United States Department of the Interior
Bureau of Land Management

Environmental Assessment
DOI-BLM-CO-SO50-2010-0047 EA

July 2012

Lamborn/MacDonald Wildlife Habitat Improvement Project

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ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-S050-2010-0047 EA

PROJECT NAME: Lamborn/MacDonald Wildlife Habitat Improvement Project

LEGAL DESCRIPTION: Township 14S, Range 90W and 91W; and Township 15S, Range 91W.

APPLICANT: BLM

PURPOSE AND NEED FOR THE ACTION:

The need for the proposed action is to 1) improve wildlife habitat, 2) to reduce hazardous wildland fuels and the potential for a catastrophic fire within the vicinity of the project area, and 3) maintain or achieve the public land health standards.

The National Fire Plan was completed in 2000 in an interagency effort after catastrophic fires damaged property and threatened life in several areas of the country. There are four primary aspects of the National Fire Plan: 1) To increase the ability to suppress wildfires by increasing the number and capability of suppression forces; 2) To reduce the risk of wildfire by reducing the hazardous fuels and supporting local community efforts and small rural fire departments; 3) To restore the health of natural ecosystems so that fire can act as a natural process without causing negative impacts; 4) To contribute to and involve local communities in this effort.

The proposed action to reduce fuels is in line with National Fire Plan goals and objectives and is being pursued by the BLM as a National Fire Plan effort. This fuel reduction project would reduce the risk of fire ignitions, would lower wildfire intensity, and would lower the risk of sustained crown fire.

The results from the Uncompahgre Field Office (UFO) 2007 North Fork Land Health Assessment (LHA), point out the proposed slashing unit is located within the winter concentration range for both mule deer and elk, as well as severe winter range for elk. Coincidently, the area was identified, during the LHA, as an area with general browse plant vigor problems. In response to the low plant vigor, the 2007 LHA document suggests a need to reset succession and create a more desirable mosaic of feeding and cover areas to improve the herbaceous species composition and vigor of browse plants in the area. The proposed action

would accomplish this objective.

BACKGROUND/INTRODUCTION

The Lamborn/MacDonald Wildlife Habitat Improvement Project Area is located in Delta and Gunnison Counties, approximately 3 miles southwest of the town of Paonia, CO (see A*ttachment 1, Location Map*). This proposal addresses specific projects on approximately 609 acres that would benefit a larger 6,000 acre BLM public land project area. The US Forest Service Paonia Ranger District has begun habitat improvement work on an adjacent 8,000 acre project area.

The Proposed Action stems from a multi-agency cooperative project over the Lamborn/Landsend landscape and intends to compliment the efforts of the Grand Mesa-Uncompahgre-Gunnison National Forests' Paonia Ranger District to improve habitat across this landscape. The BLM is proposing to continue with this project on BLM public lands to enhance elk and deer winter range and to reduce the risk of wildfire in the Lamborn/Landsend area. In 2009, the Forest Service mechanically treated approximately 280 acres and has planned to mechanically treat an additional 2,000 acres in the area over the next 5 to 10 years. The NEPA compliance documentation for the Forest Service portion of the project area can be referenced by Decision Memo: Lamborn Wildlife Habitat Improvement Project, available at the Paonia Ranger District.

The Lamborn/MacDonald area is important winter range habitat for deer and elk, and also supports grazing for cattle. This area also contains natural water springs located on adjacent USFS lands that provide Paonia with their municipal water supply. Within the project, the encroachment of pinyon and juniper in areas, and the increase in mountain shrub density in other areas, has continued to decrease palatable forage for these animals as well as increased the risk of catastrophic fire to this important habitat and infrastructure to the town of Paonia.

The proposed project would maintain past treatments that provide openings in mountain shrub communities and pinyon/juniper woodlands to increase the palatability of browse species and increase grass/forb production. The proposed project would also create a variety of age classes in the mountain shrub, oak, and pinyon-juniper communities while reducing fuels build-up. The proposed slashing unit would retreat an area that was chained in 1978 to reduce pinyon and juniper. This area was retreated in 1999, using a rollerchopper to maintain desired forage conditions. Since then, these areas have been encroached with young pinyon and juniper trees. The proposed prescribed fire unit includes an area previously treated in 1982 using a rollerchopper to encourage forb and grass production by reducing mountain shrubs.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action:
The proposed action addresses specific projects on approximately 609 acres within a 6,000 acre project area. The project components include a slashing treatment, prescribed fire, and mechanical treatment (see A*ttachment 2, Proposed Treatments Map*).

The slashing treatment would occur on approximately 224 acres within the boundaries of a 1978 chaining that was later rollerchopped in 1999 (see A*ttachment 3, Slashing-Area Treatments Map*), that now consists of early/mid pinyon-juniper grassland. Slashing treatments would consist of a hand crew with chainsaws and/or other hand tools used to deliberately remove individual trees within the unit boundary.

Prescribed fire would be used on up to approximately 385 acres of mid to late-seral mountain shrub communities to restore a more productive early and early/mid seral component over an area previously rollerchopped in 1982 (see A*ttachment 4, Rx-Area Treatments Map*).

The area proposed for prescribed burning is a mid- to late-seral mountain shrub community. This community currently consists of a variety of shrub species, including: snowberry, mountain mahogany, serviceberry, and Gambel oak; as well as pockets of mature Gambel Oak stands. The objective is to treat approximately 50-70 percent of the area to create patches 5-20 acres in size. The results may be higher or lower depending on weather conditions and fire behavior. Any or all of the treated areas may be seeded with grasses and forbs to reduce bare soil, decrease potential for noxious weeds, and increase availability of forage. The desired future condition is a mosaic of age classes and vegetation types across the landscape. This would reduce fuel loadings and create openings for grasses and forbs to regenerate to improve elk habitat and would rejuvenate portions of the mountain shrub community to improve deer habitat.

Approximately 1.2 miles of ATV trails may be mechanically treated to reinforce adequate fuel breaks when implementing the prescribed fire. Mechanical thinning may also be used within the prescribed fire unit to protect infrastructure such as fences and water facilities. Mechanical treatment would use tools such as a rollerchopper, hydro-axe, or fecon head.

<u>Key Design Features</u>

* Evaluate treatments to determine need for seeding. If needed, seed native grasses/forbs/shrubs to improve the early and early-mid seral species mix within the treatment area. Use the seed mix shown in table 1.

* Complete an inventory of weeds in the area prior to project commencement with the potential for treatments of weeds prior to the project beginning.

* As not to exacerbate the known presence of tall whitetop (Lepidium latifolium) found within the proposed burn unit, contain and/or control the weed prior to any prescribed burning. This could reasonably take 3 to 10 years.

* Remove all dirt and debris that could contain weed seeds from machines and equipment then thoroughly wash with a suitable power washer. This would be a contract stipulation, and washing would be completed prior to moving onto public lands.

* Monitor the project site for the spread of weeds, and spot treat as needed for a three-year (minimum) period.

* An approved burn plan would be completed prior to implementing any phase of a prescribed fire. A Colorado State smoke permit would be obtained prior to implementing any phase of a prescribed fire.

* Fueling and maintenance activities would not take place in or adjacent to any drainage. All product containers (oil and hydraulic fluid cans, etc.) would be removed from the site and disposed of properly. Any spills, regardless of size, would be reported to the authorized officer and follow prescribe hazardous material protocol.

* A Cultural Resource Inventory has been completed over the proposed project area. Treatments would only be implemented within an area that has a completed Cultural Resource Inventory. All sites identified and recorded would be avoided.

* Two contract stipulations for the mechanical treatment would be: 1) "Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the contractor, or any person working on his behalf, shall be immediately reported to the authorized officer. The contractor shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery would be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values." 2) "Pursuant to 43 CFR 10.4(g), the contractor must notify the authorized officer, by telephone, 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."

* Any new line construction would be rehabilitated to prevent the public from using the route when the project has been completed.

* To protect wintering big game, bald eagles, and crucial habitats, it is recommended that no surface disturbing activities occur from December 1 through April 30 without consulting with a BLM biologist.

* To protect migratory bird populations it is <u>recommended</u> that no vegetation treatments occur between May 15 and July 15. Because this project is designed ultimately to benefit these species, an exception to this restriction may be appropriate and exceptions may be granted after consulting with a BLM biologist. Surveys for nesting migratory birds would be conducted and to the extent practicable, known bird nests would be avoided until after fledging.

* Retain and avoid modifying identified cavity trees in the area.

* Raptors:

> To protect breeding and nesting raptors, a raptor survey shall be conducted for all proposed surface disturbance and treatments. Surveys shall follow BLM UFO standard protocol and shall be conducted as close in time as possible prior to surface disturbance. Survey reports, data, and determinations shall be submitted to the BLM biologist for review. Survey clearances expire May 1 of the following year. If any raptor nests or breeding birds are

encountered during treatments, operations would cease immediately, and a BLM biologist would be notified.

Seasonal restrictions**:** During the period from nest territory establishment to dispersal of young from nest (based on species known breeding periods), surface disturbing activities shall not occur within .5 mile of active, special status raptor nests (e.g., peregrine falcon), or .25 mile of active, non-special status raptor nests (e.g., golden eagle). If nest status is unknown (i.e., we have no recent data on nest use), the standard buffer and restriction period would apply during the appropriate breeding season for the species of interest. If said nest is deemed non-functional or inactive, based on at least two consecutive years of monitoring, the above seasonal restriction would not apply.

Spatial restrictions: Mechanical treatments shall not occur within 1/4 mile of functional nest sites of special status raptors, or within 1/8 mile of functional nest sites of non-special status raptor species, unless deemed beneficial to the species by a BLM Biologist.

* To the extent possible, any observed reptiles or amphibians would be avoided by treatment activities and would not be intentionally harmed.

* Slashing and fire line construction would avoid the riparian zone. Cut vegetation shall not be piled in the riparian zone.

Monitoring:

Completed project units would be mapped using a Geographic Positioning System (GPS). A photo point(s) would also be established prior to commencing the project.

The proposed project would be monitored for vegetative response upon completion, 2 years, and 5 years following treatment.

Monitor the project site for the spread of weeds, and spot treat as needed for a three-year (minimum) period.

Table 1

	A	B	C	D
Species	Desired % of planting	Multiplier (A x 0.01)	PLS lbs for full stand	PLS lbs per acre needed for mix (B x C)
Western Wheatgrass, Variety Arriba *(Pascopyrum smithii)*	35	0.35	10	3.5

Bottlebrush squirreltail *(Elymus elemoides)*	20	0.20	8	1.6
Indian Ricegrass, Variety Paloma *(Acnatherum hymenoides)*	10	0.1	8	0.8
Galleta Grass (*Hilaria* or *Pleuraphis jamesii*)	5	0.05	8	0.4
Sand Dropseed (*Sporobolus cryptandra*)	5	0.05	1	0.05
Needle and Thread *(Stipa* or *Heterostipa comata)*	5	0.05	10	0.5
Scarlet Globemallow *(Sphaeralcea coccinea)*	2	0.02	3	0.06
Annual Sunflower (*Helianthus annuus*)	3	0.03	10	0.3
Rocky Mountain Penstemon *(Penstemon strictus)*	2	0.02	2	0.04
Northern Sweet Vetch *(Hedysarum boreale)*	2	0.02	15	0.3
Winterfat (*Eurotia* or *Krascheninnikovia lanata)*	1	0.01	5	0.05
Four-Wing Saltbush, from western Colorado, E Utah *(Atriplex canescens)*	5	0.05	6	0.3
Wyoming Big Sagebrush *(Artemisia tridentata wyomingensis)*	5	0.05	1	0.05
Totals	100	1.0		7.95

Seed Notes:

Use the complete mix on larger projects where substantial amounts of ground would be disturbed, and the likelihood of reseeding from adjacent vegetation is low. On small projects where linear or small patches of vegetation are disturbed and there is abundant adjacent native vegetation for reseeding, use just the bottlebrush squirreltail and western wheatgrass (at 4 lbs PLS seed for each species per acre, under the drill rate, double this rate for aerial application with no seed incorporation).

Price and seed availability vary, so not all species may be available, or priced affordably, at the time needed. However the major ones should usually available. If price or availability become a problem, reduce or leave out those species and increase percentages of remaining species correspondingly, after consultation with the Uncompahgre Field Office Ecologist.

The rate shown is for a drilled seeding, or some other method that incorporates the seed into the soil. Rates should be doubled if the seed is to be aerially applied.

