BLM

United States Department of the Interior
Bureau of Land Management

Environmental Assessment
for the
Farmers Canyon & Wagon Park Restoration Project

Dominguez-Escalante National Conservation Area
2815 H Road
Grand Junction, Colorado 81506

DOI-BLM-CO-N060-2016-0001-EA

JUNE 2016

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple-use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific and cultural values.

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CHAPTER 1 – INTRODUCTION

1.1 IDENTIFYING INFORMATION

BACKGROUND: This EA has been prepared by the Bureau of Land Management (BLM) to analyze a variety of treatment methods including but not limited to mechanical, broadcast burning, pile burning, and the use of naturally occurring wildfire throughout the project area to reduce hazardous fuels and to improve wildlife habitat in the Farmers Canyon and Wagon Park area.

CASEFILE/PROJECT NUMBER optional: DOI-BLM-CO-N060-2016-0001-EA

PROJECT NAME: Farmers Canyon and Wagon Park Restoration Project

PLANNING UNIT: Dominguez-Escalante National Conservation Area

1.2 PROJECT LOCATION AND LEGAL DESCRIPTION

GENERAL LOCATION:

The project is located near Whitewater, Colorado. From Whitewater, take highway 141 approximately 14 miles, then turn on to the divide road and go approximately 5 miles to the divide road and Dominguez road intersection. The project area lies directly to the east in the Dominguez-Escalante National Conservation Area.

LEGAL DESCRIPTION:

6th Principal Meridian
T. 14 S., R. 99 W., Secs., 19, 29, 30, and 31
T. 14 S., R. 100 W., Secs., 11, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36
T. 15 S., R. 99 W., Sec. 6
T. 15 S., R. 100 W., Secs., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, and 23

