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Upper Snake Field Office

Environmental Assessment of the
Shotgun Valley Fuels Reduction and Forest Restoration Project
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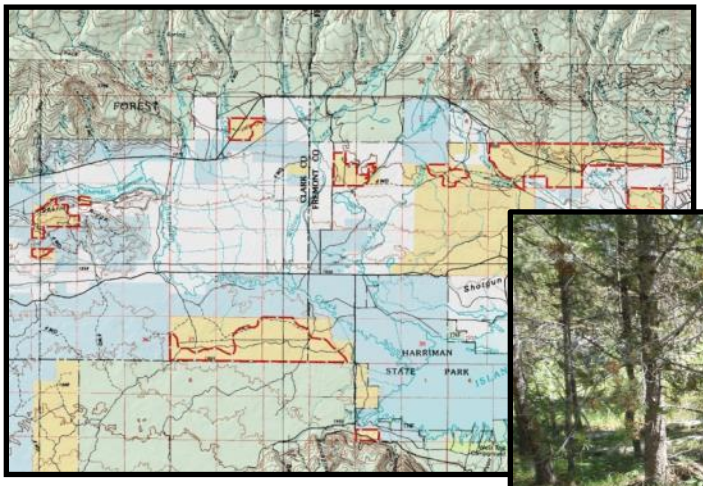

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Acronyms

ARMPA	Approved Resource Management Plan Amendment
BLM	Bureau of Land Management
BMP	Best Management Practice
BpS	Biophysical Setting
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIAA	Cumulative Impact Assessment Area
dbh	diameter at breast height
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FMDA	Fire, Fuels, and Related Vegetation Management Direction Plan Amendment
FRCC	Fire Regime Condition Class
HUC	Hydrologic Unit Code
IDT	Interdisciplinary Team
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
LAU	Lynx Analysis Unit
LUP	Land Use Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register Historic Places
OHV	Off-Highway Vehicle
PM_{10}	Particulate matter 10 µm or less
$PM_{2.5}$	Particulate Matter 2.5 µm or less
RMP	Resource Management Plan
ROD	Record of Decision
SHPO	State Historic Preservation Office
USDA	U.S. Department of Agriculture

USFO	Upper Snake Field Office
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WFU	Wildland Fire Use
WUI	Wildland Urban Interface

CHAPTER 1 – INTRODUCTION

The Bureau of Land Management (BLM) Upper Snake Field Office (USFO) has prepared this Environmental Assessment (EA) to analyze a proposal to reduce hazardous fuel accumulations and improve forest community health on public lands within the Shotgun Valley area of northeastern Idaho in accordance with the *Medicine Lodge Resource Management Plan (RMP) and Final Environmental Impact Statement (FEIS) 1985* (DOI-BLM 1985) as amended by the *Fire, Fuels, and Related Vegetation Management Direction Plan Amendment and Final Environmental Impact Statement (FMDA FEIS)* (DOI-BLM 2008) and the *Idaho and Southwestern Montana Greater Sage-Grouse Land Use Plan Amendment and FEIS* (DOI-BLM 2015b). This EA discloses the direct, indirect, and cumulative environmental effects that would result from implementation of the proposal as required by the National Environmental Policy Act (NEPA) of 1969. Federal actions must be analyzed in accordance with NEPA and other relevant Federal and State laws and regulations to determine potential environmental consequences. The EA provides a site-specific analysis of potential effects that could result from implementation of the alternatives and assists the BLM in making a determination as to whether any "significant" impacts could result from the analyzed actions (40 Code of Federal Regulations [CFR] § 1508.27). The EA will provide evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact that presents the reasons why implementation of the Proposed Action would not result in "significant" environmental effects. The document has been prepared in accordance with the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR § 1500 et. seq.), BLM guidelines for land use planning in BLM Handbook H-1601-1, BLM guidelines for implementing NEPA in BLM Handbook H-1790-1, and the Idaho Falls District Guide for Implementing NEPA (IM-ID-300-09-004).

Background

Starting in the1960s and continuing through the early part of the 1970s, many of the forested lands within the Shotgun Valley and surrounding areas were infested by an epidemic level of mountain pine beetle (*Dendroctonus ponderosae*). The BLM salvaged thousands of acres of beetle killed timber during the latter part of the 1970s and then replanted the harvested areas, creating what is now an overabundance of evenly-aged, densely stocked plantations of lodgepole pine (*Pinus contorta*) that have received very little maintenance since their initial establishment some 30 to 40 years ago. Multi-aged, densely stocked, closed canopy stands of Douglas-fir (*Pseudotsuga menziesii*) are also prevalent in the project area and they have experienced varying levels of infestation of spruce budworm (*Choristoneura occidentalis*), tussock moth (*Orgyia pseudotsugata*), and Douglas-fir beetle (*Dendroctonus pseudotsugae*) over the last 10 years. Lesser amounts of aspen (*Populus tremuloides*) and mountain shrublands populate the interspaces not occupied by the conifers.

Aspen stands within the project area are categorized as even-aged and decadent, are being encroached upon by adjacent conifer tree species, and lack the level of reproduction necessary to maintain healthy clones. Aspens are considered a keystone species and are critical for maintaining biodiversity in western landscapes, where clones regenerate primarily through vegetative reproduction triggered by hormonal stimulation of underground root buds initiated by disturbance (Jones et al. 2005). Douglas-fir within the project area have been expanding into many of the historic aspen clones due to the modification of the natural fire regime, which had historically provided the disturbance necessary to maintain the clone and thus had kept Douglas-fir out of the aspen stands. It has been estimated that in areas where aspen were historically found fire return intervals were typically 20 to 60 years (Campbell and Bartos 2000).

The existing conditions in the project area are primarily the result of fire suppression activities and a lack of forest management that have contributed to high tree densities and poor growth rates and tree vigor. Fire records dating back to the early 1940s identify only a single wildfire as occurring within those BLM

lands that make up the project area. This fire was less than one acre in size and was speculated to be human-caused due to its proximity to the Yale-Kilgore Road. Outside of wildfire, past treatment activities that have altered forest communities within the project area include the thinning of approximately 1,000 acres of Douglas-fir and lodgepole pine plantations in the Yale Road, Eagle Ridge, and Green Canyon Treatment Units between 2008 and 2010.

As these forests become denser, competition for limiting factors such as moisture or nutrients increases, further stressing the trees and making them more vulnerable to insect attack (O'Laughlin et al. 1993). The disturbance regimes for these vegetation communities mainly focused around fire; however, insects and disease outbreaks did play a lesser role and depending upon the severity could have led to the replacement of the stand. With regards to fire, the following fire return intervals were calculated for the previously discussed vegetation communities: aspen-mixed conifer communities had a <35-year fire interval frequency (average number of years between fires) with low severity surface fires; dry conifer forests had a 35-100+ year fire interval frequency with mixed severity and replacement severity fires (highly dependent upon dominant vegetation type); while mountain shrub communities had a 35-100+ year fire interval frequency with stand-replacement surface fires (LANDFIRE 2007). On average, fuel loading (1hr.-100hr., live herbaceous and live woody) within the dominant conifer cover types, which makes up 76 percent of the project area, should be near 3.7 tons/acre (Scott and Burgan 2005). Field data shows that current fuel loading values within the Shotgun Valley project area average 5.38 tons/acre. Fuel loading is defined as the total volume of combustible material in tons per acre and correlates to the amount of heat produced during a fire (higher fuel loading results in more heat).

Fire Regime Condition Class (FRCC) is a measure of vegetation and fuel departure, as well as fire severity and frequency departure. Vegetation in a condition of FRCC 1 would correspond to its historical range of conditions and would be less susceptible to uncharacteristic fires; FRCC 2 ratings for the major vegetation cover types in the project area suggests that the natural fire regime has been altered allowing overstocking in the Douglas-fir/aspen and lodgepole pine vegetation cover types and conifer encroachment into the remaining aspen vegetation cover type (FRCC methodology is described in Appendix A). The overstocking and increasing number of diseased, dead, and dying trees in the stands makes the project area more susceptible to uncharacteristic wildland fire.

Additionally, as development adjacent to the project area increases, there is an increased risk to life and property because of the presence of high fuel loads on adjacent public lands. Homes, ranches, and farms in these areas are vulnerable to wildland fire spread from adjacent BLM lands. The high fuel loading conditions present in the project area can contribute to wildland fires that can quickly spread beyond control resulting in adverse consequences. Fuels management and restoration practices are available to manage fuel loads, improve ecological integrity of existing vegetation resources, and reduce spread of undesirable, non-native species. For example in seral aspen stands, mechanical removal of dead or diseased trees, coupled with prescribed fire can reduce fuel loads and stem densities and increase age class diversity in the previously mentioned cover types. This would promote a more diverse, seral mosaic of aspen and dry conifer forest, as opposed to a landscape dominated by mature and decadent stands of Douglas-fir or young and overstocked stands of lodgepole pine. Vegetation typical of the project area is shown in photographs on the following page.

Forest vegetation typical of the project area (2013 and 2015)

Purpose of and Need for Action

The purpose of the Shotgun Valley project is to protect the home developments, ranches, and businesses adjacent to the project area that make up the Island Park community from large, uncharacteristic, high-intensity wildland fire. Additionally, this project aims to protect important wildlife habitat, improve forest health, and promote aspen regeneration and expansion. Heavy fuel loads within the project area have created conditions that would support the development of high-intensity wildland fires and the potential for unacceptable resource and human health and safety impacts. As a result, the proposed fuel reduction and forestry treatments are needed to reduce the large volume of vegetation build up, consisting of young lodgepole pine and densely stocked stands of Douglas-fir, which are creating a risk to the surrounding federal, state, and developed private lands. The proposed fuels reduction treatments would be designed to reduce forest vegetation fuel loadings, decrease fire intensity and erratic fire behavior, aid in wildland fire suppression activities, provide for firefighter and public safety, and improve ecosystem health in the forested vegetation types present in the project area.

Management actions are needed to reduce the risk to private lands and public land resources, as well as providing for improved public and firefighter safety from uncharacteristic wildland fire. The purpose of the Proposed Action is to:

- Protect and enhance healthy conifer stands by reducing the density of young suppressed trees that may propagate surface fires into the forest crowns or increase the stands' susceptibility to insects and disease.

- Reduce hazardous fuel loading (vertical and horizontal continuity of ladder fuels) to prevent uncharacteristic wildfires and resultant resource damage, while providing conditions so wildfire can safely take its role in the ecosystem.
- Improve the health, vigor, and acreage of aspen stands and promote natural regeneration of aspens.
- Maintain or improve wildlife habitat by providing multiple successional stages of more diverse vegetative communities.

Location of the Proposed Action

The Shotgun Valley project is located at the northeastern margin of the Eastern Snake River Plain, approximately six miles west of Island Park, Idaho. The 4,283 acre project area is comprised of 10 parcels of BLM-administered public lands (Figure 1). The project area is located in whole or in part within Townships 12 & 13 North, Ranges 40, 41 & 42 East. The individual parcels within the project area are disconnected from one another by adjacent private lands or lands administered by the U.S. Forest Service (USFS) or State of Idaho. Portions of the Shotgun Valley project area have been designated as a wildland-urban interface (WUI) due to the presence of homes and other human developments adjacent to the public lands within the eastern treatment units (Fremont County 2004). Of the approximately 4,283 acres identified for treatment, 1,781 acres are within the Sheridan Creek Watershed while the remaining 2,502 acres are within the Henry's Fork-Island Park Reservoir Watershed. A complete list of the legal descriptions for each of the ten treatment units are identified in Table 1.

Table 1. Proposed Shotgun Valley Treatment Units.