No Action Alternative

Under the No Action Alternative, treatments would not be implemented. In the absence of stand

replacement fire, fuels within the project area would continue to accumulate. There would be increasing amounts of late successional vegetation on the landscape, more woody species, less meadows/open stands where grasses and forbs are present, decreased diversity of wildlife habitat, and the increased potential to have stand replacement fire. Without the proposed mechanical treatment, wildlife habitat quality would continue to degrade.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Goat Brushing Alternative: This alternative consists of using goats to control weedy brush through prescribed grazing instead of using prescribed fire and was suggested through public scoping. This alternative was considered, but eliminated from further consideration because this alternative would not adequately address multiple objectives in the Purpose and Need within reasonable cost to the government and accomplish results in a reasonable timeframe. The dense mountain shrubs in the project area have grown larger in diameter than goats can effectively browse to achieve desired conditions. Goats readily browse on leaves and twigs, but would leave behind the mature woody stems greater than 5cm (Briggs and Phillip, 1989), common in the mature mountain shrubs found in the purposed unit. To achieve the desired effect, using this alternative, would necessitate grazing be preceded with mechanical treatment (Davis et al., 1975) to remove the mature mountain shrub component. Furthermore, numerous re-entries of goat brushing over multiple years would be needed to reach the desired levels of shrub control (Brock, 1988). Consequently, these combined actions result in substantially increased cost. The increased cost is primarily due to the high number of goats that would be required in the treatment area and also due to the lack of qualified contractors providing goat brushing services located within reasonable hauling distances of the project area.

SCOPING AND ISSUES

On May 31, 2011, the BLM UFO mailed a scoping letter soliciting comments, which included a description of the proposed action and maps to: Colorado Division of Wildlife, Delta and Gunnison County Commissioners, US Forest Service GMUG, Colorado State Forest Service, environmental and conservation groups (12 groups), the livestock grazing permittees, adjacent property owners, and other interested parties. Substantial comment was received regarding the project; as a result, the BLM extended the comment period for an additional 30 days and attended a Paonia Town Council meeting on July 12, 2011 to discuss the issues and concerns generated. The meeting was summarized by an article published by The North Fork Merchant Herald on July 18, 2011. The Delta Independent also published an article in the local paper regarding the project on July 20, 2011. Additionally, a field trip to the project area was conducted for interested parties on September 13, 2011 to further address concerns.

BLM received comments in support of the proposed action from the National Wild Turkey Federation, Paonia Town Mayor, Paonia Town Council, Western Area Power Administration, and three interested individuals.

In general, concerns involved issues regarding risks of prescribed fire to public safety, private

property, impacts on viewsheds, erosion, and municipal water supplies. Concerns have been addressed throughout this environmental assessment.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5-3, BLM 1617.3):

Name of Plan: Uncompahgre Basin Resource Management Plan

Date Approved: July 26, 1989

Decision Number/Page: Page 14

Decision Language: The management unit (unit 2) will be managed to improve the area's capabilities to support wintering deer, elk, and bighorn sheep populations.

Relationship to statutes, regulation, and other plans:

The proposed action conforms to the UFO Fire Management Plan, approved in May 2002, as tiered from the Wildland and Prescribed Fire Management Policy (August 1998).

The proposed action conforms with the Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (September 2007).

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 et seq.:90 Stat. 2743; P.L. 94-579) directs that the public lands be managed in a manner that will provide food and habitat for fish and wildlife.

The Sikes Act of 1960 (16 U.S.C. 680a-f; Stat.1052, as amended), provides for the conservation, restoration and management of species and their habitats in cooperation with State Wildlife Agencies, including the implementation of on-the-ground wildlife habitat improvement, maintenance and protection programs.

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. A finding for each standard will be made in the environmental analysis (next section).

Standard	Definition/Statement
#1 Upland Soils	Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

#2 Riparian Systems	Riparian systems associated with both running and standing water, function properly and have the ability to recover from major surface disturbances such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.
#3 Plant and Animal Communities	Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.
#4 Threatened and Endangered Species	Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.
#5 Water Quality	The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

AFFECTED ENVIRONMENT and ENVIRONMENTAL CONSEQUENCES

Elements specified by statute, regulation, executive order, or the Standards for Public Land Health are described and analyzed in this section.

The following elements are considered. Those that could be impacted are brought forward for analysis. Any element not affected by the proposed action or alternatives will not be analyzed in this document; the reasons for no impact will be stated.

Element	Not Applicable or Not Present	Present, But No Impact	Applicable & Present; Brought Forward for Analysis
Air Quality			X
ACEC	X		
Wilderness	X		
Lands with Wilderness Character	X		
Wild and Scenic Rivers	X		
Cultural			X
Native American Religious Concerns			X
Farmlands, Prime/Unique	X		
Soils			X
Vegetation			X
Invasive, Non-native Species			X
Threatened and Endangered Species			X
Migratory Birds			X
Wildlife, Terrestrial			X
Wildlife, Aquatic	X		

Wetlands & Riparian Zones			X
Floodplains	X		
Water Quality, Surface and Ground			X
Wastes, Hazardous or Solid		X	
Environmental Justice			X

AIR QUALITY

Affected Environment:
The project area lies within the Western Slope Air Quality Planning Region in Colorado and lies directly adjacent to the Central Mountains Air Quality Planning Region, as categorized by the Colorado Air Quality Control Commission. Class 1 air-sheds in the vicinity of the proposed project include The West Elk Wilderness, about 10 miles to the southeast, and the Maroon Bells – Snowmass Wilderness, about 20 miles northeast. Communities in the immediate area include the town of Paonia (approximately 3 miles to the northwest) and Hotchkiss (approximately 7 miles to the west). There are also scattered residences north of the project area, with higher population concentrations toward Paonia. Transportation corridors include CO State Highway 133 (approximately 3 miles northwest).

The area complies with federal air quality standards. Air quality concerns in this region primarily are from the impacts of motor vehicles, energy development, and controlled and uncontrolled burns (CDPHE 2011).

Environmental Consequences:
Proposed Action – The mechanical treatment would have little impact on air quality, with any impacts being localized to within 300 feet of the equipment. Localized impacts would be dust and bad fumes from the machine engines, which would contribute to overall short-term air quality degradation. Degradation would terminate each day upon equipment shut-down, as well as upon completion of the project. Enough ground cover remains on site after mechanical treatment to minimize the potential for dust storms during windy events.

The primary impact to air quality from the proposed action would be from prescribed burning. Fire is a natural combustion process that is a potential source of air pollutant emissions. The amount of emissions depends on the size and intensity of the fire, which are determined by meteorological conditions, such as temperature, wind speed, wind direction, types and moisture content of the fuel, mix of vegetation types, and the total mass of combustible material (available fuels loading).

Any impacts to air quality from prescribed burning would generally be short term (<5 hours) and by scheduling the burn under appropriate atmospheric conditions smoke would move away from towns and communities and disperse quickly. Burning would be done only on good smoke dispersal forecasts to mitigate air quality. Any burning would be guided by an approved burn plan that identified environmental and fire behavior parameters, as well as a Smoke Permit acquired from the State of Colorado. All standards and permit conditions would be adhered to while burning. If negative smoke impacts do occur during implementation the burn boss would

immediately modify the burn to reduce or eliminate the impact.

No Action Alternative – There would be no immediate impacts to air quality. Over time, hazardous fuels would continue to accumulate, as well as the potential for uncontrolled wildfire to release an increased amount of particulates and emissions.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN, WILDERNESS, LANDS WITH WILDERNESS CHARACTER, and WILD AND SCENIC RIVERS

There are not any Areas of Critical Environmental Concern within or near the project area. There are not any Wilderness areas or Wilderness Study Areas within the project area. The West Elk Wilderness Area lies approximately 6 miles southeast and east of the project area. An inventory did not identify any Lands with Wilderness Character within the project area. There are no Wild and Scenic Rivers within the project area. These resources would not be impacted.

CULTURAL RESOURCES

Affected Environment: The proposed fuels reduction project is situated middle elevations zone on the slopes of Mount Lamborn between 6000 and 7000 feet ASL. Previous cultural resource inventory in this and similar localities indicates that cultural site density in these elevation zones is low, and site types are generally limited to low-density lithic scatters and occasional isolated artifacts.
The treatment areas as outlined above have been inventoried for cultural resources at a Class III level (BLM projects 75UN-007, 75UN- 017, 75UN-019 and 83UN-012). Most of the surface of these treatments has been disturbed by those previous fuels projects, and there is little or no likelihood of discovering new eligible historic properties within the project area.

Environmental Consequences:

Proposed Action – The proposed treatment area has been inventoried. Several non-eligible sites have been identified. Two un-evaluated sites (5DT 43 and 5DT 46) have been identified and would be avoided by this project design. Provided that the treatment plan is followed as proposed, this project would have no effects to any National Register or otherwise eligible sites and no further work is required.

No Action Alternative – There would be no effects to Cultural Resources.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: Upland areas such as this may have served as traditional gathering localities for Native American tribes in prehistory. Occasional sacred sites and/or Traditional Cultural Properties may be found, and may be documented and protected at the request of traditional users and tribes. No such sacred sites or Traditional Cultural Properties are known from this locality and none are anticipated.

Environmental Consequences:

Proposed Action – There are no known Native American Religious Concerns for this project, and no impacts are anticipated.

No Action Alternative – There would be no effects to Native American Religious Concerns.

FARMLANDS, PRIME AND UNIQUE

All of the project area is located on BLM land at an elevation above the current irrigation infrastructure in the valley. There would not be impacts to prime and unique farmlands.

SOILS (includes a finding on Standard 1)

Affected Environment: The soils within the two treatment areas are largely a product of the local geologic parent material, climatic conditions, and the topographic position on the landscape. The Mancos shale formation dominates the area and weathers to produce fine-textured, silty clay loam soils.

Deeper soils with little rock content are mostly found on the interior portions of mesa tops and alluvial valleys. The shallower, rocky soils are found along mesa rims and canyon side slopes. The soils in the lower and more arid portions of the area are mostly classified in the soil orders Aridisols (soils of dry climate regimes) and Entisols (very limited soil development), and have little organic matter throughout their vertical profile. At the higher elevations, soils are commonly in the soil orders Alfisols (high level of subsoil development) and Mollisols (soils having darkened, organic matter enriched surfaces).

The Paonia Area Soil Survey, completed by the United States Department of Agriculture, Natural Resources Conservation Service, contains detailed soils information for the allotted area and is shown in the table below.

Soil Unit Name	Geomorphic Description	Taxonomic Order	Texture	Runoff Potential	Soil Erodibility (Kw) Higher=More Erodable (0.2-.69)
Prescribed Fire Soils					
Midway-Gaynor silty clay loams	hills, ridges	Entisols	silty clay loam	Very high	0.32
Work loam	alluvial fans,	Mollisols	loam	Very	0.28

	depressions, uplands			high	
Slash Area Soils					
Cerro stony loam	alluvial fans, mountain slopes, terraces	Mollisols	stony loam	Very high	0.15
Scholle stony loam	benches, mesas, terraces	Aridisols	stony loam	Very high	0.2
Saraton-Agua Fria complex	benches, mesas, terraces	Aridisols	gravelly loam	High	0.28

Environmental Consequences:

Proposed Action –

Prescribed Fire

The effects of prescribed burning on soils is directly related to the extent the surface litter layer and soil organic matter (0 to 3 cm) is burned as well as vegetation removal which exposes the soil to wind and water erosion. In a high intensity burn, the mineral soil surface is exposed, increasing erosion processes such as rain splash mobilization, soil sealing, increased dry ravel, development of a less permeable hydrophobic layer 1 to 10 cm below the surface and destruction of the protective microbial crust and associated soil aggregates. All of these factors contribute to increased overland flow and the potential to deliver large amounts of sediment to wetlands and stream channels. Another factor that can increase the possibility of mass slope failures is an increase in soil moisture in the absence of vegetation, increasing the soil weight and downward forces on the slope (Graham, 2003).

The prescribed burning would occur on the mesa top where slopes are shallow and the fuel loading is moderate to low. In addition, conducting the burn while soil and live fuel moisture is high would result in lower surface temperatures and short burning duration. As a result, removal of the surface litter and soil organic matter should not be severe enough to cause significant changes in the physical properties of the soil. Root bed mortality of perennial grasses and forbs, and mortality of the seed bed should also be low. Evidence suggests from previous studies, that in contrast to severe wildfires, low and even moderate severity fires generally do not result in a corresponding increase in runoff and erosion (Robichaud and Waldrop, 1994). Despite the beneficial burning conditions described above, it is possible that some soil erosion could increase for one to three growing seasons post burn due to increased soil surface exposure. Within that time frame, herbaceous vegetation cover should increase above pre-burn levels resulting in increased soil stability, increased water infiltration and uptake, and overall ecological vigor.

In areas where fire may burn at a higher intensity due to variations in soil and vegetation moisture conditions, some increased erosion may occur. The magnitude of the erosion on these sites would likely be reduced by several factors. First, the forest structure of the area and the resulting litter layer typically do not produce the appropriate conditions to develop a strong hydrophobic layer. Hydrophobic conditions are strongly correlated with sandy soils under coniferous forest cover (Morris and Moses, 1987). The second factor reducing the potential for substantial erosion is the limited scale of the burns. The burns would be conducted in areas surrounded by intact vegetation communities serving as buffers to catch mobilized sediment. These buffers should prevent sediment from being mobilized and being caught by the Lone

Cabin Irrigation Ditch. Additionally, much of the burning would occur in the fall allowing for more vegetation establishment prior to the summer monsoon thunderstorm season, when the highest risk of erosion is likely to occur.