Figure 1. Farmers Canyon/Wagon Park Restoration Project Area Map

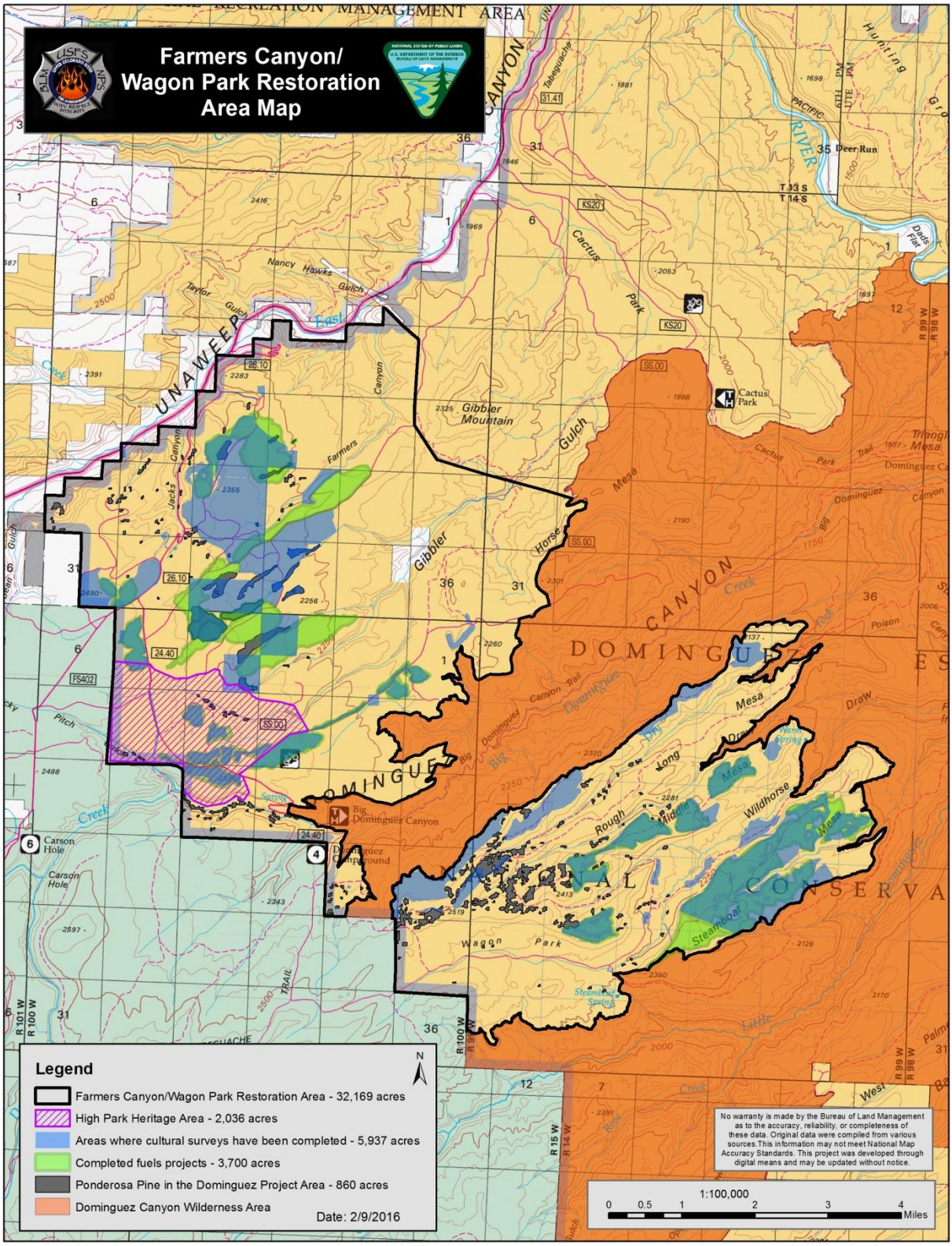


Figure 2. Farmers Canyon/Wagon Park 2016 Proposed Hydroaxe Treatments

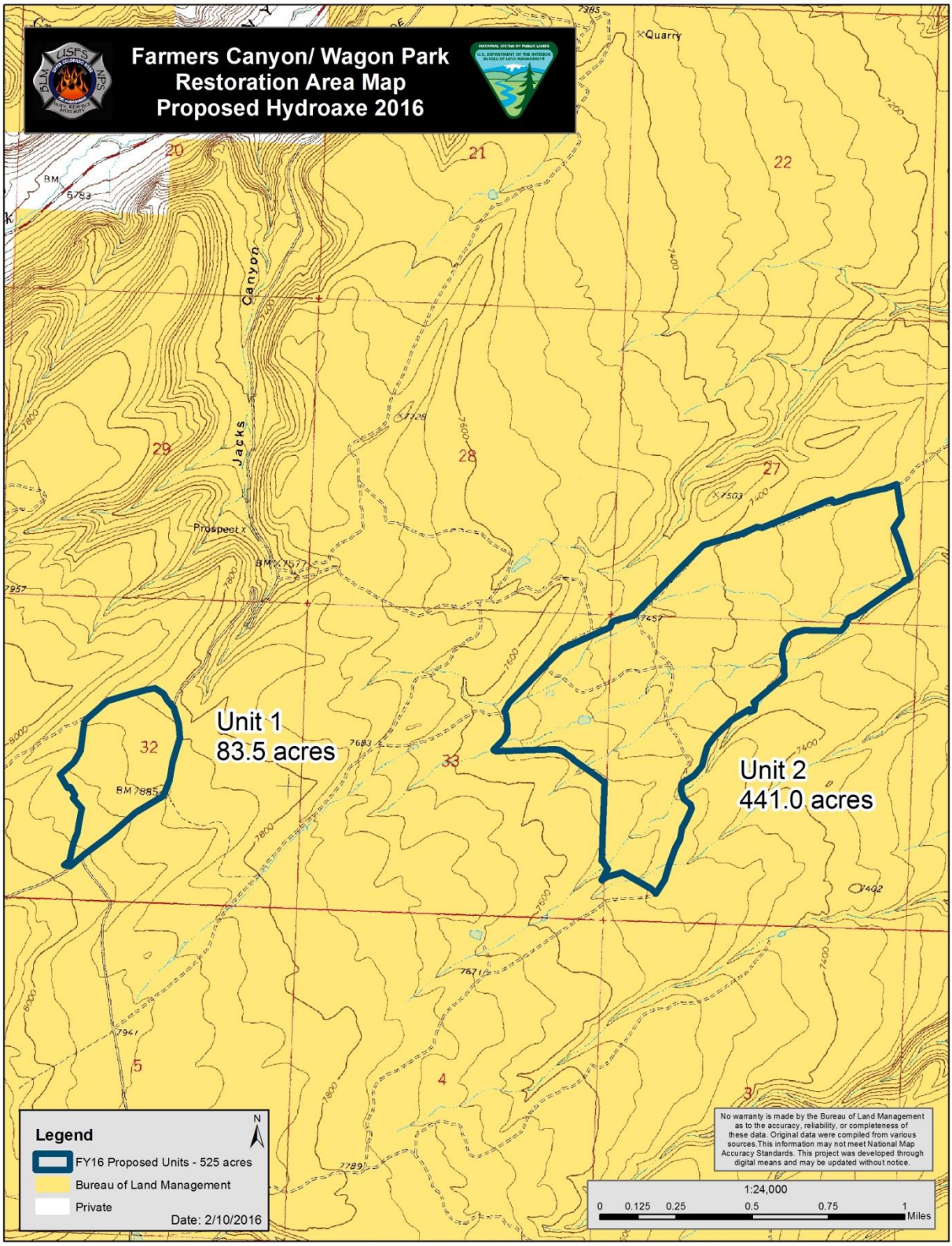


Figure 3. Farmers Canyon/Wagon Park Proposed Hand Thinning Areas

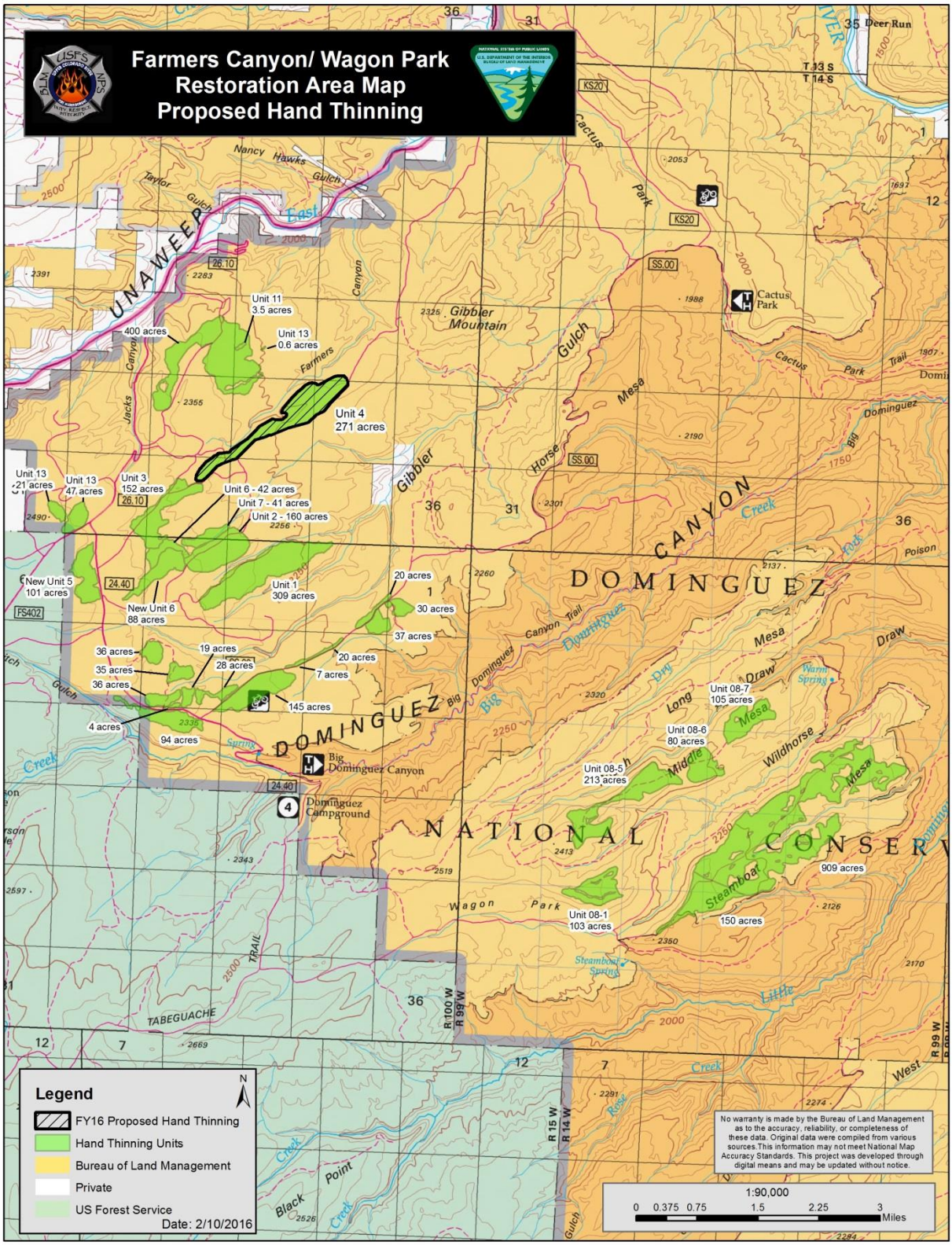
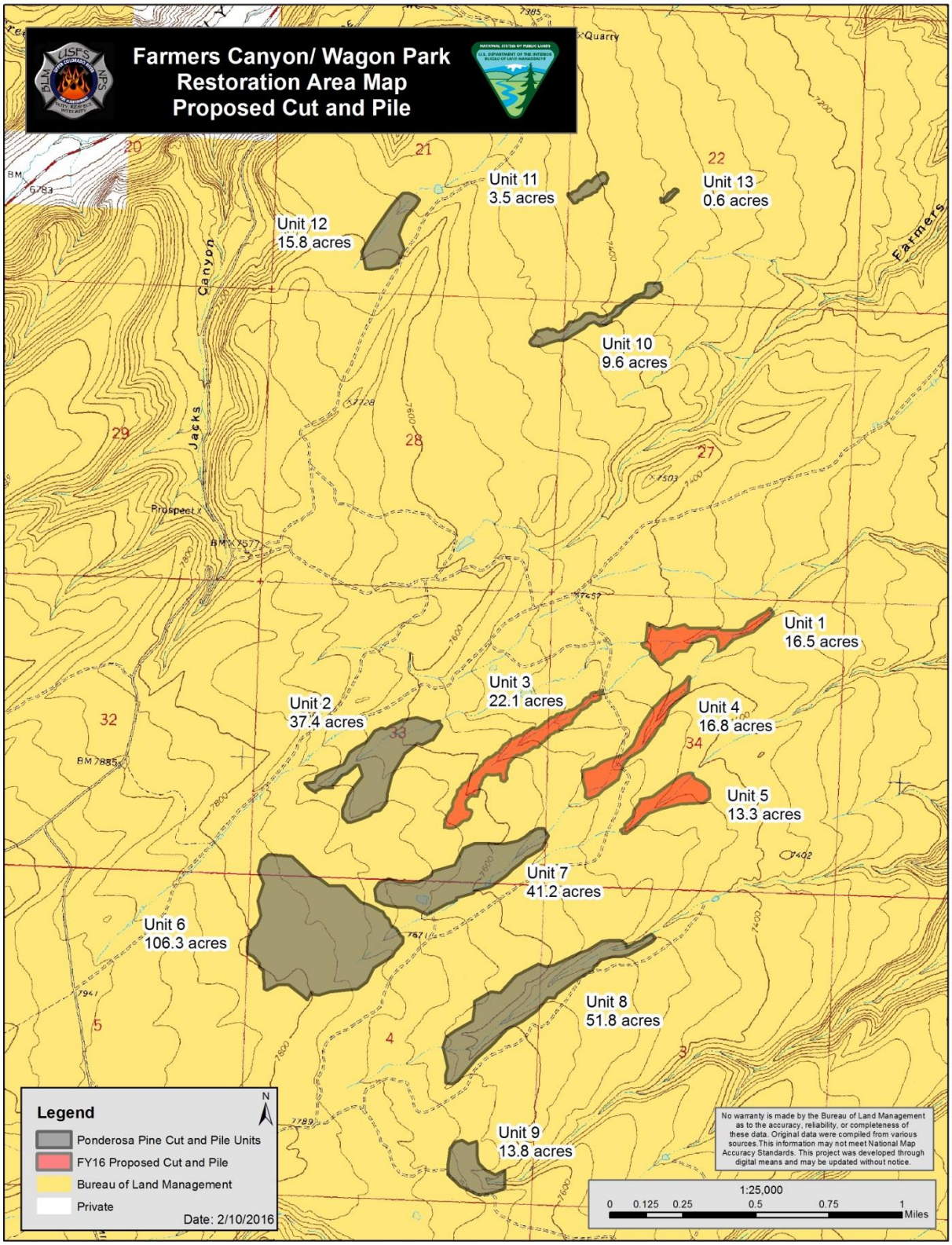


Figure 4. Farmers Canyon/Wagon Park Proposed Cut and Pile Areas



1.3 PURPOSE AND NEED

Many portions of the Farmers Canyon and Wagon Park Restoration Project area were historically open parks consisting of sagebrush and/or grass parks surrounded by pinyon and juniper hillsides and canyons. Pinyon and juniper (PJ) over the years have encroached upon these parks due to fire suppression or other management activities. Chaining and Roller-Chopping efforts were made back in the 1960's and continuing through the early 2000's to address this encroachment. Years later, the dominant vegetation is again pinyon and juniper.

The presence of this tree community has several management implications. First, the opportunity for high intensity fires is greater with the presence of the tree community. Treatment of encroaching PJ will help to reduce fuel loading within these sagebrush ecosystems and reduce the chance of uncharacteristically severe and/or frequent wildfires. Another implication is that this portion of Farmers Canyon/Wagon Park Restoration area has been designated critical habitat of the Gunnison Sage Grouse. This proposed project is to treat and maintain prior treatments in an ongoing effort to improve Gunnison Sage Grouse habitat. Active removal of encroaching PJ will help maintain open and healthy sagebrush shrub lands that will be available for sage-grouse habitat. Lastly, there are numerous Ponderosa Pine stands located within the project area. The Ponderosa Pine stands are currently in a Fire Regime Condition Class 3. These stands are outside the historic range of variability due to encroaching pinyon and juniper trees. This encroachment has been exacerbated by the removal of fire from the Ponderosa Pine ecosystem. In the current condition, any wildfire in these pine stands would result in 80 to 100 percent mortality of all age classes of Ponderosa Pine.

This project has been initiated to reduce the overall risk of catastrophic wildfires to public and private lands, improve habitat conditions for wildlife, and produce a more wildfire resilient Ponderosa Pine ecosystem.

Accomplishing these land management needs will be most effective by implementing a landscape approach by using a variety of treatment methods including but not limited to mechanical, broadcast burning, pile burning, and the use of naturally occurring wildfire throughout the project area.

1.4 PUBLIC PARTICIPATION

1.4.1 Public Scoping: The primary mechanism used by the BLM to invite public involvement in the public scoping process was posting this project on the BLM E-Planning National Environmental Policy Act (NEPA) website. No comments were received for this proposal.

1.4.2 Internal Scoping: Maps of the parcel and description of the Proposed Action were distributed to the GJFO Interdisciplinary Team (IDT) and discussed at IDT meetings. Four IDT members, three CPW employees, and two USFS employee visited the project site. Local permitee holders were also consulted. Documentation of which resources would be impacted based on internal scoping and site visits is included in Table 3.1.

1.4.3 Issues Identified: Based on external and internal scoping, the following issues were identified:

1. What would be the extent of impacts to soils from use of machinery or various intensity of prescribed fire?

2. What are the best times of year to complete the proposed work to reduce the impacts to wildlife and nesting raptors, and would additional survey be necessary?

3. Are there any tribal concerns with the Proposed Action and does any mitigation need to be developed?

1.5 DECISION TO BE MADE

The BLM will decide whether to approve the proposed Farmers Canyon/Wagon Park Restoration project based on the analysis contained in this Environmental Assessment (EA). The BLM may choose to: a) approve the project as proposed, b) approve the project with modifications/mitigation, c) approve an alternative to the proposed action, or d) not authorize the project at this time.

