United States Department of the Interior
Bureau of Land Management

Environmental Assessment DOI-BLM-UT-G000-2014-0002-EA

November, 2014

Tom Patterson Prescribed Fire Hazardous Fuel Reduction

Location:
Uintah County, Utah
T14S, R24E, Sec 11-16, 21-28, 33-36: T14S R25E, Sec 18-19, 30-32
T15S, R24E, Sec 1-3, 10-15, 23-25, 36: T15S, R25E, Sec 5-8, 17-20, 29-31.

U.S. Department of the Interior
Bureau of Land Management
Vernal Field Office
170 South 500 East
Vernal, Utah 84078
Phone: 435-781-4400
FAX: 435-781-4410

This page intentionally left almost completely blank

1.0 CHAPTER 1 - INTRODUCTION AND NEED FOR THE PROPOSED ACTION

The Environmental Assessment (EA) has been prepared to analyze the Tom Patterson Prescribed Fire Hazardous Fuel Reduction project. The EA is an analysis of potential impacts that could result with the implementation of a proposed action or no action alternative. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). A FONSI statement is a document that briefly presents the reasons why implementation of the selected alternative will not result in "significant" environmental impacts (effects) beyond those already addressed in the Vernal Resource Management Plan (2008). This document provides the environmental assessment for the Tom Patterson Prescribed Fire Hazardous Fuel Reduction Project. If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the alternative selected.

1.1 Purpose and Need for the Proposed Action

The proposed action is needed primarily to reduce the risk of large wildfires in the project area. An additional need is to maintain important sagebrush habitat for a variety of wildlife species in the project area.

The purposes for the Tom Patterson Prescribed Fire Hazardous Fuel Reduction project include:

- Maintain and improve areas that provide for important ecological functions and habitat for Greater sage grouse.
- Reduce the buildup of hazardous fuels by removing pinyon pine and Utah juniper encroachment into sagebrush communities.
- Reduce the risk of large fire events by creating a mosaic of early successional stage vegetation that act as fire breaks.
- Maintain areas that provide for important ecological functions and habitat for keystone species.
- Maintain important sagebrush habitat for a variety of wildlife species in the project area.
- Maintain natural fire return intervals.

1.2 Conformance with the BLM Land Use Plan(s)

The alternatives considered in this EA are in conformance with the Vernal Resource Management Plan Record of Decision (2008). The specific citations are listed below:

Page 77 in section Goals and Objectives reads:

- The primary goal and objective of fire management is to help restore natural systems to their proper functioning condition by restoring fire to its legitimate role in the ecosystem, including managing wildland fire for other resource benefits.

- For Wildland Urban Interface (WUI) areas, the objective will be to reduce hazardous fuels adjacent to these at-risk areas through mechanical, prescribed fire, or chemical treatments, or a combination thereof. The BLM will develop WUI projects in partnership with the State of Utah, the Ute Indian Tribe, and Daggett, Duchesne, Uintah, and Grand Counties.

Page 78 in section Fire-4 reads:

> "Hazardous fuel reduction activities will be implemented primarily through the use of prescribed fire and managed wildland fire. In some cases, chemical and/or mechanical treatments will be used in conjunction with fire. Where social and/or resource constraints preclude the use of fire, mechanical and/or chemical treatments will be used."

1.3 Relationships to Statutes, Regulations and Other Plans

This project is in Uintah County.

<u>Uintah County General Plan of 2007</u>
All alternatives considered in detail in the EA are not in conflict with the Uintah County's General Plan Update of 2007, which states: With respect to "public land management", the County continues to support "multiple-use" management practices, responsible public-land resource use and development.

<u>Federal Statutes and Regulations.</u>

- Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594).
- Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; U.S.C. 315).
- Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 42 U.S.C. 1856, 1856a).
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 686).
- The Federal Land Management and Policy Act of 1976 (FLPMA) (Public Law 94-579; 43 U.S.C. 1701).
- Disaster Relief Act, Section 417 (Public Law 93-288).
- 2001 Annual Appropriations Acts for the Department of the Interior.
- United States Department of the Interior Manual (910 DM 1.3).
- 1995 Federal Wildland Fire Management Policy.
- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update).
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures.

- 1998 BLM Handbook 9214, “Prescribed Fire Management” describes authority and policy for prescribed fire use on public lands administered by the Bureau of Land Management.
- September 2000, “Managing the Impacts of Wildfires on Communities and the Environment.”
- October 2000, National Cohesive Strategy goal is to coordinate an aggressive, collaborative approach to reduce the threat of wildland fire to communities and to restore and maintain land health.
- August 2001, “Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment -10 Year Comprehensive Strategy” provides a foundation for wildland agencies to work closely with all levels of government, tribes, conservation, and commodity groups and community-based restoration groups to reduce wildland fire risk to communities and the environment.

1.4 Identification of Issues

The proposed action was reviewed by an interdisciplinary team of BLM resource specialists. For a list of all resources considered, refer to Appendix A. The below issues were carried forward for detailed analysis based on this internal review, since they would be potentially impacted by the project to a level that may help make a reasoned choice among alternatives or may be related to a potentially significant effect.

- *Air Quality and Greenhouse Gas Emissions:* Potential particulate matter impacts to downwind receptors.
- *Fuels and Fire Management:* Potential for the proposed action to change the fire cycle by decreasing hazardous fuels designed to result in a return to the natural fire regime and condition class with shorter flame lengths in the event of a wildfire.
- *Wildlife:* Potential impacts to big game and raptors individuals and habitat.
- *Migratory Birds:* Potential impacts to individuals and habitat.
- *Threatened, Endangered, Proposed or Candidate Animal Species:* Potential to impact greater sage grouse and Mexican spotted owl habitat and individuals.
- *Plants: Invasive Plants/Noxious Weeds:* Potential to spread Russian knapweed, Canada thistle, low whitetop, musk thistle, Russian olive, broadleaved pepperweed, and saltcedar.
- *Lands with Wilderness Characteristics:* Approximately 11,000 acres have been identified through the inventory process as having wilderness characteristics.
- *Visual Resource Management:* Approximately 3,400 acres were identified as VRM Class II management areas. The Mountain Browse Instant Study Area (ISA) is VRM class I, but will be excluded from the project.

2.0 CHAPTER 2 – DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Introduction

This EA focuses on the Proposed Action and No Action Alternatives. The No Action alternative is considered and analyzed to provide a baseline for comparison of the impacts of the proposed action.

2.2 Proposed Action

The treatment involves a prescribed burn and a bullhog mastication device treating areas within 50 feet adjacent to major roads in the project for holding lines. The proposed action is a hazardous fuels reduction project to reduce the risk, frequency and intensity of wildfires on lands within and adjacent to the project area. The total project area consists of 23,697 acres; the final treated acres are estimated at 10,000 acres and will vary depending upon the mosaic pattern of the burn.

Bullhog

The bullhog methodology involves the mulching of pinyon pine and Utah juniper (PJ) trees and large brush species including serviceberry, sagebrush and mahogany with a reciprocating drum. The majority of species over two feet in height will be mulched. The mastication treatment is adjacent to two main north-south roads along ridgetops, creating a 25 foot buffer on each side of specific roads over 20 miles covering approximately 120 acres. These main roads include: Tom Patterson road, Tom Patterson point road and McCook ridge road.

These control lines are critical in removing fuels and facilitating control efforts while burning the units from roads. Hand slashing using chainsaws may occur within the mastication treatment polygon in areas containing steep terrain or inaccessible terrain for the bullhog or areas that are sensitive to equipment. Work will be performed between September 1 and March 15th.

The vegetation in the project area is comprised of primarily PJ and sagebrush. The PJ trees have increased in overall density and encroached into the sagebrush habitat type in the project area, increasing the overall fuel loads. The sagebrush habitat has been designated as a Fire Regime Group III (fire return interval 35-100 years). The increased amount of PJ trees have resulted in a change in the Fire Regime Condition Class from a Class I to a Class II Condition Class (Vernal Fire Management Plan, 2009). The departure from a Class I Condition Class to a Class II Condition Class indicates that at least one cycle of the natural fire regime fire interval has been missed due to historic fire suppression efforts, manmade structures or changing vegetation conditions. The change from a Class I to Class II has resulted in an increase of the hazardous fuel loads in the project area.

The mastication treatment would result in bark, sawdust, and wooden chips being left on the ground after treatment is completed. No new access roads would be needed to access the

project area and access would be via existing roads and trails. No permanent manmade structures would be established or left remaining after treatment work is completed. A maintenance treatment of slashing may occur in the future as PJ regeneration develops on the site to reduce the amount of pinyon pine and juniper seedling establishment into the sagebrush ecosystem.

No treatment work would be allowed during times of saturated soil conditions, which exist when ruts greater than three inches in depth are created by the bullhog machine. The mastication only area still has an adequate understory vegetation to protect the soil from erosion, following removal of the PJ trees, thus reseeding this area after treatment would not be required.

Prescribed Burn

A second treatment proposed is a prescribed burn to remove conifer encroachment and establish an early successional stage in the Mountain sagebrush vegetation type. The project area covers 23,697 acres; the goal is to apply fire to at least 10,000 acres in an uneven mosaic pattern. The burning treatment will occur over multiple years depending upon weather, fuel conditions, prescription parameters, resource availability and funding.

Prescribed fire would be implemented utilizing aerial and/or hand ignition techniques targeting mixed conifer, and pinyon juniper woodland with mosaic burn patterns and mixed burn severities as an objective. Most riparian areas will be avoided; however, the areas would be ignited on the outside edge so that the prescribed fire could back towards the interior of the riparian area.

Treatment work is expected to occur after September 1 and before December 1. These dates would protect deer and elk on their summer and winter range, and are in compliance with the Resource Management Plan (see 4.2.3.1 Big Game Species for specific information on dates).

Prescribed fires would comply with the Utah State air quality standards. Prior to prescribed fire implementation, the District would obtain approval from Utah Smoke Management.

Due to the potential for weed invasion within the project area, standard weed prevention measures would be followed. These include: conducting a pre-project weed inventory; washing equipment prior to entering the project area; and monitoring the project area to detect and/or treat weed infestations.

Notification: Prior to treatment notification and coordination with oil and gas companies and right of way owners in the area will occur to ensure safety for life and facilities.

2.3 No Action Alternative

Under this alternative, no hazardous fuel reduction actions would be taken. Current resource conditions and trends would continue. The area would continue to be at risk from wildfires; hazardous fuels would continue to increase. The pinyon pine and Utah juniper will continue

to increase in frequency and dominance while the forbs, brush and grass components will continue to diminish.

2.4 Alternatives Considered But Not Analyzed

2.4.1 Mechanical bullhog and mowing

The project size and uneven terrain would make mechanical treatments problematic. This vegetation ecotone is a fire adapted system that relies on periodic fire events to function in a natural way. Mechanical treatments would meet some of the fire behavior objectives by reducing the fuels and thus flame lengths in the event of a fire. The early successional stage of sagebrush through the use of fire would not be realized by mechanical means.