Mechanical Treatments
Mechanical treatments would result in additional surface cover in the form of ground surface litter. Once the trees are removed, the canopy would be opened up and allow for greater grass and forb cover. The increased ground cover would reduce the potential for surface runoff and soil erosion from the current conditions. The overall increase in ground cover would begin immediately after the treatment and slowly increase as the vigor of the existing vegetation improves.

No Action Alternative – There would be no direct impact to soils under this alternative. However, the threat of large fires occurring under extremely dry conditions would continue to exist. The scale and duration of adverse soil impacts is much higher under extreme burning conditions associated with large fire occurrence.

Finding on the Public Land Health Standard for upland soils: Soils within the burn units currently "meet with problems" standard 1 of the Public Land Health Standards. The problems found include low grass cover, high levels of bare soil and low perennial forb cover. Implementing this prescribed fire project would cause a short term (1-3 years) increase in soil erosion by decreasing canopy cover and surface litter. However, since soil heating should not be severe, organic content of the soil should remain high, canopy cover should increase with vigorous desirable perennial grasses and forbs, and plant diversity can be expected to increase from current conditions. It is anticipated that by implementing this proposed action the long term effect should improve the indicators for the upland soils standard.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The slashing treatment would occur on approximately 224 acres within the boundaries of a 1978 chaining that was later rollerchopped in 1999 (see A*ttachment 3, Slashing-Area Treatments Map*). The area now consists of early/mid pinyon (*Pinus edulis*) and Juniper (*Juniperus osteosperma*) along with western wheatgrass (*Pascopyrum smithii*), bottlebrush squirreltail (*Elymus elymoides*), and Indian ricegrass (*Achnatherum hymenoides*).

The area proposed for prescribed burning is a mid- to late-seral mountain shrub community (see A*ttachment 4, Rx-Area Treatments Map*). This community currently consists of a variety of shrub species, including: snowberry (*Symphoricarpos albus*), mountain mahogany (*Cercocarpus montanus*), serviceberry (*Amelanchier alnifolia*), and Gambel oak (*Quercus gambelii*); as well as pockets of mature Gambel Oak stands. Some of the understory species present include elk sedge (*Carex geyeri*), Letterman's needlegrass (*Acnatherum lettermanii*), Kentucky bluegrass (*Poa pratensis*), western yarrow (*Achillea millefoluim*), lupine (*Lupinus spp.*), and southern ligusticum (*Ligusticum porteri*).

Environmental Consequences:

Proposed Action – The proposed action regarding wildlife and vegetation is supported by the Land Health Assessment (LHA) findings in 2006/2007. The LHA findings suggest age and successional stage of plant communities in the sagebrush, pinyon-juniper, and mountain shrub zones influence the abundance of forage and overall habitat quality. Since the proposed project area lies within an overlap area of deer and elk winter use, the habitat is generally in poor to fair condition. These treatments would support the LHA findings and should improve habitat for deer and elk along with improving species diversity, low vegetative cover, plant vigor, and soil loss in various areas.

No Action Alternative – In areas where there is high winter use from deer and elk the no action alternative does not address the problem of poor to fair vegetative condition. In these areas as the mountain shrub and pinyon-juniper vegetation fills in it would continue to reduce the amount of winter feed needed by these animals for survival. This would elevate use on areas where shrub and grass vigor are in better health which has the potential to create land health problems in adjacent area. Additionally, this could push wildlife onto private lands for winter foraging causing conflicts between private land owners and Colorado Parks and Wildlife.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic; Wildlife, Terrestrial; and Invasive, Non-native Species): Although burning may cause short term negative impacts, long term impacts would be positive through seeding, maintaining, and creating additional browse and forage for wildlife species especially during the winter months. This project in the long term would meet the standard for plant communities.

INVASIVE, NON-NATIVE SPECIES (includes a finding on Standard 3)

Affected Environment: Noxious weeds in the area include but are not limited to oxeye daisy (*Chrysanthemum leucanthemum)*, yellow toadflax (*Linaria vulgaris*), leafy spurge (*Euphorbia esula*), whitetop (*Cadaria draba*), musk thistle (*Carduus nutans*), Canada thistle (*Cirsium arvense)*, Tall whitetop (*Lepidium latifolium*) and Russian knapweed (*Acroptilon repens*). All are Colorado State listed "A" or "B" species.

Environmental Consequences:

Proposed Action – The proposed action takes into account the potential weed spread through the different treatment types from slashing to burning. Slashing would create the least amount of disturbance with little exposure for weed establishment as long as all equipment is clean before entering public lands. Burning creates the most potential for noxious weed invasion/establishment by opening up the understory and exposing soil where weed seeds can establish. The design feature specifying monitoring and spot treatment of noxious weeds up to 3 years post treatment should eliminate noxious weed establishment in the treatment areas. In addition to monitoring and spot treating post treatment a pre- inventory of weeds in the area should be completed prior to project commencement with the potential for treatments of weeds prior to the project beginning.

No Action Alternative – Under the no action alternative noxious weeds would be less of

a potential problem.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic; Wildlife, Terrestrial; and Vegetation): With the design features in place the project would not have long term negative effects on plant and animal communities in regards to noxious weed establishment.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES (includes a finding on Standard 4)

Affected Environment: The Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1534) mandates the protection of species listed as threatened or endangered of extinction and the habitats on which they depend. Section 7 of the ESA clarifies the responsibility of federal agencies to utilize their authorities to carry out programs for the conservation of listed species. In addition, federal agencies must consult with the U.S. Fish and Wildlife Service (Service) to ensure that any action authorized, funded or carried out by the agency is "…not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species…". The UFO refers to the most current Colorado county list provided by the U.S. Fish and Wildlife Service to analyze the effects of a proposed action on threatened, endangered and candidate species and designated critical habitat for these species. In accordance with *BLM Manual 6840*, the goal of management is to prevent a trend toward federal listing or loss of viability for sensitive species.

Appendix A lists potentially occurring federally listed species within the UFO and provides assessments for their occurrence within the project area. No threatened, endangered, or federally protected species or habitats occur in the proposed action area. Likewise, Appendix B identifies species of special management concern that are known or have potential to occur within the UFO along with occurrence assessments for the area. Several sensitive species are known or have the potential to occur in the project area.

Environmental Consequences:

Proposed Action – Only occurring and potentially occurring species are assessed in this section. The proposed treatments would have "no effect" on the remaining species. Refer to the Vegetation section above for a general discussion of potential impacts of the proposed treatments on vegetation communities. With the appropriate measures, including seeding and weed control as proposed, mechanical and fire treatments would likely result in improved vegetation species diversity, increased habitat edge, recruitment and growth of young vegetation, increased age classes of vegetation, and replacement of less desirable forage species with more desirable species. The results can be beneficial for some species and less so for others depending on the target species' life history needs (cover, food, space, water). It is generally assumed that more diverse vegetation communities across a landscape, both from a composition and spatial standpoint, translate to more diverse wildlife communities. Treatment design includes creating variable habitat patches and spacing to avoid a savannah-like, or "orchard", effect. Thinning the overstory would improve tree growth and vigor in remaining trees and improve understory shrubs and herbaceous vegetation, resulting in improved availability of food and shelter for many

species.

Treatment activities themselves may have impacts on some species, particularly less-mobile species (i.e., reptiles or plants) unable to avoid proposed treatment areas. These impacts are expected to be short-term and negligible for both terrestrial species (via habitat modification and direct disturbance) and aquatic species (via sedimentation of waterways). Overall, the proposed treatments are expected to improve and expand native habitats and ultimately benefit the majority of these species.

Treatment activities may disrupt breeding and nesting sensitive birds (Brewer's sparrow and peregrine falcon), potentially causing nest abandonment. Nest surveys, avoidance measures, and project design features should minimize impacts on these species. Any undetected nests, eggs, or nesting features (trees, substrate, etc.) could be crushed, destroyed, or modified by project activities, and young birds could be killed. Adult birds would most likely avoid areas during treatment. Outside the bird breeding season, short-term impacts on individuals may occur by disrupting foraging, migrating, and wintering birds. Treated areas may be temporarily unsuitable for these species. Refer to the Migratory Birds section for additional details on potential effects on these species.

Sensitive bats and reptiles may be temporarily impacted by treatments and habitat conditions. Individuals unable to avoid activities may be injured or killed. The net long-term effect is expected to be beneficial for these species by restoring native vegetation cover and mitigating the risk of catastrophic fire.

Based on the above information, project design features, and/or current distribution of species, the proposed action would have "no effect" on the roundtail chub, bluehead sucker, flannelmouth sucker, Colorado River cutthroat trout, Gunnison sage grouse, Columbian sharp-tailed grouse, white-faced ibis, American white pelican, northern leopard frog ,canyon treefrog, American bittern, willow flycatcher, veery, Chestnut-collared longspur, black rosy-finch, brown-capped rosy-finch, Cassin's finch. With project design features, the proposed treatments would have minimal, short-term impacts and "may affect, but are not likely to result in a trend toward federal listing" for the Townsend's big-eared bat, fringed myotis, bald eagle, American peregrine falcon, western yellow-billed cuckoo, northern goshawk, ferruginous hawk, burrowing owl, Brewer's sparrow, Colorado (Adobe) desert parsley, golden eagle, prairie falcon, Lewis's woodpecker, pinyon jay, juniper titmouse. These determinations are based on GIS information, site characteristics, and other currently available data. Field surveys, may determine that either suitable habitat is not present for some species and/or that species themselves are not present. In that case, proposed treatments would have "no effect" for those species.

No Action Alternative – Without the proposed treatment, current vegetative condition and trends would continue. The potential for a catastrophic, stand-replacing wildfire would remain. Habitat and species diversity would continue to be limited.

Finding on the Public Land Health Standard for Threatened & Endangered species: The project would have no detectable impact on threatened, endangered, or special status species

within the project area. Threatened, endangered, and sensitive species' habitats would not be greatly affected by the proposed action in the short term. Over the long term, the proposed action should improve habitat conditions for the majority of these species.

MIGRATORY BIRDS

Affected Environment: Plant communities within the analysis area provide habitats for a variety of migratory bird species. The U.S. Fish and Wildlife Service list of Birds of Conservation Concern was used to complete this analysis (USFWS 2008, Table 14, p.32, BCR 16 [Southern Rockies/Colorado Plateau]). Appendix C identifies the species from this list which are known or have potential to occur in the UFO and which are protected under the Migratory Bird Treaty Act (MBTA), and assesses their potential for occurring in the project area.

Environmental Consequences:

Proposed Action – The impact on Birds of Conservation Concern that are covered under the Migratory Bird Treaty Act would be minimized through implementing most treatments outside of the nesting season whenever possible. Project design features (May 15 through July 15 seasonal restriction) would minimize impacts on migratory birds. Perch sites, nest sites and habitats supporting prey and food species may be reduced for some bird species, but may increase habitats for other bird species. Short-term displacement of individuals may occur due to these changes in habitats. It is possible individual wintering birds may be affected by the removal of vegetation that provides hiding and thermal cover; however, vegetation removal activities in any given area are expected to be short-term. Long term, vegetation diversity and condition should increase. Shrub understory and herbaceous vegetation should increase after the reduction of competition from the overstory. Thinning and/or removing the overstory would improve understory vegetation, resulting in greater foraging opportunities and shelter for some species.

No Action Alternative – Under the No Action Alternative, no impacts are expected to migratory birds and associated habitat would remain in its current condition.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area contains winter range, severe winter range, and winter concentration areas for both mule deer and elk. The project area is also identified by the Colorado Division of Wildlife as a migration corridor for elk. The area also provides seasonal habitat for other regionally common species such as turkeys, black bear, coyotes, mountain lion, bobcat, rabbits, and a variety of rodents, raptors, and other birds.

Environmental Consequences:

Proposed Action – Effects to terrestrial wildlife species would be similar to those described under the Threatened, Endangered, and Sensitive Species and Migratory Bird Sections. Some species may be temporarily displaced while equipment or slashing and burning crews are working, but would return following treatment. Treated areas may be temporarily unsuitable as

habitat for some species. Long term, vegetation diversity and condition should increase (see Vegetation section). Shrub understory and herbaceous vegetation cover should increase. Increased shrub vigor and diversity would provide improved habitat for mule deer, elk, turkey, black bear and others. Treatment design includes creating variable habitat patches and spacing to avoid a savannah-like, or "orchard", effect. Project design features (December 1- April 30 seasonal restriction) would minimize impacts on wintering animal populations, particularly deer and elk.

