

**2006 U.S. Department of the Interior  
Bureau of Land Management  
Little Snake Field Office  
455 Emerson Street  
Craig, CO 81625-1129**

**ENVIRONMENTAL ASSESSMENT**

**EA-NUMBER:** CO-100-2006-033 EA

**PERMIT/LEASE NUMBER:** N/A

**PROJECT NAME:** Deer Valley Hazardous Fuels Reduction

**LEGAL DESCRIPTION:** The project is located in all or a portion of the following sections:

T. 7 N., R. 101 W., Sections: 2, 3, 10, 11, 12, 13

**APPLICANT:** N/A

**PLAN CONFORMANCE REVIEW:** The proposed action is subject to the following plan:

Name of Plans: Little Snake Resource Management Plan and Record of Decision

Date(s) Approved: April 26, 1989

Results: The treatment area falls within Management Unit 5: Douglas Mountain, identified in the Little Snake Resource Management Plan and Record of Decision. The management objectives for this unit are to manage the forest and woodland resources to produce a variety of forest and woodland products on a sustained-yield basis. The development of other resource uses/values within this unit is allowed consistent with the management objectives for forest and woodland resources. The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The proposed alternatives are in conformance with the objectives of the Little Snake Resource Management Plan.

**RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS:**

The Proposed Action implements actions recommended in the National Fire Plan and the Little Snake Fire Management Plan. It is also consistent with the draft Moffat County Fire Management Plan.

**NEED FOR PROPOSED ACTION:** In accordance with the National Fire Plan of 1999, public

land agencies are directed to take actions to reduce hazardous fuels, especially in those areas where communities and human development are at risk from wildfire. The Little Snake Fire Management Plan identifies areas where fuels reduction treatments are desired and needed. The Moffat County Sheriff's Department and Maybell Volunteer Fire Department have expressed concern over the potential wildfire hazard in the Greystone area of Douglas Mountain due to the long response time for emergency equipment and frequent fire occurrence. The proposed action was developed to respond to these concerns and comply with the two plans. Inherent to complying with the plans is also the need to reduce fuels to help protect life, property, and natural resources. Specifically the community of Greystone, surrounding residences as well as scattered residences, cabins, and ranch buildings on Douglas Mountain are at risk from wildfire.

Currently the area in which this project is proposed is identified as a "B4" polygon. "B4" polygons support a mix of Ponderosa pine with mountain shrub interspersed by sagebrush in the draws. Pinyon-juniper is found to be invading into the Ponderosa pine stands. It is desirable to maintain the stand of Ponderosa pine. According to the Fire Management Plan for the Northwest Colorado Fire Management Program (2003), the primary resource management objective in this area is to sustain the yield of forest products. Wildland fires are ordered to be suppressed until adequate hazardous fuels treatments have been accomplished to reduce the risk of stand-replacement fires (Fire Management Plan for the Northwest Colorado Fire Management Program, 2003). The reduction of "ladder" fuels (shrubs and young trees that provide continuous fine material from the forest floor into the crowns of dominant trees) in the Deer Valley area will create a "park-like" stand, which encourages ground fires instead of a stand-replacement crown fire. The Douglas Mountain area has been identified as a high priority area for hazardous fuels treatments due to the urban-interface with the community of Greystone, CO.

**PUBLIC SCOPING PROCESS:** An information package was sent to citizens that live in the Greystone area and to concerned public interest groups. A public meeting was held at Ladore Hall in March of 2002 to address additional concerns regarding the project. Several residents of Greystone were also met with individually.

**BACKGROUND:** The Douglas Mountain hazardous fuels reduction project was originally initiated in 2002 and various projects have been completed in the Douglas Mountain area since then. The Deer Valley area of Douglas Mountain has been identified for treatment by Little Snake Field Office Fire Management Staff due to the encroachment of Pinyon-Juniper in the Ponderosa pine stands and the build-up of shrubbery and sagebrush through years of fire suppression in the area. The Ponderosa pine stands in this area are of mixed age, with the oldest trees dating back 200-300 years. Removal of encroaching Pinyon-Juniper trees is essential to ensuring a healthy, mixed-age Ponderosa pine stand.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**NO ACTION ALTERNATIVE:** Under this alternative, hazardous fuel reduction activities would not occur.

**CHEMICAL TREATMENT ALTERNATIVE:** Using herbicides to kill woody vegetation was considered as a treatment option but dropped from further analysis because of the high volume of woody material left after treatment. Chemical treatment would not fully achieve hazardous fuels reduction objectives and visual resources would be impacted.

**PROPOSED ACTION:**

It is proposed to reduce hazardous fuels in the Deer Valley area of Douglas Mt. using mechanical and prescribed fire treatments. There are several cabins and residences in the area at risk from wildfire as well as a need for ecosystem restoration.

**Mechanical Treatments:**

The overall strategy of the mechanical treatments for this project is to reduce ladder fuels within the ponderosa pine stands in order to periodically perform understory prescribed burns. “Ladder” fuels are defined as shrubs, saplings, or lower branches that can carry a fire from the ground up into the crowns (tops) of trees often causing extreme fire behavior. Crown fires are more intense, harder for firefighters to suppress, burn hotter, faster, and result in more devastating effects. In order to limit tree mortality from wildfire events where crown fires are a possibility, the reduction of ladder fuels is essential.

It is proposed to remove 100% of ladder fuels within 20 feet of mature ponderosa pine tree boles to a maximum height of 6 inches off the ground for pinyon and juniper trees and a maximum height of 4 inches off the ground for sagebrush. In order to accomplish this objective, a variety of mechanical treatments may be utilized and are described below.

**Hand Thinning:**

In ponderosa pine areas, all pinyon or juniper trees less than 8' or those that have ladder fuel potential, and brush will be cut with chainsaws. No large ponderosa trees will be cut, and only selected young trees that may contribute to ladder fuels will be cut. The objective is to produce a healthier stand and reduce the chance of wildfire burning through the tree crowns. The slash will be placed in 4' to 6' tall piles and burned later in the fall or winter. Piles will not be placed on known cultural sites. Tree limbs within 6' of the ground will be cut from larger trees to eliminate ladder fuels which provide a path for fire to burn up into the crown of a tree. In areas where diseased trees occur, all diseased trees regardless of size will be cut down, limbed, bucked and piled for later burning. Standing dead trees, which are disease free, will be left at a rate of one tree per acre to provide for cavity nesting bird species.

**Hydro-ax:**

This is a large rubber tired tractor (similar to a skidder) with a 6' - 8' hydraulically powered mowing head attached to the front. The machine is capable of shredding trees up to 12" in

diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. The mulch is evenly scattered across the surface. Operations would not be allowed in muddy conditions where tire tracks would leave a visible rut. 70% - 90% of the pinyon/juniper would be removed from existing ponderosa stands targeted for mechanical treatment. If the hydro-ax is used instead of broadcast burning to treat sagebrush areas, islands of vegetation (20% - 50% of the landscape) will be left untreated to mimic a mosaic pattern that a fire might leave under low to moderate conditions. Treated areas should not exceed widths of 160 meters or 525 feet with intact sagebrush widths of at least 80 meters or 262 feet in order to maximize Greater Sage-Grouse habitat suitability (Dahlgren et al. 2006). A hydro-ax may only be used where a class III cultural survey has been completed.

#### Brush Beating:

This is basically a heavy duty mower pulled behind a rubber tired tractor. It is typically used in flat to gently rolling sagebrush areas. Brush would be mowed to a height of 3 to 4 inches. Operations would not be allowed in muddy conditions where tire tracks would leave a visible rut. If a brush beater is used instead of broadcast burning, islands of vegetation will be left untreated (20% - 50% of the landscape) to mimic a mosaic pattern that a fire might leave under low to moderate conditions. Treated areas should not exceed widths of 60 meters or 197 feet with intact sagebrush widths of at least 60 meters or 197 feet in order to maximize Greater Sage-Grouse habitat suitability (Dahlgren et al. 2006).