3.0 CHAPTER 3 – AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values) of the project area as identified by the interdisciplinary team analysis and as presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

3.2 General Setting

The project area is located in the Tom Patterson and McCook ridge areas approximately 60 miles south of Vernal, UT. The project is between Chipeta and Sweet Water canyons.

The elevation on the project ranges from 6,640 to 8,290 feet. This area receives on average 16 to 22 inches of precipitation annually. The soil is a mixture of an upland stony loam to very steep stony loam that are well drained; slopes ranging from flat to 60 percent.

The overstory vegetation consists primarily of pinyon pine (*Pinus edulis*), Utah juniper (J*uniperus osteosperma*), and Douglas fir (*Pseudotsuga menziesii*). The mountain brush community is represented with mountain big sagebrush (A*rtemisia tridentata var. vaseyana*) and serviceberry (*Amelanchier alnifolia*), and mountain mahogany (*Cercocarpus montanus)* among others.

3.3 Resources Brought Forward for Analysis

During the analysis conducted by the interdisciplinary team, it was found that the following aspects of the environment could potentially be affected by the proposed action.

3.3.1 Air Quality and Greenhouse Gas Emissions

3.3.1.1 Air Quality

The Project Area is located on the southern end of the Uinta Basin at roughly 8,200 feet elevation. The area has a semiarid, mid-continental climate regime typified by dry, windy conditions, limited precipitation and wide seasonal temperature variations subject to

abundant sunshine and rapid nighttime cooling. The Uinta Basin is designated as unclassified/attainment by the EPA under the Clean Air Act. This classification indicates that the concentration of criteria pollutants in the ambient air is below National Ambient Air Quality Standards (NAAQS), or that adequate air monitoring is not available to determine attainment.

NAAQS are standards that have been set for the purpose of protecting human health and welfare with an adequate margin of safety. Pollutants for which standards have been set include ground level ozone, (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and carbon monoxide (CO), and particulate matter less than 10 microns in diameter (PM_{10}) or 2.5 microns in diameter ($PM_{2.5}$). Airborne particulate matter consists of tiny coarse-mode (PM_{10}) or fine-mode ($PM_{2.5}$) particles or aerosols combined with dust, dirt, smoke, and liquid droplets. $PM_{2.5}$ is derived primarily from the incomplete combustion of fuel sources and secondarily formed aerosols, whereas PM_{10} is primarily from crushing, grinding, or abrasion of surfaces. **Table 3-1** lists ambient air quality background values for the Uinta Basin and NAAQS standards.

Table 3-1. Ambient Air Quality Background Values

Pollutant	Averaging Period(s)	Uinta Basin Background Concentration (μg/m^3)	NAAQS (μg/m^3)
SO_2	Annual 24-hour 3-hour 1-hour	0.8[2] 3.9[2] 10.1[2] 19.0[2]	--[1] --[1] 1,300 197
NO_2	Annual 1-hour	8.1[3] 60.2[3]	100 188
PM_{10}	Annual 24-hour	7.0[4] 16.0[4]	--[6] 150
$PM_{2.5}$	Annual 24-hour	9.4[3] 17.8[3]	15 35
CO CO	8-hour 1-hour	3,450[4] 6,325[4]	10,000 40,000
O_3	8-hour	100.0[3,5]	75

1 – The 24-hour and annual SO2 NAAQS have been revoked by USEPA
2 – Based on 2009 data from Wamsutter Monitoring Station Data (USEPA AQS Database)
3 – Based on 2010/2011 data from Redwash Monitoring Station (USEPA AQS Database)
4 – Based on 2006 data disclosed in the Greater Natural Buttes FEIS. (BLM, 2012)
5 – Ozone is measured in parts per billion (ppb)
6 – The annual PM10 NAAQS has been revoked by USEPA

Existing point and area sources of air pollution within the Uinta Basin include the following:

- Exhaust emissions (primarily CO, NO_x, $PM_{2.5}$, and HAPs) from existing natural gas fired compressor engines used in transportation of natural gas in pipelines;
- Natural gas dehydrator still-vent emissions of CO, NO_x, $PM_{2.5}$, and HAPs;
- Gasoline and diesel-fueled vehicle tailpipe emissions of VOCs, NO_x, CO, SO_2, PM_{10}, and $PM_{2.5}$;
- Oxides of sulfur (SO_x), NO_x, fugitive dust emissions from coal-fired power plants, and coal mining/ processing;
- Fugitive dust (in the form of PM_{10} and $PM_{2.5}$) from vehicle traffic on unpaved roads, wind erosion in areas of soil disturbance, and road sanding during winter months; and,

- Long-range transport of pollutants from distant sources.

Two year-round air quality monitoring sites were established in summer 2009 near Red Wash (southeast of Vernal, Utah) and Ouray (southwest of Vernal). These monitors were certified as Federal Reference Monitors in fall of 2011, which means they can be used to make a NAAQS compliance determination. The complete EPA Ouray and Redwash monitoring data can be found at: http://www.epa.gov/airexplorer/index.htm

Both monitoring sites have recorded numerous exceedences of the 8-hour ozone standard during the winter months (January through March 2010, 2011, and 2013). It is thought that high concentrations of ozone are being formed under a "cold pool" process. This process occurs when stagnate air conditions form with very low mixing heights under clear skies, with snow-covered ground, and abundant sunlight. These conditions, combined with area precursor emissions (NO_x and VOCs), can create intense episodes of ozone. The high numbers did not occur in January through March 2012 due to a lack of snow cover. This phenomenon has also been observed in similar locations in Wyoming. Winter ozone formation is a newly recognized issue, and the methods of analyzing and managing this problem are still being developed. Existing photochemical models are currently unable to reliably replicate winter ozone formation. This is due to the very low mixing heights associated with unique meteorology of the ambient conditions. Further research is needed to definitively identify ozone precursor sources that contribute to observed ozone concentrations.

The UDAQ conducted limited monitoring of $PM_{2.5}$ in Vernal, Utah in December 2006. During the 2006-2007 winter seasons, $PM_{2.5}$ levels were higher than the $PM_{2.5}$ health standards that became effective in December 2006. The $PM_{2.5}$ levels recorded in Vernal were similar to other areas in northern Utah that experience wintertime inversions. The most likely causes of elevated $PM_{2.5}$ at the Vernal monitoring station are those common to other areas of the western U.S. (combustion and dust) plus nitrates and organics from oil and gas activities in the Basin. $PM_{2.5}$ monitoring that has been conducted in the vicinity of oil and gas operations in the Uinta Basin by the Red Wash and Ouray monitors beginning in summer 2009 have not recorded any exceedences of either the 24 hour or annual NAAQS.

HAPs are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental impacts. The EPA has classified 187 air pollutants as HAPs. Examples of listed HAPs associated with the oil and gas industry include formaldehyde, benzene, toluene, ethylbenzene, isomers of xylene (BTEX) compounds, and normal-hexane (n-hexane). There are no applicable Federal or State of Utah ambient air quality standards for assessing potential HAP impacts to human health.

Under the 1977 Clean Air Act Amendments (42 U.S.C. 7401 et. Seq.), areas of the country were designated as Class I, II, or III Airsheds for the Prevention of Significant Deterioration purposes. Class I areas include national parks and in the wilderness areas that were in existence as of August 7, 1977 larger than 5,000 acres. Class I provides the most protection to pristine lands by severely limiting the amount of additional human caused air pollution which can be added to these areas. Class II areas may receive a greater amount of man-made

pollution than Class I areas. Dinosaur National Monument, located approximately 48 miles north of the Project Area, is a Class II Area. There are no Class I Airsheds which would be affected by this project. The Project Area is contained in Utah Airshed 3 (Utah Airshed 3 comprises areas in the state above 6,500 feet elevation). Most smoke from fires within the Project Area is likely to disperse in a northeasterly direction, as the prevailing winds are out of the southwest.

3.3.1.2 Greenhouse Gas Emissions

Ongoing scientific study has identified the potential impacts of anthropogenic greenhouse gas (GHG) emissions and changes in biological carbon sequestration due to land management activities on global climate. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused CO_2 (e) concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. The Intergovernmental Panel on Climate Change recently concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally averaged temperatures since the mid- 20th century is very likely due to observed increase in anthropogenic greenhouse gas concentrations" (IPCC 2007)

Global mean surface temperatures have increased nearly 1.8 degrees F. from 1890 to 2006 (Goddard, 2007). Models indicate that the average temperature changes are likely to be greater in the Northern Hemisphere. Northern latitudes have exhibited temperature increases of nearly 21 degrees since 1900, with a nearly 1.8 degree increase since 1970 alone. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climatic change.

In 2001, the IPCC indicated that by the year 2100, global average surface temperatures would increase 2.5 to 10.4 degrees above the 1900 levels. The National Academy of Sciences has confirmed these findings, but has also indicated there are uncertainties regarding how climate change may affect different regions. (National Academy of Sciences, 2006). Computer model predictions indicated that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures is more likely than increases in daily maximum temperatures. Increases in temperatures would increase water vapor in the atmosphere, and reduce soil moisture, increasing generalized drought conditions, while at the same time enhancing heavy storm events. Although large-scale spatial shifts in precipitation may occur, these changes are more uncertain and difficult to predict.

Several activities contribute to the phenomena of climate change, including emissions of GHGs (especially carbon dioxide and methane) from fossil fuel development, large wildfires and activities using combustion engines, changes to the natural carbon cycle; and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs will have a

sustained climatic impact over different temporal scales. For example, recent emissions of carbon dioxide may influence climate for 100 years.

3.3.2 Fuels and Fire Management

The project area vegetation is comprised primarily of mountain brush community with pinyon pine and Utah juniper (PJ) in the lower elevations, Douglass fir, mountain big sagebrush, mountain mahogany and serviceberry in the higher elevations. The mountain big sagebrush type has been designated as fire regime group III where the historic natural fire interval is between 35-100 years. The project area has also been designated as a class II condition class. The condition class II designation indicates that the area has gone at least one fire interval period (35-100 years for this site) between fire events. The decrease of fire on the landscape may be attributed to several factors including: fire suppression efforts, livestock grazing removing fine fuels, breaks in fuels consisting of roads and/or rights-of-ways for oil and gas infrastructure. Due to this alteration in the fire regime and corresponding change in the fire condition class there has been an increase in the overall fuel loadings.

Sagebrush sites have experienced significant PJ infilling and expansion during the last century in the Uintah Bain area. Pinyon-juniper trees have expanded into landscapes once dominated by an assemblage of grasses, forbs, and shrubs. The expansion of PJ woodlands affects soil resources, water and nutrient cycles, forage production, wildlife habitat, biodiversity, plant communities, plant structure and fire patterns across the landscape. Another impact is the shift from historic fire regimes to larger and more intense wildfires that are increasingly determining the future of the landscape.