Treatment Area	Legal Descriptions*	Total Acres	Treated Acres
Sheridan Ridge	SE¼NW¼ , SE¼, W½SE¼, SE¼SE¼ and NW¼NW¼ of Section 22, T.13 N., R. 40 E.	315	295
Sheridan Reservoir	SW¼NW¼ of Section 14, T.13 N., R. 40 E.	28	21
South Slope	N½SW¼ of Section 22, T.13 N., R. 40 E.	42	35
Taylor Creek	E½SW¼ and SE¼ of Section 5, T.13 N., R. 41 E.	170	36
Boundary	SW¼NW¼ and S½ of Section 31, T.13 N., R. 41 E., SE¼NW¼, SW¼ and E½ of Section 32, T.13 N., R. 41 E., All of Section 33, T. 13 N., R. 41 E., and S½NW¼, SW¼, W½SE¼, SE¼SE¼ of Section 34, T.13 N., R. 41 E.	1,356	440
W.E. Farms	SE¼ and SW¼NE¼ of Section 10, E½SW¼ and SW¼SW¼ of Section 11, T.13 N., R. 41 E.	256	221
Green Canyon	S½SW¼ of Section 34, T.12 N., R. 41 E.	80	29
Icehouse Creek	SE¼ of Section 12, T.13 N., R. 41 E. and SW¼ and W½SE¼ of Section 7, T.13 N., R. 42 E.	162	120
Yale Road	N½SW¼, SE¼SW¼, SW¼SE¼, N½SE¼, N½ of Section 8, T.13 N., R. 42 E., N½SW¼, SE¼SW¼, SE¼, N½ of Section 9, T.13 N., R. 42 E., N½ of Section 10, T.13 N., R. 42 E. and NW¼, W½NE¼ of Section 11, T.13 N., R. 42 E.	1,637	1,374
Eagle Ridge	NW¼, W½NE¼ of Section 14, T.13 N., R. 42 E.	237	180

*Boise Meridian

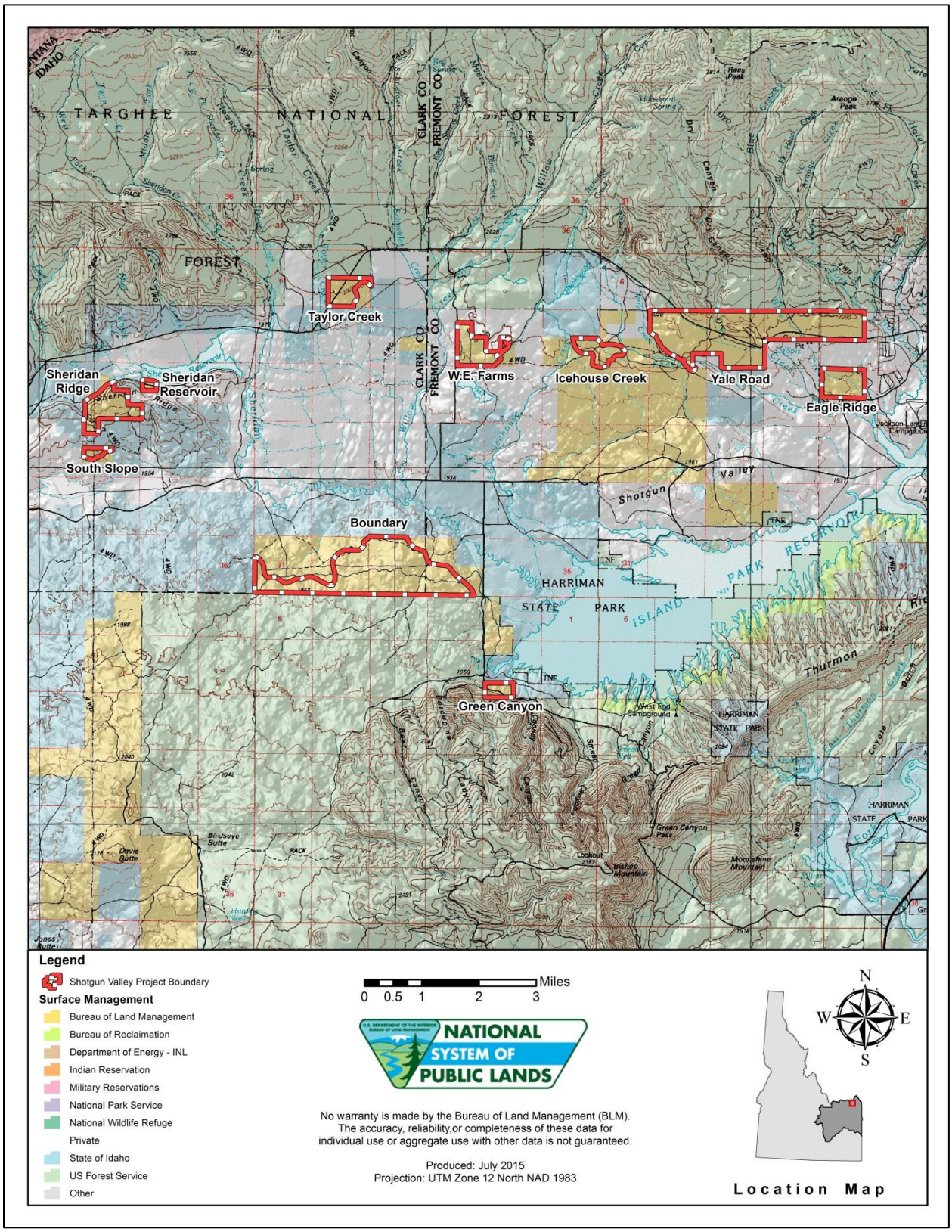


Figure 1. Project Location.

Conformance with Applicable Land Use Plan

The Proposed Action is in conformance with the following landscape-level objectives and management actions set forth in the Record of Decision for the *Medicine Lodge RMP and FEIS 1985* (DOI-BLM 1985) as amended by the *Fire, Fuels and Related Vegetation Management Direction Plan Amendment* (*FMDA) FEIS* (DOI-BLM 2008) and *ROD and ARMPA for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana* (DOI-BLM 2015b). A Greater Sage-Grouse Implementation Plan Conformance Review was conducted by the Idaho State Office review team for this project and is attached under Appendix D within this document.

Portions of the BLM land within the Shotgun Valley project area were amended by the ARMPA and classified as either important or general habitat. Treatments being proposed and analyzed under this EA would be occurring within only the forested areas of the valley and not within those areas classified as mountain sagebrush or areas occupied or used by Greater Sage-grouse. As a result, the proposed project would not affect greater sage-grouse or its habitat.

The FMDA FEIS (DOI-BLM 2008:14, 17, 18), Medicine Lodge RMP and FEIS Record of Decision (DOI-BLM 1985) and Sage-Grouse Plan Amendment and FEIS (DOI-BLM 2015b): set the following objectives and management actions:

Medicine Lodge RMP Objectives and Management Decisions:

Management Area 5 – Sands:

Objective 4 –Intensively manage 4,253 acres for timber production (pg. 8).

Management Decisions:

- Timber sales can be conducted on 3,623 acres, predominately in areas adjacent to the Yale-Kilgore road and in the Pine Creek –July Creek areas…..About 3,203 acres of woodland will be managed will be managed for production of forest products on demand with stipulations to maintain wildlife habitat and watershed conditions (pg. 8).

Standard Operating Procedures:

Wildlife and Fisheries:

- Seasonal restrictions will continue to be applied where they are needed to mitigate the impacts of human activities on important seasonal wildlife habitat. Applicable restricted time periods include (pg. 26):
    - Raptor Nest Sites: Dates vary (See Appendix G)
- The Idaho Department of Fish and Game and the U.S. Fish and Wildlife Service will be consulted prior to implementing projects that may affect habitat for threatened and endangered species (pg. 27).
- Sufficient forage and cover will be provided for wildlife on seasonal habitat (pg. 27).
- Vegetation manipulation projects will be designed to minimize impacts on wildlife habitat and to improve it whenever possible. These projects will comply with sage-grouse, antelope and mule deer management guidelines (pg. 28).
- Elk Management Guidelines: Maintaining adequate thermal and security cover on deer and elk habitat, particularly within timber stands adjacent to primary winter foraging areas (pg. 28).

Forestry:

- Public lands within intensive Forest management Area will be available for a full range of forest management activities. Areas classified as woodland will also be available for limited forest management activates (pg. 22).
- Silvicultural prescriptions will be consistent with accepted methods related to site, species, habitat types, and the individual requirements of the forest stand. Tractor logging will be limited to slopes with gradients of less than 40%, and the season of logging will be limited to avoid soil compaction and rutting (pg. 22).
- Road locations will be determined on the basis of topography, drainages, soils, and other natural features to minimize erosion. All roads and skid trails to be closed will be seeded to grass, legumes and shrubs. Species will be selected for the forest community and elevation to be seeded (pg. 23).
- Slash disposal will be done in a manner conducive to revegetation and advantageous to the passage of big game. Slash will be lopped and scattered where possible with some accumulation in or near openings for escape cover. Slash will be burned when necessary. Such burning will be in conformance with state air pollution regulations (pg. 23).
- Logging units will be laid out in a manner that will mitigate the risk of windthrow, and the selection of trees in shelterwoods will be made in a manner that will improve the genetic composition of the regenerated stand (pg. 23).

FMDA Management Goals for Aspen/Conifer and Dry Conifer:

Increase acres of early-seral and mid-seral Aspen/Conifer and Dry Conifer cover types (pure aspen and Aspen/Conifer mix). Spatial arrangement of varying age-classes should occur in a mosaic across the landscape (pg. 14).

Improve composition and structure of Aspen/Conifer and Dry Conifer types to better represent historical Aspen/Conifer and Dry Conifer cover types (pg. 14).

Objective 2: Maintain, protect, and expand sage-grouse source habitats (pg. 17).

Management Actions:

- Conduct vegetation treatments in areas that pose a wildland fire risk to source habitats (pg. 17).

***Objective 4*:** Make Progress toward Desired Future Condition in historically frequent fire regimes (Aspen/Conifer, Dry Conifer, Mid-elevation Shrub encroached by juniper, Mountain Scrub) by increasing Wildland Fire Use (WFU) and prescribed fire to create a fire regime within the historical range of variability (pg. 18).

Management Actions:

- Use mechanical and chemical treatments to prepare areas in FRCC 2 and FRCC 3 for prescribed fire and WFU (pg. 18).
- Where prescriptive parameters, resource conditions, and vegetation conditions allow, use WFU or prescribed fire to increase the annual average number of wildland fire acres to an average similar to historical conditions (pg. 18).

Sage-Grouse Plan Amendment Objectives and Management Decisions:

Objective SSS 3: Maintain a resilient population of GRSG in Idaho and southwestern Montana (pg. 2-7).

MD SSS 5: Prioritize activities and mitigation to conserve, enhance and restore GRSG habitats (i.e., fire suppression activities, fuels management activities, vegetation treatments, invasive species treatments etc.) first by Conservation Area, if appropriate (Conservation Area under adaptive management or at risk of meeting an adaptive management soft or hard trigger), followed by PHMA, then IHMA then GHMA within the Conservation Areas. Local priority areas within these areas will be further refined as a result of completing the GRSG Wildfire and Invasive Species Habitat Assessments as described in **Appendix H of the ARMPA**. This can include projects outside GRSG habitat when those projects will provide a benefit to GRSG habitat (pg. 2-8).

> Portions of the Shotgun Valley project are within mapped GRSG habitat; however, in reality the treatment areas are all dominated by stands of lodgepole pine, Douglas fir, and aspen, which are not indicative of GRSG habitat. The treatment areas, due to their vegetative cover, are not sage-grouse habitat and the proposed treatments will have no effect on GRSG or its habitat. The impacts to GRSG and its habitat in relation to the action alternatives are described on pg. 62-74 of the EA.

MD SSS 7: GRSG habitat within the project area will be assessed during project-level NEPA analysis within the management area designations (PHMA, IHMA, GHMA). Project proposals and their effects will be evaluated based on the habitat and values affected (pg. 2-9).

> GRSG habitat was assessed during the NEPA analysis. The impacts to GRSG habitat in relation to the action alternatives are described on pg. 62-74 of the EA.

MD SSS 33: Conduct implementation and project activities, including construction and short-term anthropogenic disturbances consistent with seasonal habitat restrictions described in **Appendix C of the RMPA** (pg. 2-15).

> Project is outside of seasonal grouse habitats.

MD SSS 38: Monitor the effectiveness of projects (e.g., fuel breaks. fuels treatments) until objectives have been met or until it is determined that objectives cannot be met, according to the monitoring schedule identified for project implementation (pg. 2-15).

> Monitoring is proposed as described on page 24 of the EA.

MD SSS 39: Monitor invasive vegetation post vegetation management treatment (pg. 2-15).

> Monitoring is proposed as described on page 24 of the EA.

Objective VEG 1: Reconnect and expand areas of higher native plant community integrity/rangeland health to increase the extent of high quality habitat and, where possible, to accommodate the future effects of climate change (pg. 2-16).

