continuing cultural or religious identity of the community. No concerns or issues were identified during the tribal consultation conducted for this project. The cultural resource surveys that have taken place did not locate any potential sacred sites or traditional cultural properties.

### 3.10 Wildlife

Threatened, Endangered, and Sensitive Wildlife Species

Analyzing and disclosing the effects of the proposed action to federally listed species is needed to comply with the Endangered Species Act of 1973 (16 U.S.C.1531 et seq.), as amended; BLM manual 6840 direction for special status species management; and the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C.4321 et seq.), as amended. The project effects will not result in a requirement to consult with the US Fish and Wildlife Service (Section 7, Endangered Species Act).

There are known occurrences of golden eagles in the project area. This species will be carried forward for analysis.

Terrestrial Wildlife

There is habitat for several raptor species that may be impacted by the proposed action. Potentially impacted species will be carried forward for analysis.

The Rabbit Mountain project area is heavily used by elk and deer in most winters and the entire project area is designated by Colorado Parks and Wildlife as critical and severe winter range for both species. Elk use has declined for the past two decades, primarily due to declining forage value as forage areas have converted to dense cover. There are roads in the area used for administrative access for oil and gas activity that are closed for public use. The area is somewhat popular in some hunting seasons when higher elevation snows push animals down to lower elevations. Hunters can only access the area on foot from outside the closed gates. A major elk

migration corridor leads to the project area with some animals continuing onto nearby private lands south of U.S. Hwy 160.

There are numerous and diverse terrestrial wildlife species that may occur in the analysis area. Mammals that may be within the project area include, but are not limited to: red and gray fox (*Vulpes spp.)*, raccoon (*Procyon lotor*), coyote(*Canis latrans*), badger(*Taxidea taxus*), desert shrew (Notiosorex crawfordi) possibly the Merriam's shrew(*Sorex merriami*), black-tailed jackrabbit (*Lepus californicus*), desert and mountain cottontail (*Sylvilagus spp.*), chipmunks (*Tamias spp.*), ground squirrels (*Sciuridae spp.*), Gunnison's prairie dog (Cynomys gunnisoni), woodrats (*Neotoma spp.)*, mule deer (*Odocoileus hemionus*), elk (*Cervus Canadensis*), black bear (*Ursus americanus)* and several species of mice (*Peromyscus spp.*) (Fitzgerald 1994, pers. observations).

# CHAPTER 4
# ENVIRONMENTAL EFFECTS

## 4.0 DIRECT AND INDIRECT EFFECTS

## 4.1 PROPOSED ACTION

This section analyzes the effects of the proposed action to those potentially impacted resources described in the 'Affected Environment', Chapter 3, above.

### 4.1.2 Air Quality

Prescribed burning would occur primarily in the Fall, typically sometime between late-August and late-October. Burning could also occur in the spring, depending on burn windows. Burning would occur for 2-3 days each year for the next 2-3 years. The BLM is required to obtain a Smoke Permit from the State of Colorado, Environmental Health Department, Air Pollution Control Division, prior to burning. The permit contains 'standards and conditions' under which the prescribed burn must be carried out in order to minimize the potential for violations of the National Ambient Air Quality Standards (NAAQS); these standards include a maximum daily burn acreage, wind direction, dispersion index, and daily ignition cutoff time. The Burn Boss must also consider smoke effects to public safety, including roads, airports, and health care facilities. Additionally, the Burn Boss should consider effects to viewsheds, particularly if effects could occur over multiple consecutive days.

Violations of the NAAQS are assumed not to occur under the Smoke Permit standards and conditions.

#### Daytime Smoke

Typical wind directions in this area are a north wind in the morning until late morning (~10:00) switching to a south or southwest wind for the remainder of the daylight hours. Throughout each day during the burns there would be some smoke visible in the immediate vicinity and up to 4-5 miles downwind (typically north to northeast) of the burn area, visually beyond that distance, the smoke should be fairly well dispersed. Immediately adjacent to the burn and within 1-2 miles downwind there is some potential to smell smoke. During the day there is very limited potential to impact roads, however roads immediately adjacent to the burn units will be monitored and patrolled to manage any effects that might occur. This could include temporarily stopping traffic or using a lead car to move vehicles through the area. The potential to impact the Bayfield area with daytime smoke is very limited, given the anticipated acceptable wind direction from the smoke permit.