#### Prescribed Fire treatments:

Once mechanical treatments are implemented, it is proposed to treat the entire project area with a broadcast burn to mimic low to moderate fire conditions. The objective of this prescribed fire is to create a mosaic burn pattern with 40 – 60 % of the project area blackened, targeting brush and woody species. Broadcast burning will be used to reduce brush and woody species including sagebrush, serviceberry, oakbrush, Utah juniper, and pinyon pine. This has the affect of changing the vegetation composition to mostly herbaceous species resulting in a lower intensity fire should one occur as compared to a brush or tree dominated site.

Fire will be used to reduce the fuel loading in the under story of forested sites; in this case ponderosa pine. The intent is to eliminate ladder fuels that provide a path for fire to burn up into the crown of a tree and to reduce the intensity of a ground fire should one occur so as to reduce the mortality rate of older trees.

Within the project area, small aspen groves exist and are in a decadent stage. These areas are vital for cavity nesting bird species. Within these areas it is desirable to remove encroaching pinyon pine and Utah juniper trees and to include the groves within the prescribed fire. A low intensity ground fire to limit tree mortality is desirable in aspen groves in order to stimulate new growth of aspen trees. A biologist will mark trees within the aspen groves that are to be avoided when the broadcast burn is implemented.

Sagebrush areas throughout the project area would be burned in order to reduce the chance of

high intensity brush fires from burning into the ponderosa pine. 50% to 80% of the sagebrush would be targeted.

Ladder fuels removed from the ponderosa pine stands through the hand thinning process will be piled and burned. Burn piles will be located in an area 50 feet away from any large ponderosa pine trees as to avoid tree mortality with a high intensity burn associated with pile burning activities. Piles will be seeded with native seed following the burn process to avoid infestation of weeds.

All prescribed fire would be conducted in accordance with the State of Colorado Smoke Management Plan and MOU, and would be regulated under Colorado Department of Public Health and Environment, Air Pollution Control Division. An approved open burning permit must be obtained prior to prescribed burning. Simple Approach Smoke Estimation Model (SASEM 1988) air pollutant dispersion predictions will be completed for all prescribed burn plans and reviewed by the state.

Holding operations in conjunction with prescribed fire may include hand-line construction, black-lining, and off road fire engine operations. A class III cultural clearance would be done prior to any hand-line construction. Any new routes established during burning or holding operations would be closed off after project completion to prevent the establishment of new two track roads.

References: Dahlgren, David K, Chi, Renee, and Messmer, Terry A. 2006. Greater Sage-Grouse Response to Sagebrush Management in Utah. *Wildlife Society Bulletin* 34(4): 975-985.

**STANDARD OPERATING PROCEDURES:** The following procedures must be implemented in order achieve resource objectives of the proposed action.

**CULTURAL RESOURCES:**

The following standard stipulations apply for this project:

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
- Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary

items, sacred objects, or objects of cultural patrimony.

- Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

#### MIGRATORY BIRDS:

Project activities will not be permitted during the months of May 15 through July 15 to prevent disturbance to nesting migratory birds.

#### T&E SPECIES – SENSITIVE PLANTS

Use of motorized equipment and the construction of hand lines will avoid any wet meadows, seasonally wet depressions or washes. No use of motorized equipment or construction of hand lines will be allowed across seasonally wet drainages unless the absence of narrow-leaf evening primrose has been confirmed. BLM will locate and flag the known occurrence of narrow-leaf evening primrose within the proposed project area. No use of motorized equipment or construction of hand lines will be allowed to impact this population.

#### WETLANDS/RIPARIAN AREAS:

The proposed allowable burn area was delineated to avoid a brushy riparian drainage on the northern flank of Douglas Mountain.

#### RANGE MANAGEMENT:

Livestock operators must completely rest all treated areas for two complete growing seasons following treatment. BLM will notify and work with all affected livestock operators to achieve this goal. BLM must monitor and repair all damage to existing range improvements.

#### REALTY AUTHORIZATIONS:

Damage to existing power lines would be minimized by:

- Keep the prescribed fire treatment activities a safe distance from the power lines.
- Provide 48 hour notification to the owner/operator of facilities prior to performing prescribed fire treatment activities adjacent to power lines.

#### VEGETATION:

Fires conducted in the fall should be planned to avoid bitterbrush as much as possible. If areas of bitterbrush must be burned, those areas should be burned in the spring. No areas of bitterbrush should be burned in the summer. Climax mountain mahogany communities should be avoided as much as possible.

#### WILDLIFE, TERRESTRIAL:

No construction activities will be conducted from 16 April to 30 June in elk calving areas to prevent disturbance and added stress during the calving season. No mechanical or fire treatment will be conducted in these sections from 16 April to 30 June.

## **AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES**

### **CRITICAL RESOURCES**

#### **AIR QUALITY**

Affected Environment: Air quality in the vicinity of the project area is considered to be in compliance with the National Ambient Air Quality Standards. There are two Class 1 (visibility) areas located in Northwest Colorado. These are the Mt. Zirkel Wilderness 90 miles to the east and the Flat Tops Wilderness 75 miles to the southeast.

Environmental Consequences:

Proposed Action: Prescribed and wildland fires can contribute substantial emissions of air quality pollutants including particulate matter, volatile organic compounds, and carbon monoxide. However, prescribed fires are typically smaller than uncontrolled wildfires occurring during peak burning conditions. Prescribed fires involve less combustion, and therefore less total smoke emissions, since they are typically conducted under conditions when larger fuels (>3" diameter) are not consumed. Prescribed fires are also conducted under atmospheric conditions that will promote air pollutant dispersion. Each prescribed fire must be continually monitored to assure that the burning conditions remain within a previously determined prescription of controlled fire and smoke behavior.

Reintroducing fire into the landscape by use of prescribed fire and implementing additional mechanical fuel treatments will provide mosaics of small burned and/or treated areas where fuels are reduced. The treated landscape is expected to be more resistant to an uncontrolled wildfire because of the discontinuous nature of the fuels in the area. The most effective means of controlling air pollution emissions from forested landscapes is to inhibit large catastrophic fires by using natural and prescribed fires and mechanical treatments to reduce hazardous fuel loading.

Landscapes treated with prescribed fire and other fuel reduction treatments are expected to cause fewer air quality impacts both in the short and the long term because of the incremental reduction of fuels and the periodic release of small amounts of air quality pollutants. Pollutant emissions released at this smaller scale are not expected to cause air quality impairment to urban areas or Class 1 areas, or if they do would be of a much shorter duration.

The proposed prescribed fire will be conducted in accordance with existing laws that protect air quality. Specifically, all fire activities must comply with the applicable air quality regulations required by FLPMA and the Clean Air Act.

Mechanical treatments proposed would not be expected to affect air quality other than localized short term dust production.

No Action Alternative: The direct environmental consequences associated with fuels reduction activities will be absent in the no action alternative. However, in the long term it would be

possible to have a substantially greater air quality impairment episode as a result of increasing the potential for large scale uncontrolled wildfires. Uncontrolled wildfires tend to produce more smoke as a result of more fuel consumption, their larger size, and longer burning duration. A large fire in this area has the potential to impact air quality of urban areas and reduce visibility within the two Class 1 areas.

Mitigative Measures: None

Name of specialist and date: Ole Olsen September 11, 2006

### **FLOOD PLAINS**

Affected Environment: There are no large floodplain areas in the proposed project location. The hazardous fuel reduction treatments are located in headwater stream segments.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen September 11, 2006

### **AREA OF CRITICAL ENVIRONMENTAL CONCERN**

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer April 11, 2006

### **CULTURAL RESOURCES:**

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, An Isolated Empire, A History of Northwestern Colorado, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and Colorado Prehistory: A Context for the Northern Colorado River Basin, Colorado Council of Professional Archaeologists.

Environmental Consequences: The proposed project, the Deer Valley Hazardous Fuels Reduction Project, has undergone a Class III cultural resource survey:

Collins, Gary D. 2006 Bureau of Land Management, Deer Valley Hazardous Fuels Reduction Project, Class III Cultural Resource Inventory. BLM 10.15.06 Little Snake Field Office, Craig, Colorado.

The survey identified no eligible to the National Register of Historic Places prehistoric cultural resources. The proposed project may proceed as described in this EA with the following mitigative measures in place.

No Action Alternative: Under this alternative, cultural resources in the area would not be disturbed.