3.3.3 Wildlife

Wildlife species that are likely to occur in the project area include turkeys, black bear, mountain lion, coyote, and bobcat, as well as a large variety of small mammals. Many of these species are habitat generalists, meaning they are not tightly restricted to specific habitat types. These species have not shown negative impacts by prescribed fire operations; therefore, they will not be discussed further in this document.

3.3.3.1 Mule Deer and Rocky Mountain Elk

Mule deer and Rocky Mountain elk are the primary big game species found within the project area. Use typically occurs from spring to winter, when elk and deer utilize the project area for foraging, thermal cover and escape cover. Both species have an extremely variable diet and therefore live in a variety of habitats (UDWR 2008). They consume a combination of grasses, forbs, and shrubs. Food consumption is also related to the season of use (UDWR 2010).

Crucial elk winter and summer habitat along with crucial deer summer habitat has been designated within the project area. There is approximately 1,460 acres of crucial elk winter habitat, 22,187 acres of crucial elk summer habitat, and 11,180 of crucial deer habitat within the project area. These designations were made in the Vernal Field Office RMP.

3.3.3.2 Rocky Mountain Bighorn Sheep

Portions of the project area have been designated as crucial year-long habitat for bighorn sheep. Rocky Mountain bighorn sheep prefer steep rocky slopes, and may migrate from higher elevations to lower valleys in the winter. The diet of the species consists of a wide variety of plants, which vary with the season of use (Utah State Conservations Database 2014).

3.3.3.3 Raptors

Some of the more visible birds in and near the project area include golden eagles, red-tailed hawks, osprey, and goshawks. The BLM raptor database was reviewed and there are no known nests within the project area but there are known nests adjacent to the project area within PR Canyon. Habitats in and around the project area provide diverse breeding and foraging habitat for raptors. These habitats include rocky outcrops, pinyon-juniper woodlands, cottonwood bottoms and sagebrush shrub lands.

3.3.4 Migratory Birds

The Migratory Bird Treaty Act (MBTA) was implemented for the protection of migratory birds. Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition to the MBTA, Executive Order 13186 sets forth the responsibilities of Federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices into agency activities and by ensuring that Federal actions evaluate the effects of actions and agency plans on migratory birds. The Utah Partners In Flight (UPIF) has prioritized migratory birds that are considered “most in need of conservation action, or at least need to be carefully monitored throughout their range within Utah.” These are also the species “that will be most positively influenced by management as well as those species with the greatest immediate threats” according to UPIF (Parrish et al. 2002). In addition, The Utah Steering Committee has identified approximately 542,967 acres of Bird Habitat Conservation Area’s (BHCA) within the VPA (USC 2005). BHCA’s are intended to display areas where bird habitat conservation projects may take place, predicated on concurrence, collaboration, and cooperation with all landowners involved; however, the BHCA’s have no official status.

Numerous species may migrate through, or nest within the project area. This section identifies migratory birds that may inhabit the project area such as the Bitter Creek BHCA’s or those that are classified as High-Priority birds by Partners in Flight*, according to the habitat types found within the project area:

Sagebrush-Steppe - Migratory bird species commonly associated with the sagebrush-steppe community include the horned lark, sage sparrow*, sage thrasher*, Brewer’s sparrow*, western kingbird, Say’s phoebe, prairie falcon, and Swainson’s hawk.

Pinyon-Juniper Woodlands - Migratory birds commonly associated with pinyon-juniper woodlands include the black-chinned hummingbird*, gray flycatcher*, gray vireo*, Lewis’ woodpecker, Clark’s nutcracker, pinyon jay, western scrub jay, black-throated gray warbler, bushtit, juniper titmouse*, northern shrike, and Say’s phoebe.

Riparian Habitats - Bird species found in riparian habitats include hermit thrush, yellow-breasted chat, Cordilleran flycatcher, Wilson's warbler, black-chinned hummingbird*, broad-tailed hummingbird*, Mountain bluebird, and Swainson's thrush.

3.3.5 Threatened, Endangered, Proposed, or Candidate Animal Species

3.3.5.1 Greater Sage-grouse (Federal Candidate, BLM Sensitive, Utah State Sensitive)

The greater sage-grouse is an important game bird found in Utah. These birds inhabit sagebrush plains, foothills, and mountain valleys. Sagebrush is the predominant plant of quality habitat. Factors involved in the decline in both the distribution and abundance of greater sage-grouse include permanent loss, degradation, and fragmentation of sagebrush-steppe habitat throughout the western states including Utah (Heath et al.1996, Braun 1998). Documented severe populations declines (approximately 80%) occurred from the mid-1960s to mid-1980s. Research and conservation efforts in the last 20 years have help stabilize and recover many populations. Populations appear to have taken a slight positive turn in recent years. Utah Division of Wildlife Resources (UDWR) identifies approximately 7,868 acres of occupied habitat within the project area. The project area is not considered a SGMA within the state's Conservation Plan for Greater Sage-grouse in Utah. Currently, BLM considers all occupied sage-grouse habitat as Preferred Priority Habitat (PPH, BLM IM 2011-043).

3.3.5.2 Mexican Spotted Owl (Federally Threatened Species)

The range of the MSO extends from the southern Rocky Mountains in Colorado and the Colorado Plateau in southern Utah, southward through Arizona and New Mexico. A known nesting occurrence in the southwest was recorded September 6, 1958, in the Book Cliffs area of northeastern Utah (USFWS 1995).

In Utah, MSOs generally occur year-round at 4,400 – 7,000 feet. These habitats often include narrow, shady cool canyons in sandstone slick rock (USFWS 1995). The MSO occupies a variety of vegetative habitats throughout its range, but generally they inhabit high canopy closure, high stand density, and a multilayered canopy areas resulting from an uneven-aged stand (Ganey et al.1988, Ganey and Balda 1989; Fletcher 1990; USFWS 1995). Other characteristics include downed logs, snags, and mistletoe infection that are indicative of an old grove and the absence of active management.

The project area was ground surveyed by SWCA in 2005 to determine the quality level (poor, fair or good) of potential nesting habitat. The study revealed 21 polygons with approximately 7,942 acres of potential fair/good nesting habitat within the Project Area (SWCA 2005). The habitat was resurveyed by BLM biologist in 2009 and was reconfirmed as potential fair and good nesting habitat. No Critical habitat has been identified within the project area.

3.3.6. Plants: Invasive Plants/Noxious Weeds

A review of the Field Office GIS layer files shows known occurrences of the following noxious weed species within proposed treatment areas: Russian knapweed (*Acroptilon repens*), Canada thistle (*Cirscium arvense*), low whitetop (*Cardaria draba*), musk thistle (*Carduus nutans*), Russian olive (*Elaeaganus angustifolia*), broadleaved pepperweed (*Lepidium latifolium*), and saltcedar (*Tamarix ramosissima*). All of these species are Utah state noxious weeds. The invasive weeds halogeton (*Halogeton glomeratus*) and cheatgrass (*Bromus tectorum*) occur throughout the field office and are likely to occur within the project area.

3.3.7 Lands with Wilderness Characteristics

Wilderness study areas (WSAs) were established in the 1980s as part of the public process of determining which lands have wilderness characteristics and should be considered by Congress for wilderness designation. Since then, the BLM has inventoried public lands statewide that are located outside of existing WSAs and found approximately 2.6 million acres have wilderness characteristics. These lands, known as non-WSA lands with wilderness characteristics, or lands with wilderness characteristics are areas that generally have at least 5,000 acres in a natural or undisturbed condition and provide outstanding opportunities for solitude or primitive forms of recreation. Information on these lands is documented in an April 2007 Wilderness Characteristics Review in the BLM Vernal Field Office management area and is summarized in the BLM Vernal Proposed RMP and Final EIS (BLM 2008c). Additional inventories have been completed since the 2008 RMP individually and are project specific. Approximately 11,000 acres within the proposed project area have been found to have wilderness characteristics (see Tom Patterson inventory units F and C).

3.3.8 Visual Resource Management

The study area for the proposed project is defined as the viewshed of the project, or the area from which the project can be seen. The viewshed includes an area bounded by foothills and ridges on the east and north and less well-defined topographic rises to the south and west of the project site.

The proposed project is located in the Colorado Plateau Physiographic Province, as defined by Fenneman (1931). The province is characterized by extensive vistas, plateaus, buttes, mesas, and deeply incised canyons exposing flat-lying or gently warped strata.

The visual resources of the area are comprised of gentle to steep landforms. Vegetation consists of salt-desert shrubland, sagebrush shrubland, pinyon-juniper woodland, grassland, riparian, and barren lands. Vegetation colors in the growing season range from silvery gray-green to medium olive and during the dormant seasons vegetation ranges from silvery gray-green of shrubs to tan, buff, umber and gold of grasses and forbs, to gray-green and dark olives of tree patterns. Grey, brown, and umber indicate areas of sparse vegetation, soil, and rocks. Predominant vegetation colors types are associated with mountain sagebrush (olive green), oak (seasonal color changes), smaller grasses (negligible), and Douglas Fir trees (evergreen).

Picture from Contrast Rating Worksheet form 8400-4 Key observation point #1

The BLM is responsible for identifying and protecting scenic values on public lands under several provisions of the FLPMA and NEPA. The BLM VRM system was developed to facilitate the effective discharge of that responsibility in a systematic, interdisciplinary manner. The VRM system provides the methodology to inventory existing scenic quality; assign visual resource inventory classes based on a combination of scenic values, visual sensitivity, and viewing distances; and assign visual management objectives. Four visual resource classes have been established to 1) serve as an inventory tool portraying the relative value of existing visual resources; and 2) serve as a management tool portraying visual management objectives for the respective classified lands. Management objectives for each of the visual resource classes are listed as follows:

- Class I Objective. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

- Class II Objective. The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

- Class III Objective. The objective of this class 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.

- Class IV Objective. The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The VRM system also includes a contrast rating procedure for evaluating the potential visual consequences of a proposed project or management activity. The VRM system provides the basic approach for evaluating direct visual impacts as well as potential cumulative visual impacts of the proposed project.

The BLM Vernal Field Office considers surface-disturbing activities, including minerals exploration and development, OHV use, and road development as the primary activities that could potentially cause visual intrusions and impact scenic quality.

The BLM has identified Three VRM Classes within the proposed project area. The Mountain Browse ISA, VRM I, is within the boundary of the project but will be excluded from the proposed action. Approximately 3,400 acres of the project area are VRM II and the remainder of the project area is VRM III.

