United States Department of the Interior
BUREAU OF LAND MANAGEMENT
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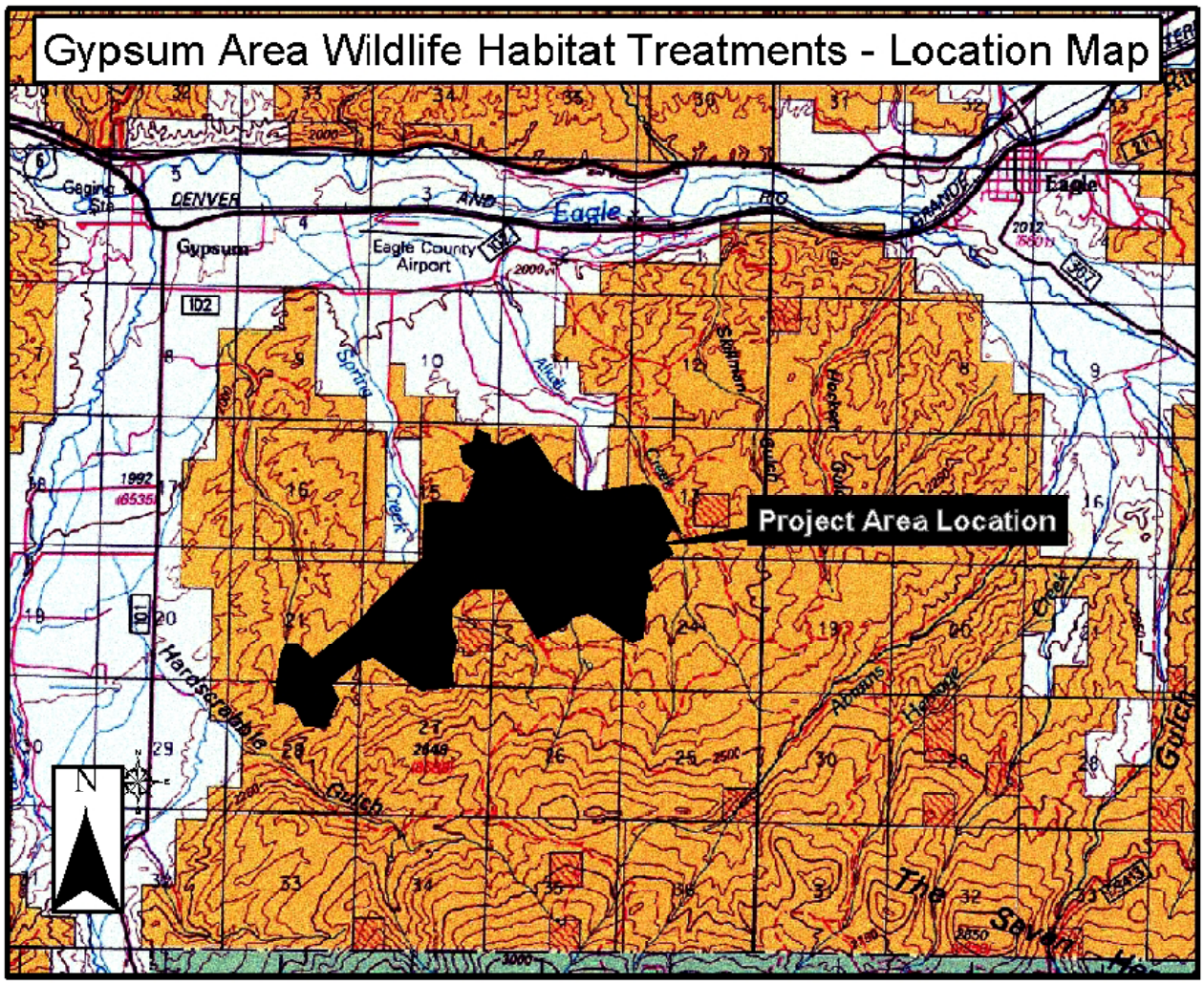
ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-NO40-2010-0028EA

PROJECT NAME: Gypsum Area Wildlife Habitat Treatments

LEGAL DESCRIPTION: T.5 S., R. 85 W., Portions of Sections: 13, 14, 15, 21, 22, 23, 24 and 28: 6th Principal Meridian. Eagle County, Colorado. Also see detailed map in Appendix A.



APPLICANT: None.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Action Alternative: The actions being proposed will aid in the preservation and enhancement of sagebrush shrublands for the benefit of big game and other sagebrush-dependent species. The project proposal is to treat approximately 950 acres of BLM land over a multiple of years (2011 to approximately 2018). The project specifically involves:

- spraying for noxious weeds (a) in 2010 ahead of mechanical treatments and (b) post-treatment,
- mechanically removing encroaching PJ woodlands from sagebrush shrublands with a hydro-axe or similar machine on 113.8 acres,
- removing, by hand, encroaching PJ woodlands (with a diameter breast-height (DBH) of 6"or less) from sagebrush shrublands on about 450 – 500 acres within the 710.7 acres identified,
- chipping, pile burning or spreading of handcut vegetation,
- inter-seeding, as necessary, a mixture of native grasses, forbs and shrubs, by hand and with an ATV to enhance herbaceous understory revegetation,
- Approximately 30% of decadent sagebrush in an individual unit may be considered for mowing treatment, and
- drill seeding of an old wildland fire with a mixture of native grasses, forbs and shrubs on 123 acres.

Project design criteria:

- A target of 70% – 90% PJ removal for hand-cut treatment units where there is an understory of sagebrush.
- A target of 80% – 90% PJ reduction for treatment units using mechanical equipment.
- Sagebrush would be mowed no closer than 12" above the ground with the preference of removing no more than ½ of the average plant height to stimulate new growth.
- Old growth pinyon/juniper woodlands, (generally considered as trees with a diameter breast high (DBH) of greater than 10 inches) would not be targeted.
- The mosaic patterns of the individual units are designed to mimic natural patterns of disturbance with undulating edges. In order to maintain a natural appearing landscape, both mechanical and hand treatment will avoid clearing vegetation in a linear corridors or straight lines.
- Noxious weeds would be monitored and controlled ahead of and for 2 years following mechanical treatment.
- A hydro-axe (or similar machine) would only be used where a class III cultural survey has been completed.
- The hydro-axe habitat treatments would be performed outside of the second and third Colorado big game rifle hunting seasons unless approved by the Division Wildlife Manager.
- Temporary fencing to exclude livestock grazing from all or portions of the drill seeding area will be used to minimize impacts to grazing permittees.

No Action Alternative: Under the no action alternative, no vegetative treatments would be conducted. The area would be managed for current vegetation types. Pinyon and juniper trees would likely continue thrive and dominant the sagebrush shrublands without a natural disturbance such as an unplanned wildland fire.

BACKGROUND:

Table 1. Cost Estimates (2011 – 2020):

TREATMENT TASK	EST. COST
Cultural Clearances	
• Estimated cost = $10,000	
• Task Subtotal	$10,000
Weed Spraying	
• Pre-treatment – staff/equipment/spray = $10,000	
• Follow-up treatments - 3 years - staff/equipment/spray = $30,000	
• Task Subtotal	$40,000
Hydro-axe Pinyon-Juniper Units	
• 113.8 acres	
• Cost estimated @ $500/acre = $57,000	
• Administrative/contracting/staff/vehicle/monitoring costs = $6,000	
• Task Subtotal	$63, 000
Drill Seeding Unit	
• 123 acres	
• Cost estimated @ $300/acre (including seed) = $37,000	
• Administrative/contracting/staff/vehicle/monitoring costs = $6,000	
• Task Subtotal	$43, 000
Hand-cut Pinyon-Juniper Units	
• Approximately 500 acres of potential treatment within the treatment units	
• Cost estimated @ $300/acre = $150,000	
• Administrative/contracting/staff/vehicle/monitoring costs = $24,000 if task is performed by BLM fire crews	
• Task Subtotal	$174,000
Sagebrush Mowing or Roller-chopping	
• Approximately 250 acres (30 % of the treatment units)	
• Cost estimated @ $200/acre = $50,000	
• Administrative/contracting/staff/vehicle/monitoring costs = $6,000	
• Task Subtotal	$56,000

Total Estimated Project Costs $386,000

Mechanical Techniques. Mechanical techniques to be utilized for vegetation treatments include:

Hydro-Axe. The Hydro-Axe is a large tractor with a 6-8 foot wide, hydraulically controlled mower/mulcher head mounted on the front. The machine has rubber, flotation-type tires which result in minimal ground disturbance. Some tractors are equipped with a drum, similar to a fecon mulching head. Both head types are used to chop, grind and mulch vegetation. A single machine can treat up to 20 acres per day. It can operate on slopes up to about 20 percent. The machine has the capability to be highly selective and can meander through a stand of trees removing selected trees, or patches to create a desired mosaic.

Brush Mower. The brush hog is a large rotary mower pulled behind a tractor. A variety of sizes are available, ranging from a single platform 6 to 8 feet wide unit to a multi-platform unit cutting a swath width of 15-18 feet. Its use is limited to sagebrush and other small shrubs in areas that were fairly gentle terrain and with no large rocks or down trees. Best results occur in sagebrush stands where good residual herbaceous vegetation is present. The height to which the target species is cut may range from ground level to 12-15 inches high.

NEED FOR THE ACTION:

Sagebrush has been demonstrated to be a critical food source for several games species during various seasons of the year. Big sagebrush is a highly nutritious and digestible food source for big game animals. During winter, big sagebrush has a higher crude protein level and digestibility than most other shrubs or grasses (TNC 2010).

Pinyon-Juniper (PJ) woodlands are the 3rd largest vegetation type in the United States, covering 35.5% of the Colorado Plateau, it is the largest vegetation type administered by the BLM on the Colorado Plateau. Historically, these trees were found clinging to rocky ridges where they were spared by periodic wildfire. PJ woodlands have been increasing dramatically in density and extent over the last 100 years (Peters, Cobb 2008) likely for numerous reasons from improper livestock grazing to fire suppression to climate. In this region PJ woodlands have been slowly invading sagebrush shrublands. Tree densities have increased, and junipers and pinyon pines have expanded into grass and shrub communities (Grahame 2008).

The project has been initiated to restore sagebrush shrublands and herbaceous vegetation thus enhancing wildlife habitat on BLM lands as identified by:

- The Eagle River South Land Health Assessment,
- GSFO Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance,
- Field reviews by BLM staff, and
- Discussions with the Colorado Division of Wildlife and the Town of Gypsum.

The project complements the 2007-2009 Eagle Ranch Wildlife Habitat Improvement Project to the east. The project is locally supported by the: BLM, CDOW, the Habitat Partnership Committee of the CDOW.

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

Name of Plan: Glenwood Springs Resource Management Plan.

Date Approved: Jan. 1984, revised 1988, amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 - Red Hill Plan Amendment; and amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance; amended in August 2006 - Roan Plateau Planning Area Including Naval Oil Shale Reserves Numbers 1 & 3 Resource Management Plan Amendment & Environmental Impact Statement

> Terrestrial Habitat Management - Page 18. Objectives - To provide approximately 57,933 animal unit months (AUMs) of big game forage (the amount needed to meet Colorado Division of Wildlife big game population goals in 1988), to improve existing wildlife habitat conditions, and to increase wildlife species diversity.

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands.

The lands involved in this proposed action are part of the West Hardscrabble allotment. In 2002, the BLM Colorado River Valley Field Office conducted the Eagle River South Land Health Assessment which included the West Hardscrabble Allotment. The Land Health Assessment Report and Determination Document were signed on December 9, 2003.

The West Hardscrabble Allotment did not meet Standard 2 (for Upper Reach Alkali Creek and McHatten Creek) or Standard 4 (specific to sage grouse and *Penstemon harringtonii*). Although the allotment, overall, met Standards 1 and 3, some concerns were noted. Problems were generally related to extensive OHV use in the northwestern part of the allotment, old, decadent sagebrush stands with poor forb production and encroaching junipers, slow recovery of sagebrush in burned areas, and livestock grazing distribution.

This allotment historically supplied habitat for sage grouse, however, none have been observed there for many years.

Several large occurrences and numerous small occurrences of *P. harringtonii* were found on the West Hardscrabble Allotment. However, many of the occurrences showed impacts due to off-road vehicle activity and livestock grazing. Also juniper encroachment into much of the occupied habitat (sagebrush parks) poses a long-term threat to the continued survival and recruitment of this species.

The riparian area of McHatten Creek showed heavy livestock utilization and trampling damage. This apparently was a distribution problem since some portions of the allotment received only slight to light use. The upper reach of Alkali Creek had concerns related to lack of sufficient upland vegetative cover to protect the riparian zone from erosion and deposition during convective storm events. Wildfire suppression and low potential productivity of gypsum soils were considered the main causes.

The impact analysis must address whether the proposed action or any alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions for each of the five standards. These analyses are located in specific elements listed below:

AFFECTED ENVIRONMENT /ENVIRONMENTAL CONSEQUENCES / MITGATION MEASURES:

CRITICAL ELEMENTS

This section provides a description of the human and natural environmental resources that could be affected by the proposed action and no action alternative. In addition, the section presents comparative analyses of the direct and indirect consequences on the affected environment stemming from the implementation of the various actions.