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The purpose of this chapter is to provide information on the Proposed Action and Alternatives.

2.2 ALTERNATIVES ANALYZED IN DETAIL

2.2.1 ALTERNATIVE A – No Action Alternative

Under the No Action Alternative the Farmers Canyon/Wagon Park Restoration project would not be completed.

2.2.2 ALTERNATIVE B – Proposed Action

Treatments within the Farmers Canyon/Wagon Park Restoration Project area would consist of a mixture of mechanical, broadcast and pile burning, and the use of naturally occurring wildfires to treat and maintain approximately 11,000 acres. Mechanical treatments would include both hand and mechanized methods to thin encroaching PJ trees and oak brush.

In previous treated areas the first phase of the Proposed Action is to mechanically retreat and maintain approximately 3,700 acres within the previous chained and rollerchop projects areas which are experiencing new PJ regrowth. Hand crews with chainsaws would be used to remove the encroaching PJ. In closed canopy stands the resulting material will be piled and burned at a later date. In open and less dense areas, vegetation will be lopped and scattered.

Areas of Ponderosa Pine with moderate to heavy fuel loadings will have the pinyon and juniper

and oak cut from underneath the Ponderosa Pine removing the ladder fuels and then the slash will be hand piled a safe distance from the pine trees so when the piles are burned no damage to the trees will occur. Once the piles are dry enough for fire to consume most of the slash (six months to two years) they will be burned. Once the heavy fuel accumulations are reduced these units may be subject to broadcast prescribed fire depending on the outcome of the vegetation monitoring results.

In previous untreated areas with sage understory, a hydro-axe or similar machine will be used to alter the vegetation structure and composition, and reduce the density of fuels within the project area. Changing the structure of the current encroached sagebrush vegetation would reduce fuels, create fire breaks, and could protect critical sage grouse habitat along with adjacent private lands in the event of a wildfire. Target trees would be encroaching pinyon, juniper, and small stem oak brush stands. The treatment will allow for selective removal of the vegetation keeping sage, and thinned oak brush islands for a mosaic landscape that will more closely resemble a landscape where fire is a natural component of the ecosystem.

Topography, fuel type, tree density along with other factors will determine the most effective and cost efficient treatment method used.

Broadcast and pile burning would be conducted in units which can be treated with limited line preparation and ground disturbance, along with maximizing vegetative responses including reduction of hazardous fuel loading. Naturally occurring wildfires would also be used and evaluated for land management needs and resource benefits as a natural land maintenance and restoration process.

Opportunities for seeding will also be evaluated. Seeding would be accomplished using certified weed free seed with a mixture of grasses and forbs to boost the establishment of native/natural herbaceous plants in an attempt to reduce the threat of invasion weeds and other unwanted plants. If seeding is deemed necessary, seed would be flown on during the fall months to help ensure proper precipitation is received for effective establishment.

Based on resource surveys, certain areas within the Planning Area may be deemed as treatment exclusions. Treatments in these identified areas would either be avoided, or done in close coordination with the concerned resource staff member.

Monitoring of vegetation before and after project treatment implementation would occur through coordination with the BLM Grand Junction Field Office and Dominguez Escalante NCA staff.

The Proposed Action would be implemented starting with the 865 acre FY 16 units as the first phase, then continuing with other project units over the course of several years as budgets allow.

The primary objectives of the project are as follows:

1) Decrease the fuel load of the area which is adjacent to private lands. Conversion of the area from a pinyon/juniper vegetation type to a sagebrush/grass community will reduce the intensity of wildfires if they occur thus reducing the threat to private lands in the area.

2) Improve habitat for the Gunnison Sage Grouse. Eliminating pinyon and juniper trees from the treatment area will encourage a sagebrush/grass vegetative community which is desired habitat for the Gunnison Sage-grouse. Reducing fuel loading will also help to reduce the likelihood of a large catastrophic wildfire that could impact sage-grouse habitat.

3) Improve the overall vegetative diversity of the area and produce a more wildfire resilient Ponderosa Pine ecosystem.

Design Features:

The following design features are also part of the Proposed Action:

1. Locate, flag, and protect any survey monuments (brass cap monuments, bearing trees, private monuments) that may exist in this project area.

2. Areas to be avoided by equipment to protect other resource values would be flagged prior to project implementation.

3. To prevent the spread of noxious weeds, equipment would be cleaned through established procedures as BLM Policy.

4. Fueling and maintenance activities should not be conducted within 100 feet of any drainage or watercourse. All spills of fuel and lubricants should be reported to the BLM and should be cleaned up promptly. Fueling of machinery and storage of fuel would be accomplished through established BLM procedures.

5. Determine boundaries of the treatment areas near private lands prior to fuel reduction to avoid treatment of private lands.

6. Existing roads and trails would be used by agency personnel to eliminate development of new routes and trails. When driving off roads, personnel would avoid repeatedly driving back and forth via the same route.

7. Schedule project work outside of the dates May 15th and July15th, to protect species identified by the Migratory Bird Treaty Act.

8. Coordinate with the Colorado Department of Parks and Wildlife to best determine timing and operation procedures to limit any possible wildlife winter range issues.

9. All road, telephone, and power line rights-of-ways and facilities will be located and flagged prior to commencement of the project to assure that no damage will occur.

10. Heavy equipment use will not occur when soils are saturated to a depth of three inches or more. All drainage courses will be protected from any impacts associated with operation of heavy equipment (e.g. bank shearing, de-stabilization of existing drainage patterns, etc.). In these areas closest to drainages, alternative methods for treating vegetation (e.g. hand crews) will be used.

11. Where possible, project boundaries will be flagged using the naturally occurring lines in the landscape. Implementation along straight lines will be avoided to reduce the level of contrast between the project area and the surrounding landscape.

12. To ensure trees with nesting raptors are not removed, trees in project areas will be checked by a BLM specialist for active raptor nests. If occupied nest are found, the CPW recommended buffer zones and seasonal restrictions around raptor use sites will be employed.

2.3 PLAN CONFORMANCE REVIEW

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: Grand Junction Resource Management Plan

Date Approved: JANUARY, 1987

Decision Number/Page: WM-5-2-14, and FM-4-2-32

Decision Language: Wildlife Management: Actively manage the areas shown on Map 10 and listed in Table 11 placing management emphasis on the key species shown, and Fire Management: Assign levels to areas based upon protection of resource values present, and manage or suppress fires as prescribed by the assigned levels.

* An RMP for the management of the Dominguez-Escalante National Conservation Area is currently being developed. The DENCA is being managed under the Grand Junction Field Office 1987 RMP until the new RMP is completed.

Name of Plan: Interim Management Policy Dominguez-Escalante National Conservation Area and Dominguez Canyon Wilderness

Date Released: August 2010

Page: 6

Vegetation Management: Projects to control fire, insects, or disease may be undertaken in both the wilderness, subject to section 4(d)(1) of the Wilderness Act (16 U.S.C. 1133(d)(1)); and the NCA, subject to the designating legislation and other applicable laws. Where other vegetation projects are considered, they should be designed to restore, enhance, or protect NCA resources. Surface disturbing projects should be considered carefully and substantial information should be presented to ensure that NCA resources would not be affected.

Fire & Fuels Management: All fire and fuels management activities and projects will be tiered to the relevant Fire Management Plans (updated annually).

2.4 STANDARDS FOR PUBLIC LAND HEALTH

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands.

Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.

Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

Because standards exist for each of these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in Chapter 3 of this document.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This section provides a description of the human and natural environmental resources that could be affected by the Proposed Action and presents comparative analyses of the direct, indirect, and cumulative effects on the affected environment stemming from the implementation of the Proposed Action and other alternatives analyzed.

This EA draws upon information compiled in the Grand Junction Resource Area RMP (BLM 1987).

3.1.1 Elements Not Affected

The following elements, identified as not being present or not affected are not brought forward for additional analysis in this EA:

Riparian Zones/Wetlands – There are no riparian areas or wetlands in the proposed project area.

Mineral Resources – There are no mineral resources of economic value present in the project location.

Paleontology – There are no paleontological resources in the project area.

Geology- There is no unique geological features impacted by the proposed project.

Visual Resources – The design feature to flag the project boundary using the naturally occurring lines in the landscape and avoid straight lines would reduce the level of contrast between the project area and the surrounding landscape.

Transportation and Access – The Proposed Action would not change access to and across BLM public lands.

Special Designations (ACEC, RMAs, WSR) – There are no eligible, suitable, or designated Wild and Scenic River segments within the project area. The project is within the Dominguez-Escalante National Conservation Area. The Proposed Action would conserve or enhance the purposes of the NCA.

Wilderness and Wilderness Characteristics – There are no lands with wilderness characteristics, WSAs, or designated wilderness in the project area.

Range Management – Livestock grazing activities do occur in the area, however impacts can be avoided through coordination with the permittees, and adjustments in the grazing rotation. The proposed project does not require rest from grazing activities.

Wild Horse and Burros – The project area is not within a Herd Management Area.

Land Tenure, ROW, Other Uses – Right-of-way (ROW) authorizations in the area include the CDOT Highway 141 ROW and telephone and electric line ROWs along the highway and along the Divide Road. These ROWs would be avoided; therefore there would be no impact.

Farmlands, Prime and Unique – There are no designated Prime and Unique Farmlands located within the Grand Junction Field Office.