Mitigative Measures: None

Name of specialist and date: Gary D. Collins September 18, 2006

### **ENVIRONMENTAL JUSTICE**

Affected Environment: The project would not directly affect the social, cultural, or economic well being and health of Native American, minority or low-income populations. The project area is relatively isolated from population centers, so no populations would be affected by physical or socioeconomic impacts from the project.

Environmental Consequences: None.

Mitigative Measures: None.

Name of specialist and date: Louise McMinn March 10, 2006

### **INVASIVE, NONNATIVE SPECIES**

Affected Environment: Cheatgrass and yellow allysum are known to occur in this region. Whitetop, houndstongue, black henbane, Canada thistle, and other biennial thistles are known to occur in this area as well. There is the potential for noxious weeds, such as dalmatian toadflax, knapweeds, and others, to exist and spread in these areas.

Environmental Consequences, Proposed Action:

#### Hand Thinning

Removal of encroaching Pinyon Pine and Juniper trees should help to encourage growth of grass and forbs in the understory. This increase in understory vegetation will provide greater competition among native perennials and invasives and discourage the establishment of invasive species. As there is very little ground disturbance with this activity, there is no expectation of an increase in invasives.

There is potential for invasive species such as cheatgrass to move in where slash is piled and

burned. Seeding of these areas with native perennials should help prevent any new cheatgrass infestations from becoming established.

#### Hydro-axe

This treatment would exhibit similar impacts to the herbaceous community as those identified in the hand thinning treatment. There would be an expected increase in the native grass and forb community. This treatment may have some potential for ground disturbance from tire movement, but disturbance would be negligible. Unlike with the hand thinning treatments there would be no need to burn slash piles that could result in potential cheatgrass invasion. This treatment is not expected to increase the presence of weeds.

#### Brush Beating

This treatment would have the same impacts to the herbaceous community as those identified in the Hydro-axe treatments. Ground disturbance from tire movement would be negligible. Native grass and forb recruitment would be expected to increase with the lack of competition from brush and shrub species. This treatment is not expected to increase the presence of weeds.

#### Prescribed Fire

This treatment exhibits the highest potential for invasive species establishment. After prescribed fire there would be an increase in early seral stage vegetation and the potential for invasive species such as cheatgrass and yellow allysum to become established is high. Seeding these areas after prescribed fire will decrease the potential for invasive species establishment and provide a native seed source for growth.

#### Environmental Consequences, No Action Alternative:

Under this alternative there would be no treatments conducted. This would allow buildup of ladder fuels and increase the potential for wildfire to burn uncontrolled and at a much higher temperature resulting in mortality in native seed sources present in the soils. This uncontrolled wildfire could result in large burn areas and very high potential for invasive species establishment. The resources that would be utilized to control wildfires such as hand lines, dozer lines, and heavy vehicle traffic over disturbed areas all increase the potential for invasive species introduction and establishment.

Mitigative Measures: None.

Name of specialist and date: Curtis Bryan April 21, 2006

### **MIGRATORY BIRDS**

Affected Environment: The sagebrush/grass habitats within the project area provides nesting and foraging habitat for a variety of avian species including and not limited to: Sage Thrasher, Brewer's Sparrow, Sage Sparrow, Vesper Sparrow and the Green tailed-towhee.

The ponderosa pine habitats within the project area provides habitat for a variety of avian species including and not limited to: Steller's Jay, Western Bluebird, Solitary Vireo, Western Tanager,

and Chipping Sparrow.

The pinyon/juniper habitats within the project area provides habitat for a variety of avian species including and not limited to: Gray Flycatcher, Pinyon Jay, Plain Titmouse, Bushtit, Gray Vireo, Black-throated Gray Warbler, Scrub Jay, Clark's Nutcracker, Townsend's Solitaire, Mountain Bluebird and American Robin.

The quaking aspen habitats within the project area provides habitat for a variety of avian species including and not limited to: Red-naped Sapsucker, Tree Swallow, Warbling Vireo, House Wren, and Flammulated Owl.

Environmental Consequences: The small amount of quaking aspen found within the project area has reached its climax stage, with a number of trees dead and down. The climax stage aspens that are standing provide excellent habitat for cavity nesting species. Introduction of fire into these communities would likely stimulate new growth, ensuring future aspen groves within the area, thus providing habitat for future generations of cavity nesting species. Fire would also remove the pinyon/juniper trees that are encroaching into the aspen groves.

The ponderosa pine woodlands, which comprise approximately 50% of the project area, provides nesting habitat for a number of avian species. The proposed action should not interfere with the quality of nesting habitat for such species since the mature ponderosa pine trees (which provide nesting habitat for migratory birds) found within the project area will not be disturbed. The removal of encroaching pinyon/juniper trees within the ponderosa pine stands will improve the overall habitat quality for migratory birds.

The pinyon/juniper stands within the project area are limited to outlying perimeters of the ponderosa pine habitats and sagebrush/grass habitats. Although some migratory birds may use these stands of trees for foraging and nesting habitat, the over-all quality of the ponderosa pine and sagebrush/grass habitats will be improved with the removal of encroaching pinyon/juniper trees.

No Action Alternative: Under this alternative, the woodland and sagebrush/grassland areas would continue to exist in its climax stage. These areas, in its climax stage, are susceptible to disease and there is a potential for large catastrophic wildfires. If this area becomes susceptible to either disease or a large stand replacement wildfire, the migratory bird habitat would be degraded if not destroyed entirely until the area could recover. The decadent age class of the project area does not promote new growth and healthy vigor among plants and trees, which would eventually decrease the quality of habitat for migratory birds.

Mitigative Measures: None.

Name of specialist and date: Gail E. Martinez      September 29, 2006

## **NATIVE AMERICAN RELIGIOUS CONCERNS**

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council, and the Colorado Commission of Indian Affairs on January 21, 1999. The letter listed the projects that the BLM would notify them on and projects that would not require notification. No comments were received (Letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Gary D. Collins September 18, 2006

## **PRIME & UNIQUE FARMLANDS**

Affected Environment: No Prime and/or Unique Farmlands are present in the vicinity of the proposed project.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen September 11, 2006

## **T&E SPECIES - SENSITIVE PLANTS**

Affected Environment: The proposed project area contains one known occurrence of narrow-leaf evening primrose (*Oenothera acutissima*), a Colorado BLM sensitive species. Another known occurrence of this plant is just outside of the proposed project boundary to the north. The known population lies within the area that is proposed to be burned.

Narrow-leaf evening primrose is a perennial forb with narrow, serrated leaves arranged in a rosette and having a long, woody taproot. Flowers are large and yellow, opening in the evening and closing by morning. Flowering period is late May through June. It grows in sandy, gravelly, and rocky soils in seasonally moist areas such as meadows, depressions, or along washes in mixed conifer to sagebrush plant communities in elevations ranging from 5,300 feet to 8,500 feet. This plant is endemic to northwest Colorado and northeast Utah. It is considered imperiled at both state and global levels.

Environmental Consequences, Proposed Action: Construction of hand lines and use of motorized equipment off of established roads could harm existing populations of narrow-leaf evening primrose by crushing or uprooting. This would be especially true if plants are harmed during the active growing season. Any direct disturbance to seasonally moist habitats could reduce the ability of this plant to establish new populations within the proposed project area.

There is no literature on the effects of fire on narrow-leaf evening primrose. However, like many rare plants that occur among fire-adapted plant communities, this plant is likely either not harmed

by fire or is enhanced by community changes brought about by fire.

Like most plants with large taproots, tremendous carbohydrate reserves and regenerative capability are maintained below ground and chances for direct mortality to narrow-leaf evening primrose through crushing or burning would be greatly reduced by conducting treatments in the fall when this plant has already set seed and has gone dormant. Both mechanical removal and burning of the shrub and tree components of these communities would reduce competition for water and nutrients with all herbaceous members of the plant community, including this plant. Additionally, mesic areas which provide habitat for this plant would benefit by removal of adjacent upland shrubs and trees, providing improved and potentially expanded habitat.

Environmental Consequences, No Action: Any chance for direct mortality to existing populations of narrow-leaf evening primrose would not occur as a result of vegetation treatment activities. By not addressing accumulating fuels and reintroducing fire and fire-mimicking disturbances into the plant community, habitat changes could occur that would decrease habitat quality for this plant. Competition with and encroachment of upland shrubs and trees into mesic areas would decrease the extent of those areas and reduce the presence of this plant.