MD VEG 1: Implement habitat rehabilitation or restoration projects in areas that have potential to improve GRSG habitat using a full array of treatment activities as appropriate, including chemical, mechanical and seeding treatments (pg. 2-16).

Treatments will only be occurring within the forested areas of the Shotgun Valley project. Treatments would aim to improve the forest vegetation structure and health thereby reducing the potential for high intensity wildfire impacting adjacent mountain sagebrush communities.

MD VEG 2: Implement vegetation rehabilitation or manipulation projects to enhance sagebrush cover or to promote diverse and healthy grass and forb understory to achieve the greatest improvement in GRSG habitat based on FIAT Assessments, HAF assessments, other vegetative assessment data and local, site specific factors that indicate sagebrush canopy cover or herbaceous conditions do not meet habitat management objectives (i.e. is minimal or exceeds optimal characteristics). This may necessitate the use of prescribed fire as a site preparation technique to remove annual grass residual growth prior to the use of herbicides in the restoration of certain lower elevation sites (e.g., Wyoming big sagebrush) but such efforts will be carefully planned and coordinated to minimize impacts on GRSG seasonal habitats (pg. 2-17).

Portions of the Shotgun Valley project are within mapped GRSG habitat; however, in reality the treatment areas are all dominated by stands of lodgepole pine, Douglas fir, and aspen, which are not indicative of GRSG habitat. The treatment areas, due to their vegetative cover, are not sage-grouse habitat and the proposed treatments will have no detrimental effect on GRSG or its habitat. Areas within the project area that contain GRSG habitat are excluded from treatments under this EA. These areas of excluded GRSG habitat contain healthy stands of mountain sagebrush that show no need for either rehabilitation or manipulation treatments.

MD VEG 4: Implement management changes in restoration and rehabilitation areas, as necessary, to maintain suitable GRSG habitat, improve unsuitable GRSG habitat and to ensure long-term persistence of improved GRSG habitat (Eiswerth and Shonkwiler 2006). Management changes can be considered during livestock grazing permit renewals, travel management planning, and renewal or reauthorization of ROWs (pg. 2-17).

Portions of the Shotgun Valley project are within mapped GRSG habitat; however, in reality the treatment areas are all dominated by stands of lodgepole pine, Douglas fir, and aspen, which are not indicative of GRSG habitat. The treatment areas, due to their vegetative cover, are not sage-grouse habitat and the proposed treatments will have no detrimental effect on GRSG or its habitat. Areas within the project area that contain GRSG habitat are excluded from treatments under this EA. These areas of excluded GRSG habitat contain healthy stands of mountain sagebrush that show no need for either rehabilitation or manipulation treatments.

Objective FIRE 1: Design fuel treatments to restore, enhance, or maintain greater sage-grouse habitat (pg. 2-19).

MD FIRE 17: Design and implement fuels treatments that would reduce the potential start and spread of unwanted wildfires and provide anchor points or control lines for the containment of wildfires during suppression activities with an emphasis on maintaining, protecting, and expanding sagebrush ecosystems and successfully rehabilitated areas and strategically and effectively reduce wildfire threats in the greatest area (pg. 2-20).

Through the project planning and scoping (internal & external) process every effort was made to ensure that the fuels and forestry treatments occurring within the conifer forests were designed in a way that would maintain and enhance the targeted vegetation but also protect those habitats adjacent to the treatment areas (i.e. mountain sagebrush and mountain shrub cover types).

MD FIRE 19: Apply appropriate seasonal restrictions for implementing vegetation and fuels management treatments according to the type of seasonal habitats present. Allow no treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around and/or in the winter range and will protect, maintain, increase, or enhance winter range habitat quality.
Ensure chemical applications are utilized where they will assist in success of fuels treatments.
Strategically place treatments on a landscape scale to prevent fire from spreading into PHMA or WUI (pg. 2-21).

> Treatments would be occurring within the conifer cover type identified within the project area. While sagebrush cover types do exist within the project area, they have been excluded from treatment. Additionally, the project area has been identified as being outside of seasonal grouse habitats.

MD FIRE 22: Fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, and protect GRSG habitat which considers a full range of cost effective fuel reduction techniques, including: chemical, biological (including grazing and targeted grazing), mechanical and prescribed fire treatments (pg. 2-21).

> The internal and external scoping process is described on pages 11-13 of the EA. While the treatment areas are primarily dominated by conifer forests, and would not be categorized as GRSG habitat, every effort has been made to ensure that the fuels and forestry treatments were designed in a way that would maintain and enhance the targeted vegetation but also protect those habitats adjacent to the treatment areas (i.e. mountain sagebrush and mountain shrub cover types).

MD FIRE 26: Protect vegetation restoration and rehabilitation efforts/projects from subsequent fire events (pg. 2-21).

> The purpose of this project is to reduce the risk of high intensity wildfire within the conifer forest cover types.

Applicable Required Design Features:

RDF 1: Solicit and consider expertise and ideas from local landowners, working groups, and other federal, state, county, and private organizations during development of projects (pg. C-2).

> This has occurred as described on pages 11-13 of the EA.

RDF 2: No repeated or sustained behavioral disturbance (e.g., visual, noise over 10 dbA at lek, etc.) to lekking birds from 6:00 pm to 9:00 am within 2 miles (3.2 km) of leks during the lekking season (pg. C-2).

> Nearest Occupied lek is over 10 miles away therefore this RFD does not apply.

RDF 3: Avoid mechanized anthropogenic disturbance, in nesting habitat during the nesting season when implementing: 1) fuels/vegetation/habitat restoration management projects, 2) infrastructure construction or maintenance, 3) geophysical exploration activities; 4) organized motorized recreational events (pg. C-2).

> The project area is outside of nesting habitat as modeled by IDFG therefore this RDF does not apply.

RDF 4: Avoid mechanized anthropogenic disturbance during the winter, in wintering areas when implementing: 1) fuels/vegetation/habitat restoration management projects, 2) infrastructure construction or maintenance, 3) geophysical exploration activities; 4) organized motorized recreational events (pg. C-2).

> The project area is outside of wintering habitat as modeled by IDFG therefore this RDF does not apply.

RDF 20: Where applicable, design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which most benefit sage-grouse habitat (pg. C-3).

> This project will reduce the potential for high intensity wildfires in timber adjacent to shrub steppe habitat within the project area.

RDF 26: Power-wash all vehicles and equipment involved in fuels management activities, prior to entering the area, to minimize the introduction of undesirable and/or invasive plant species (pg. C-4).

> This RDF is part of the design features and mitigation measures for all alternatives described in the EA (pg 22-24).

RDF 30: Remove standing and encroaching trees within at least 110 yards of occupied sage-grouse leks and other habitats (e.g., nesting, wintering and brood rearing) to reduce the availability of perch sites for avian predators, as resources permit (pg. C-4).

> No Leks are within 10 miles of the project area therefore this RDF does not apply.

Relationship to Statutes, Regulations, and other Applicable Plans

The Proposed Action is consistent with the *Conservation Plan for the Greater Sage-grouse in Idaho* objective to:

> "Maintain, enhance or restore sage grouse habitat, and continuity of habitats, at multiple spatial scales (Idaho Sage-grouse Advisory Committee 2006: 1-13)".

The Proposed Action is also consistent with the Upper Snake Sage-grouse Local Working Group's recommended actions to:

> "Manage the density, structure, and composition of shrubs, forbs, and grasses at a standard that will maintain the long-term health and sustainability of the plant community, enhance the long-term health of sage-grouse habitats, and meet the needs of other species and human uses" and "reduce the size, intensity, and frequency of wildfires and to develop a fire suppression policy that would place a high priority on protecting sage-grouse habitat" (Upper Snake Sage-Grouse Local Working Group 2010:8 & 11).

The management of noxious weeds in relation to the Proposed Action is governed by the *Upper Snake-Pocatello Integrated Weeds Control Programmatic Environmental Assessment* (DOI-BLM 2009a). The control program, which utilizes a full complement of methodologies available to treat weeds (i.e., herbicide use, fire, mechanical, manual, and biological control) tiers to the *Final Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Impact Statement 2007* (DOI-BLM 2007a).

This document tiers to the analysis presented in the *FMDA FEIS* (DOI-BLM 2008). The plan amendment assesses the environmental effects of mechanical, prescribed fire, and chemical fuel treatments. The analysis in the FMDA FEIS contains broad regional descriptions of resources, provides a broad environmental impact analysis, including cumulative impacts, focuses on general policies and provides Bureau-wide decisions for vegetation management.

Scoping, Issues, and Decision to be Made

Scoping

Internal scoping meetings were conducted by an interdisciplinary team (IDT) of BLM specialists to discuss the purpose and need of the project; alternatives; resources of concern; potential environmental impacts; past, present, and reasonably foreseeable projects that may have cumulative effects; and possible mitigation measures. External scoping was initiated with the distribution of a scoping letter to inform the public of the proposal, and to generate input on the preparation of this EA. In July of 2015, the Upper Snake Field Office sent letters to permittees, known adjacent private land owners, news organizations, interested publics, and other agencies inviting them to participate in the evaluation process by submitting comments, suggestions and preliminary issues related to the alternative proposals to be considered in the development of the EA.

The external scoping period ran from July 1, 2015 through August 1, 2015. During the scoping period, an open house was held at the Island Park EMS building (located across from the Island Park Library at 4377 County Circle) on Thursday July 16, 2015 from 3-6 p.m. in order to provide an opportunity for the public to learn more about the project and provide comments on the fuels reduction and forest health treatments proposed in the Shotgun Valley project area. A notice of the meeting and of the scoping period for the EA was posted at several Island Park businesses, post offices, banks, and at city hall. The public notice was also published in the Island Park Journal on July 15, 2015, in the Island Park News on July 9 and July 16, 2015, and on the BLM's ePlanning website. Fourteen members of the public attended the meeting.

In addition to the public notices, an article about the Shotgun Valley project was included in the July 25, 2015 edition of the Upper Valley Standard Journal. The article presented information about the project including the scoping period dates. Contact information for BLM personnel was also provided in the article. On July 25, 2015 BLM's Fire Mitigation and Education Specialist was involved in the Wildfire Awareness Week event held at the Island Park Ranger Station. During the event, maps of the project area and descriptions of the project proposals were available to the public. Approximately 30 informational pamphlets were circulated to Island Park residents during this event.

Native American tribes with affiliation to the area were also notified, via letter, about the project and meeting during the scoping period. As of August 3, 2015, no comments had been received from the tribes regarding the proposed project.

A total of 10 written comments were received during the scoping period. All comments were considered and incorporated into the EA, where applicable. Responses to the substantive comments are posted on the BLM's ePlanning page for this project (http://www.blm.gov/id/st/en/prog/nepa_register.html).

Issues

Using the comments from the public in combination with the information developed from internal scoping, a list of resource concerns to be considered in the analysis was developed. Resources of concern identified in the development of this proposal and discussed in Chapter 3 are listed in Table 2.

Table 2. Preliminary Issues Identified for the Analysis.

Resource	Resource Issue
Air Quality	Air quality could be affected by vegetation removal and burning of fuels and other activities associated with the proposed treatments that would increase emissions and fugitive dust.
Cultural Resources	Cultural resources could be affected by ground disturbing activities associated with the proposed treatments, including potential destruction of sites located within the project area.
Economic and Social Values	Economic and social values could be affected by removal of timber and other activities associated with the proposed treatments, including potential increases in employment or increased timber products to local markets.
Fisheries	Fisheries could be impacted by ground disturbing activities associated with the proposed treatments, including loss of adjacent vegetation cover and increased sediment loading into streams.
Forest Resources	Forest resources could be affected through a reduction in overstory spacing and overall basal area within the stands. Thinning activities would also promote aspen health by removing encroaching conifers. Treatments would improve forest health and break up fuel continuity, reducing the risk of the spread of wildland fires from the ground to the forest crown.
Invasive, Non-Native Species	Invasive, non-native species abundance and distribution could increase in the treatment areas due to vegetation removal and other ground disturbing activities associated with the proposed treatments including burning.
Recreation	Recreational use of the area could be affected by vegetation removal, burning, and the presence of equipment and personnel associated with the proposed treatments.
Soil Resources	Soil resources could be affected by ground disturbing activities and vegetation removal associated with the proposed treatments that could lead to increased erosion and compaction.
Tribal Treaty Rights and Interests	Tribal treaty rights could be affected by removal of vegetation and ground disturbing activities associated with the proposed treatments that could restrict access to wildlife and plants in the project area.