3.1.2 Past, Present, and Reasonably Foreseeable Actions

NEPA requires federal agencies to consider the cumulative effects of proposals under their review. Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations 40 CFR §1508.7 as "…the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency…or person undertakes such other actions." The CEQ states that the "cumulative effects analyses should be conducted on the scale of human communities, landscapes, watersheds, or airsheds" using the concept of "project impact zone" or more simply put, the area that might be affected by the proposed action. The area that may be affected by this

project includes the lower Gunnison Watershed. To assess past, present, and reasonably foreseeable actions that may occur within the affected area a review of GJFO NEPA log and our field office GIS data was completed. The following list includes all past, present and reasonably foreseeable actions known to the BLM that may occur within the affected area:

Past and Present Actions:
Action - date

- BLM/CDOW mechanical vegetation manipulation (Chaining) and seeding to improve big game habitat. 1988
- BLM mechanical thinning (Hydroaxe) and seeding to reduce hazardous fuels and improve wildlife habitat. 2004-2005
- BLM pile burning. 2004-2006
- Livestock grazing has a long history in the area and continues to occur
- Residential development
- Recreation (motorized and non-motorized)
- Right-of-way grants for roads, and utilities

Reasonably Foreseeable Actions

- BLM force account or contracted mechanical thinning (Fecon/Chainsaw). 2016-2026
- BLM force account or contracted slash piling and pile/broadcast burning. 2016-2026

Table 3.1.1: Potentially Impacted Resources

Resources	Not Present On Location	No Impact	Potentially Impacted	Mitigation Necessary ?	BLM Evaluator Initial & Date
Air and Climate	☐	☐	☒	☐	KEH5/23/16
Water (surface & subsurface, floodplains)	☐	☐	☒	☐	KEH5/23/16
Soils	☐	☐	☒	☒	KEH5/23/16
Geological/Mineral Resources	☐	☒	☐	☐	SG 2/25/16
Special Status Plants	☐	☐	☒	☐	NGH 5/11/16
Special Status Wildlife	☐	☐	☒	☐	NGH 5/11/16
Migratory Birds	☐	☐	☒	☐	NGH 5/11/16
Other Important Wildlife Habitat	☐	☐	☒	☐	NGH 5/11/16
Vegetation, Forestry	☐	☐	☒	☐	BP 5/17/16
Invasive, Non-native Species	☐	☐	☒	☐	MT 5/6/16
Wetlands/Riparian Zones	☒	☐	☐	☐	NGH 5/11/16
Cultural or Historical	☐	☐	☒	☐	NFC 3/14/16
Paleontological	☐	☒	☐	☐	SG 2/25/16
Tribal& American Indian Religious Concerns	☐	☐	☒	☐	NFC 3/14/16
Visual Resources	☐	☒	☐	☐	AW 5/11/16
Social/Economic	☐	☐	☒	☐	CS 2/25/16
Transportation and Access	☐	☒	☐	☐	AW 2/25/16
Wastes, Hazardous or Solid	☐	☐	☒	☐	AK 3/8/16
Recreation	☐	☐	☒	☐	AW 2/25/16
Special Designations (ACEC, SMAs, WSR)	☐	☒	☐	☐	AW 4/13/16
Wilderness & Wilderness Characteristics	☒	☐	☐	☐	AW 2/25/16
Range Management	☐	☒	☐	☐	BP 3/14/16
Wild Horse and Burros	☒	☐	☐	☐	JP 3/22/16
Land Tenure, ROW, Other Uses	☐	☒	☐	☐	RBL 3/7/16
Fire/Fuels	☐	☐	☒	☐	JP 3/22/16

3.2 PHYSICAL RESOURCES

3.2.1 Air Quality and Climate Change

Current Conditions:

There are no designated Class I air sheds located within Mesa county; the nearest Class I areas are 50+ air miles away, with the Flattops and Maroon Bells wilderness areas and Black Canyon

National Park being the closest. The Environmental Protection Agency (EPA) general conformity rule requires a formal conformity determination document for federally sponsored or funded actions in nonattainment areas, or in certain designated maintenance areas when the total direct and indirect net emissions of nonattainment pollutants (or their precursors) exceed specified de minimis levels. Since the project area is not within a nonattainment area, Clean Air Act conformity does not apply.

Alternative A – No Action:

Direct and Indirect Effects: The No Action Alternative would have no immediate, direct impact on air quality; however, allowing the continued buildup of hazardous fuels could eventually precipitate an uncontrollable wildfire of substantially greater size and intensity with an increased potential for short-term degradation to air quality and visibility.

Cumulative Effects:

No cumulative effects are expected due to the lack of direct and indirect effects.

Alternative B – Proposed Action:

Direct and Indirect Effects: The Proposed Action to accomplish fuel reduction through a combination of mechanical treatment and prescribed fire would have short-term, moderate impacts to air quality. Smoke and particle emissions from fires may degrade air quality and visibility in and around the area on a short-term basis during and following a fire. The GJFO must apply for and obtain a permit for a planned ignition (e.g., human ignited) or unplanned ignition (e.g., lightning ignited) prescribed fire from the Colorado Department of Health and Environment, Air Pollution Control Division.

The stipulations for burning under permit by the Air Pollution Control Division are fairly strict and provide guidance for reducing pollutants from the burns. The permit, coupled with the use of a smoke monitor and the low intensity prescription for broadcast burns should allow the impacts to be minimal. Pile burning usually results in a short burst of smoke from the piles shortly after ignition, and a resulting hot fire that produces small amounts of smoke. Monitoring the area for smoke impacts should be sufficient.

Cumulative Effects:

With the mitigation described above, cumulative effects are not expected to occur. Mitigation is designed to ensure air quality impacts are negligible and burning would not occur when problems would occur.

3.2.2 Soils (includes a finding on Standard 1)

Current Conditions:

Soils within the project area have been described by the Natural Resources Conservation Service (NRCS) and the information is contained in the Soil Survey Geographic (SSURGO) database. It can be accessed through the NRCS Web Soil Survey site. These allotments are all within the Mesa County Area (CO680) and Uncompahgre National Forest Area, Colorado, Parts of Mesa, Montrose, Ouray, and San Miguel Counties (CO676) soil survey (NRCS, 2016).

There are 31 Soil Map Units (SMUs) within the Farmers Canyon and Wagon Park Restoration Area. SMUs are comprised of soils that have similar characteristics and as such would be expected to respond similarly. Soils within this project area have a fine sandy loam soil texture. The off-road and off-trail erosion hazard rating is slight for about 60% of the project area. The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope and soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions.

The road and trail erosion hazard rating is moderate for about 60 percent of the project area. The ratings in this interpretation indicate the hazard of soil loss from unsurfaced roads and trails. The ratings are based on soil erosion factor K, slope, and content of rock fragments. A rating of "moderate" indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed.

The project area has over 54 percent of the area well suited for the operation of harvest equipment and 21 percent of the area is poorly suited for the use of harvest equipment. Ratings for this interpretation indicate the suitability for use of forestland harvesting equipment. The ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification of the soil, depth to a water table, and ponding. Standard rubber-tire skidders and bulldozers are assumed to be used for ground-based harvesting and transport. Rating class terms indicate the degree to which the soils are suited to this aspect of forestland management. "Well suited" indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. "Moderately suited" indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. "Poorly suited" indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

The project area has over 50 percent of the area has a low susceptibility to fire damage and about 20 percent of the area has a high susceptibility. Ratings for this interpretation indicate the suitability for use of forestland harvesting equipment. The ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification of the soil, depth to a water table, and ponding. Standard rubber-tire skidders and bulldozers are assumed to be used for ground-based harvesting and transport. Rating class terms indicate the degree to which the soils are suited to this aspect of forestland management. "Well suited" indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. "Moderately suited" indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. "Poorly suited" indicates that the

soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

Finding on Public Land Health Standard 1 for Upland Soils:

A Land Health Assessment was conducted in 2007. Over 95 percent of the area is meeting Land Health Standard (LHS) 1. The areas not meeting LHS 1 were not meeting due to gullying, and bare ground.

Alternative A – No Action:

Direct and Indirect Effects: No action would most likely result in increases in the woody species or invasive such as cheatgrass, and an increase in bare ground with the potential for increases in erosion and sediment.

Finding on Public Land Health Standard 1 for Upland Soils:

The 95 percent of the area meeting LHS 1 should continue to maintain this standard. The 5 percent not meeting may see a slight upward trend with no actions in the watershed.

Cumulative Effects:

Watershed health could continue to decline in the absence of treatments. Other activities such as grazing and recreation together with no action may continue the increase in invasive plants which could degrade localized areas. These localized areas could grow to eventually become a watershed wide problem.

Alternative B – Proposed Action:

Direct and Indirect Effects:
Mechanical Methods of Fuels Reduction

Fuels reduction through mechanical methods generally has less potential for reducing soil productivity and increasing erosion and sediment. Use of the roller chopper and hydro-ax usually does not create any surface-disturbance problems. The small short-term increase in surface erosion and sediment production is more than offset by the mulch (litter) and the increase in grass/forb vegetation. Litter on the surface reduces soil detachment from overland flow and raindrop impact, reduces bare ground, and protects the soil surface. These methods have the advantage of rapidly incorporating more litter into the soil.

Prescribed Fire Maintenance of Fuels Reduction Projects

The use of fire is an effective way to reduce fuel load or to effect/maintain vegetative change. Prescribed burns in particular can usually be planned and directed so as not to cause unwanted effects including sterilization of soil, increased erosion and sediment yield, and loss of productivity. For example, rapid burns that leaves the grass crown viable help to reduce after-burn erosion and sediment production, but areas on steeper slopes and fragile soils with a vegetation cover dominated by brushy species, have a high probability of producing substantial erosion and sediment.

Fire may temporarily reduce soil moisture content, and expose mineral soil surface to full raindrop impact which, when combined with reduction of the surface layer organic matter and litter, decreases water infiltration rates and directly affects the velocity and volume of overland flow. If hot enough, fire may seal the surface layers to moisture infiltration and biologic activity. Removing the protective vegetative cover exposes bare soil to wind and water erosion, and increases the potential for erosive runoff events and sediment production. Loss of surface soil and its biotic activity may lead to a loss of nutrient cycling, and to a decrease in soil productivity. Depending on the specific topography, parent materials and soils, and climatic events after a fire, the potential of an area to return to its former level of productivity may or may not be impaired. Bare soil, if subjected to high intensity storms immediately after burning, often produces flashy runoff and tremendous amounts of sediment and debris, filling stream channels, ponds, and other low-lying areas. Such runoff events can result in a major reduction in water quality, both in the short-term immediately following the events, and in the long-term through increased upland and channel erosion.

Mechanical Fuels Reduction Only (No maintenance with prescribed burning)

This alternative would probably not allow maintenance of the desired effect of fuels reduction as easily or as timely as using prescribed fire. However, it does not entail the potential effects or risks associated with prescribed burning.