#### Nighttime Smoke

During the time of year when the burn is scheduled there is some potential for nighttime inversions to set up shortly after sunset. Occasionally these inversions can trap smoke in the valleys throughout the night with the inversion, and smoke, lifting the following morning as the sun warms the valleys. In this location, given the topography and the number of homes and roads in the area, this would be an undesirable impact, resulting in reduced visibility on roads and the smell of smoke in the valleys through the night. Most of the fuels in the burn units

would burn out rapidly once ignited due to their limited size; this fact coupled with an anticipated permit condition to have ignition completed two to several hours prior to sunset, can reduce the potential of trapping smoke in a nighttime inversion. 'Smoke on Road' signs would remain in place on roads throughout the night and would be repositioned as needed in the event of an inversion trapping smoke. Patrols by burn personnel in the evening and possibly throughout the night may also be needed to monitor smoke on roads. There is some potential for nighttime smoke to settle in the Bayfield area given the evening down valley flow in the Los Pinos drainage (personal communication with Han Schloepfer, Fuels Specialist, Columbine District, SJNF). Completing the burns early each day will allow both the fuels to burn out and the lofted smoke to disperse downwind prior to inversions setting up late in the day.

### 4.1.3 Vegetation

Ponderosa pine is a 'fire dependent' species that relies on regular fire events to maintain stand structure, influence understory vegetation composition, and provide improved potential for pine regeneration.

The minor amounts of hand thinning in the proposed action (not more than 50 acres with the largest patches not exceeding five acres) would mechanically restore stand structure in the denser portions of the stand prior to burning. These thinnings will be aimed at removing a portion of the young, dense pine while leaving the larger, more mature trees in place. The desired outcome would be to create 2 to 3 healthy age/size classes, consisting of larger/mature trees and patches of smaller/younger trees in the understory and in the interspaces. No trees larger than 14" will be removed unless they are diseased or have an unhealthy growth form. Debris from the thinning will be lopped down to less than 2' and scattered as necessary. The broadcast burn will occur post-thinning and will consume much of the debris created by the thinning. (Personal communication with Brian Brown, Forester, Gunnison Field Office, SW District, BLM)

Broadcast burning would consist of low to moderate intensity understory burn with an average flame length of 2-4' with approximately 70-90% of each stand being burned.

The burn would remove 40-60% of the litter and duff across the stands, opening up additional areas for new grasses and forbs to become established within 1-2 years of the burn. The burn will also remove the tops of decadent grasses and forbs and stimulate re-growth of nutrient rich grasses and forbs through a pulse of nutrient rich ash into the soil.

The burn will 'top kill' approximately 50% of the shrubs within the burn units. Most of the shrub species present in the area are 're-sprouters' (oak, serviceberry, mahogany) that re-sprouted following the mechanical treatments in the mid-2000s. Many of these shrubs will again re-sprout following the burn, however, given the combined effects of the previous mechanical treatment and the planned prescribed burn the density and the size of the shrubs will be reduced for 10-20 years following the burn, essentially keeping the shrub component in a lower growth form that has benefits for reducing fire risk and has better nutrient quality and availability for wildlife.

As previously mentioned, ponderosa pine is a fire dependent species that typically benefits from understory fire. This broadcast burn is designed so that it will act as a natural process with the following effects to the ponderosa pine. The lower branches of individual trees throughout the stand will be impacted both by flame and radiant heat and subsequently will be removed, essentially raising the 'crown base height' throughout the stand by a few to several feet. The fire

will also kill some of the smaller ponderosa pine trees in the stand, primarily in the denser areas, essentially thinning the stand to a more natural, and healthier, density. Typically this thinning impact is minimal; experience in similar stands indicates that less than 5% (1 of 20) of ponderosa pine trees less than 8" dbh are killed. Given the pre-burn hand thinning of the denser areas of the stand it is anticipated that very few of the smaller trees remaining will be removed by fire. The burn will also remove litter and duff by approximately 40-60%. This will create bare mineral soil throughout the stands, which is essential for the establishment of new pine seedlings. By creating bare mineral soil over portions of the stands there is increased potential for the establishment of a new generation/age class of ponderosa pine in these stands. The fire will also kill and consume a portion of the scattered pinyon and juniper trees as well as a few shade tolerant trees (White Fir) that have become established in the stands over the past several decades, helping to maintain the pine stands on this landscape into the future. Overall the proposed action will improve the health and resiliency of the pine stands in this area in relation to wildfire, insects and disease, and other disturbances. The proposed actions should also create stands that have better potential to adjust to ongoing effects resulting from a warming and drying climate, at least over the next 2-4 decades.

Associated with the ponderosa pine burn units are some areas dominated by pinyon-juniper and oakbrush/mountain shrub that will be included to facilitate the establishment of control lines and to improve wildlife habitat in dense, decadent mountain shrub. These vegetation types are primarily located on southwest and southeast aspects in the steeper drainages on the southern ends of the pine units. Not more than 80 acres of pinyon-juniper and oakbrush/mountain shrub will be included in the two larger pine units. Fire in these mountain shrub/pinyon/juniper areas will burn with mixed severity that will occasionally torch individual shrubs and trees and small pockets of shrubs and trees as the fire moves through these small stands. It is anticipated that less than 50 acres of mountain shrub/pinyon/juniper will be impacted by the prescribed burn. The resulting burned r areas would recover over 2-5 years with grasses, forbs, and re-sprouting shrubs. Pinyon-juniper would not become reestablished in these small areas for at least 2-3 decades.