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain critical environmental elements. Not all of the critical elements that require inclusion in this EA are present, or if they are present, may not be affected by the proposed action and alternative (Table 2). Only those mandatory critical elements that are present and affected are described in the following narrative.

In addition to the mandatory critical elements, there are additional resources that would be impacted by the proposed action and alternative. These are presented under Non-Critical Elements.

Table 2 - Critical Elements of the Human Environment

Critical Element	Present		Affected		Critical Element	Present		Affected	
	Yes	No	Yes	No		Yes	No	Yes	No
Air Quality	X			X	Prime or Unique Farmlands		X		X
ACECs		X		X	Threatened or Endangered Species*	X		X	
Cultural Resources	X			X	Wastes, Hazardous or Solid	X			X
Environmental Justice	X			X	Water Quality, Drinking and Ground	X			X
Floodplains		X		X	Wetlands and Riparian Zones*		X		X
Migratory Birds	X		X		Wild and Scenic Rivers		X		X

Invasive, Non-native Species	X		X		Wilderness		X		X
Native American Religious Concerns		X		X					

*Public Land Health Standard

AIR QUALITY

Affected Environment: The proposed action and "no action" area (Eagle County) have been described as attainment areas under CAAQS and NAAQS (Colorado Ambient Air Quality Standards and National Ambient Air Quality Standards). An attainment area is an area where ambient air pollution amounts are determined to be below NAAQS standards.

Environmental Consequences/Mitigation of the Proposed Action: The Proposed Action and "no action" alternative would have little or no impact on air quality.

Environmental Consequences of the No Action Alternative: The "no action" alternative would have little or no impact on air quality.

CULTURAL RESOURCES

Affected Environment: A Class III intensive cultural resource inventory (GSFO# 5410-7) was conducted within the proposed hydro-axe and drill seed treatment areas. A number of small linear and block Class III surveys (GSFO#668,784, 1149, 1153, 1191, 1203, 9481, 5403-2, 5405-6, 5408-2, and 14502-2) have also been conducted within the proposed project areas. Intensive block cultural surveys were not deemed necessary in areas proposed for hand cutting as these trees are considered to be less than 100 years old excluding the possibility of impacts to standing aboriginal structures or other cultural sites. Two historic properties were identified during the 5410-7 survey; however these sites will be avoided by all potential disturbances. As all historic properties eligible for listing on the National Register of Historic Places were avoided, consultation with the Colorado State Historic Preservation Office (SHPO) was not necessary a BLM decision of "**No Historic Properties Affected"** based upon the National Historic Preservation Act (16U.S.C 470f), the National SHPO/BLM Programmatic Agreement (1997), and the Colorado Protocol (1998) was made for the proposed action. If the treatment or the areas affected is changed, additional cultural resource survey may be necessary.

Environmental Consequences/Mitigation of the Proposed Action: The NRHP historic properties identified during the survey have been avoided. However, some unknown buried sites may be impacted by use of the roller chopper or aerator. Additionally, indirect long-term cumulative impacts from increased access and the potential for increased erosion due to the time the ground may be exposed and the time for the seeds to take may increase the potential for buried cultural manifestations being exposed and could lead to a range of impacts from illegal collection and excavation to vandalism. If the treatment or the areas affected is changed, additional cultural resource survey may be necessary. All brush mowing must be at least 6 inches above the current ground surface.

Mitigation for the Proposed Action: As follows:

- All brush mowing must be at least 6 inches above the current ground surface.

- All hand cutting is limited to trees with DBH of 6"or less.
- Education/Discovery Stipulation for cultural resource protection should be attached to the permit to conduct this project, informing personnel and the public that they have a responsibility to protect and report any cultural resources encountered on public land.
    - The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the Archaeological Resource Protection Act.
    - Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361). Non-compliance could result in fines up to $500,000 and imprisonment of up to six years or both.
- Additional areas or changes in the methodology to achieve the proposed effect may require additional archaeological inspection by a qualified archaeologist. These changes include but are not limited to roller chopper, aerator treatment, or other ground disturbing equipment.

Environmental Consequences of the No Action Alternative: Under this alternative vegetation would not be cut and no ground disturbance would occur. This would lessen the potential to expose buried cultural resources as well as lessen the potential for indirect effects from illicit collection or vandalism as well as reduce the cumulative impacts on cultural resources.

ENVIRONMENTAL JUSTICE

Affected Environment: Review of 2001 data from US Census Bureau indicates the median annual income of Garfield County averages $43,560 and is neither an impoverished or wealthy county. Median annual income of Eagle County averages $51,578 and is not impoverished but is considered a wealthy county. U.S. Census Bureau data from July, 2002 shows the minority population of Garfield and Eagle County comprises less than 3 % of the total population[1].

Table 3 – Income Data

Garfield County		Eagle County	
Median Household Income		Median Household Income	
Estimate	90% Confidence Interval	Estimate	90% Confidence Interval
$43,560	$40,491 to $46,613	$51,578	$47,958 to $55,177

[1] **Table CO-EST2002-ASRO-02-08-County Population Estimates by Race Alone and Hispanic or Latino Origin: July 1, 2002 Source: Population Division, U.S. Census Bureau Release Date: September 18, 2003 03**

Environmental Consequences/Mitigation of the Proposed Action: The proposed action is not expected to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations within the area.

Environmental Consequences of the No Action Alternative: The "no action" action is not expected to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations within the area.

FARMLANDS, PRIME AND UNIQUE

Affected Environment: The proposed action does not involve any prime or unique farmlands.

Environmental Consequences/Mitigation of the Proposed Action and No Action Alternative: N/A

FLOODPLAINS

Affected Environment: There are no floodplains in the area of interest.

Environmental Consequences/Mitigation of the Proposed Action and No Action Alternative: N/A

INVASIVE, NON-NATIVE SPECIES

Affected Environment: An assortment of noxious weeds have been documented in the vicinity of the proposed treatment area. The primary noxious weeds observed include: Russian knapweed houndstongue, musk thistle, and Canada thistle. The noxious weeds have been treated in the past, especially along the roads, but scattered infestations remain in the overall area. Other invasive, non-native species known to occur in the area include crested wheatgrass, Kentucky bluegrass, and smooth brome.

Environmental Consequences/Mitigation of the Proposed Action: Wind, water, vehicles, animals, and people transport weeds and other invasive species. Weeds generally germinate and become established in areas of surface disturbing activities such as vehicular traffic, some vegetative treatments, and big game and livestock grazing.

The use of a hydro-axe or brush mower to remove some of the decadent sagebrush, dense oakbrush and encroaching pinyon and juniper trees should result in minimal surface disturbance and therefore, minimal potential for expansion of noxious weeds in the area. If the roller chopper or aerator is used, the surface disturbance created by this equipment may increase the potential for noxious weeds to become established or expand in the area. Crested wheatgrass, smooth brome and Kentucky bluegrass are all long-lived, aggressive species that are likely to persist following the proposed treatment.

Mitigation for the Proposed Action: In order to minimize the potential for invasion or expansion of noxious weeds, areas where the roller chopper or aerator are used shall be seeded with a mixture of certified weed-seed free native grasses, and possibly, forbs and/or shrubs.

The project shall be monitored for the presence of noxious weeds at least once annually during the growing season for a minimum of three years or until noxious weeds are eliminated from the project area.

Environmental Consequences of the No Action Alternative: Under this alternative, no vegetation would be cut and no ground disturbance would occur. The potential for noxious weed expansion would be less than the proposed action. Crested wheatgrass, smooth brome and Kentucky bluegrass would likely persist even without any vegetation treatment. No mitigation would be required.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: The Ute Tribes claim this area as part of their ancestral homeland. At present, there are no areas of Native American concern within the proposed project and the surveys did not identify any either. The Ute Tribes have indicated that they do not want to be notified or consulted with if there are no identified areas of Native American concern within the proposed action.

Environmental Consequences/Mitigation of the Proposed Action: The Native American significant sites have been avoided. However, some unknown sites may be impacted if the treatment method or if the areas affected are changed. This would likely require additional survey. All brush mowing must be at least 6 inches above the current ground surface. Additionally, indirect long-term cumulative impacts from increased access and the potential for increased erosion due to the time the ground may be exposed and the time for the seeds to take may increase the potential for buried cultural manifestations being exposed and could lead to a range of impacts from illegal collection and excavation to vandalism.

Mitigation for the Proposed Action: Same as Cultural Resources.

Environmental Consequences of the No Action Alternative: Under this alternative, vegetation would not be cut and no ground disturbance would occur. This would lessen the potential to expose sensitive Native American resources as well as lessen the potential for indirect effects from illicit collection or vandalism, and cumulative impacts.

MIGRATORY BIRDS

Affected Environment: BLM Instruction Memorandum No. 2008-050 provides guidance toward meeting the Bureau of Land Management's (BLM) responsibilities under the Migratory Bird Treaty Act (MBTA) and the Executive Order (EO) 13186. The guidance directs Field Offices to promote the maintenance and improvement of habitat quantity and quality. To avoid, reduce or mitigate adverse impacts on the habitats of migratory bird species of conservation concern to the extent feasible, and in a manner consistent with regional or statewide bird conservation priorities.

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the U.S. Fish and Wildlife Service (USFWS) to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the

Endangered Species Act (ESA) of 1973." The "*BIRDS OF CONSERVATION CONCERN 2008"* (U.S. Fish and Wildlife Service 2008) is the most recent effort to carry out this mandate.

The MBTA prohibits the "take" of a protected species. Under the Act, the term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The USFWS interprets "harm" and "kill" to include loss of eggs or nestlings due to abandonment or reduced attentiveness by one or both adults as a result of disturbance by human activity, as well as physical destruction of an occupied nest.

The conservation concerns are the result of population declines - naturally or human-caused, small ranges or population sizes, threats to habitat, or other factors. Although there are general patterns that can be inferred, there is no single reason why any species is on the list. Habitat loss is believed to be the major reason for the declines of many species. When considering potential impacts to migratory birds, the impact on habitat are a major concern. This includes: 1) the degree of fragmentation or connectivity expected from the proposed project relative to before the proposed project; and 2) the fragmentation/connectivity within and between habitat types (e.g., within nesting habitat or between nesting and feeding habitats. Continued private land development, surface disturbing actions in key habitats (e.g. riparian areas) and the proliferation of roads, pipelines, powerlines and trails are local factors that reduce habitat quality and quantity for many species.

The Colorado River Valley Field Office (CRVFO) is within the Southern Rockies/Colorado Plateau Bird Conservation Region (BCR). The 2008 list of Birds of Conservation Concern include the following:

Table 4 - 2008 list of Birds of Conservation Concern within the CRVFO

Species	Habitat Description	Potential Occurrences in Project Area
Gunnison Sage-Grouse *(Centrocercus minimus)*	Sagebrush communities 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	Not Present
American Bittern *(Botaurus lentiginosus)*	Marshes and wetlands; ground nester. Summer resident.	Not Present
Bald Eagle *(Haliaeetus leucocephalus)*	Nests in forested rivers and lakes; winters in upland areas, often with rivers or lakes nearby. Generally winter resident, occasional breeding.	Present
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.	Unlikely
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.	Present
Peregrine Falcon *(Falco peregrines)*	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.	Possibly Present
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 . Spring/summer resident, breeding	Unlikely

Species	Habitat Description	Potential Occurrences in Project Area
Snowy Plover *(Charadrius alexandrinus nivosus/tenuirostris)*	Sparsely vegetated sand flats associated with pickleweed, greasewood, and saltgrass. Spring migrant, non-breeding. Spring migrant, non-breeding	Not Present
Mountain Plover *(Charadrius montanus)*	High plain, cultivated fields, desert scrublands, and sagebrush habitats, often in association with heavy grazing, sometimes in association with prairie dog colonies ; short vegetation.	Not Present
Long-billed Curlew *(Numenius americanus)*	Lakes and wetlands and adjacent grassland and shrub communities. Spring/ fall migrant, non-breeding.	Not Present
Yellow-billed Cuckoo *(Coccyzus americanus)*	Riparian, deciduous woodlands with dense undergrowth; nests in tall cottonwood ,mature willow riparian, moist thickets, orchards, abandoned pastures. Summer resident, breeding.	Not Present
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.	Not Present
Lewis's Woodpecker *(Melanerpes lewis)*	Open woodland, often logged or burned, including oak, coniferous forest (often ponderosa), riparian woodland, and orchards, less often in pinyon-juniper.	Possibly Present
Willow Flycatcher *(Empidonax traillii)*	Riparian and moist, shrubby areas; winters in shrubby openings with short vegetation. Summer resident, breeding.	Not Present
Gray Vireo *(Vireo vicinior)*	Open pinyon-juniper woodlands. Uncommon summer resident, breeding.	Unlikely
Pinyon Jay *(Gymnorhinus cyanocephalus)*	Pinyon-juniper woodland. Year-round resident, breeding.	Present
Juniper Titmouse *(Baeolophus ridgwayi)*	Pinyon-juniper woodlands, especially juniper; nests in tree cavities. Year-round resident, breeding.	Present
Veery *(Catharus fuscescens)*	Dense riparian thickets and hillside brush near streams. Uncommon spring/fall migrant in Eastern Colorado.	Not Present
Bendire's Thrasher *(Toxostoma bendirei)*	Desert, especially areas of tall vegetation, cholla cactus, creosote bush and yucca, and in juniper woodland Possible summer resident.	Present in Summer
Grace's Warbler *(Dendroica graciae)*	Breeds in ponderosa pine forests. Uncommon summer resident in southwest Colorado.	Not Present
Brewer's Sparrow *(Spizella breweri)*	Summer resident that primarily breeds in sagebrush-grass stands and shrublands. Migrant at low elevations.	Present in Summer
Grasshopper Sparrow *(Ammodramus savannarum)*	Open grasslands and cultivated fields. Spring migrant, non-breeding.	Not Present
Chestnut-collared Longspur *(Calcarius ornatus)*	Open grasslands and cultivated fields. Spring migrant, non-breeding.	Not Present
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.	Not Present
Brown-capped Rosy-Finch *(Leucosticte australis)*	Alpine meadows, cliffs, and talus and high-elevation parks and valleys. Summer residents, breeding.	Not Present
Cassin's Finch *(Carpodacus cassinii).*	Open montane coniferous forests; breeds/ nests in coniferous forests. Year-round resident, breeding.	Possibly Present

The CRVFO planning area provides both foraging and nesting habitat for a variety of migratory birds that summer, winter, or migrate through the area. The habitat diversity provided by the broad expanses of sagebrush, mixed mountain shrub, oakbrush, aspen, pinyon-juniper woodlands, other types of coniferous forests and riparian and wetland areas support many bird species. The Gray Vireo, Pinyon Jay, Juniper Titmouse, Lewis's Woodpecker and Grace's Warbler are characteristically found in pinyon/juniper woodlands and the Brewer's sparrow *(Spizella breweri*) is found within sagebrush habitats. Many species of raptors (red-tailed hawks, Cooper's hawks, kestrels and owls) not on the Fish & Wildlife Service's Birds of Conservation Concern list also could occur in the area. Raptor surveys have not been conducted in the area.