Finding on Public Land Health Standard 1 for Upland Soils:

This project would not be expected to decrease the area not meeting LHS 1. Area currently not meeting LHS 1 is due to bare ground and gullies. All proposed methods are not expected to cause permanent bare ground or create gullies.

Cumulative Effects:

The implication of these potential impacts is dependent on climatic conditions during the time following a fire and prior to successful revegetation. With successful revegetation, the soil susceptibility to accelerated erosion usually undergoes a substantial reduction after the first growing season.

Following a fire, temperature of the unshaded, blackened soil surface is appreciably increased. This increase in soil temperature may create unfavorable conditions for seed germination and seedling survival; it may also be a point at which unwanted species or noxious weeds may find advantage over native or perennial species if moisture conditions are favorable. These factors can have a bearing on the success of the fuels reduction efforts, or in choosing the method of fuels reduction.

Mitigation

1) Unit boundaries need to be a minimum 30 feet from active gullies in all directions for all units using equipment. An evaluation should be conducted by BLM hydrologist to identify and flag these areas.
2) Do not actively light in drainages with active beds.
3) Monitor burn areas for at least three years after burning to ensure area is vegetating.

3.2.3 Water (surface and groundwater, floodplains) (includes a finding on Standard 5)

Current Conditions:

Surface Water

The project area contains ephemeral and intermittent tributaries that drain to the Gunnison River. Major Drainages include Jacks Canyon, Gibbler Gulch, Farmers Canyon, Dry Fork, and Wild Horse Draw. Snowmelt and discharge from springs provide most of the flow, but summer convective storms produce the peak flows. The Colorado Department of Public Health and Environment, Water Quality Control Division (CDPHE-WQCD) belong to the Gunnison River assessment unit COGULG04a. These waters support Warm Water 2, Potential Primary Contact Recreation, Agriculture, Aquatic Life, and Drinking Water uses. As such, water quality needs to meet criteria that protect those uses. CDPHE-WQCD had determined that all tributaries to the Gunnison River, including all wetlands, Crystal Reservoir to the confluence with the Colorado River were not meeting selenium criteria and a Total Maximum Daily Load analysis has been developed for these waters.

Ground Water Description and Quality

The various aquifers throughout the area can be categorized by the associated geologic deposits and rocks of which they are composed. In these allotments, ground water is associated with fractured crystalline-rock, alluvial deposits, or in shallow fractures of sedimentary rocks. Ground water in all of these cases has association with surface water and will have water quality associated with the specific geology and uses of the area.

Water Rights

The BLM has no surface water rights in the tributaries. There are 10 springs identified in the project area. Several of them have BLM water rights.

Finding on Public Land Health Standard 5 for Water Quality:

Water quality standards are currently not being met in this watershed. Several designated uses are impaired. These impairments are due to exceedances in selenium. A Total Maximum Daily Load report has been developed by CDPHE-WQCD (2016).

Alternative A – No Action:

Direct and Indirect Effects: Not treating the project area could have a more substantial impact on water quality than the Proposed Action if a major fire occurs. The impacts described above would be of a longer duration and higher intensity than under prescribed fire conditions. Additionally the watershed protection provided by Ponderosa Pine would be lost.

Finding on Public Land Health Standard 5 for Water Quality:

Water quality would not be impaired if the No Action Alternative was selected. Waters currently impaired would continue to be impaired and no improvement would be expected.

Cumulative Effects:

If the project was not completed there would be no cumulative effects.

Alternative B – Proposed Action:

Direct and Indirect Effects: The mechanical treatment alternative would have a minimal impact on water quality. There may be a very minimal sediment increase at the time of treatment. With the amount of litter and live vegetation left from treatment, the gentle slope in the treatment areas, and the low water yield produced from this area, the likelihood of this sediment reaching the Gunnison River is very low. In the long term, an increase in vegetative cover would most likely result from the reduction in competition from pinyon-juniper and sagebrush, offering improved watershed protection. The sediment produced from the treatment area would be less than the non-treated areas. This benefit would continue until encroachment re-occurs and species mature. With the prescribed fire followup, both long-term and short-term impacts to water quality could occur. There could be a short-term increase in sediment and a nutrient flush within the project area watershed. The primary impact would be sediment which would result from increased overland flow and channel scour in the treatment area, and would continue for weeks, months, or longer. In the long-term the sediment yield would actually decrease from pre-treatment levels, due to increased ground cover. A nutrient flush would include calcium, magnesium, potassium, which are converted to oxides and deposited as ash on the soil surface. The oxides are low in solubility until they react with carbon dioxide and water of the atmosphere forming bicarbonate salts. As salts they are more easily dissolved in surface runoff or by leaching. Sediment can also serve as a vehicle for phosphorus, calcium, magnesium, and potassium loss. The more vegetation removed, the higher the intensity and duration of the flush. Most of the nutrients would be flushed during the first runoff and the levels would decrease dramatically as watershed conditions stabilize. Some of the nutrients would actually benefit the down-gradient vegetation by offering fertilizer benefits.

Finding on Public Land Health Standard 5 for Water Quality:

Water quality would not be impaired if this action was selected. Waters currently impaired would continue to be impaired and no improvement would be expected. This project may have beneficial effects for water quality. These kinds of treatments may reduce severe wildfires and prevent future water quality problems.

Cumulative Effects:

Cumulative effects would not be expected with the hand treatments and mechanical treatment. These actions have effects that are minimal and only result in the immediate area.

Cumulative effects from prescribed fires are likely for three years. Changes in runoff and erosion have been shown to dramatically improve three years after burning. The proposed treatments are expected to be at intensities that effects would be negligible due to the time of year or conditions when burns would occur, but in instances of natural starts, there may be areas of high intensity burns that could result in longer lasting effects.

Finding on Public Land Health Standard 5 for Water Quality:

No violation of water quality standards would occur with this action, therefore standard 5 would be met. Current exceedances of water quality standards would not be affected by this alternative.

3.3 BIOLOGICAL RESOURCES

3.3.1 Invasive, Non-native Species

Current Conditions:

The BLM completed an inventory for noxious weeds in the Dominguez area during the 2000 field season by the BLM, all infestations of listed noxious weeds were recorded and stored in a GIS database managed by the BLM. The predominant weed that the BLM found during the inventory was Russian knapweed, which was found in many locations primarily along roads and at ponds, none of the infested sites were greater than a half-acre in size. This discovery of small infestations prompted an aggressive response by the BLM weed program in 2001 that continues to this day. The BLM has treated all of the known infestations at least once. While the BLM continues to find invasive plants at these sites, all of the sites are considered contained and under maintenance.

Alternative A – No Action:

Direct and Indirect: The project would not occur under this scenario, and since there is some (although minor) disturbance associated with the project, theoretically there is a decreased chance of weed invasion because there would not be any new potential vectors.

Cumulative Effects:

Cumulative impacts would be similar to those described above under direct and indirect impacts.

Alternative B – Proposed Action:

Direct and Indirect Effects: The project is well thought out from a weed perspective, because there is little disturbance associated with the planned efforts. The most likely vector of weed spread is the mechanical treatments if machines are not cleaned properly. Best Management Practices (BMPs) for cleaning machinery to remove weed seed reduces this possibility. The proposed mechanical work would specifically target young trees, and not cause widespread ground disturbance which increases the potential for weed invasion. The short and long-term risk of increasing the spread of weeds is minimal.

Cumulative Effects:

Theoretically, the accumulation of these kinds of projects increases the chance a new weed problem will arise due to the associated vectors (vehicles and equipment). However, with heightened awareness of weed issues in the last 20 years and use of best management practices to reduce weed spread, these risk factors are acceptable.

3.3.2 Threatened, Endangered, and Sensitive Species (includes a finding on Standard 4)

Current Conditions:

Two Federally listed species have the potential to occur within the action areas, Gunnison sage-grouse and Sclerocactus glaucus. The project area is not known to contain suitable habitat for any of the special status animal species for which the Grand Junction Field Office manages. A review of BLM and Colorado Natural Heritage Program records confirmed that no sensitive plants are known to occur in the area. Brewer's sparrow may occur in the area see section 3.3.4.

Gunnison sage-grouse – Some of the project areas overlap with critical habitat for Gunnison sage-grouse, but not with occupied habitat. The proposed projects are expected to beneficially affect critical habitat by moving areas towards meeting the primary constituent elements described in the 2014 designation for Gunnison sage grouse, specifically reducing pinyon juniper encroachment and increasing the suitability of sagebrush habitat for Gunnison sage grouse. Consultation occurred with the United States Fish and Wildlife Service (USFWS) and concurrence was received that habitat maintenance treatments are expected to have no effect or a purely beneficial effect on designated critical habitat and are not likely to adversely affect sage grouse.

Habitat Assessment Framework data was collected within proposed areas for hand thinning, but not within proposed hydroaxe and pine cut and pile units. In hand cutting units two sample points were classified as suitable summer/fall Gunnison sage-grouse habitat, five sample points were classified as marginal summer/fall Gunnison sage-grouse habitat, and five sample points were classified unsuitable summer/fall Gunnison sage-grouse habitat. Marginal or unsuitable points were due to varied reasons, the most common being; pinyon and juniper cover, inadequate sagebrush, and low forb cover. Removal of encroaching pinyon-juniper will maintain or improve habitat for Gunnison sage-grouse.

Although the proposed project area is less than a mile from Colorado hookless cactus (CHC), it is not expected that this species will be adversely affected. Hydroaxe projects have the potential to disturb sensitive plant species through the use of heavy machinery. Hookless cactus (*Sclerocactus glaucus*) is the primary concern at this time, however hydroaxe project areas are below 7,000ft elevation and not considered hookless cactus habitat.

Finding on Public Land Health Standard 4 for Threatened, Endangered, and Sensitive Species:

Land health assessments performed in 2002 found that approximately 95 percent of the overall restoration area was generally meeting Land Health Standard 4. Less than one percent of the area was not meeting land health standard 4 and overlaps with areas identified for hand cutting. The reasons for not meeting Land Health Standard 4 were habitat concerns including low soil stability and soil loss, decadent sage, pinyon juniper invasion, and low grass cover. Approximately 4 percent of the overall area was determined to be meeting with problems. Portions of these areas overlap with proposed hand thinning areas. Issues identified in these areas include as some erosion, decadent sage, late seral stage, pinyon juniper invasion, and Ips beetle mortalities.