The prescribed burns will also be implemented in 2 areas of mechanically treated pinyon-juniper totally 144 acres in the southern portion of the project area near the powerline. The burn in these locations will primarily be aimed at reducing the debris left over from the mechanical treatment in the mid-2000s in order to reduce the risk of wildfire impacting the powerline and adjacent private property. The burn will also stimulate grasses and forbs and remove the tops of re-sprouting shrubs, with the effects similar to those discussed for the pine stands above. Additionally, the burn will remove 10-30% of the remaining overstory pinyon and juniper from these mechanically treated stands.

#### 4.1.3.1 Noxious Weeds

The proposed action alternative proposes to actively treat 600-800 acres within the project area using low to moderate intensity prescribed burns. Prior to conducting the prescribed fire activities site preparation would consist of hand thinning ponderosa pine on approximately 50 acres and constructing approximately 6 miles of hand line and/or ATV plow lines for helping to control prescribed fire.

The amount of soil disturbance, temporary loss of existing vegetation and the amount of bare ground exposed will be widespread with the use of prescribed fire. Soil disturbing activities

associated with the construction of fire control lines will result in the exposure of bare mineral soil. Ground disturbing activities associated with hand thinning would be minimal to non-existent.

Regardless of the activity implemented, those areas in which ground disturbance has occurred, vegetation cover has been removed and/or bare soil exposed are susceptible to the spread and establishment of noxious weed species.

Although the proposed action has the potential to increase and spread noxious weeds within the proposed project area, the design criteria identified as part of the proposed action partially negate these effects. Design criteria include mitigations that 1) treatment areas will be inventoried where possible for noxious weeds prior to treatment. If noxious weeds are present then noxious weed treatment may occur prior to treatment activities and in subsequent years as needed based on treatment effectiveness monitoring; 2) in areas where noxious weed control measures are completed, effectiveness monitoring will occur following treatments; 3) in areas where noxious weed populations were not present at the time of the prescribed fire treatments, periodic monitoring will be completed during the growing season following the treatment to ensure that no new populations of noxious weeds become established, and 4) areas of ground disturbance associated with fire control lines would be re-habilitated and seeded if necessary following completion of treatment activities.

### 4.1.4 Fuels/Fire Management

Mechanical treatment of dense pockets of pine, followed by broadcast burning of the larger pine units would have the following effects to fuels and fire management.

Surface fuels would be reduced over 70-90% of the area of each stand. This reduction would be from an estimated 8-12 tons/acre down to approximately 4-6 tons/acre (PMS822, pre-treatment, pages 29-34, post-treatment, pages 27-28). The most significant reductions would be in the 10 and 100 hour masticated debris from the previous mechanical treatments, followed by a significant reduction in spatial extent and depth of 1 hour fuels (needle litter). There are very few 1000 hour fuels (logs) in the area.

Ladder fuels, in the form of oakbrush and other shrubs, scattered pinyon and juniper trees, and the lower branches of the ponderosa pine, would be reduced over 40-60% of the area, creating a stand with a more open understory and higher crown base height.

Overstory pine densities would only be impacted in isolated areas, primarily through the mechanical hand thinning of young trees in the dense pockets. There is limited potential that the prescribed burn could torch isolated ponderosa pine or small pockets of dense ponderosa pine, which could further reduce the canopy cover.

Effects to the surface, ladder, and canopy fuel components would have an effect to future fire behavior, as well as the ability of firefighters to control a future fire. A reduction in surface fuels will reduce the flame length of future fires in the stand while the reduction in ladder fuels will make it difficult for a surface fire to climb into the overstory pine. The thinning of the canopy, both mechanically and through prescribed burning, will create a more open stand that will not support a crown fire, even if the fire could climb from the surface into isolated trees throughout the stand post-treatment. These effects will result in a fire that is much more likely to stay on the ground and burn with 2-4' flame lengths, rather than climbing up into, and moving through, the

canopy with 30-50' flame lengths that firefighters cannot readily control. The anticipated increase in grass and forb cover post-treatment does have potential to increase surface fuel continuity, and subsequently, the surface fire rate of spread could increase by 20-25% in the flashier grass fuels. This impact means that fires that do start, though they are likely to stay on the surface, have potential to spread slightly more rapidly, making a timely response essential. However, given that the flame length and resistance to control (i.e., lighter fuels) would be lower post-treatment, firefighters could more easily control a fire once on scene.