4.0 CHAPTER 4 – ENVIRONMENTAL IMPACTS

4.1 Introduction

This Chapter analyzes the direct and indirect impacts that the proposed action and the no action alternative have on the resources identified in Chapter 1 and explained in Chapter 3. It also analyzes the cumulative impacts expected from other land use activities and recognizes actions that could take place in the reasonably foreseeable future.

4.2 Alternative A – Proposed Action

4.2.1 Air Quality and Greenhouse Gas Emissions

4.2.1.1 Air Quality

It is anticipated that the equipment associated with the mastication would release a negligible amount of emissions into the local air-shed due to its short timeframe and dispersed effects. Therefore it is not analyzed in detail in this EA.

The air quality impact analysis for the proposed prescribed fire was extracted from Chappell, 2014. The combustion products of prescribed fire and wildland fire include carbon dioxide,

water vapor, carbon monoxide, particulate matter, nitrogen oxides, and trace minerals. Many factors contribute to the amount of smoke and particulates produced from a prescribed burn including weather conditions, combustion processes, fuel properties (moisture, loadings, and arrangement) and type of burn. The effects of this smoke on air quality are of short duration due to regulatory requirements, weather factors, the qualities of the smoke itself, and smoke impact reduction measures. The degree of smoke effects from prescribed fire in the Project Area would be affected by the season of burning, wind flows, and topography and time of day when burning takes place.

- Spring and summer seasons are usually the best times for smoke dispersal because daytime heating and general wind flows help to raise the smoke columns high into the atmosphere, and disperses them readily. By mid-September, the air quality naturally begins to deteriorate as nighttime inversions often develop. During the winter months from December through February and on into March, inversions are common in the local valleys.
- Strong winds help to disburse smoke rapidly.
- Night time down-slope winds would carry some residual smoke down-slope, and may cause the smoke to pool at lower elevations, where it would usually disperse in the afternoon. Smoke dispersal is best when daytime heating is maximized.

The current Utah Division of Air Quality regulations do not permit prescribed fire of any size when air quality is poor.

For approximately one to three days following the burns, residual smoke has the tendency to settle close to the ground during the night time hours where it could remain until it lifts as surface heating begins near mid-morning the following day. Proximity to the burn and wind direction would determine how much any individual residents would be affected. While ignition is taking place, residents located to the northeast (downwind) would experience drift smoke due to prevailing winds. The smoke levels anticipated from the proposed action would not be expected to be a health concern, with the possible exception of severely smoke sensitive people living directly downwind during the prescribed fires. The Tom Patterson canyon is approximately 26 miles northwest of the closest community (Loma, CO). Steps would be taken prior to burning to alert other nearby residents, including radio announcements, posting notices and contacting key individuals of the residential areas or communities. The intent is to inform the public and provide smoke sensitive individuals adequate notice of planned burning.

According the Environmental Protection Agency's (EPA) Report AP-42, Compilation of Air Pollution Emission Factors, some air pollution would be generated by prescribed fires although the net amount would be a relatively smaller quantity than that produced by wildland fires. The EPA states in this report that "prescribed fire is a cost effective and ecologically sound tool for forest and range management. Its use reduces the potential for destructive wildland fires and thus maintains long term air quality." Therefore, utilizing prescribed fire smoke can be held to a minimum duration and intensity, although burning can temporarily reduce air quality. Prescribed fire in the short term can reduce the acute impacts to air quality from wildland fire in the long term. Levels of emissions from prescribed fires are within health standards, while wildfire can produce emissions which are more than double Federal health standards.

4.2.1.2 Greenhouse Gas Emissions

Climate change analyses are comprised of several factors, including greenhouse gases (GHG's), land use management practices, the albedo effect, etc. The tools necessary to quantify climatic impacts are presently unavailable. As a consequence, impact assessment of specific effects of anthropogenic activities cannot be determined. Additionally, specific levels of significance have not yet been established. Existing climatic prediction models are global in nature; so are not at the appropriate scale to estimate potential climatic change on the project area. Therefore, climate change analysis for the purpose of this document is limited to accounting and disclosing of factors that contribute to climate change. Qualitative and/or quantitative evaluation of potential contributing factors within the project area is included where appropriate and practicable.

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. However, potential impacts to air quality due to climate change are likely to be varied. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated. Due to loss of habitat, or due to competition from other species whose ranges may shift northward, the population of some animal species may be reduced. Less snow at lower elevations would be likely to impact the timing and quantity of snowmelt, which in turn, could impact aquatic species (Final Utah GHG Inventory, July 2007). It is anticipated that Proposed Action would release a negligible amount of greenhouse gases into the local air-shed.

4.2.2 Fuels and Fire Management

Under this alternative, there would be a total of 120 acres of mechanical fuel reduction treatment within 25 feet adjacent to the main roads. Following the bullhog treatment, desirable grasses, shrubs, and forbs are expected to increase in overall vigor and productivity as the competition with the PJ trees for light, nutrients and water is drastically reduced. The treatment is expected to reduce the fuel loadings to the extent that the condition class would decrease to a class I condition. The early succession vegetation is expected to respond to the mulching with a young generation of grass, forbs and shrubs.

The prescribed burn area is expected to be an overall mosaic pattern that varies in burn intensities and design in the mountain brush vegetation. Some small areas in brush and conifer pockets will have high intensity fire that open up spaces resulting in a restart of successional stages and age class. The new age class of grasses, forbs and shrubs are expected to increase in vigor and production as the competition with the overstory and large shrubby vegetation is reduced. The mosaic pattern of the burn is expected to add a variety of vegetation age stages, species composition and heights. Any open vegetation areas and early succession stages will add zones that have a minimal risk of supporting wildfires. These green strips will have less hazardous fuels containing characteristics with minimal fire behavior which will allow wildland fire resources opportunities to suppress wildfires. Green strips in this area may also allow fire practitioners to use future wildfires in achieving resource goals.

The treatment is expected to reduce the fuel loadings to the extent that the condition class would decrease to a class I condition.

4.2.3 Wildlife

4.2.3.1 Big Game Species

There are two treatment methods proposed within the project area. The first is the use of mastication (bullhog) to reduce fuels along roads and help contain a fire perimeter. The second method is a prescribed burn to remove conifer encroachment and establish an early successional stage in the Mountain sagebrush vegetation type. The project area covers 23,697 acres; the goal is to apply fire to at least 10,000 acres in an uneven mosaic pattern.

An issue facing big game populations in Utah is that many of the crucial ranges are in late successional plant community stages that are dominated by mature stands of PJ or other conifer trees. Tree-dominated habitats offer a place to retreat from severe weather, but offer little in the way of food. That is why it is important to maintain mosaic patterns of habitat that can provide food, cover, and water (UDWR 2008 and 2010). Both deer and elk can be found within the project area during the summer and elk will be found in the northern portion of the project area during the winter months. An increase in human presence during these time frames could cause short term impacts (increased stress, increased energy expenditure) to big game species. A direct impact may occur to individual species through fire mortality. Treatment of encroachment or invasion sites, along with returning the Mountain sagebrush to an early successional stage can successfully return this area into a grassland/shrubland community, thus enhancing and promoting the return of sagebrush and other perennial understory species which will benefit big game habitat in the long term.

Mitigation: Do not conduct treatment activities from December 1 - April 30, or May 15 – June 30 in order to protect elk and deer on the summer and winter range. This restriction would not apply if deer and/or elk are not present, or if it is determined through analysis and coordination with UDWR that impacts could be mitigated (USDOI-RMP 2008).

4.2.3.2 Raptors

Impacts would be the same as the migratory bird section. Treatment activities would occur after the nesting season of May 1 – July 31.

4.2.4 Migratory Birds

Migratory bird species may be present during the fall months; September, October. Individual bird species could be impacted. Impacts may include; destruction of nesting habitat, fragmentation of habitat, reduction of habitat patch size, and direct fire mortality of individual species. The proposed hazardous fuel reduction project targets a younger age-class of pinyon-juniper trees, and not the older, mature stands of pinyon-junipers which are favored by most pinyon-juniper bird species. Although there may be some short-term impacts to pinyon-juniper bird species, the long term benefit of the hazardous fuel reduction project would benefit sagebrush/grassland bird species, several of which are currently

identified as BLM State Sensitive Species. Treatments will occur after September 1 and before March 15.

4.2.5 Threatened, Endangered, Proposed, or Candidate Animal Species

4.2.5.1 Greater Sage-grouse (Federal Candidate, BLM Sensitive, Utah State Sensitive)

The UDWR has designated the project area as occupied habitat, and BLM has identified PPH. The project area does not fall within the state's Sage-Grouse Management Areas as identified by the "Conservation Plan for Greater Sage-Grouse in Utah".

Sage-grouse habitat use and requirements change through the annual flow of the seasons and life functions. Early Brood-Rearing (June to mid-July) generally occurs relatively close to nest sites, and the habitat consists of contiguous sagebrush habitats that exhibit a diverse mosaic of green vegetation, including forbs, that also support abundant insects. Late Brood-Rearing (Mid-July to mid-September) habitat includes riparian areas, irrigated hay fields, upland seeps and springs, and open meadows (Utah Conservation Plan for Greater Sage-grouse 2013).

Direct impacts (mortality of individual grouse from bullhog vehicles, and fire) to sage grouse are not anticipated as these activities will occur in the fall. Indirect impacts could include temporary displacement (flushing) from foraging/cover areas if grouse were present.

Treatment of encroachment or invasion sites can successfully return this area into a grassland/shrubland community, thus enhancing and promoting the return of sagebrush and other perennial understory species which will benefit sage grouse. The proposed action is consistent with the guidelines established in IM-2012-043 as personal communication with UDWR (Brian Maxfield, 2014) verified that the project will benefit sage-grouse habitat. Sage-grouse have not been documented within the project area since 1990.

Sage-grouse are dependent on healthy sage-steppe habitats for most of their needs; cover, forage. The increase in vigor of Mountain sagebrush would be a benefit to sage-grouse habitat over the long term. The BLM and UDWR will continue to monitor vegetation on an annual basis.

4.2.5.2 Mexican Spotted Owl

Potential Mexican Spotted Owl (MSO) breeding/nesting habitat was identified on BLM lands within the Project Area according to the "Assessment of Potential Mexican Spotted Owl Nesting habitat on BLM-Administered Lands in Northeastern Utah (BLM 2005)", and BLM biologist review. The latest surveys within the project area were completed in 2008, and no MSO were documented. Project activities will take place in the fall, outside of the nesting season. Foraging habitat should not be impacted by project implementation, due to the scale of the project. The proposed prescribed fire would target 10,000 acres of Mountain sagebrush, along with younger pinyon-juniper trees. The bullhog treatment has been designed to reduce fuels along existing roads to help contain the fire perimeter. The project

will enhance the sage-steppe habitat by removing older sagebrush plants, replacing them with younger healthier sagebrush plants, and introducing more forbs into the understory. Overall, treatment activities will improve/maintain habitat, and protect habitat from large scale unplanned fire events. Treatments will occur after September 1 and before March 15.