Resource	Resource Issue
Vegetation	Vegetation resources could be affected by treatments that would promote better health and vigor by reducing competition stress from uncharacteristically high stand densities. High risk trees, trees that are crowding desirable trees, undesirable species, and trees of poor quality and low vigor would be marked for removal. Stand density and understory ladder fuels would be reduced in conifer stands and conifers would be removed from aspen stands.
Visual Resources	Visual resources could be affected by harvest, thinning, and potential burning activities. Modifying the character of the landscape during these activities could result in alterations in color, line, and texture that could affect visual resources.
Water Quality	Water quality could be affected by vegetation removal and ground disturbance associated with the proposed treatments that could lead to increased sedimentation of streams within the project area.
Wetlands and Riparian Areas	Wetlands and riparian areas could be affected by vegetation removal and associated ground disturbance related to implementation of the proposed treatments. Indirect effects would include increased runoff and sediment loads.
Wildlife Resources	Wildlife could be affected by the proposed treatments because of the presence of equipment and personnel in treatment units and the resulting habitat disturbance created by the treatments.

Decision to be Made

The Upper Snake Field Manager is the official responsible for decisions regarding the management of BLM administered lands within the project area. Based on the results of the NEPA analysis, the Field Manager will issue a determination of significance of the environmental effects and determine whether an EIS would be required. If the authorized officer determines that it is not necessary to prepare an EIS, the EA will provide information for the authorized officer to make an informed decision. Following appropriate NEPA analysis, the Field Manager would issue a decision document consistent with the regulations for implementing the procedural provisions of NEPA (40 CFR § 1500-1508), 43 CFR 5000 Administration of Forest Management Decisions, and Secretarial Order 3336 range fire prevention, management, and restoration. The EA would provide the Field Manager with the information to determine which alternative(s) would best meet the management objectives.

CHAPTER 2 – THE PROPOSED ACTION AND ALTERNATIVES

This chapter describes and compares the alternatives considered by the IDT for the vegetation treatments proposed for the project area. Four alternatives – the No Action, Proposed Action, WUI Shaded Fuel Break Treatments, and Hazardous Fuels Reduction Treatments Alternatives – were developed by the IDT based on issues identified during scoping and an understanding of the purpose and need for the project as well as experience with fuels and restoration projects at other locations in the USFO. As this project progressed from conceptualization to alternative description, refinements to the action alternatives were made to minimize the potential for adverse effects, as described below. Different types of treatments are being proposed to address the potential danger associated with high fuel loading in the project area. These treatments are tailored to the different vegetation types that are present in the project area and are designed to reduce wildland fire hazard, the potential loss of life, property, and natural resources, and facilitate more efficient suppression activities in the event of a wildland fire. The treatments would also improve and maintain important wildlife habitat in the project area.

Alternative A: Proposed Action

The Proposed Action would focus on reducing hazardous fuel accumulations and improving forest and shrub community health through the use of mechanical treatments (e.g., chainsaws, other hand tools, and heavy mechanical equipment), prescribed fire, and biomass utilization on 2,751 acres throughout the Shotgun Valley and surrounding areas (Figure 2). Implementation would consist of the treatment of approximately two to four areas annually over a 10 year period, with treatment areas ranging in size from 20 to 225 acres. The Proposed Action would be broken up into three treatment priorities: WUI Shaded Fuel Breaks (784 acres), Habitat Improvement/Forest Health (1,716 acres), and Aspen Health (251 acres). These treatments are not intended to eliminate wildland fire from the project area but represent actions necessary to affect a change in the intensity and severity of wildland fires within the area. Each of these treatments is briefly described below.

WUI Shaded Fuel Break Treatments:

WUI treatments would occur on BLM administered lands within a 1,000 foot treatment zone adjacent to developed private property. A variety of treatment methods would be used, including mechanical harvesting, in order to reach fuel reduction goals and objectives. Mechanical harvesting would be employed to reduce costs of the treatment and to facilitate removal of useable wood products. Treatments would be designed to reduce stand density and understory ladder fuels within conifer stands, while increasing tree and crown spacing so as to reduce the occurrence of crown fires. Resulting slash from treatments would be piled and burned, chipped, or removed off site (if accessible and/or feasible). Attempts would be made to promote the utilization of biomass (e.g., chip and/or firewood collection and whole tree utilization such as post and poles) when possible. A total of 784 acres would be treated, with treatments focused in and around those populated areas within the northern extent of the Shotgun Valley. The following specific treatments could occur within these areas:

- Ladder Fuels
  - Thin all standing conifers 12 inch diameter at breast height (dbh) and under to a tree spacing of 20 feet (± 10 feet) in stands dominated by young, single age-class canopies.
  - In mixed age-class canopies, remove young conifers (12 inch dbh and under) located directly under the outer circumference of the mature canopy and out to a spacing of 20 feet (± 10 feet) from the edge of the canopy drip line.
  - Remaining conifers would be pruned up to a height of 6 feet while shrubs and other ground fuels would be removed from around the tree boles.

  - In aspen colonies having a patch size of at least one-quarter acre, all conifers 12 inch dbh and under would be removed from within the aspen colonies and out to a distance of approximately 75 feet.
- Commercial Thinning
  - Conifers between 12 and 30 inch dbh would be selectively harvested to approximately 40 to 70 square feet of basal area per acre. Basal area is described as the cross-sectional area of a tree stem in square feet commonly measured at breast height (4.5 feet above ground) and inclusive of bark, usually computed by using the diameter at breast height. The 40 to 70 square feet of basal area per acre would represent the cross-sectional area of all stems of a species or all stems in a stand measured at breast height per acre of land area.
  - Conifers would be removed from within aspen colonies and out to a distance of approximately 75 feet, with the exception of large trees displaying old characteristics which would be given a priority to be left and protected as long as the project goals and objectives are being met.

Habitat Improvement and Forest Health Treatments:

These treatments would include selective thinning, thinning from below, and small scattered patch cuts (< 2 acres in size). Thinning from below is the removal of intermediate and codominant trees to favor the more mature, high quality trees in the upper crown classes. The trees removed during thinning are typically high risk trees, trees that are crowding desirable trees, undesirable species, and trees of poor quality and low vigor. Treatments would strive to break up the continuity of forest fuels while leaving larger diameter trees and aspen, where present, thereby reducing the potential for ground fires to transition to the forest crown and allowing wildfire to return to a natural cycle, where possible. The thinned material could be offered as firewood, mulch, or post and poles or it may be lopped and scattered or piled. Thinning treatments would reduce tree density and allow remaining trees to receive more sunlight, water, and nutrients, which would improve forest health and vigor, as well as improve drought and disease resistance. Resulting slash from treatments would be piled and burned, broadcast burned (only within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units), chipped, or removed off site (if accessible and/or feasible). Attempts would be made to promote the utilization of biomass; however, low intensity prescribed fire would be the preferred method where conditions permit and the reintroduction of fire is strategically and environmentally feasible.

The BLM's stewardship contracting tool for managing and restoring federal lands may be used for implementation of portions of the Proposed Action. For the purposes of this project, stewardship contracting could involve the exchange of wood products from public lands (e.g., post and poles, timber, or sawlogs) for a local contractor's service (e.g., fuels reduction). Wildlife habitat improvement treatments would encourage the natural regeneration of aspen with a targeted density of 1,000 suckers per acre, maintenance of adequate thermal cover, and an increase in understory herbaceous vegetation. Additionally, increasing aspen densities within the treatment areas may further help to reduce fire intensity due to the species' fire resistant properties. A total of 1,716 acres would be treated under this treatment priority. The following could occur within these areas:

- Pre-commercial Thinning
  - Thin all standing conifers 8 inch dbh and under leaving a tree spacing of 20 feet (± 10 feet) in stands dominated by young, single age-class canopies.
  - In mixed age-class canopies, remove young conifers (8 inch dbh and under) located directly under the outer circumference of the mature canopy and out to a spacing of 20 (± 10 feet) feet from the edge of the canopy drip line.

  - Remaining conifers would be pruned up to a height of 6 feet while shrubs and other ground fuels would be removed from around the tree boles.

- Commercial Thinning (Douglas-fir)
  - Conifers between 8 and 30 inch dbh would be selectively harvested to approximately 40-70 square feet of basal area per acre.
  - Live, healthy conifers 31 inch dbh and greater displaying late seral characteristics would not be cut as long as the project goals and objectives are being met.
  - Conifers would be removed from within aspen colonies and out to a distance of approximately 75 feet, with the exception of large trees displaying old characteristics which would be given a priority to be left and protected as long as the project goals and objectives are being met.

- Commercial Thinning (Lodgepole pine)
  - Thin all standing lodgepoles leaving a tree spacing of up to 20 feet (± 10 feet) spaced off the largest available trees.
  - In pockets of smaller lodgepole (<8 inch) space residual trees 15 feet.

Aspen Health Treatments:

Aspen health treatments would focus on reducing encroaching conifers from within existing aspen stands. Treatments would encourage the natural regeneration of aspen through the removal of encroaching conifers with the target of increasing aspen sucker density to 1,000 suckers per acre. Additionally, increasing aspen densities within the treatment areas may further help to reduce fire intensity due to the species' fire resistant properties. Treatment slash would be piled and burned, broadcast burned (only within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units), chipped, or removed off site (if accessible and/or feasible). While attempts would be made to promote the utilization of biomass, the use of prescribed fire in the form of broadcast burns would be the preferred method of slash disposal in selected areas due to fire's ability to further promote aspen regeneration. A total of 251 acres would be treated under this treatment type.

The following could occur within the aspen health treatment areas:

- Remove all standing conifers 30 inch dbh and under from within existing aspen stands.
- In mature, single age class aspen stands, up to 1/3 of the mature aspens may be girdled or fallen to initiate the suckering response and aid in the regeneration of the stand.

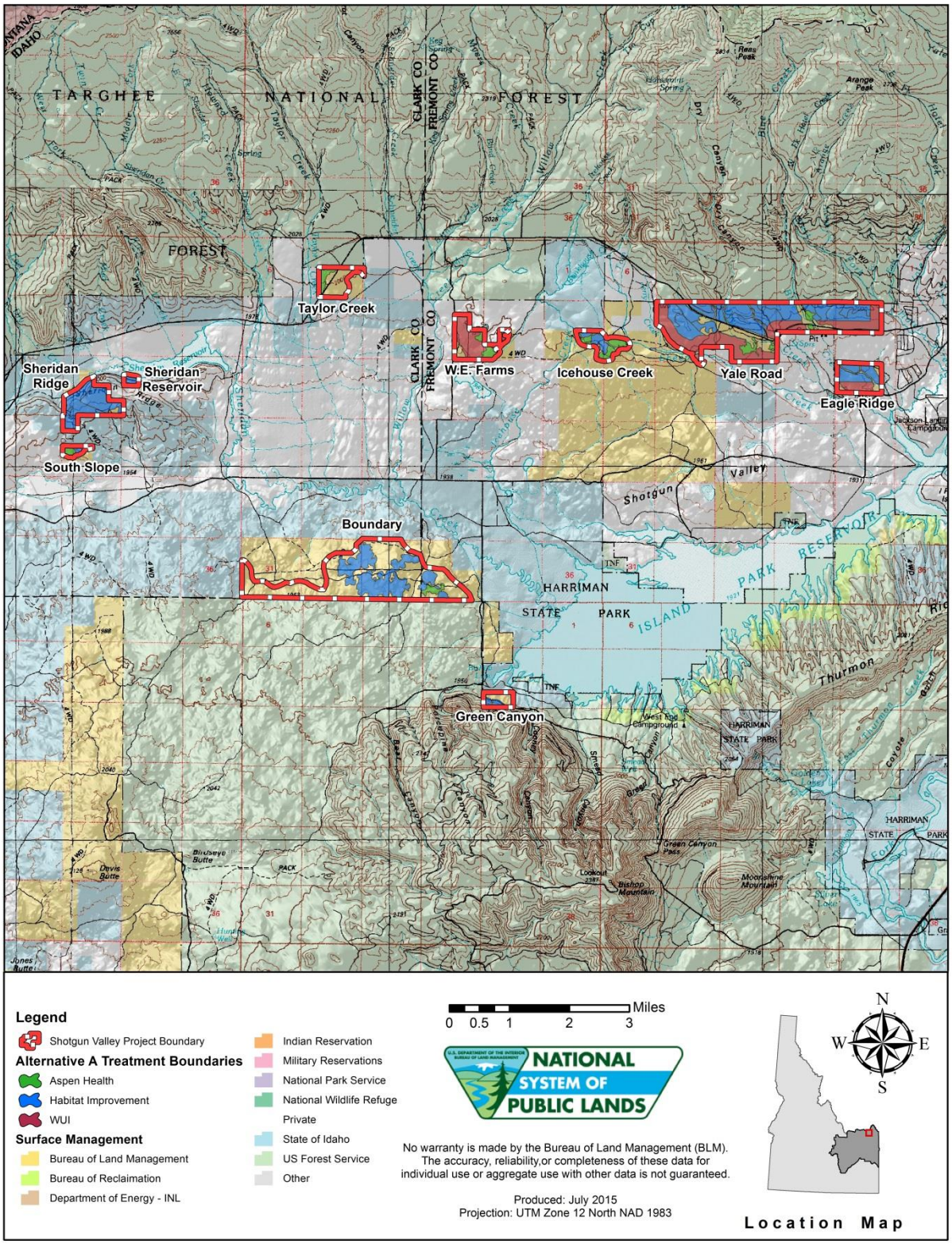


Figure 2. Proposed Action Treatment Boundaries.