Overall the pine stands would exhibit a significantly more natural fire behavior during future fire events as a result of the proposed treatment, which has benefits both for fire control, the health of the stands, regeneration of young pine, and for future stand structure and ecological function.

Fuels within the included pinyon-juniper and oakbrush/mountain shrub areas have some potential to be reduced in a patchy manner where fire may torch individual trees/shrubs or make small crown fire runs through the trees/shrubs (these areas will not be intentionally ignited). The resulting pockets of grasses, forbs, and re-sprouting shrubs are less likely to burn with high intensity for 10-40 years following treatment. This potential for increased 'age and structure patchiness' would reduce the potential for fire spread across these portions of the landscape.

Fuels in the masticated pinyon-juniper stands in the southern portions of the project area would be dramatically reduced through broadcast burning. This reduction would be from an estimated 12-14 tons/acre to less than 5 tons/acre. There would also be a 20-40% reduction in canopy fuels, including the shrubs and scattered pinyon-juniper. Overall this reduction in fuels in these masticated pinyon-juniper stands would dramatically reduce flame lengths from 4-6' down to 2-3' and would reduce the potential for torching overstory trees by removing the surface fuels and a portion of the canopy. This would lead to a subsequent reduction in resistance to control and reduced risk to the adjacent powerline and private property containing structures.

### 4.1.5 Soils, Water Resources, Water Quality

The prescribed burn is designed to be low to moderate intensity aimed at burning approximately 70-90% of each target area. The majority of slopes to be targeted are the flat mesa tops which have slopes of less than 15%. The burn will be designed to consume approximately 40-60% of the litter and duff, leaving an equivalent amount of litter and duff to cover much of the soil surface following the burn. There is a healthy root system (consisting of grasses, forbs, and shrubs) throughout the soils on the mesa tops that will not be impacted by the burn. In addition, the pine overstory will not be impacted to any degree that would allow increased raindrop impact or increased susceptibility to wind erosion. For these reasons soilson the mesa tops will not be negatively impacted by the low to moderate intensity burn or subjected to increased erosion potential due to the remaining litter and vegetation and the low slopes in these areas. Within 1-2 years resprouting grasses and shrubs will begin to cover the soil surface, reducing any erosion potential to pre-burn levels.

There are some steeper slopes, up to 30-35%, within some of the burn units that will have some fire applied to them both to create control lines around burn unit perimeters as well as to rejuvenate the decadent mountain shrub vegetation types. Fire on these slopes will be moderate to high intensity in the denser mountain shrub/pinyon/juniper areas. It is estimated that this higher intensity burn will not occur on more than about 50 acres and typically in small patches not exceeding 3-5 acres each in size, surrounded by unburned vegetation. With a higher

intensity fire and the steeper slopes in these areas, there is potential in isolated areas for soil movement downslope to occur for 1-2 years post-burn. Most of these areas that will burn hotter have a dense mountain shrub root system that will rapidly resprout within 1-2 growing seasons. Between the small patch size, existing root structure, and the rapid resprouting of shrubs any erosion potential should be limited and short term, ie for 1-2 seasons.

Handline and ATV plowline will need to be constructed where existing control lines (roads) are not present. Most of this handline/plowline will be constructed on the mesa tops where slopes are less than 15%, though there are 4-5 steeper slopes and sub-ridges (15-35% slopes) that these control lines will be constructed on. Control lines on these slopes will be kept to a minimum width necessary and any control line on slopes greater than 20% will have water bars constructed post-burn and will also have debris (logs, branches, rocks, etc) pulled back across the line post-burn to keep soil movement to a minimum.

The ephemeral and intermittent drainages should be minimally impacted by this prescribed burn. During normal snowmelt and rainfall events for 1 to 2 years post-burn there should be minimal soil movement into the drainages. However, if higher intensity rainfall events occur there could be increased movement of sediment into the intermittent drainages. Much of this sediment would be deposited along the banks and in small pools as it moves downstream, though a small portion of it could reach Dry Creek and the Los Pinos River. The potential for this type of impact downstream is low.

### 4.1.7 Visual Resources

The proposed action would primarily affect the color of the existing landscape through fire blackening of the undergrowth (for up to 2 years) and removal of a portion of the oak brush component of the project area. The overall form, color, texture, and line of the landscape would not be altered to a level that would be noticed by the casual observer once the fire blackening and smoke have dissipated and would mimic natural processes expected for the area. Effects would be greatest for residents located in the immediate vicinity such as those on Hillcrest Drive, which parallels the project area up near the crest of the affected foothills. However, the change to the characteristic landscape when viewed from most locations by casual observers would be weak and would meet the standards of a VRM Class II designation.