Based upon the timing of treatment activities, abundance of potential MSO nesting and foraging habitat across the region, and insignificant and discountable impacts to any possible dispersing and foraging owls, the BLM has determined that the Proposed Action would result in a ***"not likely to adversely affect"*** situation for the MSO.

4.2.6 Plants: Invasive Plants/Noxious Weeds

Russian knapweed, Canada thistle, low whitetop, musk thistle, Russian olive, broadleaved pepperweed, and saltcedar are known to occur within proposed treatment areas. Bullhog treatments will occur along existing roads and we do not expect substantial disturbance from bullhog treatments that would increase the risk of weed invasion.

Burning has the potential to increase the occurrence of invasive weeds like cheatgrass. High elevation sagebrush sites in good ecological condition are more resistant to cheatgrass invasion after a fire than are low elevation; poor condition sites (Chambers et al. 2007). The project area is a higher elevation site in good ecological condition that supports mountain big sagebrush, mountain shrub, conifer, and piñon-juniper plant communities. We expect that existing native plant seed sources will be sufficient to re-establish vegetation within the controlled burn treatment areas and that the project area is at low risk for widespread cheatgrass invasion.

Across all proposed treatment areas, the management goal will be to minimize or eliminate new infestations of noxious weed species.

Mitigation:

- Known populations of Russian knapweed, Canada thistle, low whitetop, musk thistle, Russian olive, broadleaved pepperweed, saltcedar, and any new noxious weed populations encountered in any proposed fuels treatment areas prior to or during treatment, will be spot treated with an upland herbicide mix (Curtail + Telar XP) prior to applying the proposed fuels-removal treatment.
- Any equipment used in treatment areas that contain noxious weed populations will be power-washed prior to being driven into another treatment area.
- The BLM will continue to practice early detection and rapid eradication to ensure new noxious weed populations do not establish as a result of project activities. Annual monitoring will continue for three years following project completion.

4.2.7 Lands with Wilderness Characteristics

The proposed project and alternatives have the potential to impact non-WSA lands identified by the BLM as having wilderness characteristics. Approximately 11,000 acres of new disturbance would occur under the proposed action. This new disturbance would be outside of any BLM identified natural areas. The direct impact of this surface disturbance would result in short term impacts during proposed operations, and longer impacts to wilderness

characteristics from man caused fire. However the public perception would be that impacts exist due to fire, which happens as part of the natural process.

The indirect impact of this disturbance would be the loss of naturalness and degradation of solitude and primitive recreation opportunities on portions of the lands with wilderness characteristics, depending upon the location and distribution of the lands actually disturbed under this alternative. Under this alternative, impacts to wilderness characteristics would continue throughout the life of the alternative until final reclamation is complete.

4.2.8 Visual Resources

Potential visual impacts associated with the proposed project were analyzed using the procedures outlined in the BLM Visual Contrast Rating Handbook H-8431-1 (BLM 1986). The BLM VRM system only applies to federal lands, not to state, Tribal, or private lands. Therefore, visual resource impacts discussed in this section occur on federal lands within the proposed project area, and do not include state, Tribal, or private lands that have no designated visual classification. Visual impacts were determined by comparing the proposed project and alternatives with the VRM class objectives for the proposed project area, which are designated VRM Class II and Class III. The process involves comparing the degree of visual contrast from the proposed action and activities with the existing landscape character.

Levels of visual impacts are judged as follows:

- High – Predicted visual contrast that exceeds the VRM class guidelines.
- Moderate – Predicted visual contrast levels that are fully at the level of change allowed, but that do not exceed the VRM guidelines.
- Low or Weak – Predicted visual contrast levels that are clearly below the VRM class allowable thresholds for visual change.

A contrast rating form was completed with 4 key observation points within the proposed area were selected in T15S, R24E Sections 13, 24 and T15S R25E Section 30. Descriptions for land/water, vegetation and structures were consistent for the entire project area.

The contrast rating form documented no change by the proposed action to land/water, no change to structures, and moderate change to vegetation. This moderate change was determined by observing that a mosaic would be created by the planned burn, leaving areas of vegetation that would remain unchanged, and areas that would be burned. By leaving pockets of vegetation, the level of contrast would be reduced. By typically burning in the fall, new forbs and shrubs grow in the spring, and color contrasts are further reduced. Vegetation will be most affected in the short term (1-5 years) and be less noticeable in out years. Based on the remote location of the proposed project (back country), the low level of visitation for the area, and the short season that the area will be open to travel prior to grass, shrub and forb emergence, the level of contrast would be higher in the first year, but likely low within 3 years. The casual observer would recognize the return of grasses, sagebrush and other shrubs, and likely not be aware that the proposed project was other than a natural fire in the area. Based on this information, no additional mitigation is recommended.

4.3 Alternative B – No Action

Under the No Action Alternative, current resource trends would continue.

4.3.1 Air Quality and Greenhouse Gas Emissions

Under the No Action Alternative no additional particulate matter or GHG emissions would be realized from the prescribed burn.

4.3.2 Fuels and Fire Management

Under this alternative, there would be no removal of the PJ trees across the project area. Sagebrush obligate species, including sage-grouse are sensitive to western juniper encroachment into sagebrush communities (Miller et al). Overtime the trees would eventually out-compete the shrubs, grasses, and forbs for water, nutrients, and light, resulting in the loss of the sagebrush habitat type in the project area. The fuel loading would continue to increase, eventually shifting the project area from the existing Condition Class II to a Condition Class III situation. A Condition Class III has been substantially altered. These are areas that are at risk of losing key ecosystem components. Fire frequencies may have departed by multiple return intervals and may result in dramatic changes in fire size, fire intensity and severity. Vegetation attributes have been substantially altered.

Eventually, an unplanned wildland fire is expected to occur, and since the fuel loadings would have increased, the severity of the fire event is also expected to be greater. An increased amount of tree densities would have correspondingly decreased the amount of understory plants; the loss of trees from an unplanned fire event would most likely result in increased soil erosion due to the lack of ground cover remaining following the fire event. The lack of plant diversity would likely significantly lengthen the recovery timeframe of the site from wildfire.

4.3.3 Wildlife including Raptors

Under the No Action Alternative, there would be no removal of PJ trees or sagebrush. Encroachment by PJ trees into older stands of sagebrush habitat is detrimental to sagebrush-dependent species because it results in the loss or fragmentation of sagebrush habitat. Over time the PJ trees will out-compete the shrubs, grasses, and forbs, resulting in the loss of the sagebrush habitat type.

4.3.4 Migratory Birds

Under the No Action Alternative, there would be no removal of the PJ trees across the project area. Sagebrush obligate species are sensitive to juniper encroachment into sagebrush communities (Miller et al). Overtime the trees would eventually out-compete the shrubs, grasses, and forbs for water, nutrients, and light, resulting in the loss of the sagebrush habitat type in the project area.

4.3.5 Threatened, Endangered, Proposed, or Candidate Animal Species

4.3.5.1 Greater Sage-grouse (Federal Candidate, BLM Sensitive, Utah State Sensitive).

Under the No Action Alternative, there would be no removal of the PJ trees across the project area. Sagebrush obligate species, including sage-grouse are sensitive to western juniper encroachment into sagebrush communities (Miller et al). Overtime the trees would eventually out-compete the shrubs, grasses, and forbs for water, nutrients, and light, resulting in the loss of the sagebrush habitat type in the project area.

4.3.5.2 Mexican Spotted Owl

Under the No Action Alternative, there would be no removal of the PJ trees across the project area from a prescribed fire. However, the area will have future wildfire. The area has a natural burn frequency and the disturbance of a wildfire will be similar to the Proposed Action effects.

4.3.6 Plants: Invasive Plants/Noxious Weeds

Known populations of Russian knapweed, Canada thistle, low whitetop, musk thistle, Russian olive, broadleaved pepperweed, and saltcedar within the proposed treatment area would continue to receive regular (at a maximum, annually) herbicide treatment until eradicated. Unknown noxious weed populations within the project area will either be located and treated in future years or remain unknown and untreated, and will continue expanding in future years. Invasive weeds are not usually treated unless they encroach upon sensitive plant species habitat.

4.3.7 Lands with Wilderness Characteristics

Under the No Action Alternative, there would be no immediate change in wilderness characteristics; however, the area will have a future wildfire. The area has a natural burn frequency and the disturbance of a wildfire will be similar to the Proposed Action effects.

4.2.8 Visual Resources

Under the No Action Alternative, there would be no immediate change in Visual Resources; however, the area will have a future wildfire. The area has a natural burn frequency and the disturbance of the wildland fire will be similar to the Proposed Action effects, though greater in magnitude.

4.4 Cumulative Impacts Analysis

"Cumulative impacts" are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

4.4.1 Air Quality and Greenhouse Gas Emissions

4.4.1.1 Air Quality

This air quality impact analysis was extracted from Chappell, 2014. Past, Present and Reasonable Foreseeable actions were reviewed to determine the cumulative effects to air quality. Because impacts to air quality from fuels management activities are short-lived, past activities do not contribute to cumulative effects. Under the proposed action some smoky days are likely to occur. Under the no action alternative an accumulation of effects from the proposed controlled burn would not occur.

4.4.1.2 Greenhouse Gas Emissions

Rangelands, and to a broader extent sagebrush steppe ecosystems are important for carbon sequestration, primarily because of the significant carbon stored as soil organic matter and the magnitude of the rangelands that occur within the United States (roughly one third of total lands, excluding Alaska) (Svejcar et al, 2008). Conversion of sagebrush steppe to annual vegetation dominance (such as cheatgrass) is associated with 1) volatilization of carbon in woody shrubs during wildfires (carbon source); 2) loss of surface soil organic matter due to erosion after a wildfire; 3) reduction in net carbon stored in deeper soils; and 4) reduction in net carbon exchange in annual grasslands compared to sagebrush steppe lands (Bradley, et al, 2006). Conversion of sagebrush steppe to annual vegetation dominance would be cumulative with such events occurring throughout the western United States.

4.4.2 Fuels and Fire Management

The cumulative impact area for vegetation is the Vernal Field Office. Since 2004, the Vernal Field Office of the Bureau of Land Management has been involved with the Utah Partners for Conservation and Development to take actions to restore declining habitat conditions in the sage steppe habitat type. Approximately 80,000 acres have been treated to date, and continued actions by this group are expected to continue to occur in the future through the use of mechanical, prescribed fire, chemical applications, and wildland fire use to manage the vegetative resource.