Alternative B: WUI Shaded Fuel Break Treatments

Under Alternative B, WUI treatments would occur on BLM administered lands within a 1,000 foot treatment zone adjacent to developed private property. Other fuels and forestry related treatments previously discussed under the Proposed Action alternative would not occur under this alternative. The WUI specific treatments would occur within portions of the following treatment units: W.E. Farms, Yale Road, and Eagle Ridge (Figure 3). A variety of treatment methods would be used including mechanical harvesting in order to reach fuel reduction goals and objectives. Mechanical harvesting would be employed to reduce costs of the treatment, and to increase utilization of material. Treatments would be designed to reduce stand density and understory ladder fuels within conifer stands, while increasing tree and crown spacing so as to reduce the occurrence of crown fires. Resulting slash from treatments would be piled and burned, chipped, or removed off site (if accessible and/or feasible). Attempts would be made to promote the utilization of biomass (e.g., chip and/or firewood collection, whole tree utilization such as post and poles). A total of 807 acres would be treated, with treatments focused in and around those populated areas within the northern extent of the Shotgun Valley. The following specific treatments could occur within these areas:

- Ladder Fuels
  - Thin all standing conifers 12 inch dbh and under to a tree spacing of 20 feet (± 10 feet) in stands dominated by young, single age-class canopies.
  - In mixed age-class canopies, remove young conifers (12 inch dbh and under) located directly under the outer circumference of the mature canopy and out to a spacing of 30 (± 10 feet) feet from the edge of the canopy drip line.
  - Remaining conifers would be pruned up to a height of 6 feet while shrubs and other ground fuels would be removed from around the tree boles.
  - In aspen colonies having a patch size of at least one-quarter acre, all conifers 12 inch dbh and under would be removed from within the aspen colonies and out to a distance of approximately 75 feet.
- Commercial Thinning
  - Conifers between 12 and 30 inch dbh would be selectively harvested to approximately 40 to 70 square feet of basal area per acre.
  - Conifers would be removed from within aspen colonies and out to a distance of approximately 75 feet, with the exception of large trees displaying old characteristics which would be given a priority to be left and protected as long as the project goals and objectives are being met.

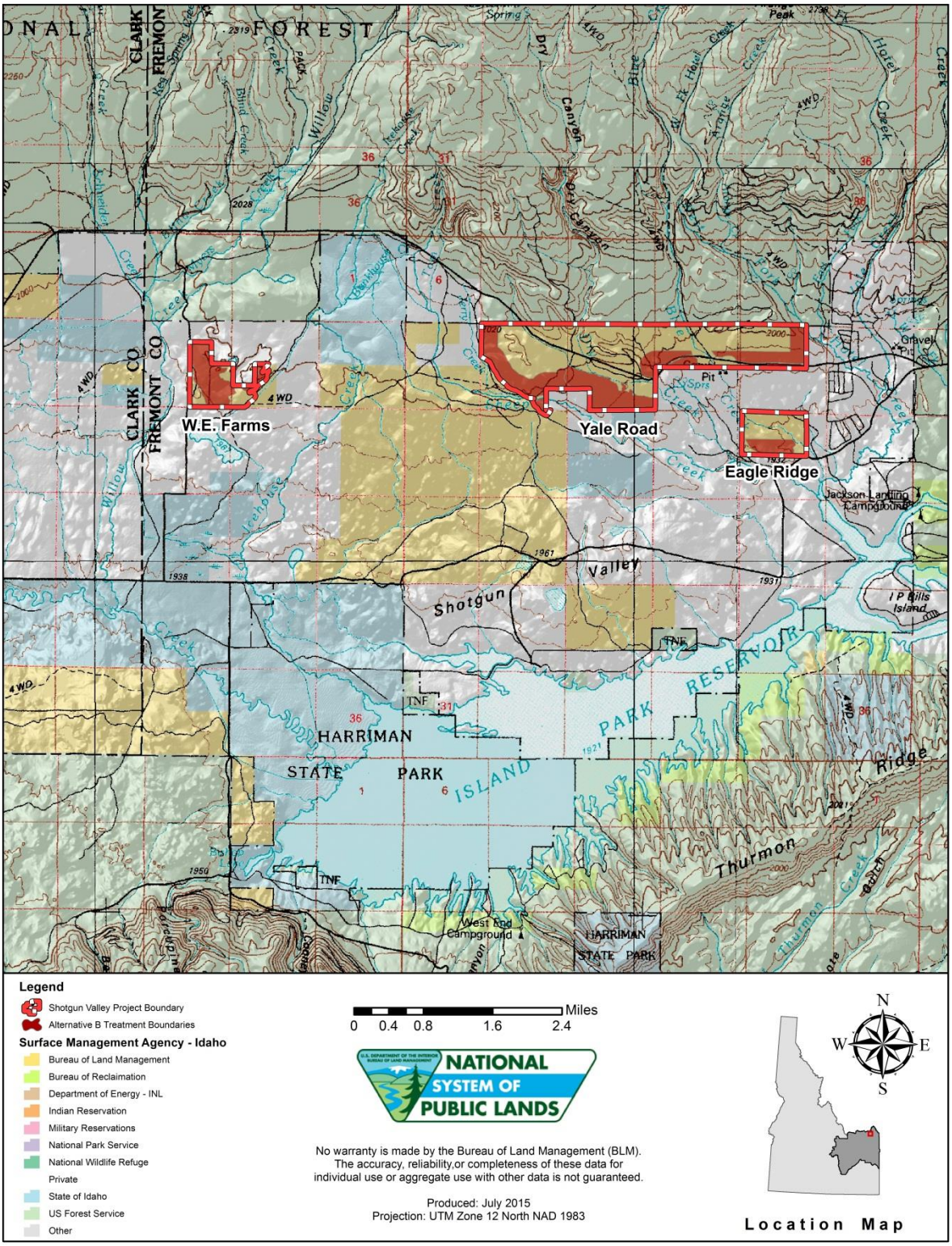


Figure 3. Alternative B Treatment Boundaries.

Alternative C: Hazardous Fuels Reduction Treatments

Under Alternative C, treatments would include thinning and pruning all Douglas-fir and lodgepole pine trees less than 12 inch dbh to break up fuel continuity and reduce the potential for ground fires to transition to the forest crown. The thinned material would be either lopped and scattered or piled. Resulting slash from treatments would be piled and burned, broadcast burned, chipped, or removed off site (if accessible and/or feasible). Attempts would be made to promote the utilization of biomass (e.g., chip and/or firewood collection, whole tree utilization such as for post and poles). A total of 2,740 acres would be treated under this alternative (Figure 4). The following could occur within the treatment areas:

- Ladder Fuels
  - Thin all standing conifers 12 inch dbh and under to a tree spacing of 30 feet in stands dominated by young, single age-class canopies.
  - In mixed age-class canopies, remove young conifers (12 inch dbh and under) located directly under the outer circumference of the mature canopy and out to a spacing of 30 feet from the edge of the canopy drip line.
  - Remaining conifers would be pruned up to a height of 6 feet while shrubs and other ground fuels would be removed from around the tree boles.
  - In aspen colonies having a patch size of at least one-quarter acre, all conifers 12 inch dbh and under would be removed from within the aspen colonies and out to a distance of approximately 75 feet.

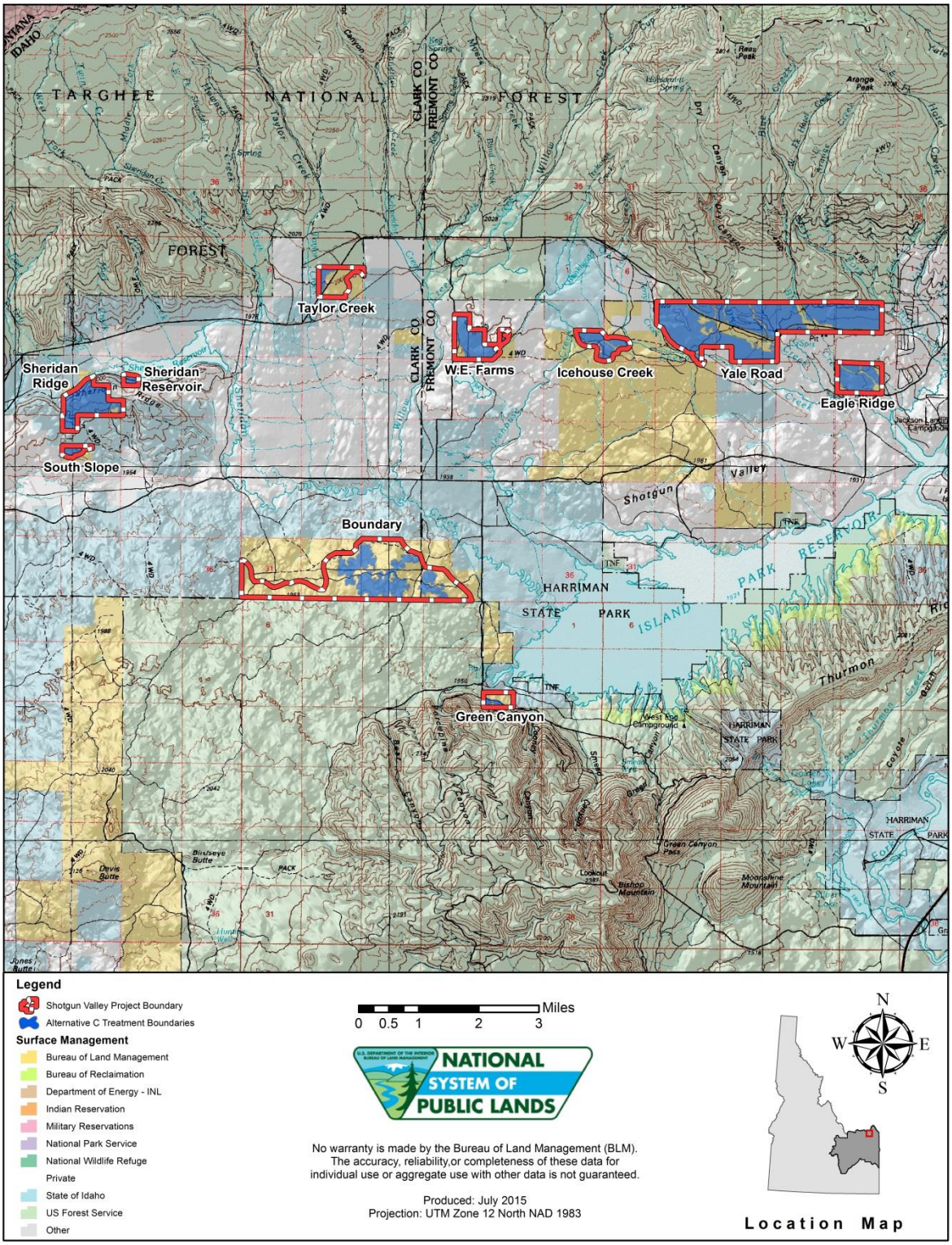


Figure 4. Alternative C Treatment Boundaries.