No Action Alternative – Under the no action alternative the project would not occur and fuels would continue to build in the area. There would be increasing amounts of late successional vegetation on the landscape, more mature woody species, and less desirable browse for big game. The chance for uncontrolled fire would still be a threat.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation; Invasive, Non-native Species; and Wildlife, Aquatic): Proposed vegetation treatments would enhance the productivity of terrestrial habitat and animal communities and would, therefore, meet the criteria for this land health standard.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

The activities in the Proposed Action do not overlap with any known wetlands or riparian areas on BLM lands. There would be no impacts to aquatic wildlife by the Proposed Action.

WETLANDS & RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: The Proposed Action on BLM occurs near two riparian areas. The prescribed fire and constructed fireline would be approximately ½ mile west of Sams Creek, while the slashing project occurs on either side of McDonald Creek. Both of these streams are somewhat compromised by low or manipulated flows—likely from upstream diversions. The streams are currently rated as Functioning at Risk. Vegetation along McDonald Creek includes limited narrowleaf cottonwood and sandbar willow along with skunkbush sumac. Much of the vegetation is more upland in nature. Vegetation along Sams Creek is dominated by annual weedy species, and seems associated with upstream agriculture. Some sandbar willow is present.

Environmental Consequences:

Proposed Action – Limited impacts to riparian areas are anticipated with the recommended design features. Slashing and fire line construction shall not be done in the riparian area, so direct damage to existing vegetation is unlikely. It is possible that the controlled burn could escape and burn into Sams creek. However, the possibility of this occurring is reduced by the presence of constructed fire line on the east side of the proposed burn. If the burn does jump the line and carry across Sams Creek, the existing herbaceous-dominated vegetation is unlikely to be damaged for more than one growing season, and should resprout. The majority of the burn area is located across a drainage from Sams Creek, so ash washing into the creek would be unlikely. The slashing activity around McDonald Creek is not expected to substantially

change the groundcover or the majority of the vegetation in the unit, so no additional sedimentation of McDonald Creek is expected.

No Action Alternative – There would be no impacts to riparian areas under this alternative.

Finding on the Public Land Health Standard for riparian systems: Both streams currently meet Standard 2 with problems, as listed above. Neither alternative is expected to affect the causes of stream health problems, nor prevent conditions from improving should the root causes be addressed. Therefore, no changes to current health status are anticipated.

FLOODPLAINS

There are not any mapped FEMA floodplains in the vicinity of the proposed treatments

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: The treatment areas drain into intermittent and perennial drainages that lie within the North Fork of the Gunnison Basin. The table below lists the water quality classifications for the described surface waters:

4th Level Watershed	*Stream Segment*	*Stream Classification 1-5*
14020004 North Fork Gunnison River	Mainstems of Hubbard Creek, Terror Creek, Minnesota Creek, and Leroux Creek from their boundary with national forest land to their confluences with the North Fork of the Gunnison River; mainstem of Jay Creek from its source to its confluence with the North Fork of the Gunnison River; mainstem of Roatcap Creek including all tributaries, wetlands, lakes and reservoirs, from its source to its confluence with the North Fork of the Gunnison.	Aq Life Cold 1 Recreation P Water Supply Agriculture
	Mainstem and all tributaries to Bear Creek, Reynolds Creek, Bell Creek, McDonald Creek, Cottonwood Creek, Love Gulch, Cow Creek, Dever Creek, German Creek, Miller Creek, Stevens Gulch, Big Gulch, Stingley Gulch and Alum Gulch including lakes, reservoirs, and wetlands which are not on national forest lands from their source to the North Fork of the Gunnison River	Aq Life Warm 2 Recreation P Water Supply Agriculture

1- Waters are designated either warm or cold based on water temperature regime. Class 1 water's are capable of sustaining a wide variety of cold or warm water biota, while class 2 waters are not.
2- Recreation Class E - Existing Primary Contact Use. These surface waters are used for primary contact recreation or have been used for such activities since November 28, 1975.
3-Recreation Class P - Potential Primary Contact Use. These surface waters have the potential to be used for primary contact recreation.
4-Recreation Class N - Not Primary Contact Use

5- Waters that are suitable for irrigating crops usually grown in Colorado.
6- Waters that are suitable or intended to become suitable for potable water supplies.

There are not any surface waters in the area that are on Colorado's impaired waters, 303(d) or Monitoring and Evaluation list (CDPHE, Water Quality Control Commission, 5 CCR 1002-93).

In addition to the state's water quality classifications and numeric standards, all surface waters of the State are subject to the Basic Standards (Colorado Department of Public Health and Environment, Water Quality Control Commission, Regulation NO. 31), which in part reads: state surface waters shall be free from substances attributable to human-caused point or nonpoint source discharge in amounts, concentrations or combinations that:

1. can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or
2. form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or
3. produce color, odor, or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or
4. are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or
5. produce a predominance of undesirable aquatic life; or
6. cause a film on the surface or produce a deposit on shorelines.

Water quality sampling conducted in 2006 associated with the land health assessment did not reveal any water quality exceedences. A complete organic, inorganic and metals suite was analyzed at one site on Minnesota Creek, and E. Coli bacteria was analyzed at one site. Both of the samples returned results below the state water quality standard.

Macroinvertebrates were collected at one location. The results were compared to reference sites established by the state of Colorado as well as prior monitoring. This data as well as the water quality data and stream morphology characteristics were used to determine the status and trend for Land Health Standard 5- water quality and found to "meet" standards.

There are no ground water wells in the area of the treatments and no existing water quality data on BLM lands.

Environmental Consequences:

Proposed Action – In the short term following any prescribed fire, the proposed burn areas pose a slight risk to increased sediment, nutrient and ash constituent loads into local surface water systems. Areas on the burn most susceptible for causing elevated levels of these constituents would be the steeper micro-sites within the mesa top. Due to the planned low intensity burns surrounded by natural vegetation buffers, any sediment transported from burn sites should be slowed and deposited in the unburned areas prior to reaching stream channels or the irrigation ditch.

High intensity precipitation events, capable of transporting sediment or ash constituents are most likely to occur during mid to late summer. Consequently, spring burns would leave the soil surface more prone to accelerated runoff and erosion compared to fall burns. Burning during the fall as planned, would allow more vegetation establishment in the spring prior to the summer monsoon thunderstorm season. Over the course of 1 to 3 years, the burned areas would reestablish effective watershed cover, resulting in increased soil-water infiltration, decreased surface runoff, reduced soil surface erosion, and improved water quality over the current conditions.

Surface water quality within and downstream of the proposed treatment areas would improve as a result of mechanical treatment. Mechanical treatment results in additional watershed surface cover in the form of surface litter and increased grass and forb densities. The increased watershed cover from mechanical treatments would reduce the potential for surface runoff and soil erosion, minimizing the sediment yield from these areas. The overall increase in watershed cover would begin immediately after the treatment and slowly increase as the seeding becomes established.

There would be no impact to ground water resources with implementation of the proposed action.

Limited spot treatment of weeds may be needed to help the establishment of native species in mechanical and prescribed fire treatment areas. The herbicides that may be applied are analyzed in detail including the impact to water quality, in the *Programmatic Environmental Impact Statement: Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, and Programmatic Environmental Report.*

No Action Alternative – There would be no change to present water quality conditions of both surface and groundwater.

Finding on the Public Land Health Standard for water quality: Both the mechanical and burn treatments would ultimately result in improved watershed conditions, although a slight, temporary increase in sediment and ash constituents could be realized in the first few years after a burn. The improved watershed conditions would be reflected in improved quality water draining from the area, thus enabling the site to maintain Standard 5 of the Public Land Health Standards.

WASTES, HAZARDOUS OR SOLID

Affected Environment: Hazardous and solid wastes are not a part of the natural environment but could be introduced to the environment as a result of implementation of the proposed action. This would be in the form of spilled fuel or hydraulic fluid.

Environmental Consequences:

Proposed Action – There would be the potential for minor spills of fuel or hydraulic fluids resulting contaminated soil or water. The proposed action serves to limit the impacts.

Prompt notification and cleanup would eliminate any significant or long-term negative impacts.

No Action Alternative – No impacts.

ENVIRONMENTAL JUSTICE

Affected Environment: While analyzing a federal action, BLM identifies and addresses, as appropriate, disproportionately high and adverse human health and environmental effects of program, policies, or activities on minority or low income populations. Environmental Justice involves fair treatment, which means that no group of people, including a racial, ethnic, or socio-economic group, should bear a disproportionate share of the negative environmental consequences resulting from a federal action.

Environmental Consequences:

Proposed Action – The proposed action was developed based on the need for the project, which is primarily to improve wildlife habitat and to reduce hazardous wildland fuels and the potential for a catastrophic fire. The action would not have a disproportionately high or adverse human health or environmental effect on minority or low-income populations.

No Action Alternative – There would not be impacts to Environmental Justice.

OTHER ELEMENTS

The following elements are considered. Those that could be impacted are brought forward for analysis.

Other Elements	Not Applicable or Not Present	Present, But No Impact	Applicable & Present; Brought Forward for Analysis
Access		X	
Transportation			X
Cadastral Survey	X		
Realty Authorizations			X
Range Management			X
Forest Management			X
Fire			X
Hydrology/Water Rights		X	
Noise		X	
Recreation			X
Visual Resources			X
Geology and Minerals	X		
Paleontology	X		
Law Enforcement	X		

Socio-Economics	X		

TRANSPORTATION AND ACCESS

Affected Environment: The project area lies within a "Limited to Existing" travel designation. Motorized and mechanized travel is limited to existing roads and trails; however, the Uncompahgre Basin and San Juan/San Miguel Resource Management Plan Travel Amendment Environmental Assessment stated: "BLM administrative functions related to resource management objectives (e.g., wildlife habitat and species monitoring and management, noxious weed eradication, resource enhancement and restoration, and fence repair) requiring cross-country travel using motorized vehicles or equipment, would be addressed at the project level on a case-by-case basis, and additional environmental documentation and analysis could be required for certain administrative functions."

Environmental Consequences:

Proposed Action – The proposed action would have minimal impacts to transportation.

No Action Alternative – Under the no action alternative, there would be no impacts to transportation and access.

REALTY AUTHORIZATIONS

Affected Environment: Several right-of-way authorizations are present within the project area including an irrigation pipeline along McDonald Creek and the Lone Cabin irrigation ditch.

Environmental Consequences:

Proposed Action – The rights-of-way would be avoided to the extent possible. If they cannot be avoided, care would be given to ensure no damage or harm is caused to the right-of-way. If needed the right-of-way holder would be contacted and coordinated with to ensure consideration and protection of the existing facility.

No Action Alternative – Under the no action alternative, there would be no impacts to existing rights-of-way.

RANGE MANAGEMENT

Affected Environment: There are two allotments affected by the proposed action, the Reynolds/McDonald and the Oak Ridge allotments. Both these allotments are managed in coordination with the USFS Paonia Ranger District. The Reynolds/McDonald allotment is part of the USFS Cottonwood allotment and is broken up into the Cottonwood, Lower McDonald, Upper Lower McDonald, Upper McDonald pastures and the Lower Reynolds, Upper Reynolds, and Roeber Reservoir pastures. The management in the allotment is intensive management with

short duration grazing in each pasture. The Oak Ridge allotment has 10 pastures and a grazing schedule is again intensive short duration grazing.

Environmental Consequences:

Proposed Action – The proposed slashing is in the Upper McDonald pasture of the Reynolds/McDonald allotment. The slashing, which does not have any ground disturbing activity, would not have any effect on grazing management. The grazing strategy for this allotment is short duration with each pasture being grazed 4-7 days. The Oak Mesa allotment has three pastures that would be affected by the prescribed burn. The grazing for the area is intensive with short durations in each pasture. The pastures with the prescribed fire targeting oak brush would be grazed the year or same season as the prescribed burn. This would intensify stress and help to deplete additional root reserves. The USFS in this area has been using this technique and has found livestock grazing in areas where prescribed burning targets oak brush has better results in terms of reduced re-sprouting of oak brush.

No Action Alternative – The proposed action would not occur Pinyon/Juniper would continue to encroach and mountain shrub vigor would continue to decline in the area.

FOREST MANAGEMENT

Affected Environment: As a result of previous treatments, much of the pinyon and juniper that would be influenced by the proposed action is very young (10 to 30 years old). The pinyon and juniper resources that would be influenced by the proposed action may have some limited value locally as a source of small Christmas trees.

Environmental Consequences:

Proposed Action – Approximately 224 acres of young pinyon and juniper would be removed by slashing. Slashing trees would consist of selective removal of living pinyon and juniper with hand tools and/or chainsaws down to the base of the stump. The removal of these woodland resources would have no impact on commercial forest products as none of the project area is considered in the commercial forest base.

No Action Alternative – Under the no action alternative, there would be no impacts to existing woodland resources. In the absence of disturbance causing events, pinyon and juniper would continue to establish and mature to a closed-canopy woodland over time.

FIRE

Affected Environment: Within the burn treatment area there have been previous vegetation treatments to reduce the density of the mountain shrub community to improve forage for wildlife and livestock. Most of the prescribed fire would be implemented in mid- to late-seral mountain shrub.