Bald eagle (*Haliaeetus leucocephalus*). Bald eagles are increasing in numbers throughout their range and were removed from the Federal threatened and endangered species list in 2007 however bald eagles are still protected under the Migratory Bird Treaty Act. Bald eagles are known to winter along portions of the Colorado, Eagle and Roaring Fork Rivers and its major tributaries. The project area is considered bald eagle winter range and winter foraging area (see map below). Wintering bald eagles are generally present from mid-November to mid-April. Large mature cottonwood trees along the rivers and their major tributaries are used as roosting and perching sites, and these waterways provide the main food sources of fish and waterfowl. Upland habitats adjacent to these waterways are used as scavenging areas primarily for winter killed animals. Major threats include habitat loss, human disturbance and illegal shooting.

Environmental Consequences/Mitigation of the Proposed Action: There is no land management practice or treatment that is going to benefit all birds. The proposed action is to create irregular-shaped units that vary in size and to the extent possible benefit a variety of migratory bird species that utilize sagebrush shrublands.

Sagebrush-dependent species. Nationally, grassland and shrubland birds have shown the most consistent population declines over the last thirty years of any group of birds (WIVC 2002). It is widely regarded that the extent of pinyon-juniper is increasing as sagebrush shrublands are being transformed by pinyon-juniper encroachment. This expansion has likely been facilitated by a combination of climatic changes, fire suppression and, in some areas, overgrazing by livestock and wildlife, which has removed the grassy understory that ordinarily would carry a fire. A loss of sagebrush habitats, both in amount and quality has been responsible for declines in sage grouse and Brewer's sparrow (Saab and Rich 1997). Pinyon-juniper removal would protect sagebrush habitats that still have a thriving community of native understory and sagebrush plants along with ensuring the maintenance of contiguous blocks of sagebrush habitat.

The mowing of sagebrush is intended to improve stand composition and structure over time. By limiting the area to be treated to approximately 30% (approximately 250 acres) of the project area, the short-term (<5 years) negative impacts (reduced shrub density and cover) would likely be minimal and long-term benefits would occur. Until such time as regeneration of younger plants occurs, nesting birds would temporarily be displaced to adjacent habitat. It is likely that treatments would also result in the temporary displacement of bird species due to noise associated with treatments and human presence. It is also possible that trampling of ground nesting birds and/or their eggs could occur, but intentional take of native birds is not anticipated (see mitigation).

Pinyon-juniper species. The management challenge is that pinyon-juniper woodlands also provide food for other bird species. Wildlife consume pinyon seeds and junipers produce berries that are conspicuously colored making them readily visible and accessible to wildlife. The guidebook "*Sharing the Land with Pinyon-Juniper Birds*" noted "One goal of a management strategy to maintain or enhance bird populations in pinyon-juniper should be to maintain or create a mosaic across the landscape, reflecting the natural range of pinyon-juniper stand shape, size, and structural stage. This mixture would, by necessity, include young stands and mature stands and everything in-between, but because mature stands offer unique biological benefits that take tens to hundreds of years to develop, and because most of the bird species of conservation concern rely on mature stands, the emphasis should be on retaining those stands whenever possible" (Gillihan 2006).

Across the landscape, pinyon-juniper woodlands are dominant at low elevations and many large blocks of pinyon-juniper woodlands will remain untreated. This project would only target the scattered, younger trees and would leave intact the older more mature trees. Some suitable perch trees will be eliminated, but this should have no impact to raptors in the area, due to the amount of suitable nesting and perching habitat adjacent to the project area.

Wintering bald eagles are generally widespread when present from mid-November to mid-April. The treatments will likely occur outside of this time period.

The Proposed Action has the potential to have a negative effect upon individual birds, eggs, young and/or the nesting habitat of ground nesting birds, due to trampling, however, there would be no noticeable impact to the population or to the species as a whole. To avoid the destruction of active migratory bird nests, eggs or young, mitigation is proposed

Mitigation for the Proposed Action: All activities resulting in the mechanical removal of vegetation and broad-scale use of pesticides would be subject to a condition of approval (COA) that would protect BCC habitat during the nesting season. The COA would apply to activities that would take place between May 15 and July 1 at this elevation. An exception may be granted if nesting surveys indicate no nesting BCC species within 10 meters of the area to be disturbed.

Environmental Consequences of the No Action Alternative: No vegetation treatments would occur under the No Action Alternative. The No Action alternative would leave the habitats in their current conditions, allowing them to change naturally over time. Succession would continue and the encroaching pinyon/juniper would eventually take over a large portion of the landscape, resulting in loss of an important sagebrush shrublands. Relative to the conditions that the proposed action is likely to create, current habitat conditions would exhibit a decreased production of sagebrush along with understory grasses and forbs. The No Action alternative could benefit pinyon-juniper woodland obligates (e.g. pinyon jay, black-throated gray warbler, and gray vireo) while negatively impacting sagebrush-dependent species (Brewer's Sparrow, Grasshopper Sparrow) that are precluded from these habitat conditions. Generally, migratory birds would find fewer habitat niches within existing conditions and, therefore, the No Action alternative would have a negative impact on these species.

SPECIAL STATUS SPECIES – TERRESTRIAL WILDLIFE (includes a finding on Standard 4)

Affected Environment for *Federally Listed, Proposed or Candidate Terrestrial Wildlife Species*

According to the latest species list from the U. S. Fish and Wildlife Service (U.S. Fish and Wildlife Service. 2008), the following Federally listed, proposed, or candidate terrestrial wildlife species may occur within or be impacted by actions occurring within the CRVFO (Table 1):

Table 5. Federally Listed, Proposed, or Candidate Terrestrial Wildlife Species by County

Terrestrial Wildlife Species	Habitat/Range	Eagle County	Garfield County	Mesa County	Pitkin County	Routt County
Black-footed Ferret (*Mustela nigripes*)	In Colorado habitat includes the eastern plains, the mountain parks and the western valleys. Specifically grasslands or shrublands that supported some species of prairie dog, the ferret's primary prey.	X				
Canada lynx (*Lynx Canadensis)*	Mesic forests of lodgepole pine, subalpine fir, Engelmann spruce, and quaking aspen in the upper montane and subalpine zones, generally between 8,000 and 12,000 feet in elevation.	X	X	X	X	X
Mexican spotted owl *(Strix occidentalis lucida)*	Mature montane forests, shady canyons, and steep canyons. The key components in montane forests are common to old-growth forests: uneven-age stands with high canopy closure and tree density, fallen logs and snags.	X	X		X	
Greater sage grouse (*Centrocercus urophasianus)*	Resident of relatively large, open sagebrush flats or rolling sagebrush hills. Uncommon and unlikely in this part of the GSFO or associated habitats	X				X
Yellow-billed cuckoo *(Coccyzus americanus)*	Mature riparian forests of cottonwoods and other large deciduous trees with a well-developed understory of tall riparian shrubs. Uncommon summer resident of Colorado.	X	X	X	X	X
Uncompahgre fritillary butterfly *(Boloria acrocnema)*	Patches of snow willow (*Salix spp.*) at high elevations.	X			X	

These species: their status, their distributions, habitat associations, and as appropriate their association to the project area is summarized below.

Black-footed Ferret (*Mustela nigripes*). Federally listed as endangered. Black-footed ferrets have ranged statewide but never have been abundant in Colorado. Their habitat included the eastern plains, the mountain parks and the western valleys – grasslands or shrub lands that supported some species of prairie dog, the ferret's primary prey. Little is known about their natural history. They mate in early spring and give birth to a litter of three or four mouse-sized pups after a seven-week gestation period. They are susceptible to distemper, predators like owls and coyotes, and vehicles. It is assumed that plowing for agriculture and programs to eradicate prairie dogs have driven the black-footed ferret to the verge of extinction. State and federal biologists have established two major black-footed ferret colonies: one at Coyote Basin (Colorado-Utah border west of Rangely) and another at the BLM's Wolf Creek Management Area southeast of Dinosaur National Monument (CDOW 2009) Because no known

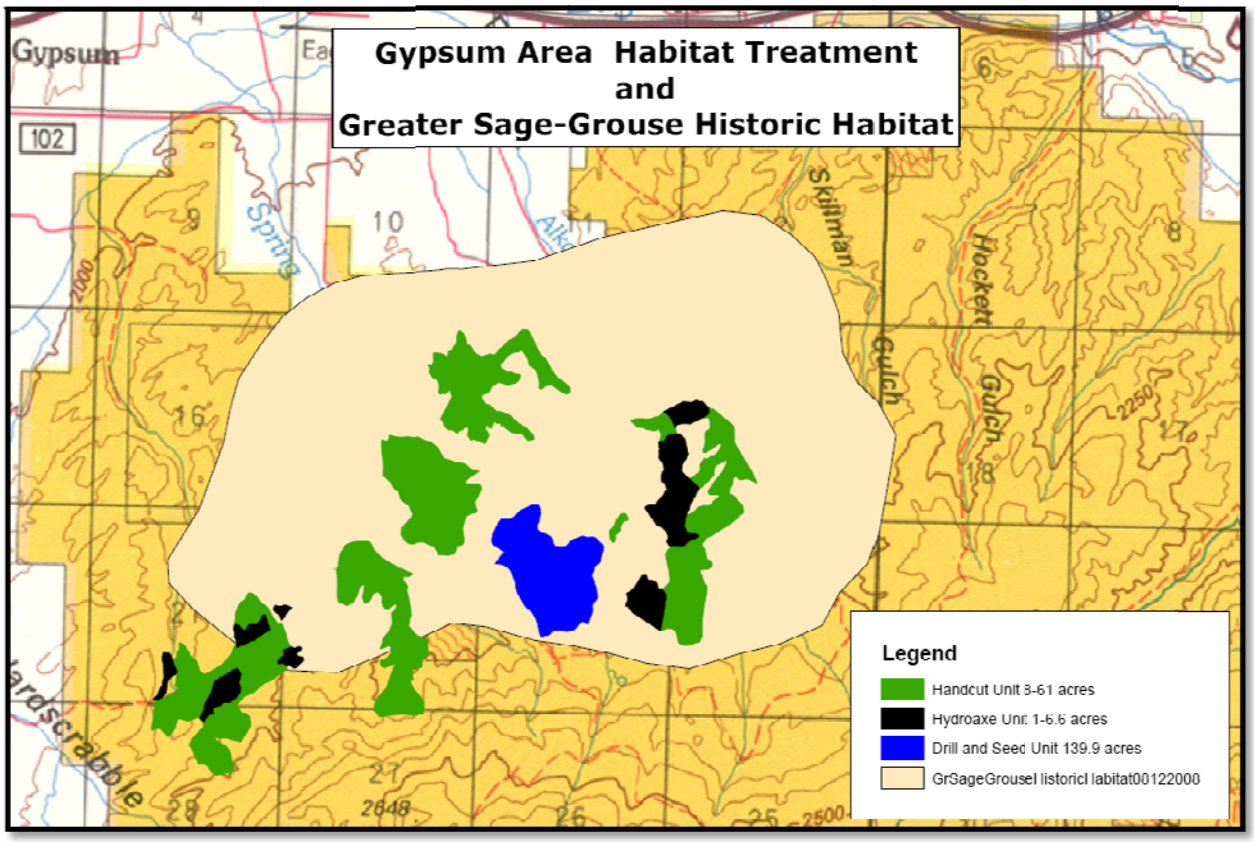
occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, this species is not considered further.