Alternative D: No Action

Under the No Action Alternative, fuel reduction would not be conducted on public lands within the Shotgun Valley project area. The area would continue to have a risk of uncharacteristic wildfire due to the density, and horizontal and vertical continuity of the vegetative fuels which is directly related to the over stocked lodgepole and Douglas-fir stands. Fuels would continue to accumulate until removed by human-caused or naturally ignited wildland fire or by other human disturbance. If a wildfire were to occur it would threaten many of the WUI areas located adjacent to the identified project units, as well as potentially impacting the quantity and diversity of native vegetation and existing wildlife habitat in the area. The WUI would remain the highest priority suppression area within the project area requiring large numbers of suppression resources for future wildland fire responses.

Design Features and Mitigation Measures under All Action Alternatives

Multiple treatment entries may occur under all action alternatives to ensure that wind-firmness (a trees ability to withstand strong winds without sustaining major damage) is established in thinned or harvested conifer treatment units. Many of the treatments would occur during the winter months to minimize impacts to wildlife, vegetation, soils, as well as the public who live and/or recreate in the area. However, the amount of treatment needed, particularly in the WUI areas, would necessitate that some treatments be conducted throughout the year, where timing restrictions allow, to complete the work in a timely manner. Any future maintenance needed beyond the 10-year life span of this plan would be subjected to future NEPA analysis.

In general, select trees would be removed from the treatment units and desired older, healthy vigorous trees would be left in order to reduce the overall fuel loading in the project area while maintaining important wildlife habitat features. This would ensure that the thinning prescriptions would be obtained and the overall project objectives would be met. Clumps of trees would be maintained wherever practical. Tree selection criteria for all action alternatives are presented in Appendix B.

In areas that would support a broadcast burning treatment (i.e., primarily areas outside of the WUI) prescribed fire may be used to promote regeneration of aspen stands following initial treatment. These areas would include the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units. In all treatment units, attempts would be made to remove slash piles within two years where possible. Slash may be offered as firewood, mulch, or post and poles within two years of the treatment (in areas near roads where it could be easily gathered) or it may be burned or chipped and left in place to provide organic material in the treated areas. Coarse woody debris would be left in place to protect soils and provide habitat.

Landings, skid trails, and temporary roads would be rehabilitated after project completion. No new permanent roads are planned as part of the project. Proposed seed mixes for rehabilitation activities are listed in Appendix C.

A number of best management practices (BMPs) and other mitigation measures that are typically incorporated as standard operating procedures would be implemented as part of this project to reduce or eliminate the potential for adverse impacts to the human and natural environment. Although no substantial impacts are anticipated from implementation of the action alternatives, the following measures have been identified to enhance protection of certain resources that could potentially be affected by treatment and would be implemented as part of any of the action alternatives. In addition to the list included below, potentially applicable mitigation measures from the FMDA are included in Appendix D.

- To avoid the spread of noxious weeds, no cross country vehicular travel would occur through areas with known noxious weed infestations. Additionally, prior to ground-disturbing activities, all mechanical equipment and vehicles would be power-washed and cleaned of all vegetation

(stems, leaves, seeds, and all other vegetative parts) and inspected in order to minimize the transport and spread of invasive plants seeds.

- The use of certified weed-free seed mixes would be required to prevent the introduction of invasive plants.
- Treatment areas would be monitored for the presence of noxious weed species. Any weeds that are identified would be treated in accordance with the *Upper Snake-Pocatello Integrated Weeds Control Programmatic Environmental Assessment* (DOI-BLM, 2009a).
- All prescribed burning would require the development of a site specific Burn Plan and require coordination with the Montana/Idaho Airshed Group Smoke Management Program for the purpose of managing smoke emissions from prescribed fire.
- Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas.
- Perennial streams would be buffered by 100’ either side while intermittent/ephemeral streams would be buffered by 50’ either side to reduce impacts to the riparian/wetland vegetation (treatment units were constructed to exclude buffered streams) as stipulated by Idaho Forestry BMPs.
- Should a stream crossing be needed to implement the treatment, a temporary stream crossing would be constructed so as to minimize sediment input and reduce impacts to riparian vegetation and aquatic species. Information and guidance provided by the Idaho Forestry BMPs, Field Office Forester, Field Office hydrologist, riparian/wetland specialist, and fish biologist would be used to determine the location and type of stream crossing needed. Following treatment, the temporary crossing would be obliterated and reclaimed back to its previous state.
- No new permanent roads would be constructed. Skid trails and/or temporary roads would likely be present as a result of the commercial harvesting operation. Maintenance of existing roads may be necessary, but will follow BLM policy and BMPs. All ground disturbances as a result of the skidding and transporting of material would be reclaimed to prevent the creation of new roads or trails. All skid trails produced by the treatments will be obliterated, rehabbed and blocked off to prevent unauthorized access by off-highway vehicle (OHVs). Rehabilitation on skids trails will be done according to Idaho Forestry BMPs and will be done in a manner to deter access past existing routes.
- Landings will be built off of existing and temporary roads. However, due to the nature of the various types of equipment used, landing locations will not be designated until the contract process. Size will depend on whether the treatments are primarily thinning with burning of residual slash or if space for a grinder or log decks will be needed.
- Landing areas, skid trails, and burn piles will be rehabbed to preexisting conditions and seeded with native seed mixes post-project to stabilize disturbed areas to prevent spread of weeds. Rehabilitation on disturbed areas will follow BMPs.
- When possible, existing snags would remain on site at a per acre density of two snags between 15 and 20 inch dbh, four snags between 10 and 15 inch dbh, and eight snags between 5 and 10 inch dbh for wildlife benefit.
- When possible, two to four small litter piles and one to two large diameter downed trees per acre would remain on site for the purpose of promoting small mammal habitat.

- Trees displaying old characteristics (as defined by Hamilton 1993) would be left when feasible to meet project objectives.
- Treatments would only occur between August 1 and March 31 so as to minimize impacts to migratory birds and other wildlife species unless previously cleared by a wildlife biologist. Additional seasonal restrictions specific to raptors may be applicable.
- Recommended grizzly bear guidelines and conservation strategies will be followed. Consultation with U.S. Fish and Wildlife Service (USFWS) will occur when applicable.
- No treatments will occur in sagebrush vegetation types to minimize the potential for impacts to greater sage-grouse.
- Wildlife and plant surveys will be conducted to determine the presence/absence of any threatened, endangered or sensitive species within the project area. Should any be encountered, setback buffers, timing stipulations or other mitigation measures will be employed to ensure that the treatments do not impact those species. For example, if any sensitive plants are identified within the project area during or prior to implementation, sites would be flagged prior to any ground-disturbing activities to avoid adverse effects. Sites that are located in areas proposed for treatment would be avoided.
- Thinning prescriptions will maintain known wildlife corridors when possible.
- Raptor nest surveys would be conducted prior to treatment to determine occupancy. If a nest is determined to be occupied, it would be avoided by species-specific buffers, or until the fledglings have vacated the nest (see Recommended Seasonal Restrictions for Raptors in the Wildlife section). Unoccupied nest trees would be retained unless they pose a public health and safety concern.
- Permittees would be prohibited from placing new water troughs or supplement blocks within 1 mile of newly seeded areas, e.g., landings, skid trails, temporary roads, etc., until those areas have reached 60 percent of the herbaceous cover in adjacent, untreated areas.
- A Class III cultural resources inventory was completed in October 2014. All eligible or potentially eligible archaeological sites would be flagged prior to any ground-disturbing activities to avoid adverse effects. Sites that are located in areas proposed for treatment would be avoided.
- Fire and non-fire vegetation treatment restrictions and BMPs identified within the FMDA FEIS Record of Decision (DOI-BLM 2008) will be applied to the Shotgun Valley Project as appropriate and consistent with National Fire Plan policy and RMP direction.

Monitoring

Monitoring would be used to gauge the effectiveness of the treatments and to identify where further treatments would be needed. Monitoring would be conducted using approved BLM methods such as Line Intercept, Tree Data and Fuel Loading (DOI-BLM 1996; FIREMON 2004; FFI 2012). Approximately one point for every 300 acres of proposed treatment would be established and baseline data acquired prior to implementation. Treatment areas would be monitored using the Fuels protocol of 1, 3, and 5 years following treatment to measure treatment effectiveness, and would be dependent upon annual funding.

Alternatives Considered but not Analyzed

Using prescribed fire to remove hazardous fuels

The use of prescribed fire as the sole means to reduce hazardous fuels throughout all of the identified treatment units was initially considered. This method would require the use of hand crews to develop fire control lines to contain prescribed fire treatments. Prescribed fire would increase the potential risk to adjacent private property and the inadvertent damage to non-target plant communities through either the creation of fire control lines or through the escape of a prescribed fire. The results of a cost analysis indicated that the revenues required to repeatedly mobilize crews and equipment to prepare treatment areas would be far greater than utilizing other types of less risky, more easily controlled treatments. Therefore, this alternative was not carried forward in the analysis.

Chemically treat the treatment areas for spruce budworm

The use of chemicals to treat the project area for spruce budworm was suggested during the public scoping period. This is not being carried forward as an alternative due to the cost as well as environmental concerns of widespread chemical application. With thousands of acres infected by budworm on the surrounding USFS and other lands, spraying on BLM land would not control the populations. Treatments would not prevent insects from repopulating the site from adjacent untreated areas and therefore would need to be reapplied on an annual basis. Therefore, this alternative was not carried forward in the analysis.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides a description of the general environmental setting and resources within that setting that could be affected by the Proposed Action and alternatives. In addition, the section presents an analysis of the direct, indirect, and cumulative impacts likely to result from the implementation of the analyzed alternatives.

General Setting

The Shotgun Valley Fuels Reduction and Forest Restoration Project is located within portions of Clark and Fremont Counties, Idaho in the Upper Snake River Plain. The project area is defined by the Eastern Centennial Mountains to the north, Henry's Fork and Island Park Reservoir to the east, Bishop Mountain to the south, and Antelope Valley to the west. The topography of the project area consists of gently rolling forested foothills with associated meadows, grasslands, and shrublands. Elevations range from 6,370 feet near Island Park Reservoir to over 6,700 feet above sea level at the mouth of Dry Canyon near the northern end of the project area. The annual precipitation in the area averages approximately 29 inches, while average temperatures range between 52ºF for a high and 23ºF for a low.

Resources Considered in the Impact Analysis

The results of the site-specific assessment indicate that not all of the resources considered are present and/or would be impacted by the Proposed Action and alternatives (Table 3). Direct and indirect impacts to those resources that are present and impacted are discussed in the following narratives. Cumulative impacts are discussed in a subsequent section.

Table 3. Resources Considered in the Impact Analysis.

Resource	Resource Status	Rationale
Access	Present, Not Impacted	The Proposed Action and alternatives would not result in changes in access to the area.
Air Quality	Present, Impacted	Impacts are disclosed under **Air Quality**.
Areas of Critical Environmental Concern	Not Present	The proposed project area is not located within or near an Area of Critical Environmental Concern.
Cultural Resource	Present, Impacted	Impacts are disclosed under **Cultural Resources**.
Economic and Social Values	Present, Impacted	Impacts are disclosed under **Economic and Social Values**.
Environmental Justice	Not Present	The Proposed Action and alternatives would not result in disproportionately high and adverse impacts to low income or minority populations.
Existing and Potential Land Uses	Present, Not Impacted	The Proposed Action and alternatives would not affect any current uses and potential uses of land.
Fisheries	Present, Impacted	Impacts are disclosed under **Fisheries, including Threatened, Endangered, and Sensitive Fish**.
Floodplains	Present, Not Impacted	The Proposed Action and alternatives would not affect floodplains. Offset buffers would be in place to mitigate potential impacts to floodplains on public lands within the project area.
Forest Resources	Present, Impacted	Impacts are disclosed under **Forest Resources**.