Environmental Consequences:

Proposed Action – Prescribed fire would create pockets of early seral vegetation communities that would provide opening for grasses and forbs, coincidently helping restore a more productive early and early/mid seral component to the landscape. Slashing work would remove young pinyon and juniper from sagebrush and mountain shrub openings, decreasing fuel loading in those units. As a result, future wildfires would tend to not burn continuously across the landscape, creating a mosaic pattern sustaining increased diversity across the landscape. The reduction in fuel loading and fuel continuity, in turn, would greatly reduce the potential for severe, or stand replacing, fire to occur.

Short term smoke would be generated during implementation of the burn, but would be limited by the conditions determined by the State of Colorado in the required smoke permit.

No Action Alternative – Under the no action alternative, there would be no immediate impacts to existing vegetation structure. Over time, density of pinyon and juniper would increase, along with the density of mountain shrubs, while the available forage would decrease. Hazardous fuels would continue to accumulate in the absence of fire. Correspondingly, the potential for sustained crown fire in the canopy, as well as stand replacing fire would increase over time.

HYDROLOGY/ WATER RIGHTS

Affected Environment: The project area is situated in an area consisting of intermittent and perennial drainages contributing surface water to McDonald Creek and Minnesota Creek. Runoff is produced from snowmelt and summer thunderstorm activity. The area receives about 14 to 16 inches of precipitation annually, about half of which is snow. There are several small stock ponds in the project area and the Lone Cabin Ditch bisects the prescribed burn area. The Lone Cabin Ditch originates at Lone Cabin Reservoir located on National Forest Lands. The decreed water rights are as follows:

	Appropriation Date	Rate or Volume (cfs) or ac-ft
Lone Cabin Reservoir	1905	326
Lone Cabin Ditch	1886	33.73

Data from Colorado Decision Support Systems

The Town of Paonia maintains a complex network of springs and pipelines located near the base of Mount Lamborn and Landsend Peak on National Forest Lands for municipal water supply. Bone Mesa Water District also has a water right on Mays spring located on National Forest Lands.

Environmental Consequences:

Proposed Action – Prior to vegetation being established on burned sites, some minor increased yield of sediment and ash constituents could occur and could temporarily affect the function of the irrigation diversions in Lone Cabin Ditch. These impacts would only potentially occur immediately after runoff-producing high-intensity thunderstorms, and only for the first

couple of years post burn. Once the burned areas establish the target vegetation species, the runoff potential would be reduced below the existing conditions.

The municipal water supplies in the area are all located above the proposed treatment areas and would not be affected by this action.

No Action Alternative – There would be no impact to the area's hydrology or water rights.

NOISE

Affected Environment: The project area is generally characterized as quiet for much of the time. Noise is generated periodically from vehicles, ATVs or motorcycles on roads through the area; this is most noticeable during the fall hunting seasons.

Environmental Consequences:

Proposed Action – There would be a short-term generation of noise from chainsaws, which would be heard in the immediate vicinity, possibly up to a distance of 1 mile. Work would proceed primarily during weekday daylight hours; however, some work could occur on the weekends as well. Noise would only be for the duration of the project, and would not have an impact beyond project completion.

No Action Alternative – There would not be impacts to noise.

RECREATION

Affected Environment: The proposed project area receives limited recreation use, which is primarily big game hunting. The additional recreational use includes OHV riding, mountain biking, horseback riding and hiking.

Environmental Consequences:

Proposed Action – Overall, this proposed action should have very little if any impact on the recreational values of the area.

Over the long-term, opportunities to hike through the area would increase as areas are opened up and hunting opportunities would be improved. In addition, the opportunities to view wildlife should be greatly enhanced due to increased visual distance and because species that utilize open areas, mosaics, and edge effect should increase.

No Action Alternative – Under the No Action Alternative, there would not be impacts to recreation.

VISUAL RESOURCES

Affected Environment: The BLM's visual resource management system was designed, and is used, to help ensure that proposed man-made features or surface-disturbing activities on public lands are constructed properly considering the existing landscape character and inherent visual resources. The BLM Manual 8410-1 Visual Resource Management defines and categorizes visual resource management classes that provide objectives for these resources as projects are proposed and implemented in the landscape. These Visual Resource Management (VRM) classes are determined through an inventory process described in the manual mentioned above, and are used to provide guidance to BLM and project proponents when contemplating proposed surface disturbing activities. Class I areas are intended to protect an area from visible change, Class II areas allow for visible changes that do not attract attention, Class III areas allow for visible changes that attract attention but are not dominant, and Class IV areas allow for visible changes that can dominate the landscape. The proposed action is located within a Class III area as indicated within the Uncompahgre Basin Resource Management Plan.

Environmental Consequences:

Proposed Action – Visual resources would be moderately modified: the proposed action would modify color and texture yet the action mimics what could naturally occur (i.e. wildfire, insects & disease), therefore the casual observer may notice the changes in color and texture but it would not likely draw attention and VRM III objectives would be met. The proposed action would not dominate the visual resources therefore maintaining the class setting set for the area.

No Action Alternative – There would be no impacts to visual resources under the No Action Alternative.

CUMULATIVE IMPACTS SUMMARY

Cumulative impacts are determined by adding the incremental environmental impacts of a proposed action to the impacts generated from other past, present, and reasonably foreseeable future actions within the Area of Influence (AOI). The AOI can vary from project to project and from resource to resource for the same project, depending on the type of project, its size, and the resources affected. For this EA, the area considered for cumulative impacts analysis is the North Fork Land Health Assessment Area located in Delta and eastern Gunnison Counties in west-central Colorado. The LHA area is primarily centered around the North Fork Valley and the North Fork of the Gunnison River.

The proposed action must be assessed cumulatively with all the other activities on private, state and federal lands. The North Fork Land Health Assessment boundary encompasses about 275,000 acres of which 66,124 acres are public land. These public lands are distributed across the area in dispersed blocks and several isolated parcels. The BLM is broken up by large areas of private land which are mainly concentrated where soils and topography are suitable for agriculture or ranching. National Forest Lands occupy most of the higher elevation areas.

Past, Present, and Reasonably Foreseeable Future Actions

The proposed project area has been altered and impacted in the past by various anthropogenic forces such as long-term fire suppression, past management practices, historic livestock grazing, and concentrations of big game ungulates. The general geographic area has also been impacted by the construction of roads, urban and rural development, and by recreation opportunities.

Other past and existing activities that have impacted area resources include the following:

- livestock grazing activities;
- recreation activities; and
- minerals development (underground coal mining and oil and gas); and
- vegetation management activities.

Livestock grazing and recreation

Under the proposed action, there would be a continuation of existing activities such as livestock grazing, recreation and wildlife use in the area. Increases in grazing and recreational pressure are not foreseen. The proposed action would add minimally to existing grazing effects (reduction in vegetation height, trampling, soil compaction, etc.) and recreation effects (compaction from vehicles and dispersed camp sites); in the long term, vegetation and soil components would be improved.

Oil and Gas development and Coal mining

It is anticipated that the number of oil and gas exploration wells may increase. Gunnison Energy has approval for 16 wells to be drilled within the AOI, SG Interests has proposed up to 150 wells within the area, and Petrox has numerous well proposals under administrative review on National Forest Service Lands. There are also 22 parcels that have been nominated for an oil and gas lease sale.

The AOI also has three active coal mines with approximately 33,000 acres of federal minerals currently leased. Currently, Oxbow Mining is proposing Coal Exploration on Oak Mesa. The primary existing disturbances in the area from coal mining include roads, exploratory drill sites, and mining operations. It is anticipated that the future development would include additional disturbances resulting from continued coal mining, exploration and development from the three operating mines in the region.

Cumulative impacts as a result of all these projects would cause the same types of short term impacts to air quality, vegetation, soil erosion and increase in weeds as this fuels treatment. However, all projects have strict mitigation measures and are of a short duration. In the long term, there should not be an increase in cumulative impacts due to best management practices that are required.

Vegetation Management Activities

In the fall of 2009 the Paonia Ranger District began to implement an elk and deer winter range habitat improvement project on National Forest System Lands in the Lamborn/Landsend area of the Paonia Ranger District. The purpose of this project is to enhance winter range by increasing the palatability of browse species and increasing grass/forb production, providing openings in pinyon/juniper woodlands, reducing fuels build-up, and providing for a variety of age classes in the mountain shrub / oak and pinyon-

juniper communities in this area. So far, the USFS is pleased that these treatments have already begun to provide benefits for wildlife (Dennis Garrison, Wildlife Biologist Paonia Ranger District, personal communication, April 2, 2012). Approximately 1955 acres are proposed for treatment on USFS managed lands by mechanical means (dozer, hydro-axe, roller chop, or similar) and/or prescribed fire to improve forage quality and quantity for deer and elk. Additionally, the Forest Service has two vegetation management projects that would promote a diversity of structural stages among the aspen stands within the Leroux Creek and Terror Creek analysis areas, regenerate through commercial clearcutting aspen stands that are impacted by Sudden Aspen Decline (SAD), and increase the patch size of regenerating aspen stands and break up the landscape "patchiness" of past harvest activities.

BLM vegetation management in the AOI has primarily focused around wildfire rehabilitation in an effort to curtail cheatgrass domination and limit erosion including the Wake, McGrudder, Wolf Park, Oak Mesa, and Jay fires totaling 6,417 acres since 1994. Mechanical vegetation manipulations in the AOI total 1,947 acres which prior to 1980 primarily focused on forage development for the livestock industry. Since 1998 and the completion of the North Fork LHA much of the vegetation that has occurred in the area has focused on addressing specific land health issues relating to wildlife, fuels, and vegetation problems identified in the land health assessment. The UFO is currently implementing a fuels treatment around the Fire Mountain Subdivision and Farmer's Mine area. Additionally BLM, in collaboration with the Hotchkiss Fire Department, will begin to look at vegetation treatments on public lands north of the town of Hotchkiss to address watershed and wildfire concerns. The planning area will encompass approximately 5000 acres of public land east of Leroux Creek and west of the Wake fire area. A full range of vegetation management tools will be considered including prescribed fire and mechanical treatments similar to this proposal to treat approximately 20-40% of the project area. The cumulative impacts of these vegetation treatments are determined to be beneficial as a whole over the long term.

This project would convert the vegetation composition and structure within the project area. Small trees would be removed, resulting in improved production of sagebrush and herbaceous vegetation. The risk of severe wildfires would decrease.

The treatments would allow for better livestock distribution within pastures. The area treated by slashing would maintain the shrub community in the area and the prescribed burn would target oak brush attempting to create an earlier seral stage mosaic in the treatment area. Both these actions would continue to support wildlife and livestock in the area while improving the mountain shrub community.

Invasive, non-native weeds have the potential to increase. Traffic on roads, livestock grazing, and recreational uses also contribute to the potential establishment of noxious weeds. The project would be monitored for noxious weeds, and noxious weeds would be treated. As a result, the project would not add incrementally to the potential establishment of noxious weeds and does present the potential to greatly reduce the presence and influence of invasive species on vegetative communities.

Project implementation would not occur during the migratory bird nesting and breeding season. Some species could be displaced at other times, such as during the winter or late summer/fall. The forest service thinning could have the same impact. Cumulatively, the impacts are not expected to have a lasting effect on migratory birds. Improved availability of food and shelter for some species would increase after project implementation. Overall, the proposed treatments are expected to improve and expand native habitats and ultimately benefit the majority of terrestrial wildlife species. No sensitive wildlife or plant species are known to occur within the project areas; however, surveys would be conducted and if detected such habitats would be avoided. Therefore no impacts to sensitive species are anticipated.

Surface water quality within and downstream of the proposed treatment areas is expected to improve as a result of treatment. Over the longer term, canopy cover should increase with vigorous desirable perennial grasses and forbs, and plant diversity can be expected to increase from current conditions; therefore, it is anticipated that by implementing this proposed action the long term effect should also improve the indicators for the upland soils standard.

No new travel routes would be constructed as a result of project implementation. Should any part of the project implementation leave the appearance of routes, they would be scarified, seeded, and blocked off with woody debris and/or boulders to inhibit route proliferation.

Air quality concerns from the proposed action would be limited to those disclosed earlier in this EA. Cumulatively, the impacts would be short term, and during the time when the projects are actively implemented.

PERSONS / AGENCIES CONSULTED

Dennis Garrison, US Forest Service Wildlife Biologist
Dave Bradford, US Forest Service Range Conservationist
Scott Leon, Town of Paonia Public Works Director

INTERDISCIPLINARY REVIEW: The following BLM personnel have contributed to and have reviewed this environmental assessment.