Canada Lynx (*Lynx canadensis*). Federally listed as threatened. Canada lynx (*Lynx canadensis*) was listed as a federally threatened species, effective April 24, 2000 (Federal Register Volume 65, No. 58). Canada lynx occupy high-latitude or high-elevation coniferous forests characterized by cold, snowy winters and an adequate prey base (Ruggiero et al. 1999). The preferred prey of Canada lynx throughout their range is the snowshoe hare (*Lepus americanus*). In the western United States, lynx are associated with mesic forests of lodgepole pine, subalpine fir, Engelmann spruce, and quaking aspen in the upper montane and subalpine zones, generally between 8,000 and 12,000 feet in elevation. Although snowshoe hares are the preferred prey in Colorado, lynx in also feed on other species such as the mountain cottontail (*Sylvilagus nuttallii*), pine squirrel (*Tamiasciurus hudsonicus*), and blue grouse (*Dendragapus obscurus*).

The U.S. Forest Service (USFS) has mapped suitable denning, winter, and other habitat for lynx within the White River National Forest (WRNF) and Routt National Forest (RNF). The mapped suitable habitat comprises several areas known as Lynx Analysis Units (LAUs). LAUs are management areas that contain suitable lynx habitat and approximate the size of a female home range. Several LAUs border BLM lands however no areas large enough to be considered LAUs occur within the CRVFO. BLM lands within the project area generally support the movement of lynx dispersing to a new area or, potentially, moving to lower elevations during severe winter weather in search of prey.

Greater sage grouse (*Centrocercus urophasianus).* The U.S. Fish and Wildlife Service announced in March 2010 that the greater sage-grouse be added to the Endangered Species Act "Candidate" list. Sage grouse, as the name implies, are found only in areas where sagebrush is abundant, providing both food and cover. Although these birds are found at elevations of 6000-8500 feet, they are not forest grouse and prefer relatively open sagebrush flats or rolling sagebrush hills. In winter, sagebrush accounts for 100% of the diet for these birds. In addition, it provides important escape cover and protection from the elements. In late winter, males begin to concentrate on traditional strutting grounds or leks. Females arrive at the leks 1-2 weeks later. Leks can occur on a variety of land types or formations (windswept ridges, knolls, areas of flat sagebrush, flat bare openings in the sagebrush. Breeding occurs on the leks and in the adjacent sagebrush, typically from March through May. Females and their chicks remain largely dependent on forbs and insects for food well into early fall. Cultivated herbaceous broad-leaved plants (alfalfa, clover) are important early fall food sources when available (CDOW 2009a).

The Northern Eagle/Southern Routt population, while small (<500 birds), probably has, or had, a relationship with the larger population in Moffat, Rio Blanco and western Routt counties, and probably with the Middle Park population to the east. Sage-grouse are still present in the Radium area between State Bridge and Kremmling (Northern Eagle/Southern Routt Greater Sage-Grouse Work Group 2004) and likely to occur in the Gypsum Hills area and the area north of Wolcott. This area is mapped as historic sage grouse habitat described as an area where viable populations have not occurred in five years or more (see map below).



Mexican Spotted Owl (*Strix occidentalis*). Federally listed as endangered. This owl nests, roosts, and hunts in mature coniferous forests in canyons and foothills. The only extant populations in Colorado are in the Pikes Peak and Wet Mountain areas of south-central Colorado and the Mesa Verde area of southwestern Colorado. Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, this species is not considered further.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*). Candidate for Federal listing. This secretive species occurs in mature riparian forests of cottonwoods and other large deciduous trees with a well-developed understory of tall riparian shrubs. Western cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods (*Populus fremontii*) and willows (*Salix* sp.). A few sightings of yellow-billed cuckoo have occurred in western Colorado along the Colorado River near Grand Junction (USFWS 2009b). Riparian areas in the project area do not provide suitable habitat for this species due to the patchy nature of the stands and the general lack of a tall-shrub understory. Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, this species is not considered further.

Uncompahgre fritillary butterfly *(Boloria acrocnema).* Federally listed as endangered. The butterfly has been verified at only two areas in the San Juan Mountains in Colorado. There is anecdotal evidence of other colonies in the San Juans and southern Sawatch ranges in Colorado. The butterfly exists above treeline in patches of its larval host plant, snow willow. The butterfly is most often found on north and east facing slopes, which provide a moist, cool, microclimate. The greatest known controllable threat is butterfly collecting. Climatological patterns, disease, parasitism, predation, and trampling of larvae by humans and livestock might pose additional threats. Because no known occurrences have been

documented and the occurrence of the species in this area is unlikely due to range, elevation and habitat conditions, this species is not considered further.

Affected Environment for *BLM Sensitive Terrestrial Wildlife Species:* According to the latest *Colorado BLM State Director's Sensitive Species List (Animals and Plants) June, 2000,* the following terrestrial wildlife species may occur within or be impacted by actions occurring within the GSFO (Table - BLM Sensitive - Terrestrial Wildlife Species):

Table 6 - BLM Sensitive Terrestrial Wildlife Species

Name	Habitat/Range	Habitat Potential Present / Absent
Townsend's big-eared bat (*Corynorhinus townsendii*) and Fringed myotis (*Myotis thysanodes)*	Occur as scattered populations at moderate elevations on the Western Slope, along the foothills of the Front Range and the mesas of southeastern Colorado. Maximum elevation is 7,500 feet. Breeds and roosts in caves, trees, mines, and buildings; hunts over pinyon-juniper, montane conifer, and semi-desert shrubland habitats. Known occurrences - Potential in caves, mines or trees	Present
Northern goshawk (*Accipter gentilis)*	Resident in foothills and mountains and occasional in migration and winter at lower elevations. Predominantly uses mature stands of aspen, and pines (ponderosa and lodgepole). Uncommon - seasonal	Absent
Goldeneye, Barrow's (*Bucephala islandica)*	Rare winter resident and spring/fall migrant in lowlands and mountains; a few breed in the northern mountains. Uncommon - seasonal	Absent
Ibis, white-faced (*Plegadis chihi)*	Inhabits wet meadows, marsh edges and reservoir shorelines. Very rare, non-breeding, summer migrant to western Colorado valleys and mountain lakes. Main breeding area is in the San Luis valley.	Absent

The following narrative addresses species with a habitat potential to be present in the project area. Species: a) with no known or documented occurrences or b) that are unlikely to be present in the project area due to range, elevation and habitat conditions, are not discussed in more detail in the affected environment portion of this analysis or carried forward into the environmental consequences portion of this analysis.

Fringed Myotis (*Myotis thysanodes*) and Townsend's Big-eared Bat (*Plecotus townsendii*). Occur as scattered populations at moderate elevations on the Western Slope of Colorado. Habitat associations are not well defined. Both of these bats will forage over water and along the edge of vegetation (pinyon-juniper woodlands, montane conifer woodlands, semi-desert shrublands) for aerial insects. Although they commonly roost in caves, rock crevices, mines, or buildings, they also may roost in tree cavities. Both species are widely distributed and usually occur in small groups. The animals roost in rock crevices, caves, mines, buildings and trees. Townsend's big-eared bat is not very abundant anywhere in its range and this is attributed to patchy distribution and limited availability of suitable roosting habitat (Gruver, J.C. and D.A. Keinath 2006).

Environmental Consequences/Mitigation of the Proposed Action for *Federally Listed, Proposed or Candidate Terrestrial Wildlife Species*:

Due to the absence of any occupied or suitable habitat, the proposed action would have "no effect" on Black-footed Ferret, Mexican spotted owl, Canada Lynx, Yellow-billed cuckoo, or the Uncompahgre fritillary butterfly.

Greater sage grouse (*Centrocercus urophasianus).* The existing sagebrush parks are comprised of mostly old aged plants with minimal understory and young pinyon/juniper trees are expanding into these openings, thus decreasing the habitat quality for sage grouse. The proposed action would mimic natural disturbances and improve the overall vigor and health of the sagebrush ecosystem. The proposed action would build on recent treatments in the area that removed PJ and improved sagebrush structural diversity. All habitat components for sage-grouse would improve as a result of the treatments. The reduction in cover would last until new sagebrush plants grow into the shrub canopy. Overall, the cumulative effects of the proposed project with past treatments would be greater protection of sagebrush communities, maintenance of travel corridors, and improvement of several thousand acres of sage-grouse habitat.

Environmental Consequences/Mitigation of the Proposed Action for *BLM Sensitive Terrestrial Wildlife Species.* Fringed Myotis and Townsend's Big-eared Bats. Distribution is likely to be locally determined by availability of roosts, such as caves, mines, tunnels, crevices and masonry structures with suitable temperatures. No bat roosts or hibernaculum have been documented within the area of the proposed action.

The greatest threats to Townsend's Big-eared Bat (and likely Fringed Myotis) are the: (a) loss/modification/disturbance of roosting habitat resulting from uninformed closure of abandoned mines, recreation and renewed mining at historical sites; (b) loss/modification/disturbance of foraging habitat resulting from elimination of vegetation, elimination or alteration of wetland habitat and conversion of native shrub and grasslands to urban or agricultural uses; and (c) exposure to environmental toxins (Gruver, J.C. and D.A. Keinath 2006). Foraging habitat for these species is not well known, but they appear to forage in a variety of habitat, including juniper woodlands and sagebrush steppe, and would not likely be impacted (habitat suitability or connectivity) by the proposed changes in vegetation.

Environmental Consequences of the No Action Alternative: The No Action alternative would leave the wildlife habitats in their current conditions, allowing them to change naturally over time. Succession would continue and the encroaching pinyon/juniper would eventually take over a large portion of the landscape, resulting in loss of an important sagebrush shrublands. Relative to the conditions that the proposed action is likely to create, current habitat conditions would exhibit a decreased production of sagebrush along with understory grasses and forbs.

Finding on the Public Land Health Standard 4 for Special Status Terrestrial Wildlife Species: A formal land health assessment was completed on this area in 2002. The proposed treatment area was meeting the Standard for Threatened, Endangered, and Sensitive species known to be present at the time of the assessment. This allotment historically supplied habitat for sage grouse, however, none have been observed here for many years. This is attributed largely to habitat fragmentation due to extensive roads and trails and development of adjacent private lands.
Problems were generally related to extensive OHV use in the northwestern part of the allotment, old, decadent sagebrush stands with poor forb production and encroaching junipers, slow recovery of

sagebrush in burned areas, and livestock grazing. The proposed action would improve sagebrush stands and improve local land health standards.

SPECIAL STATUS SPECIES – AQUATIC WILDLIFE (includes a finding on Standard 4)

Affected Environment.

Table 7 summarizes the latest: 1) species list (USFWS 2008) from the U. S. Fish and Wildlife Service for Federally listed, proposed, or candidate aquatic wildlife species and 2) Colorado BLM State Director's Sensitive Species List for aquatic species; that may occur within the CRVFO and be impacted by the proposed action.

Table 7 – Special Status Aquatic Wildlife Species

Federally Listed, Proposed or Candidate Aquatic Wildlife Species			
Species	Habitat/Range	Occurrence	Impacted by Proposed Action
Greenback cutthroat trout *(Oncorhynchus clarki stomias)*	Federally listed as threatened. The greenback is the subspecies of cutthroat trout native to the Platte River drainage on the Eastern Slope of Colorado, while the Colorado River cutthroat trout is the subspecies native to the Western Slope of Colorado. Historically found in cold, clear, gravely headwater streams and mountain lakes of the Arkansas and South Platte River systems in Colorado and part of Wyoming. The greenback cutthroat trout was not identified on the USFWS list for Garfield County; however, recent surveys have identified a population in Cache Creek.	Absent	No
Bonytail *(Gila elegans)*	Federally listed as endangered. This large chub is a member of the minnow family found in large, fast-flowing waterways of the Colorado River system. Their current distribution and habitat status are largely unknown due to its rapid decline prior to research into its natural history. The bonytail is extremely rare in Colorado and no self-sustaining population exists. Only one has been captured in the state since 1980.	Absent	No
Colorado pikeminnow (formerly Colorado squawfish) *(Ptychocheilus lucius)*	Federally listed as endangered. The Colorado pikeminnow exists primarily in the Green River below the confluence with the Yampa River, the lower Duchesne River in Utah, the Yampa River below Craig, Colo., the White River from Taylor Draw Dam near Rangely downstream to the confluence with the Green River, the Gunnison River in Colorado, and the Colorado River from Palisade, Colo., downstream to Lake Powell. Biologists believe Colorado pikeminnow populations in the upper Colorado River basin are now relatively stable and in some areas may even be growing. Designated Critical Habitat for the Colorado pikeminnow includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle.	Absent	No
Humpback chub *(Gila cypha)*	Federally listed as endangered. Found in deep, clear to turbid waters of large rivers and reservoirs over mud, sand or gravel. The nearest known habitat for the humpback chub is within the Colorado River approximately 70 miles downstream from the project area. Only one population of humpback chub, at Black Rocks west of Grand Junction, is known to exist in Colorado.	Absent	No