Resource	Resource Status	Rationale
Invasive, Non-Native Species	Present, Impacted	Impacts are disclosed under **Invasive, Non-Native Species**.
Lands With Wilderness Characteristics	Not Present	There are no lands with wilderness characteristics within the project area.
Mineral Resources	Present, Not Impacted	The Proposed Action and alternatives would have no impact on mineral resources within the area.
Migratory Birds	Present, Impacted	Impacts are disclosed under **Wildlife Resources**.
Native American Religious Concerns	Not Present	There are no known ceremonial sites or resources associated with ceremonial practices within the project area.
Paleontological Resources	Not Present	There are no known paleontological resources located within the project area.
Prime and Unique Farmlands	Not Present	The NRCS was contacted; the soils have not been officially mapped yet, so no prime or unique farmlands have been identified within the project boundaries.
Range Resources	Present, Not Impacted	Although temporary impacts could occur related to treatment activities and mitigations, the Proposed Action and alternatives would not result in changes to range resources in the area in the long term.
Recreation	Present, Impacted	Impacts are disclosed under **Recreation**.
Soil Resources	Present, Impacted	Impacts are disclosed under **Soil Resources**.
Threatened, Endangered, and Sensitive Plants	Not Present	There are no identified threatened, endangered or sensitive plant species known to occur within the project area. Whitebark pine, Pinus albicaulis, a candidate species, was identified by USFWS (Appendix E) and is found in the broader cumulative impact assessment area (see Cumulative Impacts section at the end of Chapter 3), but is not present in the project area.
Threatened, Endangered, and Sensitive Animals	Present, Impacted	Impacts are disclosed under **Wildlife Resources**.
Threatened, Endangered, and Sensitive Fish	Present, Impacted	Impacts are disclosed under **Fisheries**. Buffers would be placed around all water bodies to reduce potential impacts to fisheries.
Tribal Treaty Rights and Interests	Present, Impacted	Impacts are disclosed under **Tribal Treaty Rights and Interests**.
Vegetation	Present, Impacted	Impacts are disclosed under **Vegetation**.
Visual Resources	Present, Impacted	Impacts are disclosed under **Visual Resources**.
Wastes, Hazardous and Solid	Not Present	There are no known solid or hazardous wastes in the project area and none would be created during the implementation of the Proposed Action or alternatives.
Water Quality	Present, Impacted	Impacts are disclosed under **Water Quality**.
Wetland and Riparian Zones	Present, Impacted	Impacts are disclosed under **Wetland and Riparian Zones**.
Wild and Scenic Rivers	Not Present	There are no wild and scenic rivers within or near the project area.
Wild Horse and Burro Herd Management Area	Not Present	There are no wild horse and burro Herd Management Areas in the region.

Resource	Resource Status	Rationale
Wilderness	Not Present	There are no wilderness areas or wilderness study areas within the project area.
Wildlife Resources	Present, Impacted	Impacts are disclosed under **Wildlife Resources, including Threatened, Endangered, and Sensitive Animals**.

Air Quality

Affected Environment

The Clean Air Act (CAA), as amended, is the regulatory framework for controlling air pollutants in the U.S., and was designed to protect human health and welfare from air pollution. The CAA defines National Ambient Air Quality Standards as levels of pollutants from which detrimental effects on human health and welfare may result. Prescribed burning produces carbon monoxide, ozone, and particulate matter; of these, particulate matter is the pollutant of most concern to public health and safety. Large volumes of particulate matter can be produced from burning vegetation and may affect areas for extended periods of time, depending on meteorological conditions. Both fine particulates with an aerodynamic diameter of 10 µm or less (PM_{10}) and fine particulates with an aerodynamic diameter of 2.5 µm or less ($PM_{2.5}$) are regulated under the CAA.

Both Fremont and Clark counties are in attainment for all criteria pollutants, including particulate matter (IDEQ 2015). There are no $PM_{2.5}$ or PM_{10} monitoring stations in Fremont or Clark counties because air quality is considered good in those areas; the closest monitoring station located in Rexburg has not recorded any violations for the area (personal communication, IDEQ Air Quality Analyst, Roger Sauer).

BLM-administered lands in the project area are designated as air quality Class II, which allows moderate deterioration associated with modest, well-controlled industrial and population growth. The nearest Class I airshed to the Shotgun project area that could potentially be affected are Yellowstone National Park, roughly 20 miles to the east, and Grand Teton National Park, approximately 40 miles to the southeast. The closest treatment units are approximately 5 miles west of the community of Island Park and about 25 miles north of Ashton, Idaho.

Idaho currently manages smoke emissions from prescribed fire under the Montana/Idaho Airshed Group Smoke Management Program. The program works to limit accumulation of smoke from controlled burning through scientific monitoring of weather conditions and formal coordination of burns. Under this program, prescribed burning would not be conducted if atmospheric conditions are not conducive to good smoke dispersion, local weather factors indicate smoke problems could result from burning, or if the project would negatively affect visual quality in Class I airsheds, non-attainment areas, and sensitive receptors. The BLM would follow policy and write burn plans including actions to minimize fire emissions, a smoke dispersion evaluation, public notification, exposure reduction procedures, and an air quality monitoring plan if prescribed burning were to occur. For each planned burn, the BLM would provide information that describes the type of burn to be conducted, the number of acres, as well as the location and elevation at each site in order for the Smoke Management Program to evaluate the proposed burn and determine if it is safe to allow the burn to proceed during the designated time.

Environmental Consequences

Alternative A (Proposed Action)

The Proposed Action would result in dust and exhaust being generated by temporary road and landing construction, tree skidding and hauling activities and vehicular and equipment operations. Soil disturbing activities associated with the Proposed Action treatments may affect air quality through increased fugitive dust. This increase in fugitive dust is expected to be localized and temporary, only occurring when activities take place.

The remainder of the anticipated air quality impacts would result from smoke caused by burning of slash and woody and herbaceous vegetation in the treatment areas. Blowing dust and ash could also be a problem following the prescribed broadcast burning of activity fuels (the remaining slash and litter contained on a site following a vegetation treatment) within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units. Impacts would be of temporary duration, dependent upon the length of time necessary to conduct the burning. Impacts from smoke emissions would be minimized through adherence to direction in the FMDA and coordination with the Montana/Idaho Airshed Group Smoke Management Program. Burning at favorable times would ensure safe burning and minimization of adverse effects. Island Park and Ashton, the towns nearest to the project area, and the Class I airsheds of Yellowstone and Teton National Parks are not expected to experience any direct impacts as a result of the Proposed Action due to the distance of these locations from the project area. Although prescribed burning would potentially contribute to temporary reductions in air quality, these impacts would be temporary and localized.

Alternative B (WUI Shaded Fuel Breaks)

Under Alternative B, impacts to air quality would be similar to those described for the Proposed Action, but to a lesser degree due to the reduced acreage that would be treated (807 acres versus 2,751 acres). In addition, prescribed broadcast burning would not be conducted under this alternative because of the risk to homes in the WUI areas. Therefore, there would be less potential for impacts from smoke. The same BMPs and design features associated with the Proposed Action would be implemented under this alternative to minimize impacts to air quality.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, impacts would be similar to those described for the Proposed Action. There would be fewer potential impacts to air quality from fugitive dust because there would not be any temporary road creation, landing construction, or tree skidding and hauling activities. This would result in less potential for fugitive dust as well as fewer emissions from equipment in the project area. Smoke emissions would be similar because in addition to burning of slash piles, prescribed burning could occur in the units identified under the Proposed Action. A larger amount of fuels could potentially be present during burning because the sale of smaller wood products (e.g., posts and poles) would not occur under this alternative. The same BMPs and design features associated with the Proposed Action would be implemented under this alternative to minimize potential impacts to air quality.

Alternative D (No Action)

There would be no direct impacts to air quality from the No Action alternative because no ground disturbance or burning would occur. Wildland fire suppression activities would continue as in the past with the WUI remaining the highest suppression priority within the project area. In the long-term, fuel buildup and stand mortality would continue; thus creating fuel conditions that increase the potential for a catastrophic wildland fire that would produce large amounts of smoke. Thus, there is the potential that

uncontrolled wildland fires can cause greater air pollutant emission levels, increasing air quality impacts. Emissions from wildland fires are substantially higher than from prescribed burning. Key findings of a comprehensive review of 20 wildfires by the USFS found that smoke volume was reduced significantly when fire reached treated areas versus fires that burned in areas where fuels had not been reduced (Buckley et al. 2014). In addition, large areas of bare ground created by a severe wildland fire could increase fugitive dust.

Cultural Resources

Affected Environment

Cultural resources are defined by the National Historic Preservation Act (NHPA) of 1966 (16 USC 470 et seq., as amended) as prehistoric and historic sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Archaeological and architectural resources (buildings and structures) are protected through the NHPA (16 USC 470f) and its implementing regulations, Protection of Historic Properties (36 CFR 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Surveys of the project area were conducted in 2007 and 2008 (North Wind 2007; Golder 2008). Crews identified and recorded four cultural properties in the area, including both prehistoric Native American and historic Euro-American sites, as described below.

Native American use of the region in which the project area is located extends back approximately 11,000 years. The area is known to have been historically inhabited and used by the Shoshone-Bannock Tribes. The Henry's Fork of the Snake River has been used as a corridor for at least that long to access montane resources from the Snake River Plain and to travel to the Yellowstone area and Great Plains. The Shoshone-Bannock Tribes were hunters and gatherers who moved with the seasons to gather various foods and products. Prehistoric lithic scatters and associated lithic artifacts are the most common type of site found in close proximity to the project area as well as in the project area. The lithic debitage, or processed stone flakes, represent activity areas of past groups of people. These sites can contain stone tools, projectile points, or solely lithic debitage waste flakes produced during the manufacture or maintenance of stone tools. Specific types of activities or sites that are known to be present in the area include a variety of short-term hunting camps; butchering sites; and tool quarry, manufacturing, or repair locations; habitation or camp sites; fishing locations; hunting blinds; cairns; rock alignments; ceremonial and rock art sites; and burials (Plew 2008; Steward 1938). Three prehistoric sites are located in the project area (North Wind 2007; Golder 2008); they consist of two isolated finds and one lithic scatter.

The first prehistoric Native American isolated find is located in the W.E. Farms treatment unit. This ignimbrite projectile point fragment consists of the tip and a portion of the body of the point. It is severed through the middle of the body by a transverse snap. This isolated find was determined not to be eligible for the National Register of Historic Places (NRHP) under any criteria (Golder 2008). The second prehistoric Native American isolated find is located in the Boundary unit. This obsidian biface fragment was also determined not to be eligible for the National Register under any criteria (Golder 2008).

A prehistoric Native American lithic scatter is located in the Icehouse Creek treatment unit. This site was originally recorded in 1974 and was re-recorded in 2008. The site was originally recorded as numerous flakes of obsidian, ignimbrite and chalcedony with one projectile point tip, two scrapers, a biface and a glass trade bead. In 2009 the site consisted of eight flakes, six of which were obsidian, one was chert, and one was ignimbrite. This site was determined not to be eligible for the National Register under any criteria (Golder 2008).

A portion of the Nez Perce National Historic Trail is located within the project area. The trail represents the 1877 route of the Nez Perce Trail through Clark County, Idaho. The trail begins near Wallowa Lake,

Oregon and ends at Bear Paw Battlefield near Chinook, Montana. The Nez Perce National Historic Trail commemorates the 1877 Nez Perce War and the attempted flight of the nontreaty Nez Perce People from the Idaho Territory to Canada. This route was used in its entirety only once; however, component trails and roads that made up the route were used by generations both prior to and after the 1877 flight of the nontreaty Nez Perce People. The trail was added to the National Trails System by Congress as a National Historic Trail in 1986 (USFS 2015). The trail's route represents a singular, significant event in the history of the United States and it is eligible for the NRHP as an event (North Wind 2009). The trail crosses the project area in an east to west direction through the Yale Road treatment unit and crosses along the southern boundary of the Taylor Creek treatment unit.

The historic period of use of the area began around 200 years ago. The arrival of the trappers and emigrants disrupted the Native American lifeway on the Snake River Plain (Malouf and Findlay 1986). In the early nineteenth century, fur trappers were the main Euro-American influence in the region. Traders entered the region around 1805 and the region was explored by John Colter in following years. The rise of the gold rush brought an influx of people to the region in the mid-nineteenth century and the opening of the Oregon Trail brought even more Euro-American emigrants. Settlers and ranchers followed the gold rush and several patented land in the area. By the 1880s, farming and ranching started to displace mining as Idaho's most important economic resource (Golder 2008).