The cumulative impact area for Fire and Fuels is the Vernal Field Office. The Bureau of Land Management has been directed by Congress (2001 Updated Federal Wildland Fire Management Policy) to implement actions designed to reduce decades of accumulation of hazardous fuels on public lands. In the future in the Vernal Field Office, hazardous fuel reductions activities will most likely increase through the use of mechanical, prescribed fire, and wildland fires to manage the vegetative resource. With the increased hazardous fuel reductions, the Field Office landscape will eventually be composed of different age classes of vegetation. Under the proposed action 10,000 additional acres would be treated. Under the no action alternative an accumulation of effects from the proposed action would occur.

4.4.3 Wildlife

The Cumulative Impact Analysis Area (CIAA) for wildlife is the Book Cliffs, Bitter Creek/South hunt boundary, which includes approximately 240,000 acres. Deer and elk hunting have been limited throughout the CIAA. Currently, the estimated population of mule deer is 7,850, well below the objective of 15,000. The estimated population of elk is 4,800

below the population objective of 7,500. Presently, the project area is open to limited permits for deer and elk. Since present deer and elk numbers are below the established herd management objectives numbers, populations will continue to increase in the future, until herd objective numbers are realized. As their numbers increase, the continued need for vigorous and productive vegetation types will increase. Current and reasonably foreseeable actions in the CIAA include; energy development, management activities, and recreational activities which include hunting. Under the proposed action 10,000 additional acres of habitat would be treated. The No Action Alternative would not result in an accumulation of impacts.

4.4.4 Migratory Birds and Raptors

The CIAA for Migratory Birds and Raptor Species is the Book Cliffs, Bitter Creek/South hunt boundary, which includes approximately 240,000 acres. The Vernal Field Office has been involved in restoring declining habitat conditions in the sage steppe habitat type. It is expected that habitat treatments within sage steppe habitat types will continue to occur in the future. Cumulative impacts would include temporary individual displacement, crushing of sagebrush vegetation, and removal of encroaching pinyon-juniper habitat types. Current and reasonably foreseeable actions in the CIAA include; energy development, management activities, and recreational activities. Under the proposed action 10,000 additional acres of habitat would be treated. The No Action Alternative would not result in an accumulation of impacts.

4.4.5 Threatened, Endangered, Proposed, or Candidate Animal Species

4.4.5.1 Greater Sage-Grouse

The CIAA for Greater Sage-Grouse is the Book Cliffs, Bitter Creek/South hunt boundary, which includes approximately 240,000 acres. The project area is no managed by UDWR as a Sage-Grouse Management Area (SGMA). The Vernal Field Office has been involved in restoring declining habitat conditions in the sage steppe habitat type. There will be a continued need for vigorous and productive vegetative types throughout sage-grouse seasonal ranges. Habitat treatments within sage-steppe habitat types will continue to occur in the future. Current and reasonably foreseeable actions in the CIAA include; energy development, management activities, continued PJ removal projects, and recreational activities. Under the proposed action 10,000 additional acres of habitat would be treated. The No Action Alternative would not result in an accumulation of impacts.

4.4.5.2 Mexican Spotted Owl

The CIAA for Mexican Spotted Owl is the Book Cliffs, Bitter Creek/South hunt boundary, which includes approximately 240,000 acres. Approximately 10,000 acres of potential foraging habitat will be treated. Forage habitat will continue to be managed as a sage steppe habitat type. The continued need for vigorous and productive vegetation types will increase. Past, present, and reasonably foreseeable actions include other vegetation treatments, wildfire management, weed infestations, and livestock grazing. Cumulative impacts include vegetation manipulation, or disturbance through treatments and/or surface disturbance. The Proposed Action would contribute 10,000 acres of habitat treatment. The No Action alternative would not result in an accumulation of impacts.

4.2.6 Plants: Invasive Plants/Noxious Weeds

The CIAA area for vegetation is the Vernal Field Office. Past disturbances, both human caused and natural, have provided soil and vegetation disturbance conducive to invasion of noxious weeds. Past development, management activities, and recreational activities often employed inadequate weed prevention measures. As a result, the infestations of Russian knapweed, Canada thistle, low whitetop, musk thistle, Russian olive, broadleaved pepperweed, and saltcedar occur within and in close proximity to the project area. Current and reasonably foreseeable actions in the CIAA that include soil or vegetation disturbance require implementation of weed prevention and mitigation practices such as those described in Chapter 4.2.6; therefore, the risk of spread of existing infestations from the above-listed actions is considered to be low. Under all alternatives, known weed infestations may provide seed source for expansion elsewhere in the project area. The risk of expansion of these infestations would be variable, depending on the location and extent of future disturbances and their proximity to existing untreated infestations.

4.4.7 Lands with Wilderness Characteristics

The cumulative impact area for wilderness characteristics is the entire Vernal Field Office management area. Of the 277,596 acres found to have wilderness characteristics within the CISA, 106,178 acres (38 percent) are protected, preserved, and maintained for their wilderness values as BLM natural areas (BLM 2008b). In accordance with management prescriptions in the Vernal RMP, these areas would remain in their current state. The remaining 171,418 acres (62 percent) do not have prescribed management to protect the wilderness values, and management decisions allow for uses that could degrade the wilderness characteristics of these areas. Impacts to lands with wilderness characteristics could result from the past, present, and reasonably foreseeable future actions including loss of naturalness and degradation of solitude and primitive recreation opportunities on portions of the lands with wilderness characteristics, depending upon the location and distribution of the lands actually disturbed under this alternative. Under both alternatives, impacts to wilderness characteristics would continue throughout the life of the alternative until final reclamation is complete.

4.4.8 Visual Resource Management

The cumulative impact area for visual resource impacts based on vegetation treatments is the entire Vernal Field Office. Various projects in differing states of re-vegetation are occurring at any given point in time within the Vernal Field Office. Projects from past years are in the immediate area and have reclaimed, and resulted in fire breaks and safety zones. Visual resources continue to improve over time as a result of like actions. Preventing larger wildfires assists with preserving visual resources over larger areas of the field office over time. Under the proposed action 10,000 additional acres would be treated. The No Action Alternative would not result in an accumulation of impacts.

5.0 CONSULTATION AND COORDINATION

5.1 Introduction

During preparation of the EA, public involvement consisted of posting the proposal on the eplanning NEPA website. No public inquiries were received. Issues or impacts identified through the interdisciplinary team analysis process are described in Appendix A.

5.2 Persons, Groups, and Agencies Consulted

AGENCY	AUTHORITY	RESULT
Utah State Historical Preservation Office	National Historic Preservation Act Section 106	The State Historic Preservation Officer (SHPO) was consulted on July 28, 2014 and they concurred with our determination on August 5, 2014.
Native American Tribes	Government to Government Consultation	Tribal consultation was conducted on April 12, 2012. We received two "no effect" comments; one from the Goshute Tribe on April 18, 2012 and one from the Hopi Tribe on April 27, 2012. Also, the proposed project will not hinder access to or use of Native American religious sites.
Utah Division of Wildlife Resources	Washington Office Instruction Memorandum 2012-043	The proposed action is consistent with the guidelines established in Utah IM-2012-043 as personal communication with UDWR (Brian Maxfield, 2014) verified that the project will benefit sage-grouse habitat.
US Fish and Wildlife Service	Endangered Species Act Section 7	A request for concurrence with the determinations of effects to Endangered and Threatened Species was sent to the USFWS on October 1, 2014. The USFWS concurred with the "Not Likely to Adversely Affect" the Mexican Spotted Owl species or habitat. The BLM received the concurrence on October 17, 2014.

5.3 List of Preparers

NAME	TITLE	RESPONSIBILITIES
Blaine Tarbell	Team Lead, Natural Resource Specialist	Impact analysis for Fire/Fuels Management
Jessica Brunson	Botanist	Impact analysis for Invasive, Non-native Species, and Vegetation including Special Status Plant Species.
Stephanie Howard	NEPA Coordinator	Impact analysis for Air Quality
Dixie Sadlier	Wildlife Biologist	Impact analysis for Wildlife
Jason West	Recreation Planner	Impact analysis for BLM Natural Areas.

5.4 Public Involvement

The proposed action was posted to the BLM eplanning NEPA register.

The following parties were notified of the project via letter.

Name	Title	Company
Bill Stringer	Public Lands Specialist	Uintah County, UT
Scott Chamberlain	Forest Manager	SITLA
Glenna Huff	Private landowner	Adjacent landowner
Tracey Jensen	Permits Manager	Red Rock Gathering Company, LLC.
Alameda Cattle Corp	Private landowner	Alameda Cattle Corporation
Rachelle Grant	Gas Well Operator	Foundation Energy Management LLC

6.0 REFERENCES

Bradley B, Houghton R, Mustard J, Hamburg S. 2006. Invasive grass species reduces aboveground carbon stocks in shrublands of the Western US. Global Change Biology, 12:1815-1822.

Braun C. 1998. Sage grouse declines in western North America: what are the problems? Proceedings of the Western Association of State Fish and Wildlife Agencies 78:139-156 Conservation Plan for Greater Sage-grouse in Utah. Approved February 14, 2013.

Chambers J, Roundy B, Blank R, Meyer S, Whittaker A. 2007. What makes Great Basin sagebrush ecosystems invasible by Bromus tectorum? Ecological Monographs 77:117-145.

Chappell L. 2014. Monroe Mountain Aspen Ecosystems Restoration Air Quality Report. Richfield, Utah.

Goddard Institute for Space Studies. 2007. Annual Mean Temperature Change For Three Latitude Bands, Datasets and Images. GISS Surface Temperature Analysis, Analysis Graphs and Plots. New York, New York.

Heath B, Straw J, Anderson S, Lawson J. 1996. Proceedings of sage grouse workshop. Pinedale, WY. USA.

IPCC. 2007. Climate Change 2007; Synthesis Report. A Summary for Policymakers. Valencia, Spain.

National Academy of Sciences, 2006. Understanding and Responding to Climate Change: Highlights of National Academies Reports. Division of Earth Sciences. National Academy of Sciences. Washington D.C.

Maxfield, Brian: UDWR, 2013. Personal communication July 13, 2014.

Miller, R, J. Bates, T. Svejcar, F. Pierson, and L. Eddleman. 2005. Biology, Ecology, and Management of Western Juniper (Juniperus occidentalis). Oregon State University Agricultural Experiment Station. Technical Bulletin 152, 82 pp.

Monsen, S, and R. Stevens. 1997. Proceedings: Ecology and Management of Pinyon-Juniper Communities Within the Interior West. RMRS P-9, Ogden, UT: USDA Forest Service, Rocky Mountain Research Station.

Svejcar T. et al. 2008. Carbon Fluxes on North American Rangelands. Rangeland Ecology and Management 61:465-474.

Parrish J, Howe F, Norvell R. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Partners in Flight Program. UDWR Publication Number 02-27. i-xiv 302 pp.

UDWR. 2009. Utah Greater Sage-grouse Management Plan. Publication 09-17. Utah Division of Wildlife Resources. Salt Lake City, Utah.