Federally Listed, Proposed or Candidate Aquatic Wildlife Species			
Razorback sucker *(Xyrauchen texanus)*	Federally listed as endangered. The razorback sucker was once widespread throughout most of the Colorado River Basin from Wyoming to Mexico. In the upper Colorado River Basin, they are now found only in the upper Green River in Utah, the lower Yampa River in Colorado and occasionally in the Colorado River near Grand Junction. Because so few of these fish remain in the wild, biologists have been actively raising them in hatcheries in Utah and Colorado and stocking them in the Colorado River. Designated Critical Habitat for the razorback sucker includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle.	Absent	No
Colorado BLM Sensitive Aquatic Species			
Species	Habitat/Range	Occurrence	Impacted by Proposed Action
Northern leopard frog (*Rana pipiens)*	Generally found between 3,500 to 11,000 feet, in wet meadows and in shallow lentic habitats. They require year-round water sources, deep enough to provide ice free refugia in the winter. Within the CRVFO, this species has been documented in locales where quality riparian vegetation exists in conjunction with perennial water sources. Larger populations of this species have been documented northwest of King Mountain within the small drainage that feeds King Mountain (Ligon) Reservoir, June Creek and East Divide Creek south of Silt, Colorado, and in portions of the Rifle Creek watershed north of Rifle, Colorado.	Absent	No
Bluehead sucker (*Catostomus discobolus*) , Flannelmouth sucker (*Catostomus latipinnis), and* Roundtail chub (*Gila robusta)*	Primarily found in larger rivers but may also be found in smaller tributaries with good connectivity to larger river systems. These fish are endemic to the Colorado River basin and reside within the mainstem Colorado River and its major tributary streams. Given their biology, feeding habits, habitat needs, and niche in the ecosystem, these species can persist in the face of actions that increase sediments to streams and rivers containing these species.	Absent	No
Mountain sucker (*Catostomus platyrhynchus*)	The mountain sucker is found primarily in small, low- mid elevation streams in northwestern Colorado with gravel, sand or mud bottoms. They inhabit undercut banks, eddies, small pools, and areas of moderate current. Young fish prefer backwaters and eddies. A population of mature adults is found in Steamboat Lake. Within the CRVFO, only known occurrence is in Piceance Creek.	Absent	No

Federally Listed, Proposed or Candidate Aquatic Wildlife Species			
Colorado River cutthroat trout (CRCT) (*Oncorhynchus clarkii pleuriticus)*	CRCT are one of three subspecies of native trout found in Colorado. CRCT prefer clear, cool headwaters streams with coarse substrates, well-distributed pools, stable streambanks, and abundant stream cover. CRCT have been documented as occurring in Parachute Creek, Abrams Creek, Battlement Creek, Mitchell Creek, North Thompson Creek and Red Dirt Creek. It is likely that all of the perennial waters capable of harboring fish historically contained this native trout species. CRCT have hybridized with non-native salmonids in many areas, reducing the genetic integrity of this subspecies. Rainbow trout hybridize with cutthroat trout. Brook and brown trout tend to replace them in streams and rivers.	Absent	No

Species: a) with no known or documented occurrences or b) that are unlikely to be present in the project area due to range, elevation and habitat conditions, are not discussed in more detail in the affected environment portion of this analysis or carried forward into the environmental consequences portion of this analysis.

Environmental Consequences/Mitigation of the Proposed Action and No Action Alternative: Neither the greenback cutthroat trout nor the four species of Federally listed big-river fishes are found within the area or the vicinity of the proposed action. Thus the proposed action and the no action alternative would have "No Effect" to this species or habitat. The Leopard Frog (*Rana pipiens*) is not found within the treatment area or the vicinity of the proposed action. Thus the proposed action and the no action alternative would have negligible negative impacts to this species or habitat.

Finding on the Public Land Health Standard 4 for Special Status Aquatic Wildlife Species: Either the proposed action nor the no action alternative would have an impact on the quantity or quality of suitable habitat is available for recovery of endemic and protected species.

SPECIAL STATUS SPECIES - PLANTS (includes a finding on Standard 4)

Affected Environment: According to the latest species list from the U. S. Fish and Wildlife Service (U.S. Fish and Wildlife Service. 2008), the following federally listed, proposed, or candidate threatened or endangered plant species may occur within or be impacted by actions occurring in Eagle County:

Table 8 - Federally Listed, Proposed and Candidate Plant Species in Eagle County

Name	Habitat	Habitat Potential Present / Absent
Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	Habitat for this threatened species is found below 6,500 feet along streams, lakes or in wetland areas with seasonally saturated or subirrigated soils.	**Absent**

Ute ladies'-tresses orchid. The proposed action does not include any riparian or wetland areas which may support the Ute ladies'-tresses orchid. There are no known occurrences or known suitable habitat for this plant species within or immediately adjacent to the proposed action area. This species will not be analyzed further.

BLM sensitive plant species with habitat and/or occurrence records in Eagle County are shown in the table below:

Table 9 - BLM Sensitive Plants Species with habitat or occurrences in Eagle County

Name	Habitat	Habitat Potential Present / Absent
Harrington's penstemon (Penstemon harringtonii)	Open sagebrush communities on rocky loam or rocky clay loam soils between the elevations of 6,200 to 10,000 feet.	**Absent**

Harrington's beardtongue (Harrington's penstemon). Harrington's penstemon is found in open sagebrush habitat on rocky loam or rocky clay loam soils between the elevations of 6,200 to 10,000 feet. The project area contains several known occurrences of this species. Most of the known occurrences are in the southwestern and northeastern portions of the project area within treatment units designated for handcutting and hydroaxing. Suitable habitat for Harrington's penstemon is found in the sagebrush communities throughout the project area. No Harrington's penstemon plants have been documented within the old burned area that is slated for drill seeding.

Environmental Consequences/Mitigation of the Proposed Action: Due to the absence of any occupied or suitable habitat for Ute ladies'-tresses orchid within or adjacent to the project area, the proposed action would have "No Effect" on this listed plant species.

Weed Spraying. Noxious weeds degrade habitat for Harrington's penstemon by competing with the native plants for water, space and nutrients. The weed spraying would eliminate or reduce noxious weeds in the project area which would improve habitat for Harrington's penstemon.

Hydroaxe. Harrington's penstemon plants may be crushed or damaged by the tires of the hydroaxe. Plants may be buried by the mulched trees. There will likely be some short-term loss of Harrington's penstemon due to the action of the hydroaxe in occupied habitat.

Encroaching pinyon pine and juniper trees reduce habitat quality for Harrington's penstemon by increasing competition for resources and by altering soil surface chemistry. Harrington's penstemon cannot compete well with pinyon pines and Utah juniper for sunlight, moisture and nutrients and therefore, does not grow in pinyon-juniper woodlands. In the long-term, removal of pinyon pine and Utah juniper trees from sagebrush communities may improve habitat for Harrington's penstemon by removing competition and creating openings for recruitment of young plants. Seeds of Harrington's penstemon plants may also be incorporated into the soil by the hydroaxe tires, thus improving germination of new seedlings.

Handcutting. In the areas identified for hand cutting, pinyon and juniper trees encroaching into sagebrush habitat would be cut and lopped with chainsaws which should result in minimal soil disturbance and therefore, should create negligible damage to any penstemon plants in the area. Some Harrington's penstemon plants may be buried by the downed trees. If trees are piled and burned, some penstemon plants may be destroyed by the fire. As discussed above for the hydroaxe treatment, the long-term benefit of maintaining suitable habitat for Harrington's penstemon by removing encroaching trees would offset the short-term adverse impacts.

Drill Seeding. No impacts to Harrington's penstemon should result from the drill seeding activities since no penstemon plants have been documented in the drill seeding area.

Environmental Consequences/Mitigation of the No Action Alternative: Under the no action alternative, no tree removal, sagebrush mowing or drill seeding would occur. No negative impacts or benefits to special status species would result. Habitat conditions for Harrington's penstemon would continue to slowly decline as the density and canopy cover of trees increases.

Mitigation for the Proposed Action: In occupied and suitable habitat for Harrington's penstemon, noxious weeds should be spot sprayed rather than boom sprayed to ensure that only the target weeds are treated. Spraying should take place during the time of year when penstemon plants are able to be identified and the herbicide applicator should be familiar with Harrington's penstemon species to be able to recognize and avoid spraying these plants.

Finding on the Public Land Health Standard 4 for Special Status Plant Species: At the time of the Land Health Assessment in 2002, several large occurrences and numerous small occurrences of Harrington's penstemon were found in the West Hardscrabble Allotment which encompasses the project area. Some of these occurrences showed impacts due to off-road vehicle activity and livestock grazing, particularly in the northern portions of the allotment where the OHV activity was concentrated. Pinyon pine and juniper encroachment into much of the occupied habitat (sagebrush parks) was also considered to pose a long-term threat to the continued survival and recruitment of this species. The Land Health Assessment determined that Standard 4 was not being met for Harrington's penstemon. The proposed action is not anticipated to cause any increase in OHV activity within occupied penstemon habitat and therefore should not contribute to any further declines in plant populations due to OHV activity. The proposed action may result in some losses of individual Harrington's penstemon plants in the short-term, but would remove the encroaching trees from a portion of the penstemon habitat which would improve habitat quality for this species in the long-term. Overall, the proposed action would result in a trend toward meeting Standard 4 for Special Status Plant Species.

WASTES, HAZARDOUS OR SOLID

Affected Environment: No hazardous or solid wastes are known to be present in the project area, and no hazardous materials are known to have been used, stored, or disposed onsite.

Environmental Consequences/Mitigation of the Proposed Action: Although not expected, there could be some accidental loss of fluids (fuels, oils, hydraulic fluid, grease and anti-freeze) from heavy equipment used to mechanically treat vegetation. Any loss of hazardous materials would be immediately reported to the BLM hazardous material coordinator for determination of and treatment as a hazardous material spill. The methods and type of clean up would be recommended by the hazardous material coordinator and resource specialist to the Field Manager. In most every situation involving hazardous materials, there are ways to remediate the area that has been contaminated.

Environmental Consequences of the No Action Alternative: N/A.

WATER QUALITY, SURFACE AND GROUND (includes an analysis on Standard 5)

Affected Environment: The proposed action is situated in the Spring Creek and Alkali Creek Watersheds. Spring Creek and Alkali Creek are part of the larger 6th field watershed defined as the "Eagle River above Gypsum". Both Spring Creek and Alkali Creek are seasonal in nature and within water quality stream segment 10a of the Eagle River Basin. Stream Segment 10a is defined as "All tributaries to the Eagle River, including all wetlands, from a point immediately below the confluence with Lake Creek to the confluence with the Colorado River, except for specific listings in Segments 10b, 11 and 12, and those waters included in Segment 1" (CDPHE-WQCC, 2010a). Spring Creek and Alkali Creek are both tributary to the Eagle River above Gypsum, CO. The Eagle River is a tributary to the Colorado River near Dotsero, Co.

Table 10 identifies stream classifications and water quality standards for Eagle River stream segment 10a as outlined in CDPHE, Regulation No. 33.

Table 10 - Stream classifications and water quality standards for Eagle River stream segment 10a.

	Numeric Standards					
Stream Segment and Classifications	Physical and Biological	Inorganic (mg/l)		Metals (µg/l)		
COUCEA10a Aq Life Cold 1 Recreation E Water Supply Agriculture	T=TVS(CS-I)oC D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 E.Coli=126/100ml	NH3(ac/ch)=TVS Cl2(ac)=0.019 Cl2(ch)=0.011 CN=0.005	S=0.002 B=0.75 NO2=0.05 NO3=10 Cl=250 SO4=WS	As(ac)=340 As(ch)=0.02(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS CrIII(ac)=50(Trec) CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)=WS(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS Mn(ch)=WS Mn(ac/ch)=TVS Hg(ch)=0.01(tot)	Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS

Table data from CDPHE, Regulation No. 33.

The CDPHE ―Integrated Water Quality Monitoring and Assessment Report-2010 update to the 2008 305(b) Report was reviewed to determine the current status of assessment and determination of water quality within the project area. The Colorado Integrated Reporting Category (IR) value assigned to the assessment unit in the ―Status of Water Quality in Colorado – 2010 document was IR=2. Segment 10a was fully supporting agriculture, water supply, and primary contact recreation. Selenium levels from unknown sources may be impacting the determination for aquatic life cold 1. However, insufficient information was available to make a determination on aquatic life cold 1 (CDPHE-WQCC. 2010c).

In Colorado, the majority of the assessed surface water bodies fall into IR Categories 1, 2, and 3. Colorado has elected to place segments where not all uses have been assessed in IR Category 2. In some cases, a complete assessment of all uses cannot be completed do to the lack of data, but the data that is available indicates that at least some of the uses that were assessed are fully supporting. IR Category 5 indicates that available data and/or information indicate that at least one classified use is not being supported or is threatened, and a TMDL is needed. Segments must be placed in Category 5 when, based on existing and readily available data and/or information, technology-based effluent

limitations required by the Clean Water Act (CWA), more stringent effluent limitations, and other pollution control requirements are not sufficient to implement an applicable water quality standard and a TMDL is needed. This category constitutes the Section 303(d) list of waters impaired by a pollutant (CDPHE-WQCC. 2010b).

The 2010 CDPHE-WQCC Regulation No. 93 Section 303d List of Impaired Waters and Monitoring and Evaluation List, was reviewed to determine if Eagle River stream segment 10a was listed. Eagle River stream segment 10a was not identified in Regulation No. 93 (CDPHE-WQCC. 2010b).

A review of the Colorado River Valley Spring database indicated no springs are located within the proposed treatment polygons. Likewise, water rights will be unaffected by the proposed action.