Name	Title	Area of Responsibility
Kelly Homstad	Fire Use Specialist	Air Quality, Fire, Forest Management
Robert Bavin	Wildlife Biologist	Endangered, Threatened, and Sensitive Species, Migratory Birds, Terrestrial Wildlife, Aquatic Wildlife
Amanda Clements	Ecologist	Wetlands and Riparian
Glade Hadden	Archeologist	Cultural, Native American Religious

		Concerns, Paleontology
Julie Jackson	Outdoor Recreation Planner	Transportation, Recreation, Visual Resources
Lynae Rogers	Range Conservationist	Vegetation; Invasive, Non-native Species; Range Management
Jedd Sondergard	Hydrologist	Farmlands, Prime/Unique; Soils; Floodplains; Water Quality, Surface and Ground; Hydrology / Water Rights
Bruce Krickbaum	Environmental Coordinator	Document Review, NEPA Compliance

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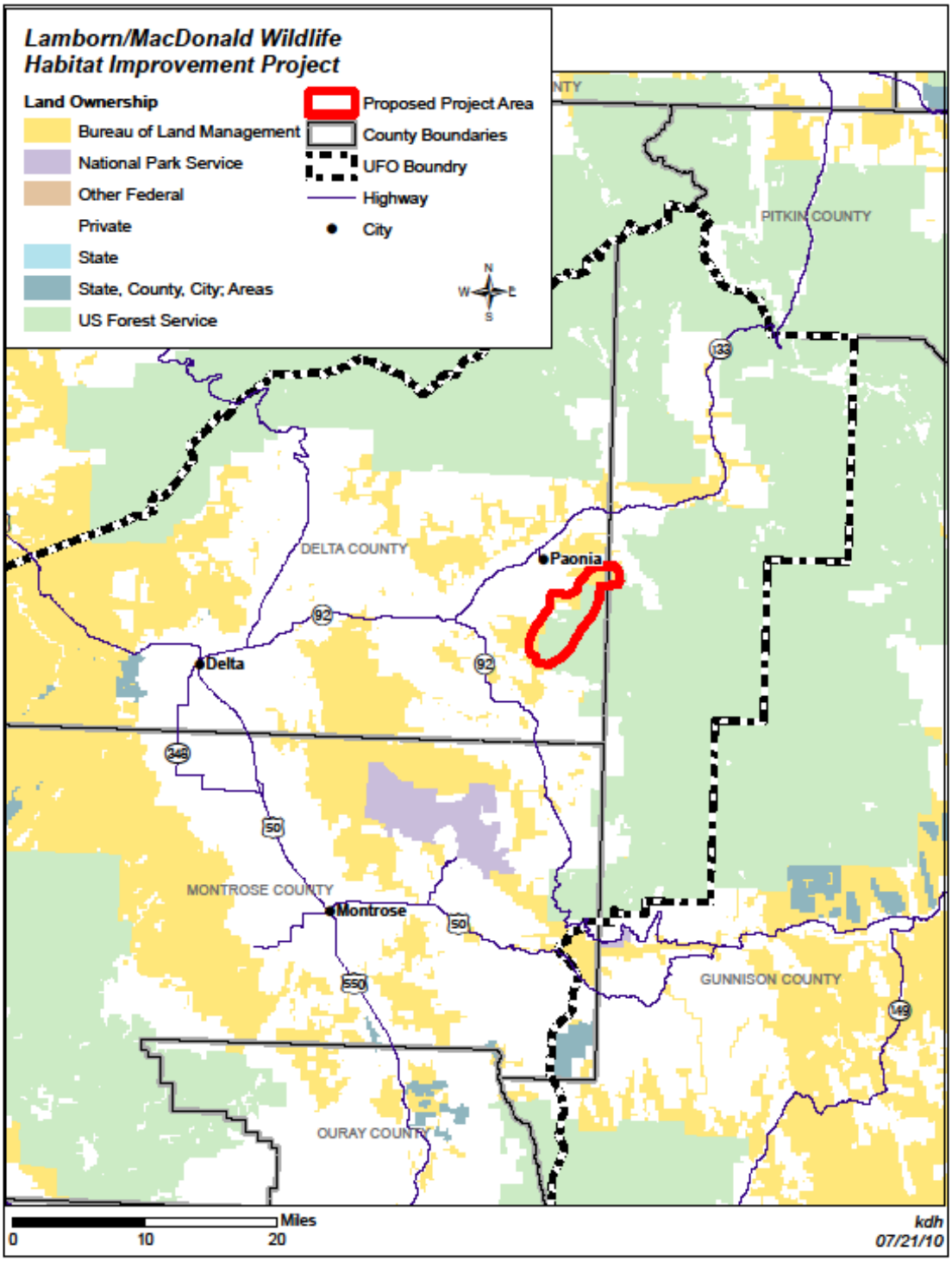
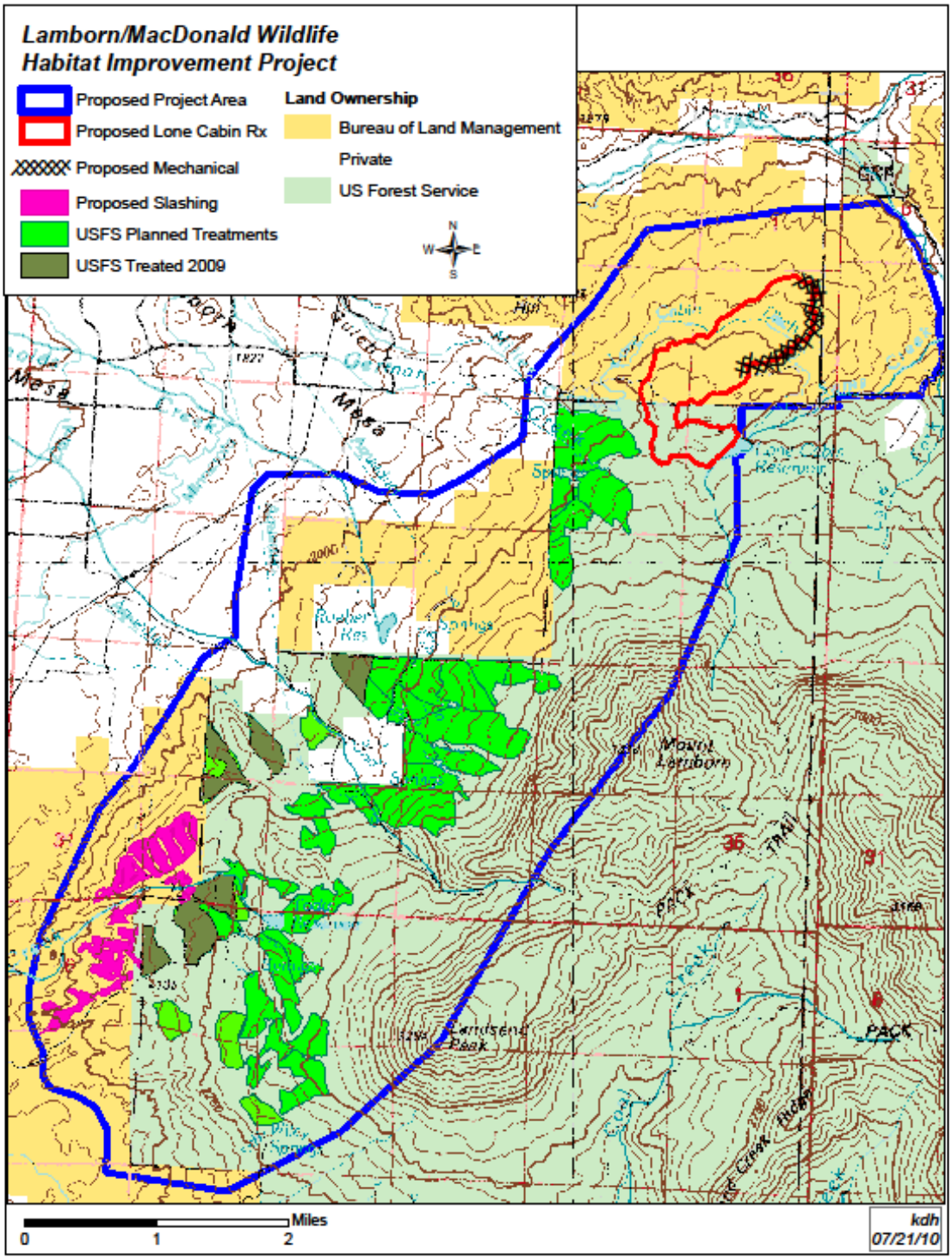
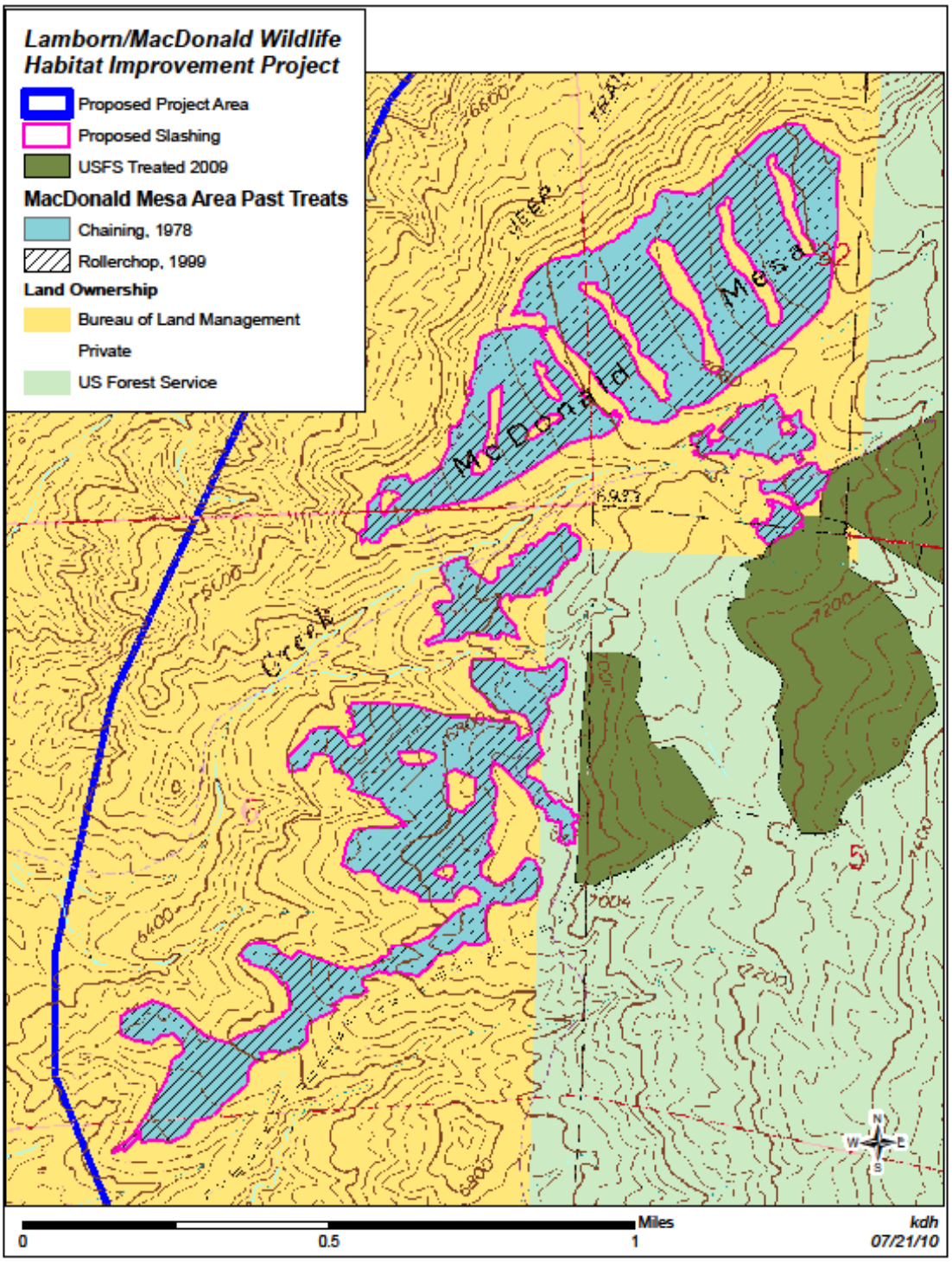
Attachment 1, Location Map


Lamborn/MacDonald Wildlife
Habitat Improvement Project
Land Ownership
Bureau of Land Management
National Park Service
Other Federal
Private
State
State, County, City; Areas
US Forest Service
Proposed Project Area
County Boundaries
UFO Boundry
Highway
City
N
W
E
S
PITKIN COUNTY
DELTA COUNTY
Paonia
Delta
MONTROSE COUNTY
Montrose
GUNNISON COUNTY
OURAY COUNTY
133
92
348
50
550
149
Miles
0
10
20
kdh
07/21/10