UDWR. 2008. Statewide Management Plan for Mule Deer. Utah Division of Wildlife Resources. Salt Lake City, Utah.

UDWR. 2010. Statewide Management Plan for Elk. Utah Division of Wildlife Resources. Salt Lake City, Utah.

USDOI - Bureau of Land Management, 2008. Record of Decision for the Vernal Field Office Resource Management Plan. U.S. Bureau of Land Management, Vernal Utah.

USDOI - Bureau of Land Management, Vernal Field Office. 2009, Fire Management Plan

USDOI - Bureau of Land Management, Approved December 22, 2011. IM 2012-043, Greater Sage-Grouse Interim Management Policies and Procedures.

Appendices

Appendix A Interdisciplinary Team Analysis Record Checklist
Appendix B Project Maps

Appendix A: Interdisciplinary Team Analysis Record Checklist

Appendix B: Project Maps

Title

Project Title: Tom Patterson Prescribed Fire Hazardous Fuel Reduction

NEPA Log Number: DOI—BLM—UT_G000–2014–0002–EA

File/Serial Number:

Project Leader: Blaine Tarbell

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource/Issue	Rationale for Determination	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
PI	Air Quality & Greenhouse Gas Emissions	An increase in particulate matter emissions is anticipated for the duration of the fire. Emissions are also anticipated as a result of equipment use during the bullhog portion of the project. These impacts are anticipated to be so small as to be negligible due to the short duration of the project. No standards have been set by EPA or other regulatory agencies for greenhouse gases. Although greenhouse gas emissions are anticipated to occur from activity associated with this project, they are anticipated to be so small as to be negligible.	Stephanie Howard	8/11/2014
NP	BLM Natural Areas	None Present as per RMP and GIS layer review	Jason R. West	7/8/2014

Determina-tion	Resource/Issue	Rationale for Determination	Signature	Date
NI	Cultural: Archaeological Resources	The current project was determined to be an undertaking per 36 CFR 800.16(y). The area of potential effect (APE) 36 CFR 800.16(d) is considered to be the area within the polygons in attached maps. William Self Associates (WSA) conducted a sample inventory (U-14-SQ-0137) of the APE for this project. Seven sites were identified and recorded on IMAC forms for this undertaking. Three of the sites were recommended as "eligible" to the National Register of Historic Places (NRHP) and will be avoided and have additional precautions taken to protect the site from fire disturbance prior to treatment. The other four sites were recommended as "not eligible" to the NRHP and do not require additional measures or protections to be taken. The State Historic Preservation Officer (SHPO) was consulted on July 28, 2014 and they concurred with our determination on August 5, 2014.	Kathie Davies	8/15/2014
NI	Cultural: Native American Religious Concerns	Tribal consultation was conducted on April 12, 2012. We received two "no effect" comments; one from the Goshute Tribe on April 18, 2012 and one from the Hopi Tribe on April 27, 2012. Also, the proposed project will not hinder access to or use of Native American religious sites.	Kathie Davies	7/22/2014
NI	Designated Areas: Areas of Critical Environmental Concern	None Present as per RMP and GIS layer review.	Jason R. West	7/8/2014
NP	Designated Areas: Wild and Scenic Rivers	None Present as per RMP and GIS layer review.	Jason R. West	7/8/2014
NP	Designated Areas: Wilderness Study Areas	Mountain Browse Instant Study Area (ISA) is within the boundaries of the project but will be excluded from the proposed action.	Jason R. West	7/8/2014
NP	Environmental Justice	No minority or economically disadvantaged communities or populations are present which could be affected by the proposed action or alternatives.	Blaine Tarbell	6/26/2014
NP	Farmlands (prime/unique)	No prime or unique farmlands as defined by the NRCS are present in the project area. Also, no irrigated lands are located in the proposed action area; therefore this resource will not be carried forward for analysis.	Blaine Tarbell	6/26/2014

Determina-tion	Resource/Issue	Rationale for Determination	Signature	Date
PI	Fuels/Fire Management	Project is designed to reduce hazardous fuel loads and decrease the risk of wildland fires in the area. Further details are outlined in the environmental assessment.	Blaine Tarbell	6/26/2014
NI	Geology/Minerals/ Energy Production	No adverse affects to geology and mineral are expected due to notification of oil and gas operators in the area prior to the burn. Also, on-sites were conducted and the wells in the area do not have any ancillary facilities other than the well head that could be damaged by the operation.	Betty Gamber	6/19/2014
IP/NW: PI Soils: Vegetation:	Invasive Plants/ Noxious Weeds, Soils & Vegetation	IP/NW: A review of the Field Office GIS layer shows known occurrences of the following weed species within or near proposed treatment areas: Russian knapweed (*Acroptilon repens*), Canada thistle (*Cirsium arvense*), low whitetop (*Cardaria draba*), musk thistle (*Carduus nutans*), Russian olive (*Elaeaganus angustifolia*), broadleaved pepperweed (*Lepidium latifolium*), and saltcedar (*Tamarix ramosissima*). Halogeton (*Halogeton glomeratus*) and cheatgrass (*Bromus tectorum*) are common throughout the field office and are likely to occur within the project area. Soils: The soils are a mixture of an upland stony loam to very steep stony loam that are well drained; slopes ranging from flat to 60 percent.	IP/NW: Jessi Brunson Soils: Blaine Tarbell	7/15/2014 7/22/2015

Determina-tion	Resource/Issue	Rationale for Determination	Signature	Date
NI	Lands/Access	No changes in land use are anticipated. Issues: Public Water Reserves, Uintah County B & D Roads, Private land owners, Tribal/Indian Trust Land Allotees, Right-of-Way holders. There are several Public Water reserves within the proposed project. Reference in RMP Riparian Resources (RIP) Management Decision: RIP-2 …"Allow no new surface disturbing activities within active flood plains, public water reserves, or 100 meters of riparian areas unless: • There are no practical alternatives. • Impacts will be fully mitigated • The action is designed to enhance the riparian resources It is anticipated that a positive impact will occur to Public Water Reserves based on observations of the Sweet Water Burn. No chemicals will be used for the proposed burn. Re-seeding of the burn is not proposed, due to the elevation. Notification letters of the prescribed burn have been sent to: Uintah County, Private Land Owners, State of Utah, and Tribal/Indian Trust Allotees, Gas Operators, and current Right-of-Way holders. (As documented in Chapter 5).	Margo Roberts	6/19/2014 9/30/2014
PI	Lands with Wilderness Characteristics (LWC)	11,000 (approximation based on GIS tools) acres of wilderness character identified within the proposed project area.	Jason R. West	7/8/2014
PI	Livestock Grazing & Rangeland Health Standards	The project is located within the Sweetwater grazing allotment. According to the RMP Rangelands that have been burned by prescribed fire would be ungrazed for a minimum of one complete growing season following the burn. However, due to soil suitability and ongoing drought conditions the recommendation for resting the burned area would be a minimum of three years, **or** until monitoring suggests otherwise. The recovery is dependent on severity of the burn, climatic conditions following the burn and whether or not additional post-treatments are needed.	Dusty Carpenter	7/15/2014

Determina-tion	Resource/Issue	Rationale for Determination	Signature	Date
NP	Paleontology	No surface disturbance would occur that could impact Paleontology resources. No paleo localities are present on GIS paleo layer.	Betty Gamber	6/19//2014
NP	Plants: BLM Sensitive	The following UT BLM sensitive plant species are present or expected in the same or an adjacent subwatershed as the proposed project: Barneby's catseye (*Cryptantha barnebyii*) and Graham's catseye (*Cryptantha grahamii*). • The proposed project is located outside of the potential range of Barneby's and Graham's catseyes, and the project is not located on soils known to support the species.	Jessi Brunson	7/15/2014
NP	Plants: Threatened, Endangered, Proposed, or Candidate	The following federally listed, proposed, or candidate plant species are present or expected in the same or an adjacent subwatershed as the proposed project: Graham's beardtongue(*Penstemon grahamii*), and White River beardtongue (*Penstemon scariosus* var. *albifluvis*). • The proposed project is located outside of the potential range of Graham's and White River beardtongues and the project is not located on soils known to support the species.	Jessi Brunson	7/15/2014
NI	Plants: Wetland/Riparian	Several mapped and unmapped riparian areas/wetlands are present in the Project Area, per BLM GIS data review. The Proposed Action would avoid riparian corridors/wetlands to the greatest extent possible, although some indirect impacts, such as a temporary increase in sedimentation, could occur. However, these indirect impacts are not anticipated to effect riparian/wetland plants to a degree that would require detailed analysis, due to the temporary nature of possible indirect impacts to riparian/wetland habitats.	Christine Cimiluca	11/10/14
NI	Recreation	Standard recreation access for hunting would not be impaired due to short project timeframes and mosaic implementation.	Jason R. West	7/8/2014
NP	Socio-Economics	Due to the small scale project size, socioeconomics are not expected to be measurably impacted by this proposed project.	Blaine Tarbell	06/26/14
PI	Visual Resources	VRM Class II (approximately 3,400 cres) were identified within the project area. The remaining acres were VRM III. The mountain browse ISA is VRM I but will be excluded from the project.	Jason R. West	7/8/2014

Determination	Resource/Issue	Rationale for Determination	Signature	Date
NP	Wastes (hazardous/solid)	*Hazardous Waste:* No chemicals subject to reporting under SARA Title III in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the project. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported, or disposed of in association with the project. *Solid Wastes:* Trash would be confined in a covered container and hauled to an approved landfill. Burning of waste or oil would not be done. Human waste would be contained and be disposed of at an approved sewage treatment facility.	Blaine Tarbell	06/26/14
NI	Water: Floodplains	The area proposed is in an area that sees periodic fluctuations in precipitation that result in events that tend to create short lived floodplain environments. The floodplains identified within this area are the Bitter Creek, Sweet Water Creek, Rat Hole Canyon, and Augusi Canyon floodplains. These floodplains are not active until these pulse events happen, which are typically short lived and carry lots of material that ends up in the floodplain if the high water mark is breached.. This project will not affect these identified floodplains to a degree that would require detailed analysis because the bull-hogging method does not turn up soils and the degree of rutting created from the bullhog machine that will utilize rubber mounts create smaller less defined ruts that keep the soil surface intact. Since much of the mulched material will remain onsite, this too will act as binding mechanisms, keeping the soil intact until native re-vegetation takes hold.	James Hereford II	7/22/2014
NI	Water: Groundwater Quality	This surface disturbance would have no impact to groundwater.	Betty Gamber	6/19/2014