<u>Alternative A – No Action:</u>

Direct and Indirect Effects:

There would be minimal direct effects to threatened and endangered (T/E) plant species if the proposed project is not implemented, since sensitive plant species are not known within the area. Indirect effects to T/E plants could include degradation of potential habitat for some species due to continued pinyon and juniper spread, or a large wildfire which would likely degrade habitat for all T/E species.

There are minimal direct effects to Gunnison sage-grouse, since there is no occupied habitat within the project area. However, direct impacts to critical habitat include continued pinyon juniper encroachment which degrades habitat for Gunnison sage-grouse, and increased risk of large wildfires, which also degrades habitat for Gunnison sage-grouse.

Finding on Public Land Health Standard 4 for Threatened, Endangered, and Sensitive Species:

The No Action Alternative is not expected to substantially change the ability of the action area ability to meet Land Health Standard 4. Some areas that are currently 'meeting with problems' or 'not meeting' Land Health Standard 4 may continue to degrade through continued pinyon juniper spread. Large fire would like increase the acres of land not meeting Land Health Standard 4.

Cumulative Effects:

The cumulative effects of the No Action Alternative are continued pinyon and juniper encroachment, and an increased risk of larger more intense wildfire. These both have the potential to degrade habitat for Gunnison sage-grouse. In addition, not treating potential habitat for Gunnison sage-grouse may create more isolated habitat patches over time.

<u>Alternative B – Proposed Action:</u>

Direct and Indirect Effects:

There are negligible direct effects to T/E plant species if the proposed project is implemented, since sensitive plant species are not known within the area. Indirect effects to T/E plants are expected to be minimal. Hand thinning projects are unlikely to impact sensitive plant species, as ground disturbance will be minimal. Similarly, ponderosa pine cut and pile projects are unlikely to impact sensitive plant species as ground disturbance will be minimal. Hydroaxe projects have the potential to disturb sensitive plant species through the use of heavy machinery. Since hookless cactus (*Sclerocactus glaucus*) is the primary concern at this time and proposed hydroaxe project areas are below 7,000ft elevation, no *Sclerocactus glaucus* habitat will be impacted.

Indirect effects to T/E animals could include improving potential habitat for Gunnison sage-grouse through removal of pinyon and juniper. Also risk of large, catastrophic wildfire would be mitigated, which could preserve potential habitat for all T/E species in the area.

There are minimal direct effects to Gunnison sage-grouse, since there is no occupied habitat within the project area. However, direct impacts to critical habitat include removal of encroaching pinyon juniper which can improve habitat for Gunnison sage-grouse, and decreased risk of large wildfires, which will mitigate a potential risk for degrading habitat for Gunnison sage-grouse.

Finding on Public Land Health Standard 4 for Threatened, Endangered, and Sensitive Species:

The Proposed Action is not expected to substantially change the ability of the action area to meet Land Health Standard 4. However, this action may help maintain the area meeting Land Health Standard 4 by mitigating large fires and pinyon juniper spread. Some areas that are currently 'meeting with problems' or 'not meeting' Land Health Standard 4 may be improved where overlap with treatment areas occur, through reduction of both live and dead pinyon and juniper cover in Gunnison sage-grouse habitat.

Cumulative Effects:

Treatments aimed at improving Gunnison sage-grouse habitat within the specific project area and within the Pinyon Mesa population habitat should improve habitat for Gunnison sage-grouse within the population. In addition to improving habitat, treatments may help provide corridors of suitable habitat between habitat patches. Monitoring outcomes will be important as climate change may make treatment outcomes less predictable. Mitigation of large fire should help preserve more intact and resilient habitat.

3.3.3 Vegetation (grasslands, forest management) (includes a finding on Standard 3)

Current Conditions:

Vegetation communities within the project area vary from pinyon-juniper, sagebrush, saltdesert shrub, and mountain shrub. The vegetation communities are determined by many factors including elevation, aspect and soils. The primary native vegetation includes galleta, shadscale, snakeweed, winterfat, prickly pear cactus, Bigelow sagebrush, bottlebrush squirreltail, Salina Wildrye, and Indian RiceGrass. As elevation increases Utah juniper and Colorado pinyon become more prevalent with understories consisting of neeldleandthread grass, Indian Ricegrass, galleta, blue grama, Wyoming big sagebrush, black sagebrush, and four wing saltbrush. There are also isolated stands of Ponderosa Pine, serviceberry, and Gambel Oak. Various forbs are found within the project area including geranium, lupine, vetch, goldenaster, penstemon, wild buckwheats, milk vetches, globemallow, and aspen fleabane.

Much of the project area was chained in the 1960's. The pinyon-juniper community type was converted to a grass and shrub type on about 10,000 acres. Encroaching pinyon-juniper has increased within these chained areas and within sage brush meadows and the few isolated stands of Ponderosa Pine.

Finding on Public Land Health Standard 3 for Plant Communities:

Based on the 2010 Land Health Assessment Report for the Northern Portion of the Dominguez-Escalante NCA, the project area (Gibbler Allotment, Wagon Park Allotment, and Triangle Mesa Allotment) had the following findings for Standard 3. Approximately 79,357 acres are achieving or making progress towards achieving, approximately 5,478 acres are achieving with problem areas, and approximately 936 acres are not achieving Standard 3. The main problems cited for sites not achieving a healthy plant community were a distinct loss of perennials and/or excessive amounts of exotic annuals: namely cheatgrass. Another factor contributing to compromised plant communities is Pinyon-Juniper invasion. PJ invasion is most commonly associated with historic grazing, and an altered fire regime. Approximately one percent of the assessed area was found to be Not Meeting Standard 3. Identified causal factors were: past grazing (selective grazing that has led to a loss of perennials and their seedbank, and concentrated livestock use), drought, PJ invasion, and dominance by cheatgrass. While the assessed landscape contains numerous crested wheat seeding projects, the resultant crested wheat stands were not downgraded for their lack of native perennials; evaluations were based on the management objectives of the original project.

Alternative A – No Action:

Direct and Indirect Effects:
Under the No Action Alternative the Farmers Canyon Wagon Park Restoration project would not be implemented, therefore no direct impacts would occur. Indirect impacts would include continued encroachment of pinyon-juniper within open sage brush and Ponderosa Pine vegetation communities. Increased fire potential would exist in the few Ponderosa Pine stands and without treatment of the encroaching pinyon-juniper it would be expected that a high mortality of Ponderosa Pine would occur in the event of a wildfire which would be a negative impact to forest resources.

Finding on Public Land Health Standard 3 for Plant Communities:

The No Action Alternative is not expected to substantially change the ability of the action areas to meet Land Health Standard 3. Some areas that are currently 'meeting with problems' or 'not meeting' Land Health Standard 3 may continue to degrade through continued pinyon-juniper spread. In the event of a wildfire it would likely increase the acres of land not meeting Land Health Standard 3 due to the loss of Ponderosa Pine stands.

Cumulative Effects:

The cumulative effects of the No Action Alternative are continued pinyon and juniper encroachment, and an increased risk of larger more intense wildfire. These both have the potential to degrade vegetative communities that are currently meeting resource objectives.

<u>Alternative B – Proposed Action:</u>

Direct effects of the Proposed Action would include the removal of encroaching pinyon-juniper stands. The methods of hand cutting and chainsaws will have the least amount of surface disturbance. Some soil and vegetation disturbance will occur from hand crews working in the area; however, these impacts are negligible. The use of the hydro-axe will have more surface disturbance and more potential to disturb soils and plant communities, however, it is expected that these impacts would be minimal do to the localized use of the machinery. Indirect effects associated with the restoration project include improved vegetative communities. The project will remove Pinyon-Juniper stands that are currently invading sagebrush and Ponderosa communities, therefore, removing these Pinyon-Junipers will result in more resilient plant and forest communities. Furthermore, the restoration project will reduce wildfire potential making the vegetative communities more stable in the event of a wildfire. Opportunities for seeding will also be evaluated. Seeding the area would be done with a mixture of grasses and forbs to boost the establishment of native/natural herbaceous plants in an attempt to reduce the threat of invasion weeds and other unwanted plants.

Finding on Public Land Health Standard 3 for Plant Communities:

The Proposed Action may help maintain the area meeting Land Health Standard 3 by mitigating large fires and pinyon juniper spread. Some areas that are currently 'meeting with problems' or 'not meeting' Land Health Standard 3 may be improved where overlap with treatment areas occur, through the removal of encroaching pinyon-Juniper that has been identified as a causal factor for not meeting Standard 3.

Cumulative Effects:

Continued restoration projects, along proper management of other resources authorized in the project area should result in more resilient plant communities. Cumulative impacts should be positive by maintaining and improving areas currently not meeting Land health Objectives.

Protective/Mitigation Measures:
Opportunities for seeding will also be evaluated. Seeding the area would be done with a mixture of grasses and forbs to boost the establishment of native/natural herbaceous plants in an attempt to reduce the threat of invasion weeds and other unwanted plants. Only BLM approved Native Seed mix would be authorized

3.3.4 Wildlife (includes fish, aquatic and terrestrial) (includes a finding on Standard 3)

Current Conditions:

Brewer's sparrow, which is on the BLM sensitive species list, may occur in the area. Migratory birds are likely to occur in the area as are other wildlife species associated with sagebrush, oakbrush, and pinyon juniper communities. Nesting raptors may also be found in trees in the area. Treatment areas are within severe winter and winter concentration areas for both elk and mule deer, and are also in summer range for mule deer. While some animals may be temporarily displaced due to disturbance during active treatments, the temporal and spatial scale of these disturbances are relatively small and not expected to impact populations.

Finding on Public Land Health Standard 3 for Animal Communities:

The BLM completed a land health assessment in 2002 and determined that approximately 95 percent of the overall restoration area was generally meeting Land Health Standard 3. Less than one percent of the area was not meeting land health standard 3 and over laps with area identified for hand cutting. The BLM determined that the reasons the area was not meeting Land Health Standard 3 was due to habitat concerns including low soil stability and soil loss, decadent sage, pinyon juniper invasion, and low grass cover. Approximately four percent of the overall area was determined to be meeting with problems. Portions of these areas overlap with proposed hand thinning areas. Issues identified in these areas include as some erosion, decadent sage, late seral stage, pinyon juniper invasion, and Ips beetle mortalities.