Mitigative Measures: None.

References: Spackman, S., B. Jennings, J. Coles, C. Dawson, M. Minton, A. Kratz, and C. Spurrier. 1997. Colorado rare plant field guide. Prepared for the Bureau of Land Management, the U.S. Forest Service and the U.S. Fish and Wildlife Service by the Colorado Natural Heritage Program.

Hessl, A., S. Spackman. 1995. Effects of fire on threatened and endangered plants: an annotated bibliography. U.S. Department of the Interior, National Biological Service, Washington, D.C.

Name of specialist and date: Hunter Seim March 13, 2006

### **T&E SPECIES – ANIMALS**

Affected Environment: No threatened or endangered animal species or suitable habitat is known to exist in the project area.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Gail E. Martinez September 29, 2006

## **T&E SPECIES – PLANTS**

Affected Environment: There are no federally listed threatened or endangered plant species within the proposed project area.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Hunter Seim March 13, 2006

## **WASTES, HAZARDOUS OR SOLID**

Affected Environment: The areas proposed for project construction are remote areas that have little influence from human activity. Currently, there are no hazardous materials present within or in the vicinity of any of the four proposed project areas.

Environmental Consequences: Heavy equipment, pickup trucks, ATVs, and other support vehicles would be present during project activities. Fuel, oil, and coolant are potential hazardous materials that could be introduced to the project vicinity. If a release does occur, the environment affected would be dependent on the nature and volume of material released. If there are no releases, there would be no impact on the environment. Consequences would be dependent on the volume and nature of the material released. In most every situation involving hazardous materials, there are ways to remediate the area that has been contaminated. Short-term consequences would occur, but they can be remedied, and long-term impacts would be minimal.

There would be no impact under the No Action Alternative as no construction activities would occur.

Mitigative Measures: None

Name of specialist and date: Hunter Seim 2/14/07

## **WATER QUALITY - GROUND**

Affected Environment: The area affected by the proposed action will have some ground water aquifers containing meteoric water. The ground water quality in the areas will range from potable to useable in aquifers within porous formations, mostly sandstone and within fracture zones in the more indurated parts of the group.

Environmental Consequences: The proposed action will be beneficial to ground water quality. The proposed action will be conducted in accordance with existing Colorado laws for water quality. Specifically, all permit activities must comply with the applicable water quality

regulations in The Colorado Water Quality Control Act, and they will be in conformance with the classifications and numeric standards for water quality established by the Colorado Water Quality Control Commission.

No Action Alternative: Under the No Action alternative, there would be no effect on water quality. The conditions would stay the same. It is possible that there would be a long term negative effect as species diversity and ground cover diminishes.

Mitigative Measures: None

Name of specialist and date: Fred Conrath March 8, 2006

## **WATER QUALITY - SURFACE**

Affected Environment: The proposed project area is located along the northern edge of Douglas Mountain where runoff water drainage would flow southerly in ephemeral tributaries of the Yampa River or northerly towards Rye Grass Draw which is an ephemeral tributary to the Green River. Water quality of the Yampa River needs to support Aquatic Life Warm 1, Recreation 1a, Water Supply and Agriculture. All tributaries to the Green River and this Yampa River segment need to support Aquatic Life Warm 2, Recreation 1a and Agriculture; these stream segments are designated as use protected. Water quality of the Green River needs to support Aquatic Life Cold 1, Recreation 1a, Water Supply and Agriculture.

Environmental Consequences: Proposed Action: The proposed action would have some short term effects to the water quality of ephemeral streams in the project area during times of runoff. These effects would be from the prescribed burning treatment and would result from accelerated soil erosion. Increases in sediment, nitrogen, phosphorous, and cation production are likely in the first couple of years after treatment. With the exception of sediment, these increases would be minor and short lived, returning to pre-treatment levels in a couple of years. Depending on the intensities of the burns and weather patterns following the burns, sediment yields could increase dramatically. Although increased sediment is expected to enter these ephemeral tributaries an unknown and varying portion of this sediment would be deposited and stabilized within active floodplain areas downstream. Stabilized sediments could have beneficial effects to the function of these ephemeral streams and reduce the amount of sediment transport downstream. The proposed fires would be ignited under prescribed (or favorable) conditions and would be expected to be of varying intensities creating a mosaic burn pattern. This would keep sediment and nutrient yields from increasing to harmful levels. The effects of the proposed action would be short lived and not out of the natural variability of the area.

Minimal surface disturbance would occur with the proposed mechanical treatments. Little to no effect to water quality would be expected to result from implementing the mechanical fuel reduction treatments.

In the long term analysis, the proposed action would have a positive impact to water quality.

This would be because of the decreased potential of experiencing a large scale wildfire and the expected increase in plant diversity and ground cover, resulting from the planned treatments.

No Action Alternative: No direct effects on water quality are anticipated from selecting the No Action Alternative. Indirect negative effects could result in the short or long term period following no action, if a large wildfire occurred in the area. In this event, substantially more sediment and nutrient loading of runoff waters would likely occur and it would be derived from a larger area of the landscape.

Mitigative Measures: None

Name of specialist and date: Ole Olsen September 11, 2006

### **WETLANDS/RIPARIAN ZONES**

Affected Environment: No riparian areas are known to be present on public lands within the treatment areas.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen September 11, 2006

### **WILDERNESS, WSA, AND WILD & SCENIC RIVERS**

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer April 11, 2006

### **NON-CRITICAL ELEMENTS**

#### **FORESTRY**

Affected Environment: Forest communities involved with this project include ponderosa pine forest, pinyon-juniper woodland, and a small amount of quaking aspen. Approximately 20% of the area can be characterized as mature ponderosa pine with limited reproduction and encroaching pinyon-juniper filling the understory and spaces between ponderosa trees. Approximately 50% of the area is predominately mature ponderosa pine but has various age classes present and limited pinyon-juniper encroachment. Approximately 2% of the area is

decadent aspen and the remaining 48% is sagebrush dominated. All of the area has a buildup of surface fuels due to many years of fire suppression.

The project area is at the upper elevation limit of the pinyon-juniper range. At this elevation both tree species typically slowly encroach into other community types rather than forming continuous stands.

The aspen stands in the project area are generally unhealthy due to old age and encroachment by sagebrush and common juniper. Because of this encroachment and a moderate amount of dead/down material, these stands are easier to burn than more viable stands.

The primary forest product utilized in the area is firewood although there have been past timber sales of saw log material in the surrounding area.

Environmental Consequences, Proposed Action:

#### Hand thinning

This highly selective treatment of targeting only pinyon pine, Utah juniper, brush and trees with ladder-fuel potential within ponderosa pine stands would be beneficial to the preservation mature ponderosa stands. Encroaching pinyon and juniper trees greatly increase the chances of wildfire killing larger ponderosa trees, which are normally resistant to low intensity surface fires that burn grasses, shrubs, duff, litter and dead/down woody material. Encroachment also increases shade in the understory of ponderosa stands. This shading suppresses the establishment of ponderosa seedlings, which are intolerant of shade. This treatment would positively impact these ponderosa stands by emulating many of the effects a low intensity surface fire would have. It will also allow prescribed fire or wildland fire use to occur to further maintain long term ponderosa forest health.

#### Hydro-ax

The effects of this treatment will be similar to those for hand thinning. The main differences are that mulched material is somewhat scattered (rather than slash piles made) which may allow for more successful prescribed burning.

#### Prescribed fire

##### *Ponderosa forest*

Ponderosa forests are one of the most fire adapted forest types in North America. Ponderosa pine has a highly fire resistant and thick bark, especially in older trees, which insulates the cambium layer from deadly heat.

Broadcast burning of understory fuels would have the effect of arresting succession, exposing natural seedbeds, and preventing large crown fires. This would help maintain healthy, open ponderosa stands that are more resistant to forest pathogens.

##### *Pinyon-juniper woodland*

Both species are easily killed by fire through crown consumption and over heating of the

cambium layer. Fire will effectively remove these species for 20 – 40 years. Burning 40 – 60 percent of the area will permit some pinyon and juniper trees to remain.