Groundwater within the project area occurs primarily in conjunction with stream alluvial/colluvial deposits. Because the proposed action is situated entirely within upland settings, groundwater will not be affected.

Environmental Consequences/Mitigation of the Proposed Action: Over the short-term, increased soil erosion would occur due to the reduced plant cover and soil exposure, potentially contributing sediment to nearby drainages and downstream. The use of heavy machinery could also increase the potential for fuel, lubricants, and other anthropogenic chemicals to enter surface drainages and groundwater, thereby degrading water quality. In the long term, the project area would show an increase in plant litter and a more diverse native shrub, forb, and grass community that is better able to protect soils and support desirable wildlife and livestock.

No adverse impacts to groundwater resources are anticipated with implementation of the proposed action.

Mitigation for the Proposed Action: Surface disturbance should not occur when soils are saturated

Environmental Consequences of the No Action Alternative: Under this alternative no vegetation treatments would occur. Surface water quality would likely persist as is under current conditions. No mitigation would be required.

Finding on the Public Land Health Standard 5 for water quality: Stream segment 10a of the Eagle River currently meets water quality standards set by the State and is not listed in CDPHW-WQCC Regulation No. 93. The implementation of the proposed action or “no action” alternative would not alter this finding.

WILD AND SCENIC RIVERS

Affected Environment: There are no designated Wild and Scenic Rivers within the proposed project area and thus are not discussed further in this analysis.

Environmental Consequences/Mitigation of the Proposed Action: N/A

Environmental Consequences of the No Action Alternative: N/A

WILDERNESS

Affected Environment: There are no designated wilderness areas, wilderness study areas or citizens proposed wilderness areas within the proposed project area and thus are not discussed further in this analysis.

Environmental Consequences/Mitigation of the Proposed Action: N/A

Environmental Consequences of the No Action Alternative: N/A

NON-CRITICAL ELEMENTS

In addition to the critical elements (Table 1), other resources and resource uses that would be affected by the proposed action and no action alternative are discussed below.

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Table 10. Other Resources Considered in the Analysis.

Resource	*NA or Not Present*	*Present and Not Affected*	*Present and Affected*
Access and Transportation		X	
Cadastral Survey	X		
Fire/Fuels Management			X
Forest Management	X		
Geology and Minerals	X		
Law Enforcement	X		
Paleontology	X		
Noise	X		
Range Management			X
Realty Authorizations		X	
Recreation		X	
Socio-Economics	X		
Soils*			X
Vegetation*			X
Visual Resources		X	
Wildlife, Aquatic*			X
Wildlife, Terrestrial*			X

*Public Land Health Standard

FIRE/FUELS MANAGEMENT:

Affected Environment: The project is located in the Eagle Valley Management Unit (B-140-05). "B" Units are those where unplanned wildfire is not desired because of potentially negative impacts to the environment or property. The Fire Management Plan identified FMU B-140- 05 (Eagle Valley) as "high" for needing prescriptive vegetation treatments.

Environmental Consequences/Mitigation of the Proposed Action: Implementation of the proposed action would lower the risk of a large-scale, high severity wildland fire event occurring in the project area. The treatments would create defensible fuel breaks from a suppression strategy. The removal and thinning of the vegetation will reduce the fuel continuity and arrangement, giving firefighters an opportunity to directly engage in safe suppression activities.

Environmental Consequences of the No Action Alternative: The risk for catastrophic wildland fire on human safety and private property would not be reduced. Accumulations of hazardous fuels in the project area, in combination with other hazardous fuels on adjacent BLM-administered and private lands, would increasingly threaten resource values, private property values, and human safety over time.

SOILS (includes a finding on Standard 1)

Affected Environment: The proposed and "no action" areas cross sixteen individual soil map units. These units are grouped into three general soils identified in the General Soils Map in the appendix of the Soil Survey of Aspen-Gypsum Area, Colorado, Parts of Eagle, Garfield, and Pitkin Counties (NRCS 1992). Forty eight percent of the project area soils are classified as having severe erosion ratings with 29% being moderate and 23% being slight.

- Forelle-Yamo-Almy soils are gently sloping to steep, well-drained, deep soils typically found on fans, benches, toes slopes and mountains.

- Gypsum Land Gypsiorthids are soils that are described as moderately steep to very steep, well drained, shallow and moderately deep found on eroded hills, mountainsides and breaks.

- Callings-Yeljack soils are described as moderately step to very steep soils. These soils are well-drained, deep soils typically located on ridge-tops, mountainsides, and benches.

Environmental Consequences/Mitigation of the Proposed Action: The implementation of the proposed action would disturb soils and vegetation, potentially increasing erosion in the area given that nearly half of the treatment area is prone to severe erosion. Seeding of the disturbed area, as outlined in the proposed action should help stabilize soils and prevent undue erosion. Implementation of the proposed action should take place when soils are not saturated and during low flow conditions as described in the proposed action (June through November). This would help mitigate the amount of sediment transported in the watershed. The following mitigation is mandatory in order to help prevent erosion in the project area.

Mitigation for the Proposed Action: Implementation of the proposed action shall not take place when soils are saturated.

Environmental Consequences of the No Action Alternative: Soil erosion would not likely increase under this alternative and soil conditions would persist under present conditions. No mitigation would be required or recommended.

Finding on the Public Land Health Standard 1 for upland soils: The proposed action would not likely prevent land health standards from being met provided that mitigation outlined in this document is implemented.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Vegetation in the project area includes big sagebrush shrublands, xeric mountain shrubs, oakbrush, and some pinyon-juniper woodlands. The middle portion of the project area, which was primarily Wyoming big sagebrush, mixed mountain shrubs and pinyon-juniper stands, burned in the late 1980's. Grasses, such as crested wheatgrass, western wheatgrass and smooth brome, dominate the post-fire vegetative community. A few forb species, such as mat penstemon and fleabane, and shrubs such as snowberry and rubber rabbitbrush, have also regenerated well, but sagebrush, and native grasses other than western wheatgrass, have been slow to recover. Cheatgrass was scattered throughout the burned area, particularly around the base of burned trees or in rockier sites.

Some of the unburned sagebrush communities have decadent or dense sagebrush and an understory that is lacking in diversity and cover of perennial grasses and forbs. Bare ground is higher than expected for these range sites. Encroachment of pinyon-juniper trees is at an intermediate to advanced stage in many sagebrush communities, leading to decreased ground cover and increased erosion.

Environmental Consequences/Mitigation of the Proposed Action: *Pinyon-Juniper removal by handcutting or hydroaxe.* The proposed action would result in removing pinyon pine and juniper trees that have encroached into sagebrush/mixed mountain shrublands in the project area. The encroaching trees have suppressed grass and forb growth in the immediate vicinity. The removal of competition from the encroaching trees should promote the growth of herbaceous vegetation in the area. The proposed action would result in a change in vegetation structure and species composition. Tree cover would be reduced and cover and composition of grasses and forbs is expected to increase. In the long-term, vegetative canopy and ground cover should remain the same or increase following treatment.

In the areas identified for hand cutting, pinyon and juniper trees encroaching into sagebrush habitat would be cut and lopped with chainsaws which should result in minimal soil disturbance and therefore, should create negligible damage to any non-target plants in the area. Some plants may be buried by the downed trees. If trees are piled and burned, some plants may be destroyed by the fire.

The tires of the hydroaxe may cause some short-term damage to or loss of grasses, forbs or shrubs as the equipment maneuvers through the treatment area. Surface disturbance associated with the equipment tires may create bare ground that provides a niche for the invasion of noxious weeds or other undesirable species. If the hydroaxe treatment area is seeded with desirable species prior to hydroaxing, seeds may also be incorporated into the soil by the hydroaxe tires, thus improving germination of new seedlings.

Sagebrush Mowing or Roller-chopping. The mowing of sagebrush is intended to: 1) reduce the density of shrubs thereby allowing more herbaceous cover to become established, 2) improve the age-class diversity of shrubs by promoting germination of new sagebrush seedlings, and 3) enhance the vigor and growth of existing sagebrush plants by removing portions of the canopy without killing the entire plant.

The treatment would reduce the density and cover of sagebrush, but should stimulate germination and growth of young sagebrush plants as well as herbaceous species. The project would also eliminate most of the encroaching pinyon and juniper trees in the project area.

Minor surface disturbance is expected to occur with the mowing equipment. If a roller chopper or aerator is used, the surface disturbance created by this equipment may result in higher mortality of sagebrush and a loss of some understory species that are uprooted during treatment. The surface disturbance would also increase the potential for noxious weed invasions. Any areas proposed for roller-chopping should be seeded with a mixture of native grasses and forbs and/or shrubs adapted to the site prior to treatment.

Drill Seeding. Approximately 120 acres would be seeded with a rangeland drill followed by firming the soil with a cultipacker or similar device. The objective of the seeding is to improve the cover and diversity of native grasses, forbs and shrubs in the old burned area. Seeding should occur in the late summer-late fall so that seed will be in the ground prior to winter snows to provide adequate moisture and cold stratification for seedling germination and establishment.

The following seed mix is recommended for the Burned Area:

Common Name	Variety	Application Rate	% of mix
Bluebunch wheatgrass	Anatone, Goldar	3.0	20
Bottlebrush squirreltail	VNS	2.3	20
Muttongrass	VNS	0.5	20
Utah sweetvetch	VNS	2.7	10
Scarlet globemallow	VNS	0.4	10
Antelope bitterbrush	VNS	7.0	5
Wyoming big sagebrush	VNS	0.3	15
		16.2	100

Seed will be certified free of weed-seeds. Seed substitutions may be approved by the Authorized Officer if the any of the above species are not available or are cost-prohibitive. Species substitutions should be native species locally adapted to the site.

The succulent new growth in the project area (particularly the grasses and forbs newly germinating from seed) would attract livestock to the area which would create grazing pressure on the new growth. The new growth, which does not have adequate root masses, may be uprooted by grazing. New growth which does not have adequate root reserves may also decline in vigor or experience mortality following grazing.

Mitigation for the Proposed Action: To provide adequate opportunity for the seeded vegetation to establish prior to livestock grazing the seeded area (139 acres) or portions of the seeded area may be excluded (e.g. electrical fence) from livestock grazing for the first two growing seasons or until seeded species become firmly established (i.e. when at least 50 percent of the new plants are producing seed).

Environmental Consequences of the No Action Alternative: Under this alternative, no vegetation would be cut and no ground disturbance would occur. In the absence of fire, disease or other disturbance, sagebrush communities may increase in density and cover which would cause a further reduction in herbaceous species due to competition. Pinyon-juniper encroachment would continue and sagebrush plants may eventually die due to competition with the trees for light and nutrients.

Finding on the Public Land Health Standard 3 for plant communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): A formal Land Health Assessment was completed for the area in 2002. The general area was found to be meeting Standard 3 for healthy plant and animal communities but with certain issues noted. These issues were related primarily to sagebrush communities that were decadent or dense with shrubs and with fewer grasses and forbs than expected. Encroachment of pinyon-juniper trees into sagebrush shrublands was also causing a downward trend in land health conditions. The proposed action would change the composition of the vegetative community by removing trees and temporarily reducing the canopy cover of sagebrush but would maintain or increase overall canopy and ground cover as understory vegetation becomes established in the area formerly occupied by trees. The action would result in maintaining the land health standard.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: *Fish.* Fisheries potential is limited for all waters. No fish bearing streams are known, likely due to low seasonal flows and heavy sedimentation caused by flashy runoff and local geologic conditions. Because no known occurrences have been documented and the occurrence of the species in this area is unlikely due to range and habitat conditions, fisheries is not considered further.

Amphibians. Several amphibians of interest are found within the GSFO, the Boreal Toad *(Bufo boreas boreas)* and the Great Basin spadefoot toad (*Spea intermontana).* The distribution of the boreal toad is restricted to areas with suitable breeding habitat in spruce-fir forests and alpine meadows generally between 7,500 and 12,000 feet elevation. Breeding habitat includes lakes, marshes, ponds, and bogs with sunny exposures and quiet shallow water. Great Basin spadefoot toads occupy arid grasslands and high sagebrush, desert shrub, and pinion-juniper woodlands. Great Basin spadefoot toad has been documented in the western third of the field office from the town of Rifle west to the boundary with the CRVFO. This represents the eastern extent (fringe) of the species overall range and populations are believed to be small and sporadic.

Environmental Consequences/Mitigation of the Proposed Action: The proposed vegetative treatments are planned to occur on upland habitats adjacent to perennial and ephemeral drainages so the project is not directly impacting riparian or wetland habitat. Due to the lack of surface-disturbing activities, the proposed action would have un-measurable indirect impacts on downstream fish or amphibians.

Environmental Consequences of the No Action Alternative: Under the no action alternative, no upland vegetative treatments to improve big game habitat would be completed. Pinyon-juniper woodlands would continue to expand and reduce important sagebrush grassland communities. Understory diversity and productivity would be reduced over time increasing the potential for increased erosion and offsite sedimentation to nearby streams.