Alternative A – No Action:

Direct and Indirect Effects: There are minor direct effects to animal communities if the proposed project is not implemented.

Indirect effects to habitat would include increased risk of continued spread of pinyon juniper which may benefit some animal species while negatively affecting others. Large and catastrophic fire would not be mitigated which can degrade habitat for most of not all animals species, especially in the short term. Over the long term degradation of sagebrush areas may impact Brewer's sparrow with loss of habitat. No other sensitive animal species are known to occur within the area.

Finding on Public Land Health Standard 3 for Animal Communities:

The No Action Alternative is not expected to substantially change the ability of the action area to meet Land Health Standard 3. Some areas that are currently 'meeting with problems' or 'not meeting' Land Health Standard 3 may continue to degrade. Large fire would like increase the acres of land not meeting Land Health Standard 3.

Cumulative Effects:

The cumulative effects of the No Action Alternative are continued pinyon and juniper encroachment, and increased risk of larger more intense wildfire. These both have the potential to degrade habitat wildlife. Pinyon juniper spread will benefit some wildlife while negatively impacting other wildlife.

Alternative B – Proposed Action:

Direct and Indirect Effects: There would be minor direct effects to animal communities if the proposed project is implemented, since sensitive animal species are not known to occur within the area, and spatial and timing limitations would provide protections to Brewer's sparrow.

Indirect effects to animal communities are expected to be minimal and likely to improve habitat conditions for desirable animal species. Also, the risk of large wildfire would be mitigated, which could preserve potential habitat for animal species in the area.

Finding on Public Land Health Standard 3 for Animal Communities:

The Proposed Action is not expected to substanitally change the ability of the action area to meet Land Health Standard 3. However, this action may help maintain the area meeting Land Health Standard 3 by mitigating large fires and pinyon juniper spread. Some areas that are currently 'meeting with problems' or 'not meeting' Land Health Standard 3 may be improved where overlap with treatment areas occur, through reduction of both live and dead pinyon and juniper cover and seeding.

Cumulative Effects:

Habitat treatments within the specific project area and within the larger landscape should improve habitat conditions for desirable animal species at the site scale and at larger scales. Monitoring outcomes will be important as climate change may make treatment outcomes less predictable. Mitigation of large fire should help preserve more intact and resilient habitat.

Protective/Mitigation Measures:

Design Features include: For projects where trees will be removed, tree removal will be performed between October 1 and November 14, or a survey for nesting raptors will be completed within the proposed project area and within ¼ mile of the project area for nesting raptors. If nesting raptors are found tree removal will be performed between October 1 and November 14.

Schedule project work outside of the dates May 15th and July15th, to protect species identified by the Migratory Bird Treaty Act.

3.4 HERITAGE RESOURCES AND HUMAN ENVIRONMENT

3.4.1 Cultural Resources

Current Conditions:

Hydroxe Units:

Units 1 and 2 proposed for hydroaxe activities in 2016 were inventoried for cultural resources under BLM GJFO CRIR 16716-01/ OAHP Document Number ME.LM.R909. Fifteen cultural resources were located by the survey, of which seven are recommended as eligible for listing on the National Register of Historic Places (NRHP). These include a prehistoric sheltered and an open camp (5ME21507 and 5ME21509), prehistoric lithic scatters (5ME21510, 5ME21511, and 5ME21512), a culturally scarred tree (5ME21508), and a historic road (5ME21514.1- Divide Road). 56 isolated finds have been located within these units; all are not eligible for listing on the NRHP.

Hand Thinning Units:

Unit 1 has been partially surveyed by 14503-03/ME.LM.R389. Nine cultural resource sites have been located within the unit and consist of prehistoric open camps and open lithic sites (5ME13458-5ME13464, 5ME13472, and 5ME13473). Two of the sites (5ME13458 and 5ME13459) are considered needs data for listing on the NRHP, and the remaining sites are determined not eligible for listing on the NRHP. Thirty-five isolated finds have been located within Unit 1; all of the sites are not eligible for listing on the NRHP.

Unit 2 has been partially surveyed by 14503-03/ME.LM.R389. Six isolated finds have been located within Unit 2; all are not eligible for listing on the NRHP.

Unit 3 has been partially surveyed by 14503-03/ME.LM.R389 and 14507-02/ME.LM.R611. Four cultural resource sites have been located within the unit and consist of prehistoric open camps and an historic road (5ME13450, 5ME13454, 5ME13457, and 5ME17912.1). 5ME13450 is determined as needs data for listing on the NRHP, and the remaining sites are determined not eligible for listing on the NRHP. Two isolated finds have been located within Unit 3; all are not eligible for listing on the NRHP.

Unit 4, proposed for hand thinning in 2016, has been partially surveyed by 14503-03/ME.LM.R389. Seven cultural resources have been located within the unit and consist of prehistoric open lithic and open campsites and historic roads and a camp. Six of the sites are recommended as not eligible for listing on the NRHP (5ME13431, 5ME17839, 5ME17840, 5ME17842, 5ME17911.1, and 5ME17912.2). The remaining site (5ME13439- a prehistoric open camp) needs further data before eligibility can be determined. Fifteen isolated finds have been located within Unit 4; all are not eligible for listing on the NRHP.

New Unit 5 has been fully surveyed by 1003-01/ME.LM.R363. Four isolated finds have been located within New Unit 5; all are not eligible for listing on the NRHP.

Unit 6 has been fully surveyed by 14507-02/ME.LM.R611. One isolated find has been located within Unit 6 all are not eligible for listing on the NRHP.

New Unit 6 has been partially surveyed by 14507-02/ME.LM.R611. Four isolated finds have been located within New Unit 6 all are not eligible for listing on the NRHP.

Unit 7 has been partially surveyed by 14503-03/ME.LM.R389. No cultural resource sites or isolated finds have been located within the unit.

Unit 08-1 has been fully surveyed by 1108-11/ME.LM.R690. One site, a prehistoric open camp (5ME16702) has been located in the unit. This site has been determined not eligible for listing on the NRHP.

Unit 08-5 has been fully surveyed by 1108-11/ME.LM.R690. Two sites, both prehistoric open camps (5ME16700 and 5ME16701) have been located in the unit. These sites have been determined not eligible for listing on the NRHP.

Unit 08-6 has been fully surveyed by 1108-11/ME.LM.R690. One site, a prehistoric open camp (5ME16699) has been located in the unit. This site has been determined not eligible for listing on the NRHP.

Unit 08-7 has been fully surveyed by 1108-11/ME.LM.R690. One site, a prehistoric open camp (5ME16698) has been located in the unit. This site has been determined not eligible for listing on the NRHP.

The unnamed units southeast of the 08 units have been partially surveyed by 1107-08/ME.LM.R604. Twenty-four cultural resource sites have been located by the survey and consist of prehistoric open lithic and open campsites. Ten sites (5ME15888, 5ME15893, 5ME15894, 5ME15900, 5ME15901, 5ME15904, 5ME16017, 5ME16021, and 5ME16022) are determined as eligible for listing on the NRHP, 12 sites are determined needs data (5ME15815-5ME15817, 5ME15887, 5ME15891, 5ME15897-5ME15899, 5ME15902, 5ME15903, 5ME16018, and 5ME16019), and two (5ME15886 and 5ME16984) are determined not eligible for listing on the NRHP. Eighteen isolated finds have been located within the units and all are determined not eligible for listing on the NRHP.

Unit 11 has been partially surveyed by 14503-03/ME.LM.R389. Two sites, a prehistoric open lithic site (5ME834) and a prehistoric open camp (5ME13424) have been located in the unit. These sites have been determined not eligible for listing on the NRHP.

The two southwestern parcels of Unit 13 have been fully surveyed by 1003-02/ME.LM.R353. The northeastern parcel of Unit 13 has not been inventoried. Previous inventory located two cultural resource sites consisting of a prehistoric open lithic site (5ME834) and an historic telephone line (5ME13260). Both sites are determined not eligible for listing on the NRHP. Two isolated finds have been located within the units and both are determined not eligible for listing on the NRHP.

The unnamed unit on the northwest edge of the project (surrounding Unit 11) has been almost entirely inventoried by 14502-01/ME.LM.R259, 14503-03/ME.LM.R389, 15404-02/ME.LM.R463, and 17311-01/ME.LM.R706. Twelve cultural resource sites have been located

consisting of prehistoric open lithic and open camp sites. One site (5ME14466) has been determined eligible, two sites (5ME13426 and 5ME13458) are determined needs data, and nine sites (5ME834, 5ME13440, 5ME13424, 5ME13425, 5ME13427, 5ME13430, 5ME14465, and 5ME14467) are determined not eligible for listing on the NRHP. Twenty-two isolated finds have been located within the unit and all are determined not eligible for listing on the NRHP.

The unnamed units south and southwest of Unit 1 have been fully surveyed by 14501-10/ME.LM.R256. Two sites (5ME12578 and 5ME12579) have been located by the survey and consist of open lithic sites. Both sites are determined not eligible for listing on the NRHP. Fourteen isolated finds have been located within the units and all are determined not eligible for listing on the NRHP.

Cutting and Piling Units:

Units 1, 3, 4, and 5 proposed for cutting and piling in 2016 have been inventoried by BLM GJFO CRIR/ OAHP Document numbers 14503-03/ME.LM.R389, 14507-02/ME.LM.R611, and 16716-01/ME.LM.R909. Nine cultural resources have been located in these areas, consisting of prehistoric open and sheltered camps and prehistoric open lithic sites. Five of these sites (5ME15998, 5ME16002, 5ME21509, 5ME21510, and 5ME21512) are recommended as eligible for listing on the NRHP and one site (5ME13445) needs data prior to eligibility determination. The remaining three sites (5ME15999, 5ME16000, and 5ME16001) are recommended as not eligible for listing on the NRHP. Twelve isolated finds have been located within the units and all are determined not eligible for listing on the NRHP.