### *Aspen*

Fire does not typically burn well through aspen stands, but when it does many of the trees are top-killed. This initiates vigorous resprouting from the roots and many seedling size trees are propagated. Prescribed burning should result in the initiation of many young trees; however, browsing by cattle, deer, and elk could limit the number of trees surviving to maturity.

Environmental Consequences, No Action: Under this alternative, no fire or other disturbances would occur. Surface and ladder fuels will continue to build up leading to decreased forest health and increasing risk of catastrophic fire that would effectively remove all trees in the area (with the possible exception of aspen). Even if fire does not occur, the increased competition for soil and water resources will lead to less vigorous trees and therefore an increased risk of forest pathogens affecting the area.

Mitigative Measures: None

Name of specialist and date: Dale Beckerman November 1, 2006

## **PALEONTOLOGY**

Affected Environment: The geologic formation at the surface is the pre-Cambrian Age Uinta Mountain Group (Yu), a resistant light to dark-red sandstone and locally gray to red silty shale, of probable marine origin. Maximum thickness probably more than 7,000 meters. This formation has been classified a Class III formation for the potential for occurrence of scientifically significant fossils. Scientifically significant fossils are rarely found within this formation (Armstrong & Wolney, 1989). The potential for discovery of significant fossils on this location is considered to be low.

Environmental Consequences: If any such fossils are located here, construction activities could damage the fossils and the information that could have been gained from them would be lost. The significance of this impact would depend upon the significance of the fossil.

No Action Alternative: There would be no impacts from the No Action Alternative.

Mitigative Measures: This impact is usually effectively mitigated by ceasing operations and notifying the Field Office Manager immediately upon discovery of a fossil during construction activities. An assessment of the significance is made and a plan to retrieve the fossil or the information from the fossil is developed. The proposed action could also constitute a beneficial impact to paleontological resources by increasing the chances for discovery of scientifically significant fossils.

References:

Armstrong, Harley J. and Wolney, David G., 1989, Paleontological Resources of Northwest Colorado: A Regional Analysis, Museum of Western Colorado, Grand Junction, CO, prepared for Bur. Land Management, Vol. I of V.

Miller, A.E., 1977, Geology of Moffat County, Colorado, Colo. Geol. Surv. Map Series 3, 1:126,720.

Name of specialist and date: Robert Ernst February 28, 2006

**RANGE MANAGEMENT**

Affected Environment: The Proposed Action is located in portions of the Brown’s Draw #04315, Deer Valley #04314, and Smelter Hill #04310 Allotments. All of these allotments are permitted for cattle use during the spring, summer, and fall. These allotments are permitted for a total of 1,285 AUM’s.

<u>Allotment</u>	<u>Season of Use</u>	<u>AUMs</u>	<u>Total Acres</u>	<u>Treated Acres</u>
Brown’s Draw	5/15-10/31	770	12,075	559
Deer Valley	6/2-10/15	72	640	498
Smelter Hill	3/1-12/31	443	7,942	611

All or portions of three fences and four water developments are located within the proposed project area:

<u>Project</u>	<u>Type</u>	<u>Location</u>
Vaughn-Macloed Line Fence	Fence	T7N R101W Sec. 3
Walker Bros. Fence	Fence	T7N R101W Sec. 10
Vaughn Macloed Fence	Fence	T7N R101W Secs. 2 and 11
Douglas Mountain Spring	Developed spring	T7N R101W Sec. 2
Whiskey Sec. 4 Dam	Pond	T7N R101W Sec. 11
Peterson Draw Check Dam	Check dam	T7N R101W Sec. 12
Twin Pine Reservoir	Reservoir	T7N R101W Sec. 12

Environmental Consequences, Proposed Action: The proposed treatments would require complete rest from livestock grazing of treated areas for a minimum of two complete growing seasons to ensure proper recovery of burned or brush beat areas. Areas that receive only hand-thinning of ponderosa and pinyon-juniper trees would not need to be rested as the grass, forb, and most shrub components of the community would not be impacted by hand thinning. In the short term, this would require the livestock operators to either stay completely off of these allotments for two years or work with BLM to install and maintain temporary fencing around treated areas.

This may negatively impact livestock operations, as well as forage in other areas, as the operators shift livestock that would normally use these areas into other parts of their operations on both public and private lands.

In the long term, all of the proposed treatments would provide a significant benefit to livestock management. Opening up closing stands of ponderosa, sagebrush, pinyon-juniper, and mountain shrub communities will increase grasses and forbs that are important to livestock. All of these treatments, especially fire, would increase the density and vigor of key livestock forage species such as western wheatgrass and thickspike wheatgrass, improving the nutritive quality and availability of these species to cattle.

The proposed action has the potential to damage range improvements. Wooden posts on fences and gates can be burned, the wooden spring box at the Douglas Mountain Spring can be damaged, and water catchments can experience increased sediment loading from runoff from burned areas prior to reestablishment of vegetation. BLM will need to carefully monitor all impacts to existing range improvements and perform repair work as necessary soon after treatments are completed to ensure their continued effectiveness.

Environmental Consequences, No Action: All areas of these three allotments would continue to be available for use by livestock in the short term. However, unless wildfire occurs on these allotments in a manner similar to what is planned under the Proposed Action, forage quality, abundance, and availability would decline to the point where portions of the allotments within the proposed project area become poorly suited for livestock use. Increasing ponderosa stand density, pinyon-juniper replacement of sagebrush communities, and sagebrush decadence would reduce key forage grasses and important forbs and reduce the overall grazing capacity of these allotments. Additionally, as diversity declines (a factor of climax conditions in sagebrush and pinyon-juniper communities), these areas would become less resilient to impacts from livestock grazing and more susceptible to invasion by exotic annual species such as cheatgrass when inevitable wildfires do occur.

There would be no direct impact to range improvements under this alternative.

Mitigative Measures: None.

Name of specialist and date: Hunter Seim March 13, 2006

## **REALTY AUTHORIZATIONS**

Affected Environment: There is an existing power transmission line within the project area, Right-of-Way authorization COC0108771, held by Moon Lake Electric Association.

Environmental Consequences: The existing power line could be accidentally damaged during prescribed fire treatment activities. Impacts would be temporary until the damage is repaired.

No Action Alternative: There would be no impacts from the No Action Alternative.

Mitigative Measures: None.

Name of Specialist and Date: Louise McMinn      March 10, 2006

## **SOILS**

Affected Environment: The primary soil mapping unit within the proposed project area is the Rock outcrop-Haploborolls complex, 10 to 40 percent slopes. This mapping unit covers the woodlands portion of the project. Smaller areas of the Detra-Cortyzack complex, 1 to 12 percent slopes are within the project area and comprise the soil mapping unit found in the valleys with big sagebrush.

The Rock outcrop-Haploborolls complex mapping unit is comprised of an estimated 50 percent rock outcrop and 50 percent soil. Haploborolls and similar soils comprise about 35 percent of the soils component and these soils are typically 4 to 30-inches to bedrock, have moderately rapid permeability, very low water holding capacity and high runoff rates. The surface soil is described as a gravelly sandy loam.

The Detra-Cortyzack complex mapping unit is comprised of 50 percent Detra soils and 40 percent Cortyzack soils. Detra soils are deep (>60-inches), have moderate permeability, high water holding capacity and medium runoff rates. This soil has a deep surface horizon (19-inches) described as a fine sandy loam. Cortyzack soils are deep, have a moderately slow permeability, high water holding capacity and medium runoff rates. Cortyzack soils also have a fine sandy loam surface horizon to a typical depth of 9-inches. Both soils have sandy clay loam subsoil and/or sandy loams in the deeper profile.

Environmental Consequences: The effects of prescribed burning on soils is directly related to the depth and intensity of soil heating as well as vegetation removal which exposes the soil surface to wind and water erosion. The areas targeted for prescribed burning contain light to moderate fuel loading which results in lower surface temperatures and short burning duration. As a result, soil heating should not be severe enough to cause significant mortality of perennial grasses and forbs. There will be increased soil erosion for one to two seasons following burning due to more soil surface exposure; however herbaceous vegetation cover should increase above pre-burn levels after two to three years thereby increasing soil stability and infiltration and reducing soil erosion.