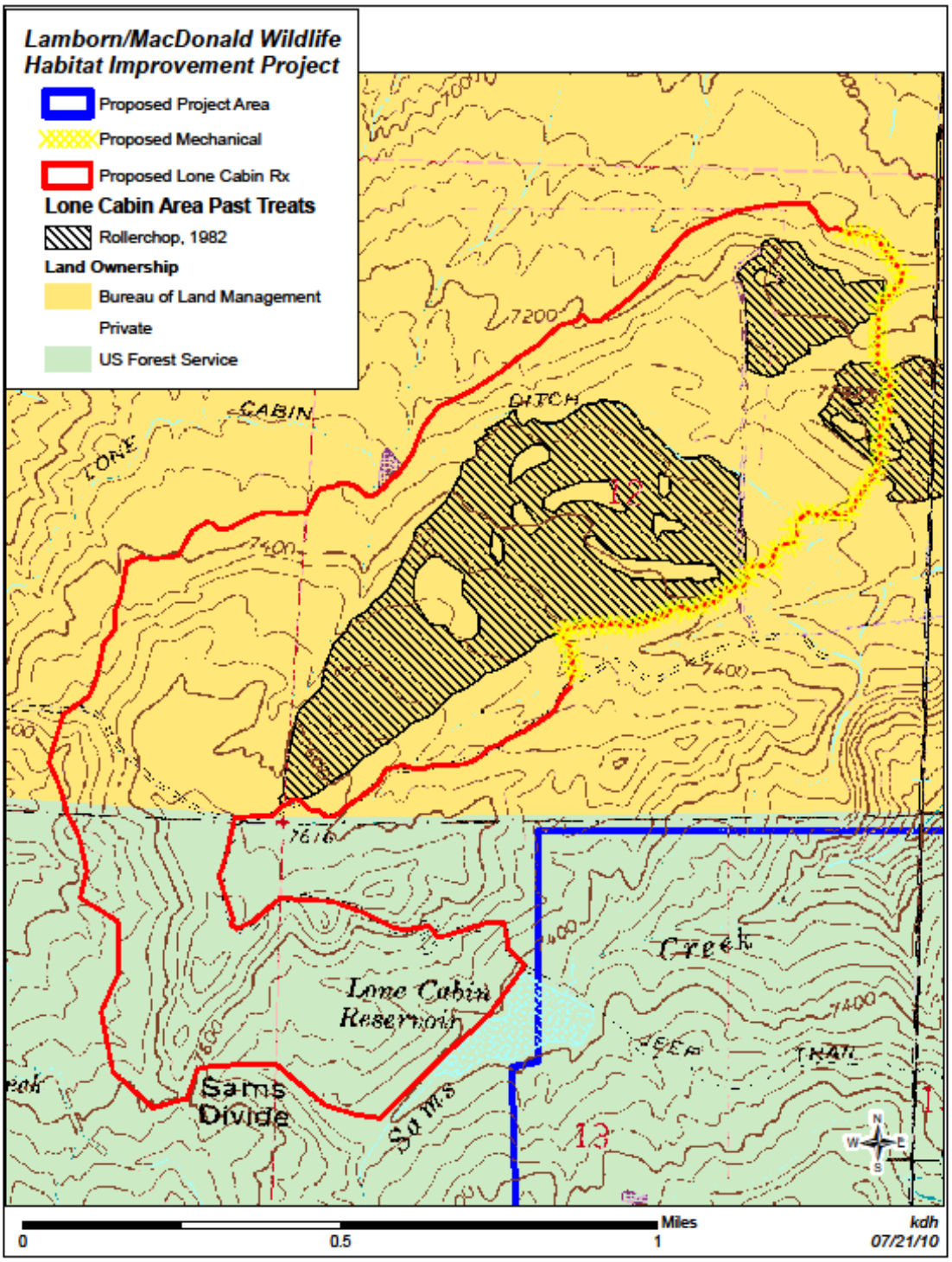
Attachment 2, Proposed Treatments Map



Attachment 3, Slashing-Area Treatments Map



Attachment 4, Rx-Area Treatments Map


Lamborn/MacDonald Wildlife Habitat Improvement Project
Proposed Project Area
Proposed Mechanical
Proposed Lone Cabin Rx
Lone Cabin Area Past Treats
Rollerchop, 1982
Land Ownership
Bureau of Land Management
Private
US Forest Service
LONE
CABIN
DITCH
7200
7400
7616
Lone Cabin Reservoir
Sams Divide
Sams
Creek
12
13
1
0
0.5
1
Miles
kdh
07/21/10

Appendix A

THREATENED AND ENDANGERED SPECIES OF THE UFO [1]				
SPECIES	STATUS	HABITAT DESCRIPTION [2]	DESIGNATED CRITICAL HABITAT IN PROJECT AREA?	POTENTIAL AND/OR KNOWN OCCURRENCES IN PROJECT AREA [3]
FISH				
Bonytail *Gila elegans*	E	Warm-waters of the Colorado River mainstem and tributaries, some reservoirs; flooded bottomlands for nurseries; pools and eddies over rocky substrates with silt-boulder mixtures for spawning	No	None
Humpback chub *Gila cypha*	E	Warm-water, canyon-bound reaches of Colorado River mainstem and larger tributaries; turbid waters with fluctuating hydrology; young require low-velocity, shoreline habitats such as eddies and backwaters	No	None
Razorback sucker *Xyrauchen texanus*	E	Warm-water reaches of the Colorado River mainstem and larger tributaries; some reservoirs; low velocity, deep runs, eddies, backwaters, sidecanyons, pools, eddies; cobble, gravel, and sand bars for spawning; tributaries, backwaters, floodplain for nurseries	No	None
Colorado pikeminnow *Ptychocheilus lucius*	E	Warm-waters of the Colorado River mainstem and tributaries; deep, low velocity eddies, pools, runs, and nearshore features; uninterrupted streams for spawning migration and young dispersal; also floodplains, tributary mouths, and side canyons; highly complex systems	No	None
Greenback cutthroat trout *Oncorhynchus clarki stomias*	T	Cold water streams and lakes with adequate spawning habitat (riffles), often with shading cover; young shelter in shallow backwaters	No	None
MAMMALS				
Black-footed ferret [4] *Mustela nigripes*	E	Prairie dog colonies for shelter and food; >200 acres of habitat with at least 8 burrows/acre	No	None, extirpated.

Canada lynx *Lynx canadensis*	T	Spruce-fir, lodgepole pine, willow carrs, and adjacent aspen and mountain shrub communities that support snowshoe hare and other prey	No	None
BIRDS				
Mexican spotted owl [5] *Strix occidentalis*	T	Mixed-conifer forests and steep-walled canyons with minimal human disturbance	No	None
Southwestern willow flycatcher [5] *Empidonax traillii extimus*	E	For breeding, riparian tree and shrub communities along rivers, wetlands, and lakes; for wintering, brushy grasslands, shrubby clearings or pastures, and woodlands near water	No	None
PLANTS				
Clay-loving wild buckwheat *Eriogonum pelinophilum*	E	Mancos shale badlands in salt desert shrub communities, often with shadscale, black sagebrush, and mat saltbush; 5200' – 6400' in elevation	No	None
Colorado hookless cactus *Sclerocactus glaucus*	T	Salt-desert shrub communities in clay soils on alluvial benches and breaks, toe slopes, and deposits often with cobbled, rocky, or graveled surfaces; 4500' – 6000' in elevation	No	None
INVERTEBRATES				
Uncompahgre fritillary butterfly [5] *Boloria acrocnema*	E	Restricted to moist, alpine slopes above 12,000' in elevation with extensive snow willow patches; restricted to San Juan Mountains	No	None

[1] U.S. Fish and Wildlife Service. 2009. Federally listed species in Colorado. Official correspondence, February.
[2] Van Reyper G. 2006. Bureau of Land Management TES [threatened, endangered, sensitive] species descriptions. Uncompahgre Field Office, Montrose, CO, updated 2009/2010.Unpublished document.
[3] Assessment based on UFO files and GIS data, partner data, and local knowledge.
[4] Black-footed ferret believed to be extirpated from this portion of its range.
[5] Species not known to occur within UFO boundaries, but known to occur in close proximity.

Appendix B

BLM SENSITIVE SPECIES OF THE UFO [1]		
SPECIES	HABITAT DESCRIPTION [2, 3]	POTENTIAL AND/OR KNOWN OCCURRENCES IN PROJECT AREA [4]
FISH		
Roundtail chub *Gila robusta*	Warm-water rocky runs, rapids, and pools of creeks and small to large rivers; also large reservoirs in the upper Colorado River system; generally prefers cobble-rubble, sand-cobble, or sand-gravel substrate	Potential, no suitable habitat within the project area.
Bluehead sucker *Catostomus discobolus*	Large rivers and mountain streams, rarely in lakes; variable, from cold, clear mountain streams to warm, turbid streams; moderate to fast flowing water above rubble-rock substrate; young prefer quiet shallow areas near shoreline	Potential, no suitable habitat within the project area.
Flannelmouth sucker *Catostomus latipinnis*	Warm moderate- to large-sized rivers, seldom in small creeks, absent from impoundments; pools and deeper runs often near tributary mouths; also riffles and backwaters; young usually in shallower water than are adults	Potential, no suitable habitat within the project area.
Colorado River cutthroat trout *Oncorhynchus clarki pleuriticus*	Cool, clear streams or lakes with well-vegetated streambanks for shading cover and bank stability; deep pools, boulders, and logs; thrives at high elevations	Potential, no suitable habitat within the project area.
MAMMALS		
Desert bighorn sheep *Ovis canadensis nelsoni*	Steep, mountainous or hilly terrain dominated by grass, low shrubs, rock cover, and areas near open escape and cliff retreats; in the resource area, concentrated along major river corridors and canyons	None
Gunnison's prairie dog [6] *Cynomys gunnisoni*	Level to gently sloping grasslands, semi-desert shrublands, and montane shrublands, from 6,000'- 12,000 in elevation	None
White-tailed prairie dog [9] *Cynomys leucurus*	Level to gently sloping grasslands and semi-desert grasslands from 5,000' – 10,000' in elevation	None
Kit fox *Vulpes macrotis*	Semi-desert shrublands of saltbrush, shadscale and greasewood often in association with prairie dog towns	None
Allen's (Mexican) big-eared bat *Idionycteris phyllotis*	Ponderosa pine, pinyon-juniper woodland, oak brush, riparian woodland (cottonwood); typically found near rocky outcrops, cliffs, and boulders; often forages near streams and ponds.	None
Big free-tailed bat *Nyctinomops macrotis*	Rocky areas and rugged terrain in desert and woodland habitats; roosts in rock crevices in cliffs and in buildings caves, and occasionally tree holes	None
Spotted bat *Euderma maculatum*	Desert shrub, ponderosa pine, pinyon-juniper woodland, canyon bottoms, open pasture, and hayfields; roost in crevices in cliffs with surface water nearby	None

Townsend's big-eared bat *Corynorhinus townsendii*	Mesic habitats including coniferous forests, deciduous forests, sagebrush steppe, juniper woodlands, and mountain; maternity roosts and hibernation in caves and mines; does not use crevices or cracks; caves, buildings, and tree cavities for night roosts	Potential foraging. No suitable sites for maternity roosts or hibernation sites in the project area.
Fringed myotis *Myotis thysanodes*	Desert, grassland, and woodland habitats including ponderosa pine, pinyon/juniper, greasewood, saltbush, and scrub oak; roosts in caves, mines, rock crevices, and buildings	Potential foraging. No suitable roost sites.
BIRDS		
Bald eagle [5] *Haliaeetus leucocephalus*	Nests in forested rivers and lakes; winters in upland areas, often with rivers or lakes nearby	Winter range and winter foraging area.
American peregrine falcon [5] *Falco peregrines anatum*	Open country near cliff habitat, often near water such as rivers, lakes, and marshes; nests on ledges or holes on cliff faces and crags	Potential foraging area, no suitable nesting or roost sites within the project area.
Western yellow-billed cuckoo[6] *Coccyzus americanus*	Riparian, deciduous woodlands with dense undergrowth; nests in tall cottonwood and mature willow riparian, moist thickets, orchards, abandoned pastures	Limited potential habitat along the Lone Cabin Ditch.
Northern goshawk *Accipiter gentilis*	Nests in a variety of forest types including deciduous, coniferous, and mixed forests including ponderosa pine, lodgepole pine, or in mixed-forests with fir and spruce; also nest in aspen or willow forests; migrants and wintering individuals can be observed in all coniferous forest types	Potential foraging area; no known occurrences or crucial habitat types in the project area.
Ferruginous hawk *Buteo regalis*	Open, rolling and/or rugged terrain in grasslands and shrubsteppe communities; also grasslands and cultivated fields; nests on cliffs and rocky outcrops	Potential foraging area, no known occurrences.
Burrowing owl [10] *Athene cunicularia*	Level to gently sloping grasslands and semi-desert grasslands; Prairie dog colonies for shelter and food	Potential, no suitable habitat (prairie dog colonies) within the project area.
Gunnison sage grouse [9] *Centrocercus minimus*	Sagebrush communities (especially big sagebrush) for hiding and thermal cover, food, and nesting; open areas with sagebrush stands for leks; sagebrush-grass-forb mix for nesting; wet meadows for rearing chicks	Potential, no suitable habitat within the project area.
Columbian sharp-tailed grouse *Tympanuchus phasianellus columbian*	Native bunchgrass and shrub-steppe communities for nesting; mountain shrubs including serviceberry are critical for winter food and escape cover	Potential habitat but outside species current known range.
Long-billed curlew *Numenius americanus*	Lakes and wetlands and adjacent grassland and shrub communities	None
White-faced ibis *Plegadis chihi*	Marshes, swamps, ponds and rivers	Potential, no suitable habitat within the project area.
American white pelican *Pelecanus erythrorhynchos*	Typically large reservoirs but also observed on smaller water bodies including ponds; nests on islands	Potential, no suitable habitat within the project area.