### 4.1.10 Wildlife

<u>Eagles and Raptors</u>

The proposed action could cause temporarily displacement of raptors that utilize the project area for breeding and foraging. There is a known Golden eagle nest in the project area and potential for other forest raptors, such as Northern goshawks and red-tailed hawks. There are design features in place to minimize effects to these species during the nesting season. Habitat conversion may cause temporary displacement, but would overall provide better habitat for these species. Treatments in the project area would ultimately increase the health of the understory vegetation and would likely provide better habitat for a variety of prey species that raptor species rely on.

Terrestrial Wildlife

The project area is a fire adapted ecosystem, consisting primarily of ponderosa pine, Gambel oak and mixed species shrub communities. Current ecological conditions are well outside their range of natural variability due to lack of fire and fire suppression efforts historically. The proposed action could cause temporary displacement of wintering deer and elk if a large percentage of the forage is removed in a given burn year. This could be especially evident when burning occurs in the fall before elk and deer herds arrive in the project area. These effects would be temporary and would not impact the overall health of herds that use the project area. The proposed action would limit the amount of vegetation that would be removed in a given burn year in order to minimize this impact by limiting burning to 70-90% of each burn unit. In the long-term, the proposed treatment will greatly improve forage productivity thereby improving elk and deer habitat value. This will help maintain the value this area holds for wintering elk and deer, particularly during severe winter events. The project will also reduce the likelihood of catastrophic wildfire that could cause significant losses of valuable winter range habitat.

The condition of the grasses and forbs throughout the project area, and the responses to the prescribed treatments could temporarily affect the rodent, rabbit, and other small mammal populations. Effects to the species listed above would be short term and would not impact populations.

## 4.2 NO ACTION ALTERNATIVE

### 4.2.1 Air Quality

There would be no direct effects to air quality from the No Action Alternative because there would be no treatment. Under the No Action Alternative, in the long-term there is an increased risk of a more severe wildfire occurring in this area from the No Action Alternative, which could produce undesirable smoke in the area for hours up to several days.

### 4.2.2 Vegetation

There would be no direct effects to vegetation from the No Action Alternative because there would be no treatment. Under the No Action Alternative, in the long term the ponderosa pine stands would potentially be impacted by no additional treatment in the following manner: 1) limited regeneration would occur due to no bare mineral soil being created, 2) the overstory would be at risk from more severe wildfire due to higher levels of surface fuels, ladder fuels, and a slightly more closed canopy, 3) the overall health and resiliency to insects and disease events would be reduced due to increasing competition for nutrients and water from the shrub understory, particularly in those areas of the stand where the pine is unnaturally dense. The grass and forb understory would continue to decrease due to increasing shrub overstory.

#### 4.2.2.1 Noxious Weeds

If the no action alternative is selected there would be no direct, indirect or cumulative effects from the proposed action. However, there still exists the potential for the spread and establishment of noxious weeds within the proposed project area. The potential spread would exist due the fact that 1) noxious weeds are currently present on surrounding public and private

lands and 2) vectors for the spread of noxious weeds will continue to exist such as roads and oil and gas activities within the proposed project area.

### 4.2.3 Fuels/Fire Management

There would be no direct effects to fuels/fire management from the No Action Alternative because there would be no treatment. Under the No Action Alternative, in the long term the masticated slash from previous treatments in the ponderosa pine would slowly decompose, the litter and duff layers would increase in extent and density, the shrub understory would increase in density and height and the canopy closure of overstory pine would increase slightly, particularly in those portions of the stand that are currently unnaturally dense.

The masticated slash in the pinyon-juniper stands would slowly decompose over time, though the juniper derived portions of the slash would remain on site for many years. The re-sprouting shrubs from the previous mechanical treatments would continue to increase in height and density.

The fuels situation resulting over time from the No Action Alternative would potentially increase both the potential risk and severity of future wildfires in this area. Future wildfires would exhibit more intensity (flame length), higher resistance to control, and be more of a threat to powerlines, private lands with structures, oil and gas facilities, and other improvements and resources in the area.

### 4.2.4 Soils, Water Resources, Water Quality

There would be no short-term impact to soils, water resources, or water quality from the No-Action Alternative. The existing situation would continue into the near future. In the long-term there would be a slight increase in potential for a high intensity, large scale wildfire to occur in the area, which would negatively impact vegetation, litter cover, and soils, perhaps over a larger area. Rainfall events following a high intensity fire could result in significant movement of soils downslope and into the ephemeral drainages, with sediment perhaps reaching as far as the Los Pinos and San Juan Rivers. This type of event may require immediate on-site remedial action through a Burned Area Emergency Rehabilitation Team.

### 4.2.6 Visual Resources

Under the No-Action alternative, there would be no direct effects to the characteristic landscape. However, the potential for a future fire which exceeds in intensity what would be expected for this landscape would increase over time and could result in much more substantial visual effects in the future. Until then, the effects associated with the No-Action alternative would result in no change to the characteristic landscape and would meet the standards of a VRM Class II designation.