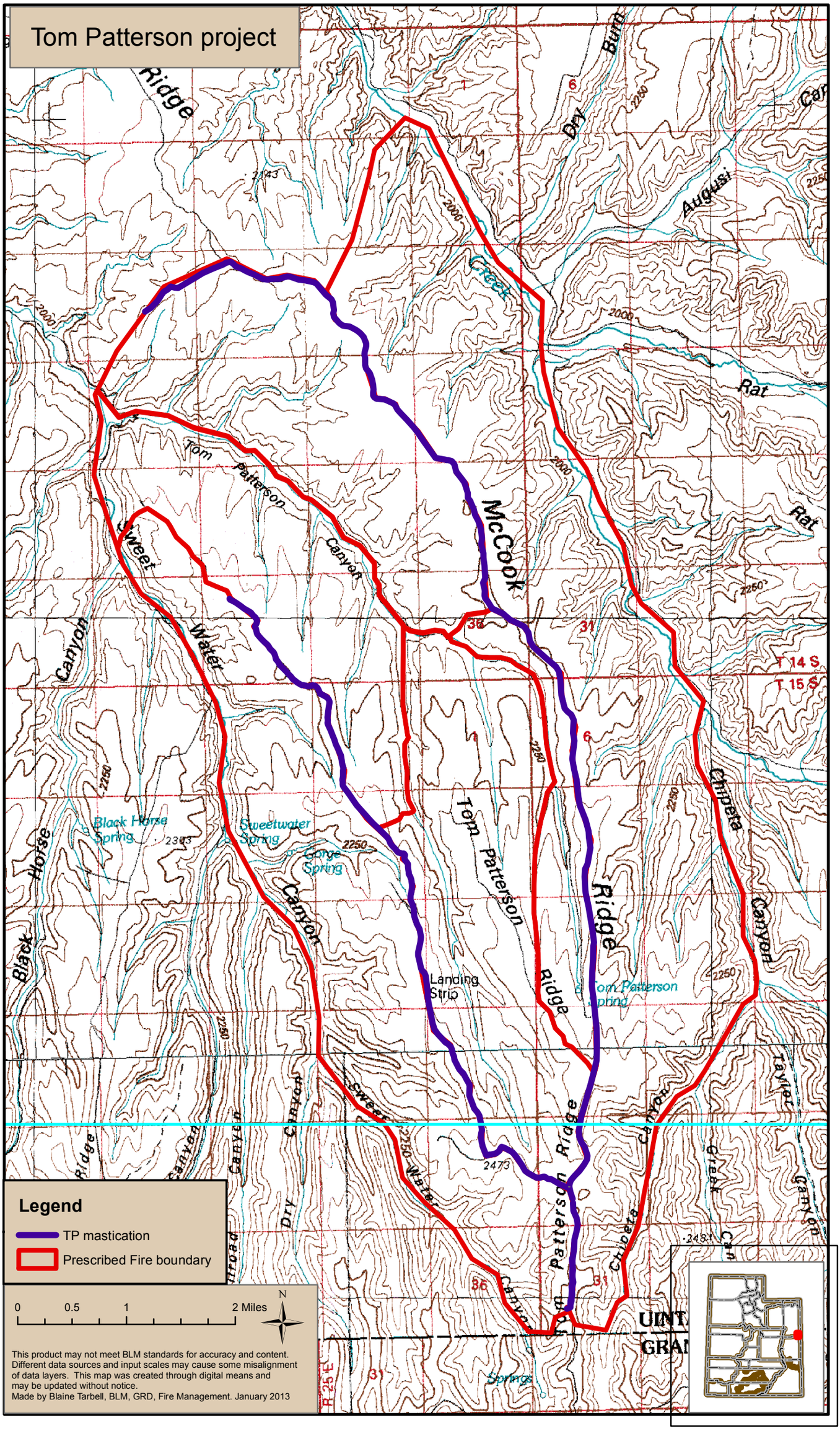
Determina-tion	Resource/Issue	Rationale for Determination	Signature	Date
NI	Water: Hydrologic Conditions (stormwater)	This project takes place in an area that is mostly ephemeral channels with sediments that exhibit high to low infiltration rates and slow to moderate permeability. The proposed action will not affect hydrologic conditions in the area that would require detailed analysis because the bull-hogging method minimizes impact to the soil surface and will not create rutting to a degree that would then increase erosion rates in the area.	James Hereford II	7/22/2014
NI	Water: Surface Water Quality	Surface Water Quality will not be affected to a degree that would require detailed analysis because the methods utilized in the proposed action (bull-hogging) will not create enough disturbance to soils that would then flow down during precipitation events and into main drainage sinks like the White River. This technique also keeps much of the mulched material onsite, which also acts as a barrier for sediment during high flow events typical in a High Desert Ecosystem.	James Hereford II	7/22/2014
NI	Water: Waters of the U.S.	The proposed area is all part of the Lower White River hydrologic unit boundary. The White River is considered a water of the U.S., and will not be affected to a degree that would require detailed analysis, because the amount of soils leaving the area will be minimized through the use of equipment that does not disturb soils. The method proposed will mow down certain vegetation to help reduce fuels and increase the amount of available organics in the soils. This mulch will act as a barrier in keeping any soils onsite, and will not contribute to increased sediments reaching main drainage points like the White River.	James Hereford II	7/22/2014
NP	Wild Horses	No wild horse herd areas are present in the project area.	Dusty Carpenter	7/15/2014
PI	Wildlife: Migratory Birds (including raptors)	Burning will take place in the fall outside of the nesting season. Habitat conditions will change with the burn.	Dixie Sadlier	11/12/14
PI	Wildlife: Non-USFWS Designated	Crucial big game ranges are present in the project area.	Dixie Sadlier	11/12/14

Determination	Resource/Issue	Rationale for Determination	Signature	Date
PI	Wildlife: Threatened, Endangered, Proposed or Candidate	Is the proposed project in sage grouse PPH or PGH? **Yes**T No If the answer is yes, the project must conform with WO IM 2012-043. Potential Mexican Spotted Owl nesting habitat was identified within .5 miles of the project area. PPH habitat is present within the project area.	Dixie Sadlier	11/12/14
NI	Woodlands/Forestry	No impact to forest and woodlands, project purpose is to reduce juniper encroachment into areas where management focus is toward sagebrush.	Blaine Tarbell	8/12/2014

FINAL REVIEW:			
Reviewer Title	**Signature**	**Date**	**Comments**
Environmental Coordinator	Stephanie Solomond	11/25/14	
Authorized Officer	[illegible]	12/1/14	

Appendix B: Project Maps

Tom Patterson project



This product may not meet BLM standards for accuracy and content. Different data sources and input scales may cause some misalignment of data layers. This map was created through digital means and may be updated without notice.
Made by Blaine Tarbell, BLM, GRD, Fire Management. January 2013

United States Department of the Interior
Bureau of Land Management

Decision Record
Environmental Assessment
DOI-BLM-UT-G000-2014-0002-EA

November 2014

Tom Patterson Prescribed Fire Hazardous Fuel Reduction

Location:
Uintah County, Utah
T14S, R24E, Sec 11-16, 21-28, 33-36: T14S R25E, Sec 18-19, 30-32
T15S, R24E, Sec 1-3, 10-15, 23-25, 36: T15S, R25E, Sec 5-8, 17-20, 29-31.

U.S. Department of the Interior
Bureau of Land Management
Vernal Field Office
170 South 500 East
Vernal, Utah 84078
Phone: 435-781-4400
FAX: 435-781-4410

BLM

DECISION RECORD

Environmental Assessment

DOI-BLM-UT-G000-2014-0002-EA

Tom Patterson Hazardous Fuel Reduction

Decision: Based on my understanding of the information contained in the *Tom Patterson Hazardous Fuel Reduction EA* and my subsequent finding of no significant impact, it is my decision to authorize the actions needed to restore the sagebrush vegetation type as set out in DOI-BLM-G000-2014-0002-EA
The following actions will be realized:

- Mastication treatment.
- Prescribed Fire treatment.

Rationale for Decision: My decision to authorize implementation of the proposed action alternative will not result in any undue or unnecessary environmental degradation to wilderness characteristics, threatened or endangered species, cultural resources, or matters pertaining to Native American religious freedoms or their customs. Realization of the proposed action is in conformance with the existing Vernal RMP (2008) and is consistent with the Uintah County General Plan. The No Action Alternative was not selected because that alternative would not meet the stated purpose and need of reducing the hazardous fuel loads.

Implementation of the proposed action will result in the improvement towards a vigorous and healthy mountain big sagebrush vegetative type. The treatment will result in the following positive result:

- Maintain and improve areas that provide for important ecological functions and habitat for Greater sage grouse.
- Reduce the buildup of hazardous fuels by removing pinyon pine and Utah juniper encroachment into sagebrush communities.
- Reduce the risk of large fire events by creating a mosaic of early successional stage vegetation that act as fire breaks.
- Maintain areas that provide for important ecological functions and habitat for keystone species.
- Maintain important sagebrush habitat for a variety of wildlife species in the project area.
- Maintain natural fire return intervals.

Protest and/or Appeal Provision:

As per 43 CFR 5003.1. (b), this decision is effective immediately.

The decision or approval may be appealed to the Interior Board Of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR 4.21. Within 30 days of receipt of the decision, an appeal must be filed to: Interior Board of Land Appeals, Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy St., Suite 300,

Arlington, Virginia, 22203. A copy of the notice of appeal must also be filed in the Vernal Field Office at 170 South 500 East; Vernal, Utah, 84078, as well as with: Office of the Solicitor, 440 West 200 South Suite 500, Salt Lake City, Utah, 84101-1345. Public notification of this decision will be considered to have occurred on December 4, 2012. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition for stay pursuant to 43 CFR 3150.2(b), the petition for stay should accompany your notice of appeal and shall show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied,
(2) The likelihood of the appellants success on merits,
(3) The likelihood of irreparable harm to the appellant or resources if the stay is not granted, and
(4) Whether the public interest favors the granting of the stay

Troy Suwyn
AFM for Division of Fire

12/1/14
Date

United States Department of the Interior
Bureau of Land Management

Finding of No Significant Impact
Environmental Assessment
DOI-BLM-UT-G000-2014-0002-EA

November 2014

Tom Patterson Prescribed Fire Hazardous Fuel Reduction

Location:
Uintah County, Utah
T14S, R24E, Sec 11-16, 21-28, 33-36: T14S R25E, Sec 18-19, 30-32
T15S, R24E, Sec 1-3, 10-15, 23-25, 36: T15S, R25E, Sec 5-8, 17-20, 29-31.

U.S. Department of the Interior
Bureau of Land Management
Vernal Field Office
170 South 500 East
Vernal, Utah 84078
Phone: 435-781-4400
FAX: 435-781-4410

BLM

FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment

NEPA Number: DOI-BLM-UT-G000-2014-0002-EA

Project Name: Tom Patterson Prescribed Fire Hazardous Fuel Reduction

Based on the analysis of potential environmental impacts contained in the environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that Tom Patterson Prescribed Fire Hazardous Fuel Reduction will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Authorized Officer

12/1/14
Date