Brewer's sparrow *Spizella berweri*	Breeds primarily in sagebrush shrublands, but also in other shrublands such as mountain mahogany or rabbitbrush; migrants seen in wooded, brushy, and weedy riparian, agricultural, and urban areas; occasionally observed in pinyon-juniper	Potential habitat.
Black swift [10] *Cypseloides niger*	Nests on precipitous cliffs near or behind high waterfalls; forages from montane to adjacent lowland habitats	None
REPTILES AND AMPHIBIANS		
Longnose leopard lizard *Gambelia wislizenii*	Desert and semidesert areas with scattered shrubs or other low plants; e.g., sagebrush; areas with abundant rodent burrows, typically below 5,000' in elevation	None
Midget faded rattlesnake [8] *Crotalus viridis concolor*	Rocky outcrops for refuge and hibernacula, often near riparian; upper limit of 7500'-9500' in elevation	None
Milk snake *Lampropeltis triangulum taylori*	Variable types including shrubby hillsides, canyons, open ponderosa pine stands and pinyon-juniper woodlands, arid river valleys and canyons, animal burrows, and abandoned mines; hibernates in rock crevices	None
Northern leopard frog [9] *Rana pipiens*	Springs, slow-moving streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes; in summer, commonly inhabits wet meadows and fields; may forage along water's edge or in nearby meadows or fields	Limited potential habitat along Lone Cabin ditch which only has seasonal flows and is at edge of project. Known occurrences in N. Fork watershed.
Canyon treefrog *Hyla arenicolor*	Rocky canyon bottoms along intermittent or perennial streams in temporary or permanent pools or arroyos ; semi-arid grassland, pinyon-juniper, pine-oak woodland, scrubland, and montane zones; elevation 1000' - 10,000'	Potential, known occurrences in N. Fork watershed.
Boreal toad *Anaxyrus boreas boreas*	Mountain lakes, ponds, meadows, and wetlands in subalpine forest (e.g., spruce, fir, lodgepole pine, aspen); feed in meadows and forest openings near water but sometimes in drier forest habitats	None
PLANTS		
Debeque milkvetch *Astragalus debequaeus*	Varicolored, fine-textured, seleniferous, saline soils of the Wasatch Formation-Atwell Gulch Member; elevation 5100' – 6400'	None
Grand Junction milkvetch *Astragalus linifolius*	Sparsely vegetated habitats in pinyon-juniper and sagebrush communities, often within Chinle and Morrison Formation and selenium-bearing soils; elevation 4800' – 6200'	None
Naturita milkvetch *Astragalus naturitenis*	Cracks and ledges of sandstone cliffs and flat bedrock area typically with shallow soils, within pinyon-juniper woodland; elevation 5400' – 6700'	None
San Rafael milkvetch *Astragalus rafaelensis*	Banks of sandy clay gulches and hills, at the foot of sandstone outcrops, or among boulders along dry watercourses in seleniferous soils derived from shale or sandstone formations; elevation 4500'– 5300'	None
Sandstone milkvetch *Astragalus sesquiflorus*	Sandstone rock ledges (Entrada formation), domed slickrock fissures, talus under cliffs, sometimes in sandy washes; elevation 5000' – 5500'	None

Gypsum Valley cateye *Cryptantha gypsophila*	Confined to scattered gypsum outcrop and grayish-white, often lichen-covered, soils of the Paradox Member of the Hermosa Formation; often the dominant plant at these sites; elevation 5200' – 6500'	None
Fragile (slender) rockbrake *Cryptogramma stelleri*	Cool, moist, sheltered calcareous cliff crevices and rock ledges	None
Kachina daisy (fleabane) [10] *Erigeron kachinensis*	Saline soils in alcoves and seeps in canyon walls; elevation 4800' – 5600'	None
Montrose (Uncompahgre) bladderpod *Lesquerella vicina*	Sandy-gravel soil mostly of sandstone fragments over Mancos Shale (heavy clays) mainly in pinyon-juniper woodlands or in the ecotone between it and salt desert scrub; also in sandy soils derived from Jurassic sandstones and in sagebrush steppe communities; elevation 5800' – 7500'	None
Colorado (Adobe) desert parsley *Lomatium concinnum*	Adobe hills and plains on rocky soils derived from Mancos Formation shale; shrub communities dominated by sagebrush, shadscale, greasewood, or scrub oak; elevation 5500' – 7000'	Potential within the northern end of the project area.
Paradox Valley (Payson's) lupine *Lupinus crassus*	Pinyon-juniper woodlands, or clay barrens derived from Chinle or Mancos Formation shales, often in draws and washes with sparse vegetation; elevation 5000' – 5800'	None
Dolores skeleton plant [10] *Lygodesmia doloresenis*	Reddish purple, sandy alluvium and colluviums of the Cutler Formation between the canyon walls and the river in juniper, shadscale, and sagebrush communities; elevation 4000' – 5500'	None
Eastwood's monkey-flower *Mimulus eastwoodiae*	Shallow caves and seeps on steep canyon walls; elevation 4700' – 5800'	None
Paradox (Aromatic Indian) breadroot *Pediomelum aromaticum*	Open pinyon-juniper woodlands in sandy soils or adobe hills; elevation 4800' – 5700'	None
INVERTEBRATES		
Great Basin silverspot butterfly *Speyeria nokomis nokomis*	Found in streamside meadows and open seepage areas with an abundance of violets	None

[1] Based on Colorado BLM State Director's Sensitive Species List (Last update: November 20, 2009).
[2] Van Reyper G. 2006. Bureau of Land Management TES [threatened, endangered, sensitive] species descriptions. Uncompahgre Field Office, Montrose, CO, updated 2009/ 2010. Unpublished document.
[3] Spackman SB, JC Jennings, C Dawson, M Minton, A Kratz, C Spurrier. 1997. Colorado rare plant field guide. Prepared for the BLM, USFS, and USFWS by the Colorado Natural Heritage Program.
[4] Assessment based on UFO files and GIS data, partner data, and local knowledge.
[5] ESA delisted species.
[6] Federal candidate species; in accordance with BLM policy and Manual 6840, candidate and proposed species are to be managed and conserved as BLM sensitive species. For the Gunnison prairie dog, candidate status includes only those populations occurring in the "montane" portion of the species' range.
[7] Species not known to occur in UFO.
[8] Validity of subspecies designation is in question by taxonomists.
[9] Species was petitioned for listing and is currently under status review by FWS, and a 12-month finding is pending; i.e., listing of the species throughout all or a significant portion of its range may be warranted.
[10] Species not on BLM Colorado State Director's Sensitive List; included at the Field Office level to account for recent sightings, proximate occurrences, and/or potential habitat.

Appendix C

BIRDS OF CONSERVATION CONCERN OF THE UFO [1]			
SPECIES	HABITAT DESCRIPTION [2]	RANGE AND STATUS IN THE UFO [2, 3]	POTENTIAL AND/OR KNOWN OCCURRENCES IN PROJECT AREA [4]
Gunnison sage grouse *Centrocercus minimus*	Sagebrush communities (especially big sagebrush) for hiding and thermal cover, food, and nesting; open areas with sagebrush stands for leks; sagebrush-grass-forb mix for nesting; wet meadows for rearing chicks	Year-round resident, breeding	See assessment under Sensitive Species Section
American bittern *Botaurus lentiginosus*	Marshes and wetlands; ground nester	Spring/ summer resident, breeding confirmed in the region but not within the UFO	Potential, no suitable habitat within the project area.
Bald eagle [5] *Haliaeetus leucocephalus*	Nests in forested rivers and lakes; winters in upland areas, often with rivers or lakes nearby	Fall/winter resident, no confirmed breeding	See assessment under Sensitive Species Section
Ferruginous hawk *Buteo regalis*	Open, rolling and/or rugged terrain in grasslands and shrubsteppe communities; also grasslands and cultivated fields; nests on cliffs and rocky outcrops	Fall/ winter resident, non-breeding	See assessment under Sensitive Species Section
Golden eagle *Aquila chrysaetos*	Open country, grasslands, woodlands, and barren areas in hilly or mountainous terrain; nests on rocky outcrops or large trees	Year-round resident, breeding	Potential foraging area. No suitable nest or roost sites within the project area.
Peregrine falcon [5] *Falco peregrinus*	Open country near cliff habitat, often near water such as rivers, lakes, and marshes; nests on ledges or holes on cliff faces and crags	Spring/summer resident, breeding	See assessment under Sensitive Species Section
Prairie falcon *Falco mexicanus*	Open country in mountains, steppe, or prairie; winters in cultivated fields; nests in holes or on ledges on rocky cliffs or embankments	Year-round resident, breeding	Potential foraging area, no suitable areas for nesting or roosting in the project area.
Long-billed curlew *Numenius americanus*	Lakes and wetlands and adjacent grassland and shrub communities	Spring/ fall migrant, non-breeding	See assessment under Sensitive Species Section
Snowy plover [6] *Charadrius alexandrines*	Sparsely vegetated sand flats associated with pickleweed, greasewood, and saltgrass	Spring migrant, non-breeding	None
Mountain plover *Charadrius montanus*	High plain, cultivated fields, desert scrublands, and sagebrush habitats, often in association with heavy grazing, sometimes in	Spring/ fall migrant, non-breeding	None

	association with prairie dog colonies ; short vegetation		
Yellow-billed cuckoo [7] *Coccyzus americanus*	Riparian, deciduous woodlands with dense undergrowth; nests in tall cottonwood and mature willow riparian, moist thickets, orchards, abandoned pastures	Summer resident, breeding	See assessment under Sensitive Species Section
Flammulated owl *Otus flammeolus*	Montane forest, usually open and mature conifer forests; prefers ponderosa pine and Jeffrey pine	Summer resident, breeding	None
Burrowing owl *Athene cunicularia*	Open grasslands and low shrublands often in association with prairie dog colonies; nests in abandoned burrows created by mammals; short vegetation	Summer/ fall resident, breeding	See assessment under Sensitive Species Section
Lewis's woodpecker *Melanerpes lewis*	Open forest and woodland, often logged or burned, including oak, coniferous forest (often ponderosa), riparian woodland, and orchards, less often in pinyon-juniper	Year-round resident, breeding	Potential
Willow flycatcher [6] *Empidonax traillii*	Riparian and moist, shrubby areas; winters in shrubby openings with short vegetation	Summer resident, breeding	Potential but suitable habitat is limited in the project area.
Gray vireo *Vireo vicinior*	Pinyon-juniper and open juniper-grassland	Summer resident, breeding	Potential
Pinyon jay *Gymnorhinus cyanocephalus*	Pinyon-juniper woodland	Year-round resident, breeding	Potential
Juniper titmouse *Baeolophus griseus*	Pinyon-juniper woodlands, especially juniper; nests in tree cavities	Year-round resident, breeding	Potential
Veery *Catharus fuscescens*	Deciduous forests, riparian, shrubs	Possible summer resident, observed recently in Gunnison County, possible breeding	Potential but suitable habitat is limited in the project area.
Bendire's thrasher *Toxostoma bendirei*	Desert, especially areas of tall vegetation, cholla cactus, creosote bush and yucca, and in juniper woodland	UFO is outside known range	None
Grace's warbler *Dendroica graciae*	Mature coniferous forests	Summer resident, breeding	None
Brewer's sparrow *Spizella breweri*	Sagebrush-grass stands; less often in pinyon-juniper woodlands	Summer resident, breeding	See assessment under Sensitive Species Section
Grasshopper sparrow *Ammodramus savannarum*	Open grasslands and cultivated fields	UFO is outside known range	None
Chestnut-collared	Open grasslands and	Spring migrant, non-	Potential but suitable habitat is

longspur *Calcarius ornatus*	cultivated fields	breeding	limited in the project area.
Black rosy-finch *Leucosticte atrata*	Open country including mountain meadows, high deserts, valleys, and plains; breeds/ nests in alpine areas near rock piles and cliffs	Winter resident, non-breeding	Potential
Brown-capped rosy-finch *Leucosticte australis*	Alpine meadows, cliffs, and talus and high-elevation parks and valleys	Summer residents, breeding	Potential but no suitable habitat within the project area.
Cassin's finch *Carpodacus cassinii*	Open montane coniferous forests; breeds/ nests in coniferous forests	Year-round resident, breeding	Potential but no suitable habitat within the project area.