Fire in the allowable areas that is forested may adversely affect soils for a longer duration. This is due to generally steeper slopes, lower composition of perennial forbs and grasses, thick duff, heavy fuels, and shallower soils. These areas will likely take longer to adequately revegetate and are more prone to invasion by annual weeds, downy brome and bulbous bluegrass. The greatest potential adverse impacts would be areas covered by thick duff and/or accumulations of heavy fuels because of the intense and long duration heat produced. Some temporary soil sterilization and water repellence may occur in these areas if burned under very dry conditions, but prescribed burning

under these conditions is not likely. Despite the short term effects, soil erosion would be expected to be at or below pre-fire levels after three to five years due to increased herbaceous ground cover.

Although the prescribed fire treatment is likely to increase soil erosion from the project area in the short term it is considered to be at an acceptable level compared to soil erosion that would inevitably occur with a large intensely burning wildfire. The fuels reduction treatments will allow fire to be reintroduced into the Ponderosa pine forests and improve the capability for wildland fires to be managed for fire use or additional use of prescribed fire to maintain the appropriate understory vegetation conditions.

No Action Alternative: There would be no direct impacts to the soil resource if no actions are implemented. However, the threat of larger more intense fires occurring under extremely dry conditions exists if fuel reduction treatments are not implemented. The scale and duration of adverse soil effects would be much higher under the extreme burning conditions that exist for large fire occurrence.

Mitigative Measures: None

Name of specialist and date: Ole Olsen      September 11, 2006

## **VEGETATION**

Affected Environment: Plant communities within the proposed project area include ponderosa pine forest, pinyon-juniper woodland, mountain shrub, and sagebrush-grass. Dominant plants present throughout the area include ponderosa pine (*Pinus ponderosa*), pinyon pine (*P. edulis*), Utah juniper (*Juniperus utahensis*), true mountain mahogany (*Cercocarpus montanus*), curlleaf mountain mahogany (*C. ledifolius*), snowberry (*Symphoricarpos albus*), serviceberry (*Amelanchier alnifolia*), Gambel oak (*Quercus gambellii*), bitterbrush (*Purshia tridentata*), Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), mountain big sagebrush (*A. tridentata pauciflora*), green rabbitbrush (*Chrysothamnus viciiflorus*), stemless goldenweed (*Haplopappus acaulis*), buckwheat (*Eriogonum* spp.), fireweed (*Epilobium angustifolium*), bluebunch wheatgrass (*Agropyron spicatum*), needle-and-thread (*Stipa comata*), Indian ricegrass (*Oryzopsis hymenoides*), squirreltail (*Sitanion hystrix*), and prairie junegrass (*Koeleria pyramidata*). Notable non-natives present are bulbous bluegrass (*Poa bulbosa*) and cheatgrass (*Bromus tectorum*). Bulbous bluegrass is present in highly localized patches and may be increasing.

In general, the distribution of pinyon-juniper woodland is determined by the location and occurrence of fire. Pinyon pine and Utah juniper are not tolerant of fire at nearly any intensity, so frequency of fire is important in the dynamics of this vegetation type's integration into other plant communities. Lack of fire for many years has increased the distribution of this community type, resulting in complete elimination of other plant communities, especially those that are sagebrush dominated.

## Environmental Consequences, Proposed Action:

### Hand thinning

This highly selective treatment of targeting only pinyon pine, Utah juniper, and trees with ladder-fuel potential within ponderosa pine stands would be beneficial to the maintenance of healthy, park-like ponderosa stands. Encroaching pinyon and juniper trees greatly increase the chances of wildfire killing larger ponderosa trees, which are normally resistant to fires that burn grasses and shrubs in the understory. Encroachment also increases shade in the understory of ponderosa stands. This shading suppresses the establishment of young ponderosas, which are intolerant of shade. This treatment would positively impact these ponderosa stands by encouraging a more stable fire regime that would continue to favor the maintenance of large ponderosas while reducing understory shade which would encourage ponderosa recruitment and help maintain a variety of ponderosa age classes.

Stacking and burning of slash piles would negatively impact grasses and forbs in small, highly localized areas. These impacts would be minor within the overall project area, but could allow for the establishment of cheatgrass in areas where it presently does not exist. Seeding of these spots with native grasses will be important to reduce this potential.

### Hydro-ax

This selective treatment will have impacts similar to hand thinning within the ponderosa stands. In sagebrush and mountain shrub communities, this treatment would have the effect of maintaining and improving the shrub, forb, and grass components of shrub dominated plant communities by reducing or eliminating the increasing competition of pinyon and juniper for water and nutrients. Additionally, juniper possesses strong allelopathic characteristics which strongly suppress other competing plants once the stands become established. This treatment would eliminate threats to existing shrub dominated communities by arresting juniper allelopathy.

### Brush beating

Brush beating in sagebrush dominated plant communities partially mimics the effects of fire by effectively killing most woody shrubs, especially sagebrush. This elimination of shrubs favors forbs and grasses. The advantage of this method over burning is that the threat of invasive weeds after treatment is greatly reduced as there is little to no soil disturbance and the existing grasses and forbs are left intact. Grasses and forbs would increase in density and abundance in the absence of shrub competition for space, water, and nutrients. The disadvantage of this method is that, unlike fire, nutrients held within the biomass of the shrubs are not released quickly and are not immediately available to other plants. This method does not cycle nutrients in the manner that fire does, so the normal successional processes that would follow fire (which add greatly to the overall diversity throughout the plant community) do not occur. Despite the disadvantages, brush beating in sagebrush dominated communities would favor the maintenance of healthy, vigorous grasses and forbs which will provide forage, watershed protection, and community

resilience.

### Prescribed fire

All of the plant communities within the proposed project area are adapted to fire, although fire would have different effects within each community. Broadcast burning, as proposed, would remove continuous surface fuels over large areas.

### *Ponderosa forest*

Ponderosa forests are one of the most fire adapted forest types in North America. Ponderosa pine has a highly fire resistant bark, especially in older trees, which helps the tree to survive all but the most intense crown fires. Broadcast burning of continuous understory fuels (where they are not too heavy, made up of pinyon and juniper, or contain dense, young stands of ponderosa) would have the effect of arresting succession, exposing natural seedbeds, and prevent large, crowing fires. This would help maintain healthy, open ponderosa stands that would be resistant to large fires and provide valuable habitat.

### *Pinyon-juniper woodland*

The Proposed Action would reduce the presence of pinyon-juniper woodland within the proposed project area and increase the presence and health of the other plant communities, especially sagebrush-grass, which is important for livestock and wildlife forage as well as watershed protection.

### *Mountain shrub*

Unlike sagebrush-grass and pinyon-juniper communities, fire would maintain dominance of most species present. For most species in mountain shrub plant communities, prescribed fire would increase biomass and nutrient quality, especially for mule deer. Burning would also increase forage availability by reducing plant height and increasing palatability. There are, however, some important mountain shrub species that would be harmed by burning and be reduced or even eliminated. Curlleaf mountain mahogany and antelope bitterbrush are two important components of these communities and are extremely valuable for forage and cover. Both of these species are moderately to poorly adapted to fire depending on factors such as community seral stage, season of burn, and availability of moisture after the fire.

### *Sagebrush-grass*

At nearly all intensities, fire kills sagebrush and most other associated shrubs. The degree to which grasses and forbs survive the fire is largely a function of the intensity, season, and the level of soil moisture during the fire. Burning in the fall would be most damaging to sagebrush and least damaging to forbs. Conducting burns in a mosaic pattern within this community would closely mimic natural fire occurrence and foster maximum species and age-class diversity throughout the sagebrush dominated communities within the proposed project area.