### 4.2.7 Cultural Resources

As there are no eligible cultural resources within the proposed treatment units, there would be no direct effects to cultural resources under the no action alternative. Without the proposed fuels reduction treatments, the long term risk of higher intensity wildfire could increase within the

project area. Eligible cultural resources in the vicinity of the proposed treatment units could potentially be impacted by future incidences of high intensity wildfire.

### 4.2.8 Native American Religious Concerns

As there are no known Native American religious concerns, there would be no direct or indirect effects under the no action alternative.

### 4.2.9 Wildlife

Terrestrial Wildlife

The no action alternative would not have immediate effects to big game species in the project area. The existing habitat would continue to provide forage and cover for big game species during severe winter events. If left untreated, the potential for a catastrophic fire will increase in this area over time. The complete loss of habitat from a catastrophic fire event would likely displace big game species from the project area and would not provide the needed habitat during a severe winter event for a longer period of time.

Eagles and Raptors

The no action alternative would not have any immediate effects to resident eagles or raptor species. The consequences of a catastrophic fire in the project area, if left untreated, would remove vegetation used for nesting and foraging habitat and subsequently displace these species until the habitat returned to current conditions.

## 4.3 CUMULATIVE EFFECTS

The purpose of the cumulative effects section required by Council on Environmental Quality (CEQ) is to evaluate the significance of the Proposed Action's contribution to the cumulative effects (40 CRF, Part 1500).

Cumulative Effects are defined as incremental effects of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or persons undertake such other actions. Cumulative effects can result from minor but collectively significant actions taken place over a period of time. The Cumulative Impact area is the Rabbit Mountain project area of the BLM lands and immediately adjacent private lands.

### 4.3.1. Past Actions

Previous to this proposal the Rabbit Mountain Fuels Reduction Project Categorical Exclusion and the Foxfire Fuels Reduction Project Categorical Exclusion were implemented between 2005 and 2008 in the same area. These earlier projects were mechanical mastication of 870 acres of pine understory consisting mostly of oakbrush along with mastication of some pinyon/juniper and other shrubs. The proposed treatment area is surrounded completely by private lands. There are numerous homes and other structures immediately adjacent to the area and there are also several gas wells, pipelines, and access roads within and adjacent to the Project Area. Additionally there is a powerline that runs east/west across the southern portions of the Project Area. Grazing has historically occurred in the area for a number of years, although the allotment is

currently vacant and has not been utilized for several years. Wildlife is present in the area utilizing the forage for winter habitat. Recreation (camping, hunting, off-highway vehicle use (OHV)) also occurs in the area occasionally, though access is restricted both by 'administrative access only roads' and also during the winter months for big-game winter range closures.

### 4.3.2 Present Actions

There are numerous homes and structures adjacent to the project area. There are ongoing oil and gas well activities in the area, including maintenance for active wells. There are approximately 15 active wells within or immediately adjacent to the Project Area. These wells are serviced by approximately 5.3 miles of roads within the project area. The majority of these roads are 'administrative use' only, ie, no public access. There are approximately 5.3 miles of pipeline buried beside most of the roads.

### 4.3.3 Reasonably Foreseeable Future Actions

It is unlikely, but possible that the grazing allotment could be re-allotted at some time in the future, though that is not expected within the next several years. If the allotment is re-allotted range monitoring would be expected to continue. Adjustments to livestock use to maintain quality habitat for any special-status species would be determined through the grazing permit renewal process if the allotment were to be re-allotted.

Oil and Gas activity will likely continue in the reasonably foreseeable future. There are no proposals for new wells on BLM land, however maintenance and ongoing activity for production of the existing active wells will likely continue.

### 4.3.4 Air Quality

Cumulative effects to air quality would be negligible because any impact to air quality from the proposed action would be very short term, ie, during burning and perhaps for up to one day post burn. Following that period air quality would return to normal conditions.

### 4.3.5 Vegetation

Cumulative effects to vegetation resources across the landscape would be minimal, but when combined with other past treatments and management activities on the landscape, would be an overall improvement in vegetation composition, structure, and health over time.

#### 4.3.5.1 Noxious Weeds

It has been determined that cumulative effects would be negligible as a result of the proposed action or alternatives because the management and control of noxious weeds would occur as outlined in the design criteria incorporated in the proposed action alternative. There would be no cumulative effects associated with the no action alternative.

Furthermore, past, present and reasonably foreseeable future actions such as past vegetation treatment activities, increased recreation and existing oil and gas activities and development would increase the potential for spread of noxious weeds.

Subsequently, the potential spread of noxious weeds would be negated by implementation of the Tres Rios Field Office's invasive species action plan which centers around using an integrated weed management approach that focuses on early detection, prevention and implementation of appropriate control measures to include the use of chemical, mechanical and biological control agents for treating and controlling noxious weeds.