Finding on the Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial): A formal Land Health Assessment was completed for the area in 2002. The general area was found to be meeting Standard 3 for healthy plant and animal communities but with certain issues noted. These issues were related primarily to sagebrush communities that were decadent or dense with shrubs and with fewer grasses and forbs than expected. Encroachment of pinyon-juniper trees into sagebrush shrublands was also causing a downward trend in land health conditions. The proposed action would change the composition of the vegetative community by removing trees and temporarily reducing the canopy cover of sagebrush but would maintain or increase overall canopy and ground cover as understory vegetation becomes established in the area formerly occupied by trees. The action would result in maintaining the land health standard.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area is comprised of a variety of different habitat types. Dominant vegetation consists of pinyon-juniper woodlands, sagebrush stands and oakbrush. These communities typically provide habitat for big game species as well as small mammals, reptiles and birds. The project area provides important winter habitat for mule deer and elk.

The current condition of wildlife habitats varies across the landscape. Some habitat is altered by power lines, pipelines, fences, public recreation use, residential and commercial development, vegetative treatments, livestock and wild ungulate grazing, oil and gas development, and roads/trails. These factors have contributed to some degradation/fragmentation of habitat as well as causing disturbance to some species.

Reptiles. Reptile species most likely to occur include the western fence lizard (*Sceloporus undulatus*) and gopher snake (bullsnake) (*Pituophis catenifer*) in xeric shrublands or grassy clearings and the western terrestrial garter snake (*Thamnophis elegans*) along creeks. Other reptiles potentially present along creeks, although more commonly found at lower elevations than the site, are the milk snake (*Lampropeltis triangulum*) and smooth green snake (*Opheodrys vernalis*).

Birds. Passerine (perching) birds commonly found in the area include the: American robin (*Turdus migratorius*), Pinyon jay (Gymnorhinus cyanocephalus) western scrub-jay (*Aphelocoma californica*), and black-billed magpie (Pica pica). Two gallinaceous species, the wild turkey (*Meleagris gallopavo*) and the Dusky grouse (*Dendragapus obscures*), are found here.

Birds of prey (eagles, falcons, hawks, and owls) may migrate through the area or nest in cottonwoods, conifers, or very tall oaks, while the numerous songbirds and small mammal populations provide the

primary prey base. Common raptor species in the area include the: red-tailed hawk (Buteo jamaicenis), golden eagle (Aquila chrysaetos) American kestrel *(Falco sparverius)*, great horned owl *(Bubo virginanus)*, Cooper's hawk *(Accipiter cooperii)*, and sharp-shinned hawk *(A. striatus)*.

Numerous streams, rivers, reservoirs, ponds, and associated riparian vegetation provide habitat for a wide variety of waterfowl and shorebirds. Common species include: great blue herons (*Ardea Herodias*), Canada geese *(Branta canadensis)*, mallards *(Anas platyrhynchos)*, pintails *(A. acuta)*, gadwalls *(A. strepera)*, and American wigeon *(A. americana)* are common.

Mammals. Numerous small mammals reside within the planning area, including ground squirrels *(Spermophilus* spp.*)*, chipmunks (*Neotamias* spp.), rabbits *(Sylvilagus* spp.), skunks *(Mephitis mephitis)*, and raccoons *(Procyon lotor)*. Many of these small mammals provide the main prey for raptors and larger carnivores. These species are most likely to occur along the drainages, near the margins of dense oakbrush, in pinyon-juniper woodland, or in the small area of aspen and spruce/fir. Larger carnivores expected to occur include the bobcat (*Lynx rufus*) and the coyote (*Canis latrans*). Black bears (*Ursus americanus*) make use of oaks and the associated chokecherries and serviceberries for cover and food, while mountain lions (*Felis concolor*) are likely to occur during seasons when mule deer (*Odocoileus hemionus*) are present.

Big Game. The mule deer *(Odocoileus hemionus)* is a recreationally important species that are common throughout suitable habitats in the region. Another recreationally important big game ungulate (hoofed animal), the Rocky Mountain elk *(Cervus elaphus nelsonii)*, is also present. Mule deer and elk usually occupy higher elevations, forested habitat, during the summer and then migrate to sagebrush-dominant ridges and south-facing slopes at lower elevation in the winter.

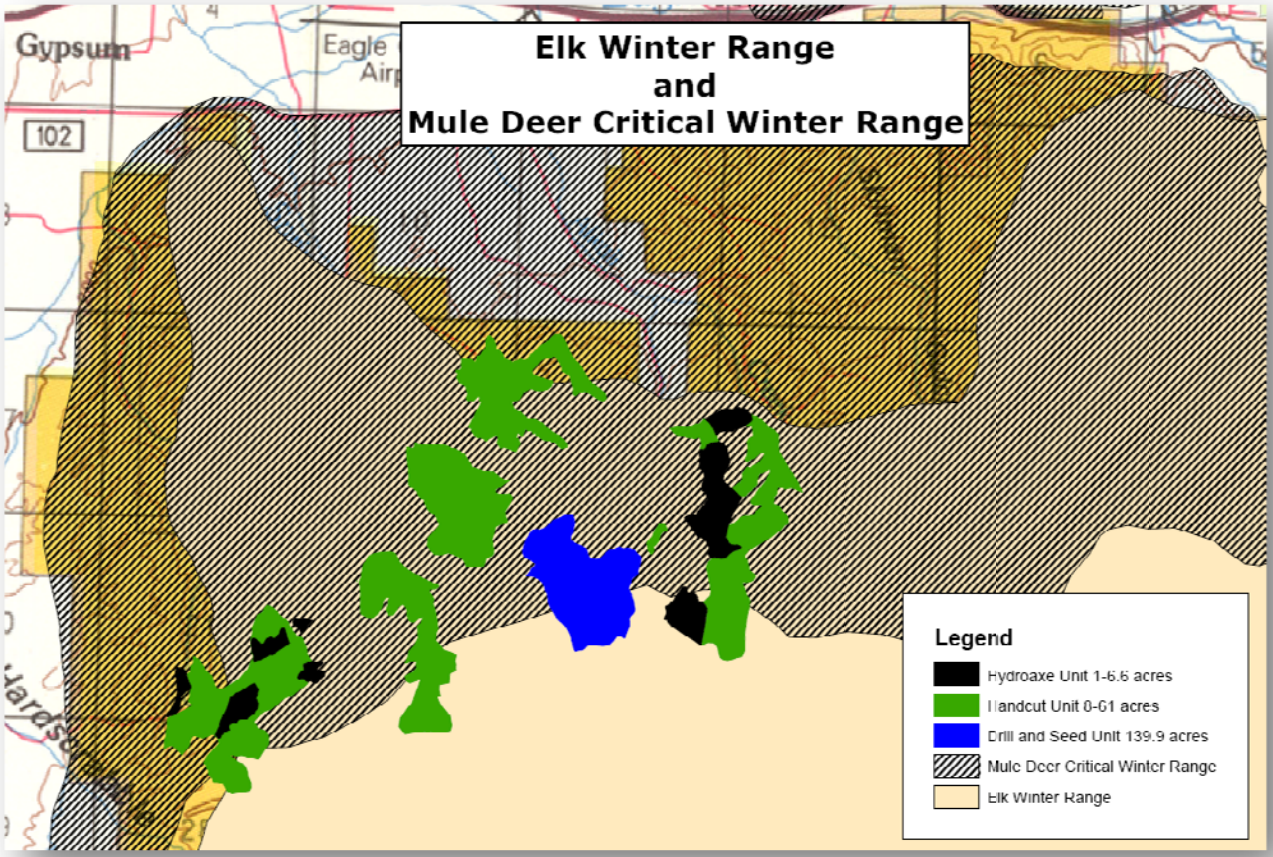
Environmental Consequences/Mitigation of the Proposed Action: *Reptiles.* The proposed action would continue to maintain adequate habitat conditions (suitability and connectivity) to ensure reptiles are maintained at viable population levels commensurate with the species and habitat's potential.

Birds and Mammals. The proposed treatments can have positive effects on bird and mammal species including: (a) improvement of sagebrush forage availability and quality; (b) the creation of patchy habitat with high structural diversity for feeding, nesting and hiding; (c) opening up areas of dense vegetation to improve foraging areas for a variety of wildlife; and (d) improving nutritional quality of browse by stimulating plant regrowth. Openings created would be beneficial to wildlife in providing an edge effect. For example, Severson (1986) found total rodent numbers were significantly greater (> 0.05) on treated areas compared to untreated PJ woodlands but individual species and groups responded differently.

Big Game. The treatment area is CDOW mapped mule deer critical winter range. This dataset was created by combining Deer DAUs, mule deer winter concentration areas, and "high density" mule deer severe winter range data.

The southeast 1/3 of the allotment is severe elk winter range is that part of the overall range of elk where 90% of the individuals are located when the annual snowpack is at its maximum and/or

temperatures are at a minimum in the two worst winters out of ten. The winter of 1983-1984 is a good example of a severe winter.



Although mature PJ woodlands provide high quality thermal and escape cover for mule deer, the expansion of these woodlands into surrounding grass and sagebrush parks leads to decreased understory diversity and productivity resulting in less winter forage for big game. The proposed action will promote the growth of grasses, forbs and shrubs on big game winter ranges that are more conducive to big game. Vigor and production of forage plants can be increased to benefit big game. Openings created would be beneficial to wildlife in providing an edge effect (Jensen 1972). The small treatment area will increase the usefulness of the treatments for both deer and elk.

Environmental Consequences of the No Action Alternative: The No Action alternative would leave the wildlife habitats in their current conditions, allowing them to change naturally over time. Succession would continue and the encroaching pinyon/juniper would eventually take over a large portion of the landscape, resulting in loss of an important sagebrush shrublands. Relative to the conditions that the proposed action is likely to create, current habitat conditions would exhibit a decreased production of sagebrush along with understory grasses and forbs.

Crucial deer and elk winter range habitat would not be improved. The pinyon/juniper woodland and its continued expansion, along with the tall, decadent big sagebrush would dominate and continue to

out-compete existing desirable grasses and forbs. There would be an over abundance of heavy, thermal cover. Big game forage production would remain the same or even decrease.

Finding on the Public Land Health Standard 3 for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial): A formal Land Health Assessment was completed for the area in 2002. The general area was found to be meeting Standard 3 for healthy plant and animal communities but with certain issues noted. These issues were related primarily to sagebrush communities that were decadent or dense with shrubs and with fewer grasses and forbs than expected. Encroachment of pinyon-juniper trees into sagebrush shrublands was also causing a downward trend in land health conditions. The proposed action would change the composition of the vegetative community by removing trees and temporarily reducing the canopy cover of sagebrush but would maintain or increase overall canopy and ground cover as understory vegetation becomes established in the area formerly occupied by trees. The action would result in maintaining the land health standard.

RANGE MANAGEMENT

Affected Environment: The proposed project is located in the West Hardscrabble Allotment. There are three grazing permittees authorized on these allotments. Permitted grazing use is as follows:

Allotment Name & No.	Livestock No./Kind	Period of Use	% PL	AUMS
West Hardscrabble 08504	623 Cattle	05/16 – 06/30	100	942
	30 Cattle	10/16 – 10/31	100	15

Environmental Consequences/Mitigation of the Proposed Action: The proposed treatments may result in some increase of the production of perennial grasses and forbs due to reduced competition with woody species and noxious weeds. As a result, the quality and quantity of livestock forage livestock may increase slightly. The area proposed for drill seeding (139 acres) may be excluded from livestock grazing for the first two growing seasons or until seeded species become firmly established. Grazing exclusion would result in a short-term loss of forage in the area proposed for drill seeding.

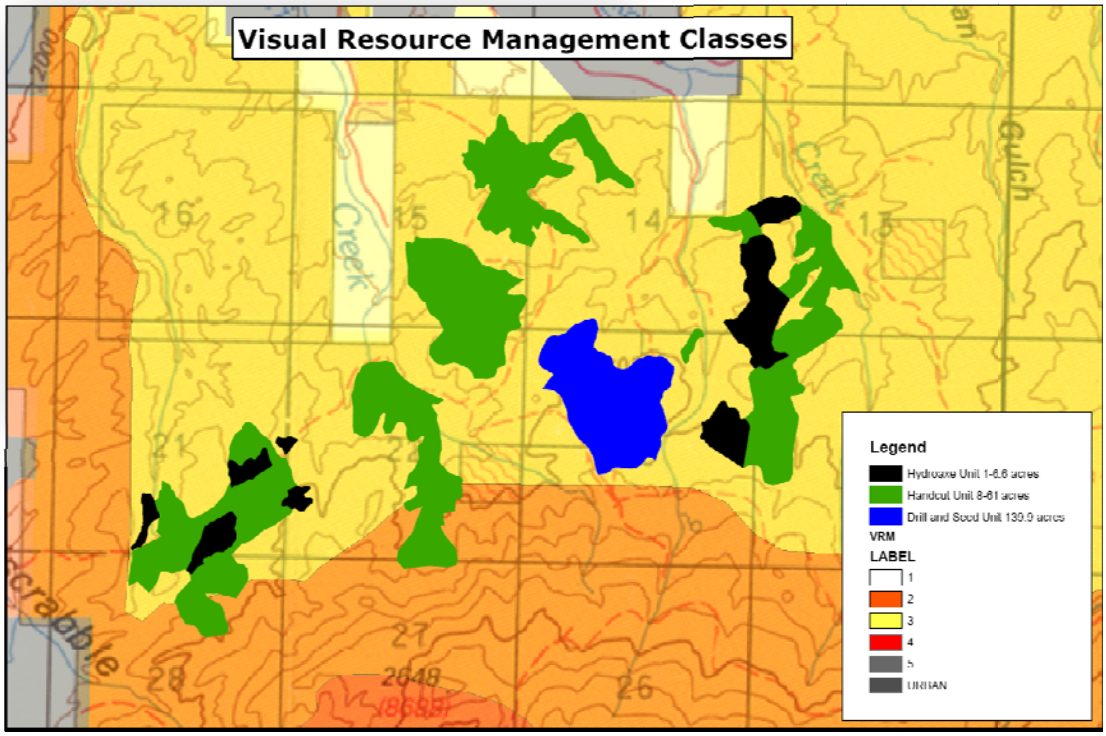
Environmental Consequences of the No Action Alternative: Improved quality and quantity of livestock forage would not result. There would be no requirements for grazing rest; consequently, there would be no temporary loss of livestock forage AUMs.