Below are general responses to fire to important species present in these plant communities:

Harmed

Bitterbrush  
Broom snakeweed  
*Eriogonum* spp.  
Idaho fescue  
Big sagebrush  
Black sagebrush  
Threadleaf sedge  
Curlleaf mountain mahogany

Unharmmed

Bluebunch wheatgrass  
Indian ricegrass  
Needle-and-thread  
Penstemon  
Prairie junegrass  
Squirreltail  
Snowberry

Favored

Arrowleaf balsamroot  
Cheatgrass  
Ephedera  
Rabbitbrush  
Sandberg bluegrass  
Serviceberry  
Thickspike wheatgrass  
True mountain mahogany  
Lupine  
Western wheatgrass  
Yarrow  
Gambel oak

Environmental Consequences, No Action: Under this alternative, no fire or other disturbances would occur within these plant communities in the proposed project area. Disturbances, especially fire, would occur at some point and in an uncontrolled manner. Depending upon when such events occur, heavy fuel buildups could lead to crown fires within the ponderosa stands and hot, extensive burns within the other plant communities resulting in widespread type-conversions within the plant communities. Important species such as bitterbrush could be severely harmed, reducing this important wildlife food source.

Due to the buildup of fuels over many years as evidenced by pinyon-juniper encroachment, widespread sagebrush decadence, and increasing densities of young ponderosa pine as a result of fire suppression over many years, this alternative would allow wildfire to result in an earlier seral state that would take many years to regain its value for wildlife habitat, biological diversity, and watershed protection.

Mitigative Measures: None.

Reference: Payne, Neil F., and Fred C. Bryant. 1994. Techniques for wildlife habitat management of uplands. McGraw-Hill, New York.

Name of specialist and date: Hunter Seim March 13, 2006

**WILDLIFE, AQUATIC**

Affected Environment: The project is located in the Green and Yampa River watersheds. There are no perennial streams located in the project area. There are two unmapped springs within the

project area, both occurring on private land (Daisy Spring and Whiskey Spring).

Environmental Consequences: The only habitat suitable for aquatic wildlife is located outside the targeted treatment areas, and the chance of impacting these areas is small. It is likely that small amphibians use the two springs in the area and the associated vegetation surrounding these springs. The effects would be minimized on these species unless the fire moved into the allowable area. The project may lead to increased run off and sediment. This effect would be minor and temporary and should not affect aquatic wildlife in the area.

No Action Alternative: There would be no impact to aquatic wildlife with this alternative.

Mitigative Measures: None

Name of specialist and date: Gail E. Martinez September 29, 2006

## **WILDLIFE, TERRESTRIAL**

Affected Environment: Douglas Mountain is a diverse area, rich in wildlife and vegetation. The area provides habitat for mule deer, black bear, mountain lion, elk, blue grouse and Merriam's turkey (CDOW communication). It is also used by raptors and small non game birds and mammals. The project area is dominated with 50% ponderosa pine woodlands, encroaching pinyon/juniper woodlands and sagebrush/grasslands. The southeastern ¼ of the project area is mapped as elk production area. The eastern 1/3 of the project is mapped as mule deer winter range. The entire project area is mapped as Merriam's turkey production area. Although the project area is not mapped as a roosting site for Merriam's turkey, the large ponderosa pine trees found within the project area may provide excellent roosting habitat for turkeys.

Environmental Consequences: The sagebrush/grass, pinyon/juniper and ponderosa pine communities of the Deer Valley area provide habitat for a variety of wildlife species. Much of the sagebrush in the area has reached climax state and reintroducing fire into the ecosystem should improve the quality of the habitat by stimulating new growth. Burning should also improve habitat diversity by creating a mosaic of vegetation in different seral stages. Common non-game bird species and small mammals that use the pinyon/juniper trees and sagebrush would lose habitat, but this effect would not be substantial. Islands of shrubs that remain intact in the area will still provide some cover and foraging areas for these species. There are no known raptor nests in the project area, however, it is likely that woodlands in the area support nesting raptors. The project site is mapped as Merriam's turkey production area. The shrubs and grasses that will remain intact in the area will provide suitable turkey production habitat. The removal of pinyon/juniper trees within the area will encourage new shrub and grass growth, thus improving the production habitat for Merriam's turkeys. The thinning of ponderosa pine trees within the project area should have no effect on turkeys as long as mature (>12" Dbh) ponderosa pine trees are left intact. The southeastern ¼ of the project area is mapped as elk production area. Timing restrictions outlined in the standard operating procedures will minimize impacts to elk. Burns conducted in the fall may conflict with the big game hunting season in the area.

Mitigative Measures: None.

No Action Alternative: There would be no direct impact to wildlife if no treatments are done, however the threat of large wildfires occurring under dry conditions exists if nothing is done. The impacts to wildlife will be greater if a catastrophic wildfire burns large areas.

Name of specialist and date: Gail E. Martinez September 29, 2006

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Fluid Minerals		FC 3/8/06	
Forest Management			DB 11/1/06
Hydrology/Ground		FC 3/8/06	
Hydrology/Surface		OO 9/8/06	
Paleontology			RE 02/28/06
Range Management			JHS 03/13/06
Realty Authorizations			LM 3/10/06
Recreation/Travel Mgmt		RS 4/10/06	
Socio-Economics		LM 3/10/06	
Solid Minerals		RE 02/28/06	
Visual Resources		JM 4/11/06	
Wild Horse & Burro Mgmt		RE 02/03/06	

**CUMULATIVE IMPACTS SUMMARY:** The Deer Valley area of Douglas Mountain is used by many people for hunting, camping, and antler “hunting”. This area is also utilized for livestock grazing. The northernmost boundary of the project area is Douglas Mountain Boulevard (County Road 116), the main thoroughfare that runs along the ridgeline of Douglas Mountain. This road receives regular traffic by local residents, recreationists and ranchers.

The Douglas Mountain Hazardous Fuels Reduction project incorporated a section of the Douglas Mountain Boulevard (Moffat County Road # 116). This project, named “Boulevard Fuel Break”, involved treating a 100 foot wide strip on both sides of County Rd. 116 from the intersection of County Rd. 10 west 9 miles to the Five Springs prescribed burn project (approximately 230 acres). The vegetation along the road was thinned to decrease the potential of a wildfire spreading to the opposite side of the road. The objective of producing a healthier stand and reducing the chance of a wildfire burning through the tree crowns is the same in both the Boulevard Fuel Break Project and the Deer Valley Project. The Boulevard Fuel Break project was implemented in the last 5 years.

Other fuel reduction projects have been implemented in the Douglas Mountain area within the last 5 years. Projects included treatment of sagebrush by mechanical and prescribed fire methods and removal of encroaching pinyon and juniper trees by mechanical and prescribed fire methods. Total acreage of these projects totaled approximately 5000 acres (50 -80 % treated) treated by prescribed fire and 450 acres treated by mechanical methods.

In June of 2006, the area to the north of Douglas Mountain was impacted by a wildfire which burned approximately 3380 acres of sagebrush, grass and pinyon/juniper woodlands.

The total area affected by the Deer Valley project will be 1493 acres; 1493 acres are targeted for prescribe fire treatment, 203 acres will be treated by hydro mulching methods, .73 acres of hand line and 3.6 acres of machine line.

## **STANDARDS**

### **PLANT AND ANIMAL COMMUNITY (animal) STANDARD:**

This area is currently meeting the standard and is providing productive habitat for a variety of mammalian and avian species. The proposed action should aid in continuing to meet this standard because it will return more decadent areas to a younger, healthier and more productive state. The greater potential under this alternative for creating landscapes composed of several plant communities that vary in successional stages and patterns will contribute to meeting this standard.

No Action Alternative: The standard would continue to be met in this area if the proposed action is not implemented. However, with out treatment, there will be fewer age classes and successional stages across the landscape, which will reduce vegetation and animal diversity. Allowing the vegetation across large areas to become old and decadent reduces the health and vigor of plants as well as their reproductive capability. It also promotes large, even-aged stands of vegetation that are more prone to large catastrophic wildfires.

Name of specialist and date: Gail E. Martinez      September 29, 2006

### **SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD:**

There are no known threatened or endangered animals or suitable habitat for such in or near the affected environment. The standard does not apply.

Name of specialist and date: Gail E. Martinez      September 29, 2006

### **PLANT AND ANIMAL COMMUNITY (plant) STANDARD:**

This area is currently meeting this standard, however increasing dominance of pinyon-juniper, increasing decadence of sagebrush, and increasing biomass in the ponderosa forest understory are threatening the vigor, diversity, and resilience to disturbance that are necessary to maintain this standard. The Proposed Action would reduce pinyon-juniper biomass and arrest its expansion into ponderosa stands, encouraging maintenance of healthier, fire resistant ponderosa trees and maintaining healthier, more diverse areas of sagebrush-grass. Reducing decadent sagebrush would foster greater age class diversity of sagebrush needed to maintain a diversity of grass and forb species and fire in mountain shrub would increase desirable species and improve its importance to wildlife. The Proposed Action would meet/maintain this standard.