### 4.3.6 Fuels/Fire Management

Cumulative effects to fuels conditions would be an overall improvement through the multiple treatments that have occurred in the area over the past decade. Future fire management actions in the area would benefit from, and possible contribute to this improvement. Specifically, future fire suppression actions in and adjacent to these treatments would be more effective due to less fuel continuity and loading, while future fire occurrence within the treatment areas would further contribute to restoration of a more natural fire regime, though this restoration impact would be limited in spatial extent by the high values in and adjacent to the area.

### 4.3.7 Soils, Water Resources, Water Quality

Cumulative effects to soils, water resources and water quality would be similar. Currently the road and well pads associated with the oil and gas operations may be contributing minor amounts of sediment and erosion potential to the area, though this appears to be very well managed. In the long-term, the prescribed burning would increase in an overall better watershed condition by stimulating more grass and forb cover, reducing future potential for sediment transport and erosion. This improvement should offset any effects of the oil and gas roads and well pads and other activities in the area.

### 4.3.8 Visual Resources

There are no cumulative effects to visual resources that would result from the Proposed Action in combination with the past, present, or reasonably future action or No-Action alternatives. The visual effects associated with the Proposed Action would mimic natural processes and would not contribute to any incremental effects associated with other ground disturbing projects in the area.

### 4.3.9 Cultural Resources

Because there would be no direct or indirect effects from the proposed action, there would be no cumulative effects to cultural resources.

### 4.3.10 Native American Religious Concerns

Because there would be no direct or indirect environmental effects from the proposed or no action alternatives, there would be no cumulative effects.

### 4.3.11 Wildlife

Terrestrial Wildlife

Cumulative effects on big game species could occur with the short term loss of the quantity and/or quality of habitat in the project area. Overall, increases in urbanization, increases in recreational use of public lands, and the utilization of natural resources on state, private and federal lands may contribute to habitat loss for these species. High-intensity, stand-replacement fires, and the means by which land managers control them, have contributed, and may continue to contribute, to loss of habitat for these species. With the mitigation measures described in the affects analysis in place, the cumulative effects to terrestrial species will be minimized during the implementation of this proposed plan.

If past, present and reasonably foreseeable future actions such as increased mineral exploration, and the development off adjacent private lands; effects to terrestrial wildlife species, particularly big game species, could increase over the life of this assessment.

Eagles and Raptors

Cumulative effects on eagles and raptor species could occur with the short term loss of habitat for prey species, and from the conversion of dense pine stand to more open pine habitat. These effects would be temporary in scale and would overall benefit the various species by providing improved habitat for prey species. With the design features in place, the cumulative effects to eagle and raptor species will be minimized during the implementation of this proposed plan.

If past, present and reasonably foreseeable future actions such as increased mineral exploration, and the development off adjacent private lands; effects to terrestrial wildlife species, particularly nesting raptor species, could increase over the life of this assessment.

# CHAPTER 5
# PERSONS, GROUPS, AND AGENCIES CONSULTED

### Table 5.1. List of Persons, Agencies and Organizations Consulted

| Name | Purpose & Authorities for Consultation or Coordination | Findings & Conclusions |
|---|---|---|
| Han Schloepfer, Fuels Specialist, Columbine Ranger District, SJNF, USFS | Discussion of smoke effects from a local prescribed fire practitioner | See 'Air Quality' in Environmental Consequences |
| Brian Brown, Forester, Gunnison Field Office, SW District, BLM | Discussion of thinning effects to ponderosa pine stands from a professional forester | See 'Vegetation' in Environmental Consequences, specifically related to thinning of dense stands. |
| Ty Smith, District Wildlife Manager, Colorado Parks and Wildlife | Discuss percent of burn units to be burned, with desire to leave some unburned patches, particularly in mountain shrub communities. Desire to not consume too much bitterbrush | See 'Wildlife' and 'Vegetation' in Environmental Consequences |
| Upper Pine Fire Department | Supportive of fuels reduction efforts. Desire to be involved operationally, willing to support our operational efforts | Support the Proposed Action |

## List of Preparers

### Table 5.2. List of Preparers

#### BLM Preparers

| Name | Title | Responsible for the Following Section(s) of this Document |
|---|---|---|
| Dan Huisjen | Fire Ecologist | IDTeam Lead, Primary Author, Air Quality, Vegetation, Fuels/Fire Management |
| Bruce Bourcy | Archeologist | Cultural Resources/Native American Religious Concerns |
| Mike Jensen | Range Conservationist | Invasive Species, Rangeland Health, Special Status Species, T and E Plant Species |
| Jennifer Jardine | Lands/ROW | Lands/Access |