Unit 2 has been partially surveyed by 14503-03/ME.LM.R389. Two sites, prehistoric open camps (5ME13447 and 5ME13450) have been located in the unit. These sites have been determined needs data for listing on the NRHP. Three isolated finds have been located within the unit and all are determined not eligible for listing on the NRHP.

Unit 6 has been entirely surveyed by 14503-03/ME.LM.R389 and 14507-02/ME.LM.R611. Two sites, prehistoric open camps (5ME13454 and 5ME13457) have been located in the unit. These sites have been determined not eligible for listing on the NRHP. Four isolated finds have been located within the unit and all are determined not eligible for listing on the NRHP.

Unit 7 has been partially surveyed by 14503-03/ME.LM.R389. No cultural resources have been located in this unit.

Unit 8 has been partially surveyed by 14503-03/ME.LM.R389. No cultural resources have been located in this unit.

Unit 9 has been fully surveyed by 14503-03/ME.LM.R389. One prehistoric open camp (5ME13468) has been located in this unit and the site is determined needs data for listing on the NRHP. One isolated find is located in this unit and is determined not eligible for listing on the NRHP.

Unit 10 has been partially surveyed by 14503-03/ME.LM.R389 and 15404-02/ME.LM.R463. No cultural resources have been located in this unit.

Unit 11 has been partially surveyed by 14503-03/ME.LM.R389. A prehistoric open lithic site (5ME834) and a prehistoric open campsite (5ME13424) have been located in this unit. Both sites are determined not eligible for listing on the NRHP.

Unit 12 has been fully surveyed by 15404-02/ME.LM.R463. No cultural resources have been located in this unit.

Unit 13 has not been inventoried for cultural resources.

Alternative A – No Action:

Direct and Indirect Effects: Under this alternative, there would be no project-related direct and indirect effects to cultural resources on BLM-administered lands from the fuels reduction project.

Cumulative Effects:

Under this alternative, there would be no project-related cumulative effects to cultural resources on BLM-administered lands from the fuels reduction project.

Alternative B – Proposed Action:

Direct and Indirect Effects: Because there are known and potential wooden (and therefore flammable and susceptible to fuels reduction activities) cultural resources within the project area, there is potential for direct and indirect effects to these types of sites. Hydroaxe activities could inadvertently destroy aboriginal wooden features, as could hand-thinning and burning. Flaked and ground stone artifacts can be affected by fire (Winthrop 2014), and fire burning can also deposit modern and/or old wood charcoal, contaminating cultural resource sites and making chronometric dating more difficult. However, the reality is that most or all of the sites within the current project area have probably burned in the past, prehistorically and/or historically, and periodic low-intensity and low-duration fires help to reduce fuel loads and prevent future catastrophic fires without causing significant damage to artifacts and features.

With the protective/mitigation measures listed below, activities related to fuels reduction would not impact cultural resource sites.

Cumulative Effects:

Performing hand-thinning within and around eligible sites is better for long-term preservation of data potential than allowing fuels to build up year after year and being susceptible to catastrophic fire. Excluding archaeological sites from prescribed burns or other fuels treatment activities can sometimes do more harm than good over the course of time. That is because the differences between the treated and untreated areas may be pronounced, such as when “tree islands” are left around sites. As a result, the sites may become more visible to the public and more likely to be looted or vandalized. Hand thinning within buffers around site boundaries, as included in the protective/mitigation measures should reduce potential cumulative effects by not creating these “tree islands”.

Protective/Mitigation Measures:

In order to protect cultural resources in the units planned for hydroaxe work in 2016, hydroaxe and burning operations should not be conducted within 100 feet of 5ME21507-5ME21512. Only hand thinning should occur within these buffers around the site boundaries. Extra care should be taken to protect 5ME21508 (the culturally scarred tree) so that it is not inadvertently damaged or burned. The BLM GJFO archaeologist will provide photographs and locational information of the tree so that it can be flagged and avoided.

Protective and mitigation measures for the hand thinning and cut and pile units planned for work in 2016 are not necessary. As this project continues, however, more cultural resource inventory may be necessary. The archaeologist may require re-visitation of identified sites within the hand thinning and cut-and-pile units phased for work in the future.

Because there are known aboriginal wooden structures and culturally scarred trees, as well as ponderosa pine stands in the general project area and due to the nature of this project, crews will need to attend a one- to two-hour wickiup and culturally scarred tree identification training. This training will be led by a BLM or BLM-permitted archaeologist each year prior to project implementation.

3.4.2 Tribal and Native American Religious Concerns

Current Conditions:

American Indian religious concerns are legislatively considered under several acts and Executive Orders, namely the American Indian Religious Freedom Act of 1978 (PL 95-341), the Native American Graves Environmental Assessment Protection and Repatriation Act of 1990 (PL 101-601), and Executive Order 13007 (1996; Indian Sacred Sites). In summary, these require, in concert with other provisions such as those found in the NHPA and ARPA, that the federal government carefully and proactively take into consideration traditional and religious Native American culture and life and ensure, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to “historic properties” and “archaeological resources”. In some cases elements of the landscape without archaeological or other human material remains may be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation. Sites of importance to tribes were located during inventory for the 2016 hydroaxe activities, and are generally known in the project area. Tribal consultation was conducted via correspondence in May of 2016. As of this analysis, the Ute Mountain Ute, Northern Ute, and Southern Ute tribes had no concerns about the project.

Alternative A – No Action:

Direct and Indirect Effects: There are no potential impacts known to the agency under this alternative.

Cumulative Effects:

There are no cumulative impacts known to the agency.

Alternative B – Proposed Action:

Direct and Indirect Effects: The Ute have a generalized concept of spiritual significance that is not easily transferred to Western models or definitions. As such the BLM recognizes that they have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands. The below mitigation measures would protect important Ute cultural resource sites and no tribal access to the area would be impacted by this project.

Cumulative Effects:

Cumulative effects would be the same as those described under direct and indirect effects section.

Protective/Mitigation Measures:

In order to protect cultural resources in the units planned for hydroaxe work in 2016, hydroaxe and burning operations should not be conducted within 100 feet of 5ME21507-5ME21512. Extra care should be taken to protect 5ME21508 (the culturally scarred tree) so that it is not inadvertently damaged or burned. The BLM GJFO archaeologist will provide photographs and locational information of the tree so that it can be flagged and avoided.

Protective and mitigation measures for the hand thinning and cut and pile units planned for work in 2016 are not necessary. As this project continues, however, more cultural resource inventory may be necessary. The archaeologist may require re-visitation of identified sites within the hand thinning and cut-and-pile units phased for work in the future.

Because there are known aboriginal wooden structures and culturally scarred trees, as well as ponderosa pine stands in the general project area and due to the nature of this project, crews will need to attend a one- to two-hour wickiup and culturally scarred tree identification training. This training will be led by a BLM or BLM-permitted archaeologist each year prior to project implementation.c

3.5 LAND RESOURCES

3.5.1 Recreation

Current Conditions:

Current recreation use in the area of the Proposed Action includes OHV riding, dispersed camping and big game hunting. The in the 2009 designation legislation identified recreation as one of the purposes of the Dominguez-Escalante National Conservation Area.

Alternative A – No Action:

Direct and Indirect Effects: Under the No Action Alternative the fuels reduction project would not occur. The recreation setting would not change. The recreation opportunities that currently exist would continue to exist.

Cumulative Effects:

Combined with past recreation, livestock grazing, and fuels reduction projects, the effects of the No Action Alternative would be similar to the direct and indirect effects described above.

Alternative B – Proposed Action:

Direct and Indirect Effects: Under the Proposed Action the fuels reduction treatment would remove and or change the appearance of the vegetation. As a result, the recreation setting would change. Visitors would encounter a manipulated landscape. This could affect the experiences of visitors. Visitors seeking a more natural landscape would encounter a landscape with evidence of human manipulation. That said, these effects would not persist over the long-term (5 – 10 years). Over time, the evidence of manipulation would become less and less noticeable. These types of vegetation manipulations often improve big game wildlife habitat. As such, the opportunities for big game elk hunting in the project area could improve. The design feature to flag the boundary of the project area to avoid straight lines and follow the existing lines in the landscape (terrain and vegetation) would reduce the visibility of the manipulation and the impacts to the recreation setting.

Cumulative Effects:

Combined with past livestock grazing and vegetation treatment projects, the cumulative effects of the Proposed Action would be similar to those described above in the direct and indirect effects.

CHAPTER 4 - CONSULTATION AND COORDINATION

4.1 LIST OF PREPARERS AND PARTICIPANTS

INTERDISCIPLINARY REVIEW

NAME	TITLE	AREA OF RESPONSIBILITY
Natalie Clark	Archaeologist	Cultural Resources, Native American Religious Concerns
Chris Pipkin Andy Windsor	Outdoor Recreation Planner Outdoor Recreation Planner	Access, Transportation, Recreation, VRM, Wilderness,
Scott Clarke	Range Management Specialist	Vegetation, Range
Bob Price	Range Management Specialist	Range, Forestry
Jim Dollerschell	Range Management Specialist	Range, Wild Horse & Burro Act
David Scott Gerwe	Geologist	Geology, Paleontology
Alan Kraus	Hazardous Materials Specialist	Hazardous Materials
Robin Lacy	Realty Specialist	Land Tenure/Status, Realty Authorizations
Heidi Plank Amanda Ewing	Wildlife Biologist	T&E Species, Migratory Bird Treaty Act, Terrestrial & Aquatic Wildlife
Anna Lincoln Nikki Grant-Hoffman Amanda Ewing	Ecologist Science Coordinator	Land Health Assessment, Range Ecology, Special Status Plant Species, Riparian and Wetland
Christina Stark	Assistant Field Manager Resources/Planning & Environmental Coordinator	Environmental Justice, Prime & Unique Farmlands, Socioeconomics, Environmental Coordinator
Kevin Hyatt	Hydrologist	Soils, Air Quality, Water Quality, Hydrology, Water Rights
Mark Taber	Range Management Specialist	Weed Coordinator, Invasive, Non-Native Species
Jeff Phillips	Fire Ecologist Natural Resource Specialist	Fire Ecology, Fuels Management

4.2 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

Colorado State Historic Preservation Office, Colorado Division of Parks and Wildlife, Mesa County.

CHAPTER 5 - REFERENCES

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