The No Action Alternative would meet this standard in the short term but not in the long term. It would maintain communities in their current state which are meeting this standard, however it would increasingly allow for less diverse and highly fire susceptible plant communities which would provide poor habitat and be threatened with complete destruction by wildfire from which it would take many years to recover.

Name of specialist and date: Hunter Seim March 1, 2006

**SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant)  
STANDARD:**

There are no federally listed threatened or endangered plants within the proposed project area. For threatened or endangered plants, this standard does not apply.

Name of specialist and date: Hunter Seim March 13, 2006

**RIPARIAN SYSTEMS STANDARD:** Proposed Action: The standard is currently not being met in this area. Riparian resources are not likely to be affected by the proposed fuels reduction project because they occur outside of the proposed treatment areas. Riparian resources will be avoided by all planned treatments; however there is a chance that escape of the prescribed fire could burn over the small riparian system. Fire could burn up the brushy component but herbaceous vegetation would resprout quickly after being burned. The functionality of the riparian system would be at risk in the short term until above ground biomass begins to flourish and support the below ground biomass necessary to protect riparian system soils from eroding. The riparian standard for healthy rangelands will likely be unaffected by the proposed projects.

No Action Alternative: Riparian resources would be unaffected if the No Action Alternative is selected, but the threat of large wildfire would still be present.

Name of specialist and date: Ole Olsen September 11, 2006

**WATER QUALITY STANDARD:** The water quality standard is met with selection of either of the alternatives. All stream segments are supporting the classified uses and no stream segments are considered to be impaired. Although an increase in sediments and nutrients would likely result in

runoff waters from the project areas this would be for a short duration and fairly localized within the headwater ephemeral channels. Projects implemented with selection of the Proposed Action will help to reintroduce fire back into the landscape. This will decrease the possibility of having a large intense wildfire that affects a larger area and would have a much greater impact on water quality. Modifying the fuels in the landscape as proposed will enhance the management of this landscape for wildfires and reduce the patch size of continuous hazardous fuels. Fire use and fuel management are considered to be Best Management Practices which will help to incrementally reduce the heavy fuel loading in sagebrush and woodlands, limiting the scale and intensity of a future unplanned wildfire and subsequent water quality degradation.

Name of specialist and date: Ole Olsen September 11, 2006

**UPLAND SOILS STANDARD:**

The uplands soil standard for healthy rangelands is met for the No Action and Proposed Action Alternatives, although there would be some short term soil instability on the area targeted for prescribed burning. In June 2004, the Douglas Mountain Landscape was evaluated to see if it met land health standards. Land health Sites DM9 and DM8 were in the project area. The upland soils were found to be stable and meeting the land health standards. This condition would remain unchanged for the No Action Alternative.

Under the Proposed Action Alternative the upland soil resource would not be modified appreciable by the hydro-ax, brush beating or hand thinning treatments. Upland soil health would be maintained. The short term affect of prescribed burning will cause increased soil erosion and surface runoff as a result of ground cover removal. Although additional rills will likely form and soil movement will be apparent initially, it is expected that within 2 to 3 years plant canopy, litter and overall vegetative cover should exceed pre-burn levels and be capable of protecting the soil resource. The resulting post-burn vegetation will be predominately herbaceous species having finer litter that can be easily decomposed and incorporated into the soil. Since fire is a natural component of the ecosystem and it can have very devastating effects over thousands of acres under extreme conditions it is desirable to reduce the potential for this to occur.

Name of specialist and date: Ole Olsen September 11, 2006

**PERSONS/AGENCIES CONSULTED:** Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.

**ATTACHMENTS:**

**1. Deer Valley Project Map illustrating the project area, specifically illustrating the areas to be treated mechanically and the area to be treated with prescribed fire.**

## **FONSI**

The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. With the implementation of the attached mitigation measures there is a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.
9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.
10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

**SIGNATURE OF AUTHORIZED OFFICIAL:**

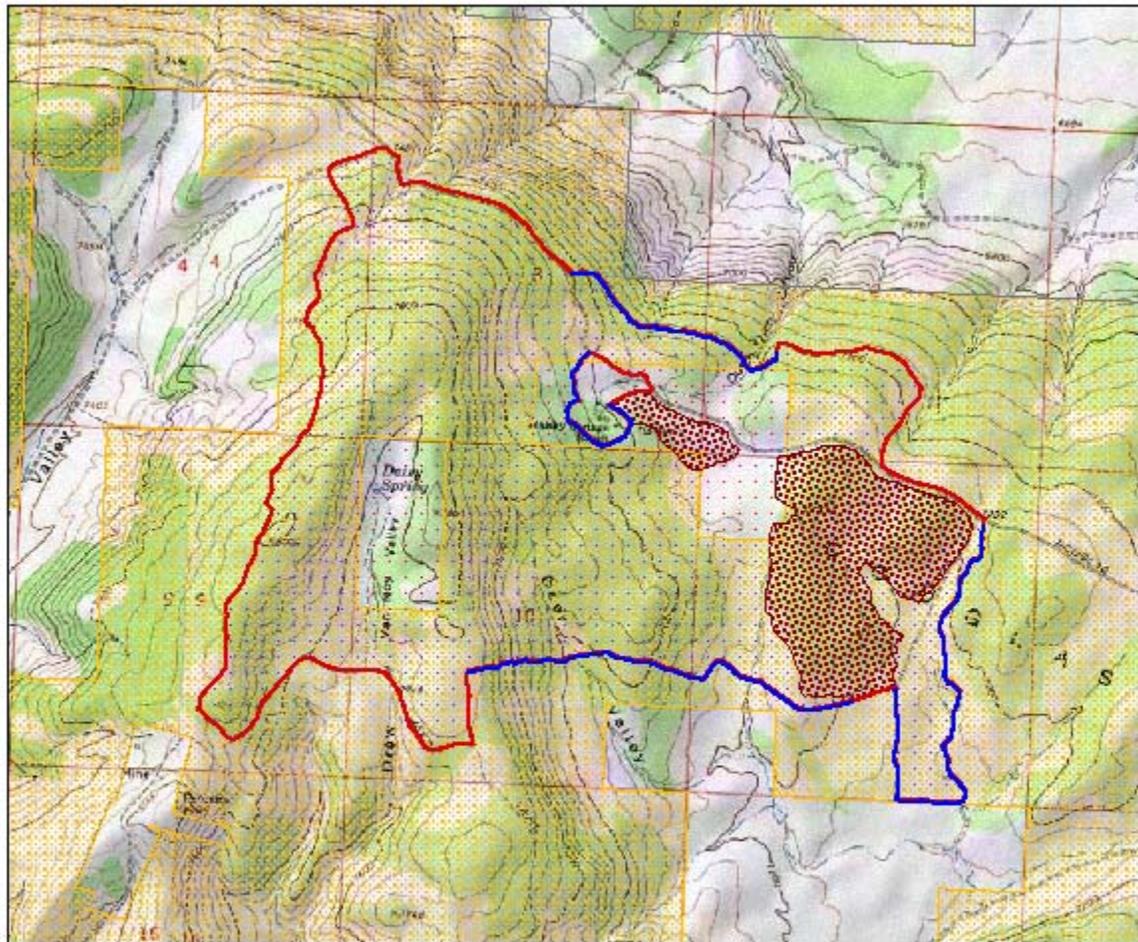
**DATE SIGNED:**

**SIGNATURE OF PREPARER:**

**DATE SIGNED:**

**SIGNATURE OF ENVIRONMENTAL REVIEWER:**

**DATE SIGNED:**



**Scale:**  
1:26683

## Deer Valley Hazardous Fuels Reduction Project

1493 acres Rx Fire  
 203 acres hydro-mulch  
 243 acres private  
 2 miles hand line (3' width) (.73 acre)  
 2 miles machine line (15' width) (3.6 acres)