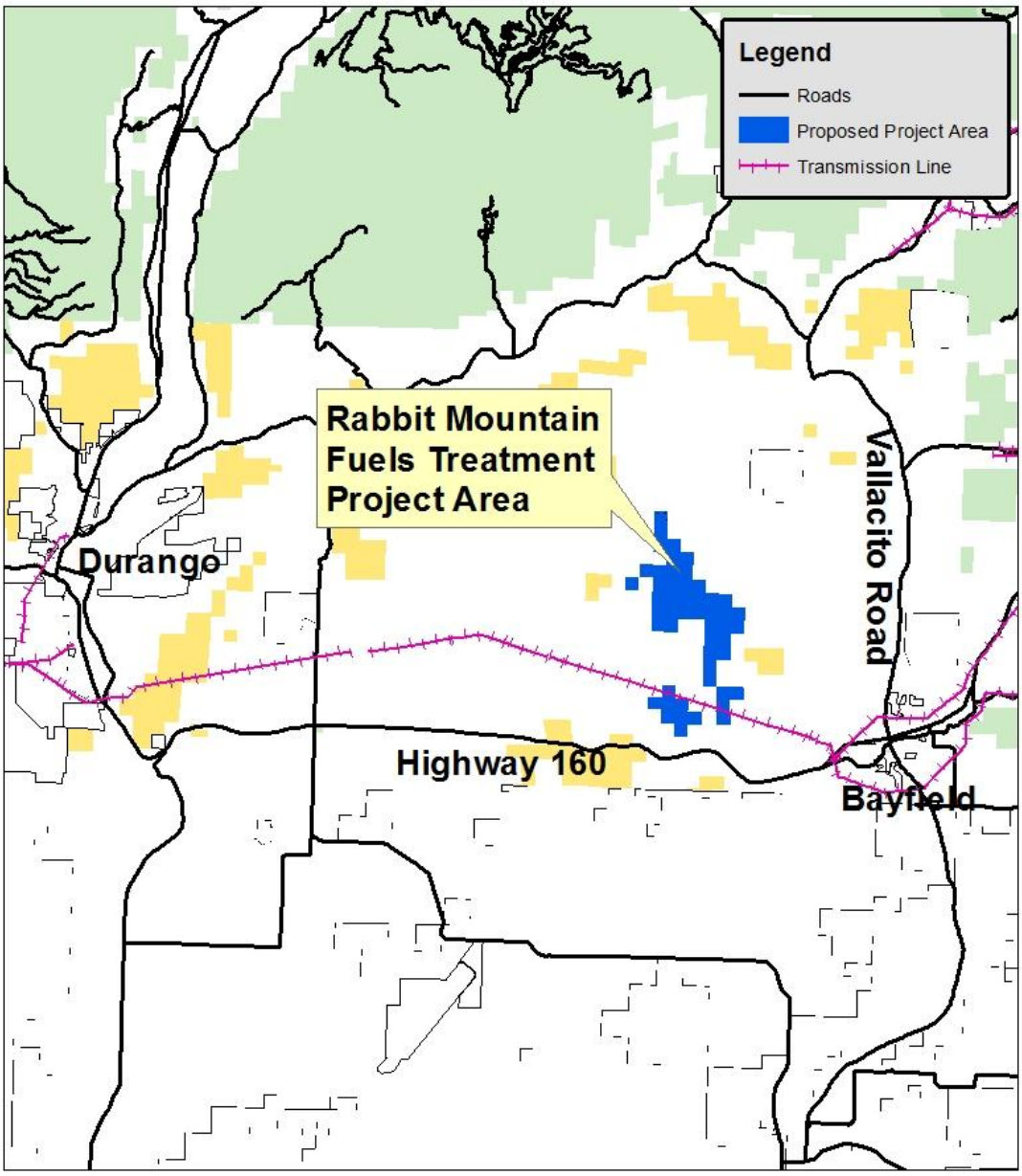
| | | |
|---|---|---|
| Jeff Christenson | Recreation Specialist | Recreation/Visual Resources |
| Eric Freels | Wildife Biologist | Special Status Species, T and E Animal Species, Terrestrial Wildlife |
| Walt Brown | Petroleum Technician | Oil and Gas |
| Kelly Palmer | Hydrologist | Soils, Water Resources/Quality |
| Gina Jones | NEPA Coordinator | NEPA Compliance |

# APPENDICES

# Rabbit Mountain Fuels Treatment
# Vicinity Map

0 1.25 2.5 5 7.5 10 Miles

dwh 03192014



# Rabbit Mountain Fuels Treatment Project Area

0 0.25 0.5 1 1.5 2 Miles

dwh 03192014

Legend
- Proposed Project Area
- Proposed Burn Units
- Prev. Mech. Treatment
- Roads