VISUAL RESOURCE MANAGEMENT:

Affected Environment: The proposed project area is located in an area classified as VRM Class III in the GSRA 1984 Resource Management Plan. The objective of Class III's is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual

observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Environmental Consequences/Mitigation of the Proposed Action: The proposed action incorporates design features to maintain a natural appearing landscape. Both mechanical and hand treatment would avoid clearing vegetation in a linear corridors or straight lines. The mosaic patterns would repeat natural patterns with undulating edges. The proposed action would meet VRM Class III objectives repeating the basic element found in the existing landscape.



Environmental Consequences of the No Action Alternative: The no action would maintain the existing landscape character and would meet VRM Class III objectives.

RECREATION:

Affected Environment: The proposed action is within the Hardscrabble area. This area includes approximately 24,000 acres of public land open for outdoor recreation activities such as mountain biking, motorcycle riding, hiking, running, hunting, ATV and 4x4 driving. The Colorado River Valley Field Office currently permits two guides in the area of the proposed action throughout the year. These Special Recreation Permit holders are The Learning Camp, which provides guided hiking, horseback riding and camping experiences, and Trail Wise Guides, which provides guided wildlife and birding experiences.

Environmental Consequences/Mitigation of the Proposed Action: Recreation would temporarily be displaced during the time periods that mechanical techniques are being implemented. The mosaic patterns

of the treatments are designed to mimic the natural patterns in the landscape, so recreationists who seek natural settings should return to the area once the treatment is complete. Recreationists who seek other outcomes (ie. spending time with family and friends, challenging personal skills) may return as soon as possible, as the proposed action would not affect these outcomes. In the long term, hunters may have improved opportunities for harvesting big game in the area.

Mitigation for the Proposed Action: Recreationists should be notified in advance of the times and locations of the mechanical treatments. Posting notices at the main access routes to the project areas and providing news releases would reduce the disappointment and stress of not being able to recreate where visitors intended to go. Also, notices should be sent to the existing Special Recreation Permit holders who operate within or near the project area.

Environmental Consequences of the No Action Alternative: The no action alternative would allow recreation to continue uninterrupted. Hunting opportunities may diminish in the area as the pinyon-juniper woodlands continue to encroach on the sagebrush shrublands.

ACCESS, TRAVEL MANAGEMENT AND TRANSPORTATION:

Affected Environment: The proposed action is within an area known as "Hardscrabble". This area has seen a large increase in use with the adjacent population growth the towns of Eagle and Gypsum. It serves as a community "close to home" recreation area for many motorized and non-motorized activities. In cooperation with the Town of Eagle Open Space program, travel in this area has been cooperatively managed to protect wintering wildlife, to avoid damage to roads and trails, and to provide both motorized and non-motorized opportunities and maintain associated settings. In cooperation with Eagle County Open Space and Eagle Ranch, travel on BLM public lands is being managed on interim system of routes until a land use plan revision is completed that would change the area to a "Limited" designation.

Environmental Consequences/Mitigation of the Proposed Action: The proposed treatment areas are near the Towns of Eagle and Gypsum. The routes in the project area are heavily used by both motorized and non-motorized types of travel. Large clearings and linear features denuded of vegetation often "invite" cross country travel. In order to enhance the "Stay the Trail" message and lay ground work for a "Limited" area, and to reduce potential resource damage, management actions should mitigate attractive nuisances whenever/wherever possible.

Mitigation for the Proposed Action: In order to reduce increased off route travel, treatment areas should avoid creating linear paths or large open areas directly adjacent to routes that would encourage travel.

Environmental Consequences of the No Action Alternative: This alternative would not remove existing vegetation which may create "new" openings that would allow for easier cross country travel.

CUMULATIVE IMPACTS SUMMARY:

Cumulative impacts are the incremental effects caused by management actions considering all past, present, and reasonably foreseeable future actions affecting a resource. These can result from individually minor but collectively significant actions taken over time and the effects can be either additive or subtract from the effects of other actions.

Vegetation. The proposed action will contribute to reversing the effects of many years of pinyon-juniper encroachment into sagebrush communities, increasing age-class diversity and vigor in sagebrush, and improving cover and diversity of herbaceous vegetation. These actions will help offset some of the development-loss of wildlife habitat occurring on private property.

Wildlife (including Migratory Birds and T&E Species). Cumulatively many of the future actions planned on private and other lands may have some undetermined effect on wildlife including special status species habitat and migratory birds. The proposed action is anticipated to result in minor positive cumulative impacts for wildlife when viewed in conjunction with negatively impacting activities, such as residential development, recreation use and development, rights-of-way and the conversion of sagebrush shrublands, currently occurring and reasonably certain to occur on adjacent private/other lands.

Cultural Resource and Native American Concerns. Cumulatively actions that may occur on private, county, city, or federal lands in the future could result in an increase of adverse impacts to cultural and Native American interests.

PERSONS / AGENCIES CONSULTED:

- West Hardscrabble Allotment grazing permittees.
- Colorado Division of Wildlife
- Town of Gypsum

INTERDISCIPLINARY REVIEW:

Name	***Title***	***Responsibility***
Michael Kinser	Rangeland Management Specialist	Wetlands and Riparian Zones, Range Management
Nathan Dieterich	Hydrologist	Water
Kimberly Miller	Outdoor Recreation Planner	WSR, Wilderness/WSAs, Recreation
Greg Wolfgang	Outdoor Recreation Planner	VRM, Travel Management
Cheryl Harrison	Archaeologist	Cultural Resources and Native American Concerns
Brian Hopkins	Wildlife Biologist	Air, Soil, Migratory Birds, Terrestrial Wildlife, T/E/S Terrestrial Wildlife, Aquatic Wildlife and T/E/S Aquatic Wildlife
Carla DeYoung	Ecologist	ACEC, T/E/S Plants, Vegetation, Land Heath Stds
Monte Senor	Rangeland Management Specialist	Invasive, Non-native Species

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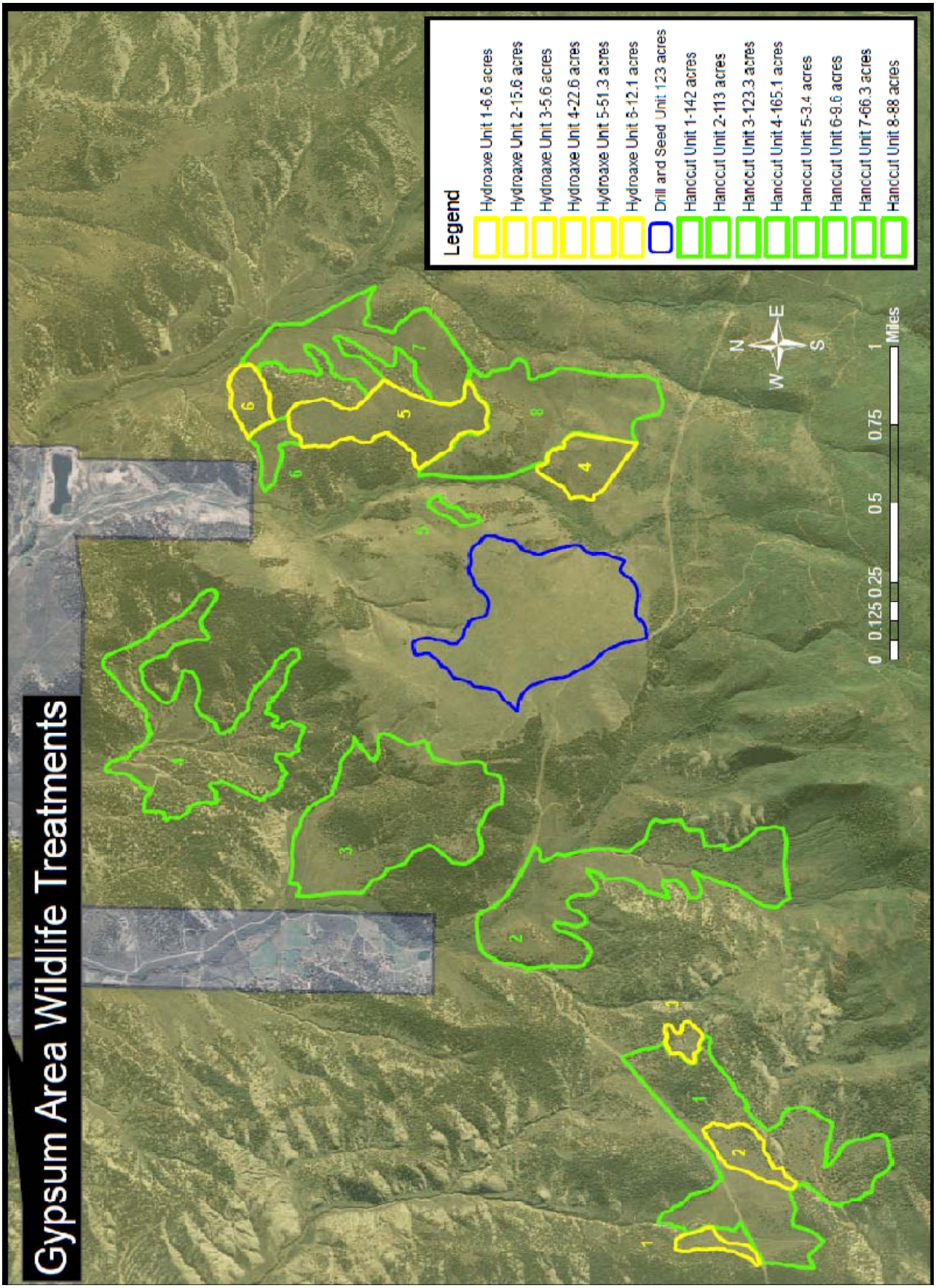
Appendix A


Gypsum Area Wildlife Treatments
Legend
Hydroaxe Unit 1-6.6 acres
Hydroaxe Unit 2-15.6 acres
Hydroaxe Unit 3-5.6 acres
Hydroaxe Unit 4-22.6 acres
Hydroaxe Unit 5-51.3 acres
Hydroaxe Unit 6-12.1 acres
Drill and Seed Unit: 123 acres
Hanccut Unit 1-142 acres
Hanccut Unit 2-113 acres
Hanccut Unit 3-123.3 acres
Hanccut Unit 4-165.1 acres
Hanccut Unit 5-3.4 acres
Hanccut Unit 6-9.6 acres
Hanccut Unit 7-66.3 acres
Hanccut Unit 8-88 acres
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E
S
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0 0.125 0.25 0.5 0.75 1 Miles

DOI-BLM-CO-NO40-2010-0028EA
Gypsum Wildlife Habitat Treatments

FINDING OF NO SIGNIFICANT IMPACT

The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The proposed action with any approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement (EIS) is not necessary to further analyze the environmental effects of the proposed action.

DECISION RECORD

DECISION: After reviewing the issues, alternatives and environmental analysis documented in DOI-BLM-CO-NO40-2010-0028EA, it is my decision to proceed with the proposed action as described with the various mitigation measures that are included in the body of the environmental assessment. Foreseen impacts of the proposed action on other resources should be alleviated by the mitigation measures included.

RATIONALE: There is general agreement that pinyon-juniper woodlands are expanding within the project area. This expansion is reducing the extent and quality of sagebrush shrublands and associated vegetation. Mechanical equipment and hand-thinning with chainsaws were judged to be the most economical, safe, appropriate and environmentally sound treatment techniques to improve sagebrush shrublands. Drill seeding and spraying noxious weeds will encourage the growth of desired native vegetation. I base my decision on the analysis in the EA and anticipate both environmental and social/community benefits from implementing the decision as listed below.

Environmental Benefits include:
1. Improvement in the quantity, the age class, composition and the structural diversity of forage on big game winter range.
2. Promoting a healthy, productive mosaic of sagebrush shrub age classes and canopy covers with a diversity of plant species for sagebrush dependent species.
3. Reduced risk of habitat loss from large wildland fires.
4. Improved condition of big game on winter ranges.

Social and Community Benefits include:
1. Reduced forage-wildlife conflicts on private lands.
2. Reduced hazardous fuel loadings that pose a risk to people and private property from wildland fires escaping public lands.
3. Improved opportunities for hunting and harvesting big game.

MITGATION MEASURES: Mitigation measures are included in the body of the environmental assessment and will be incorporated during project implementation.

NAME OF PREPARER: Brian Hopkins, Wildlife Biologist

SIGNATURE OF AUTHORIZED OFFICIAL:

Matthew Thorburn, Supervisory Natural Resource Specialist

11-17-10
Date