Historic Euro-American sites most likely to be found around and in the project area would likely consist of agricultural- or homesteading-related sites. Typical sites may include tin cans, bottles, and tack fragments such as parts of harnesses or bridles, associated with farming, ranching, homesteading and traveling. One historic site was identified in the project area (North Wind 2007; Golder 2008); the site is a historic Euro-American artifact scatter located in the W.E. Farms treatment unit. This site is a trash scatter representing occupation in the period 1890 to 1920 that likely represents a small dump of household refuse (Golder 2008). The site is composed of glass, ceramics, a hole-and-cap can lid, a metal fragment, and a fragment of electrical insulation. The glass artifacts include nine white milk glass fragments, 24 clear glass fragments, ten solarized glass fragments, three green glass fragments, and five brown glass fragments. There are two types of ceramics: porcelain with a green floral transfer print design and plain whiteware. There are 15 porcelain fragments and 11 whiteware fragments. The hole-and-cap lid is 3 inches in diameter with a 1-4/16 inches diameter cap. There is an unidentified fragment of iron. There is a fragment of orange rubber insulation taped to a stick with black plastic electrical tape. The site was determined not to be eligible for inclusion on the National Register under any criteria (North Wind 2007; Golder 2008).

Environmental Consequences

Alternative A (Proposed Action)

The Proposed Action includes selective removal of vegetation from approximately 2,751 acres of public land. Cultural resources present within the W.E. Farms (aspen health treatments) and Icehouse Creek (habitat improvement treatments) treatment units could be adversely affected by treatments proposed under this alternative. In addition, the portion of the Nez Perce National Historic Trail present in the Yale Road and Taylor Creek treatment units could potentially be impacted by treatments in those areas. Heavy equipment used for the project, such as tractors and skidders, would disturb surface soils and could damage and destroy surface features and materials. Vehicle traffic in the area could also damage and destroy surface features and materials. Tractor tires can also disturb surface soils to a depth of one inch or deeper resulting in potential impacts to subsurface resources, including damage and destruction of artifacts and archaeological site features (Golder 2008). These actions could remove or alter site features, break stone tools, and crush debitage. These direct effects could alter cultural contexts and associations within treatment unit boundaries.

The presence of work crews could also threaten sites. The USFO would provide field crews and contractors with information about their role in the protection of cultural resources in the project area. The project would be conditioned that in the event of an unanticipated discovery, and in compliance with various state and federal laws protecting cultural resources, including Section 106 of the NHPA, all work would cease in the immediate vicinity of the cultural resource until appropriate parties are consulted and an appropriate plan is established.

Potential impacts could also occur from burning; pile burning could occur in the W.E. Farms and Icehouse Creek treatment units and prescribed burning and pile burning could occur in the Taylor Creek treatment unit. No impacts would occur to the trail in the Taylor Creek unit from burning. The Icehouse Creek unit contains a lithic scatter that could be impacted and both a prehistoric isolated find and a historic trash scatter could be impacted in the W.E. Farms unit. Despite their durability, stone artifacts such as those made from obsidian and chert can be affected by fire. Reported fire effects on stone artifacts include breakage, spalling, crazing, microfracturing, pitting, bubbling, bloating, smudging, discoloration, adhesions, altered hydration, altered protein residue, and weight and density loss (Ryan et al. 2012). Surface artifacts are typically altered more than those located in subsurface contexts, even those under only an inch of soil. Fewer negative effects are noted in light fuels, with increasing effects in moderately and heavily fueled fires, or at specific locations within fires where fuels are heavy. In general, the higher the temperature and the more severely charred the ground surface, the greater the reported effect (Ryan et al. 2012). The historic artifacts present can also be damaged by fire. Glass can be affected by heat build-up, smoke, and flame. Damage to glass from low-temperature fire includes the loss of labels, soot staining, and shattering. It is less likely that a low temperature fire, such as a grass fire, would reach the melting point of glass, although whole objects, for example, bottles, might crack or even shatter from the heat. All ceramics are affected by fire to varying degrees, depending on the physical characteristics of a given ceramic, and temperature of the fire. The alkaline glaze that is typically used on high-fired refined white earthenwares can crackle even in a low temperature fire. If the fire reaches high temperatures the glaze can oxidize or burn, and the whole vessel or vessel fragment (sherd) might split laterally in places (Ryan et al. 2012). Fires can be hot enough to destroy can labels; however, the shape of the can usually remain the same.

BLM staff would flag known archaeological sites prior to treatment and related surface disturbing actions and treatment crews would be instructed to avoid all flagged areas. BLM staff and treatment crews would remove all flags and markers upon project completion. These actions would reduce or eliminate the anticipated effects of treatment of the area on NRHP eligible properties and other cultural resources. Therefore, proposed fuels management projects would have no effect on NRHP eligible or listed properties.

The Upper Snake Field Office would notify and involve the Idaho State Historic Preservation Office (SHPO) as well as the Shoshone-Bannock Tribes, the Northwest Band of the Shoshone Nation and other interested Native American groups, governments and individuals regarding Native American cultural resource issues and concerns. These procedures are specified in 36 CFR 296.7, 36 CFR 800 Section 101(d)(6)(B), and the April 29, 1994 Government-to-Government Consultation Presidential Memorandum.

Alternative B (WUI Shaded Fuel Breaks)

The potential for cultural resource impacts under this alternative would be less than under the Proposed Action alternative because fewer acres would be treated resulting in less ground disturbance (approximately 784 acres would be treated under this alternative). WUI Shaded Fuel Break treatments have the potential to impact the historical artifact scatter in the W.E. Farms treatment unit. There is also the potential for adverse impacts to a small portion of the Nez Perce National Historic Trail that intersects with proposed WUI treatments in the Yale Road treatment unit; this potential impact would be smaller

than under the Proposed Action because less treatment would occur under Alternative B and there would be less ground disturbance. In addition, resulting slash from treatments could be piled and burned under this alternative but prescribed broadcast burning would not occur; therefore, the potential for impacts from fire would be less. Potential impacts to the historic artifact scatter from fire would be similar to that described for the Proposed Action. The same BMPs and design criteria that were described for the Proposed Action would be implemented under this alternative to reduce the potential for impacts to cultural resources. Flagging the historic site and trail for avoidance would protect these resources from impacts. Because fewer fuel reduction treatments would occur under this alternative the potential for a larger, hotter wildland fire would be higher as compared to the Proposed Action.

Alternative C (Hazardous Fuels Reduction)

Under this alternative, the prehistoric lithic scatter located in the Icehouse Creek treatment unit and both the historic artifact scatter and the prehistoric isolated find located in the W.E. Farms treatment unit could be affected. The Nez Perce National Historic Trail could also be affected. The potential for impacts to cultural resources under this alternative would be less than the Proposed Action but greater than Alternative B. The reduction in disturbance as compared to the Proposed Action would result in less potential for direct impacts to cultural resources. Potential impacts to the resources present from fire would be similar to those described for the Proposed Action Alternative because pile burning could occur. No broadcast burning is planned for the W.E. Farms or Icehouse Creek treatment units so there is less potential for fire impacts to the resources present in those units. The same design features and BMPs described for the Proposed Action alternative would help to minimize potential impacts.

Alternative D (No Action)

Under the No Action Alternative, wildland fuel loads in the project area would not be reduced. There would be no potential for direct effects to cultural resources in the absence of fuels reduction treatments. However, without fuels reduction in the area, there would be a greater chance of larger, hotter wildland fire that could damage or destroy cultural resources in the project area. If fire occurred in all of the treatment units, all of the resources described in the affected environment could potentially be affected. Fire effects would be similar to those described for the Proposed Action, but adverse effects would potentially be greater because the fire would likely burn hotter than in a small controlled burn. The historic trail would not be affected, but both the historic and prehistoric sites could be damaged by a large, hot fire. Ground disturbing activities associated with suppression of wildland fire starts could also result in damage or destruction of cultural resources due to the presence of equipment in the burned areas similar to that described for the action alternatives. Fighting the fire may cause some site damage to historic artifacts; for example, use of water to fight a fire on a historic trash scatter could crack super-heated artifacts; use of a fire rake could damage the artifacts; and chemical fire retardants may alter the surface appearance of artifacts (Ryan et al. 2012). Impacts to prehistoric artifacts could include damage or destruction of the artifacts from crushing by vehicles and equipment used for suppression.

Economic and Social Values

Affected Environment

The project area lies in both Fremont and Clark counties. The 2014 estimated population of Fremont County was 12,867, representing a 2.8 percent decrease from the 2010 population of 13,242. The median household income for 2009-2013 was $44,520, and the percent of the population below the poverty level for that time was 12.4. The 2014 estimated population of Clark County was 867, representing an 11.7 percent decrease from the 2010 population of 982. The median household income of Clark County from

2009-2013 was $33,200, and 14.9 percent of the population was below the poverty level during that time. Both counties had low population densities with a density of 7.1 persons per square mile in Fremont County in 2010 and 0.6 persons per square mile in Clark County (Census Bureau 2015).

The economy of these two rural counties is based mostly on agriculture and recreation or tourism. In 2012, farm and ranch employment represented 14.1 percent of total employment in Clark County and 13.4 percent in Fremont County. Recreational use of the area supports local businesses in Clark and Fremont County; travel and tourism-related employment as a share of total private employment was 46 percent for Clark County and 15 percent for Fremont County (Headwaters Economics 2014). Recreational visits consist of both wildlife and non-wildlife related activities from both local and non-local visitors.

In addition to recreation and agriculture, timber harvest also contributes to the economy of these two counties. (The remainder of the information in this section comes from the *Idaho's Forest Products Industry and Timber Harvest 2011 with Trends through 2013* [Simmons et al. 2014]. Information is focused on the most recent years for which comprehensive state and county economic data are available: 2011 and 2012.) Almost three-fourths of the timberlands in the State of Idaho are under USFS ownership. The remaining timberlands are divided among nonindustrial private owners, including tribal (9.0 percent), industrial private lands (7.7 percent), state endowment lands managed by the Idaho Department of Lands (6.7 percent), BLM (3.7 percent), and other public ownership (0.2 percent). In 2011, 0.6 percent of Idaho's timber harvest occurred on BLM-managed lands. Fremont County and Clark County each accounted for 0.3 percent of Idaho's timber harvest in 2011.

From 1979 to 1990, approximately 77 percent of Idaho's total timber harvest came from the north part of the state; this area now provides nearly 90 percent of Idaho's timber harvest. In addition, virtually all of the wood and paper industry in northern Idaho is part of the primary forest products industry and is directly engaged in managing forests, harvesting timber, and processing timber products. In 2011, northern Idaho accounted for almost 90 percent of the harvest, received 95 percent of the harvest for processing, and accounted for almost 97 percent of the lumber production. Southern Idaho's harvest volumes dropped dramatically between 1979 to 2011, and only account for 4.4 percent of the state's harvest. Compared to 2006, the 2011 harvest was down 23 percent in southern Idaho but only down 2 percent in northern Idaho. Essentially all of the decrease can be attributed to declining harvest levels from National Forest lands, which decreased by approximately 87 percent since 1990. Over the same period, the harvest from other ownerships has remained essentially unchanged.

More than 90 percent of Idaho's 2011 timber harvest was processed within the state. However, in southeastern Idaho, only 16 percent was processed in the region where it was harvested, representing a substantial decline from the 46 percent that remained in the region during 2006. Compared to historic numbers, these data suggest timber is traveling a greater distance to be processed, reflecting the loss of milling infrastructure in southern Idaho. Production at mills in southern Idaho, which received more than 75 percent of their timber from National Forests in 1990 and over 60 percent in 1995, was more vulnerable to sharp declines in National Forest timber availability. Production in southern Idaho fell 25 percent from 2006 to 2011, and has declined by 88 percent since 1990.

Another important factor to consider when evaluating the costs and economic benefits of the Proposed Action is the potential for wildland fire and the costs that could be incurred due to suppression and rehabilitation treatments if a large and/or severe wildland fire were to occur in the project area. The expectation is that fuel treatments over the long term would result in lower fire suppression and post-fire restoration costs, less wildfire-related property damage, and fewer lost socioeconomic and ecological forest benefits (Kline 2004). Research has shown that fuel treatments alter not only wildland fire size, but also burn probabilities, fire severity, and fire behavior; therefore fuel treatments can reduce suppression costs by enhancing the effectiveness of fire suppression efforts via increased visibility, safer access and crew mobility, and reduced heat and smoke (Buckley et al. 2014). Another study reported that prescribed

fires conducted at a National Wildlife Refuge were found to have reduced hazardous vegetation fuels, thereby protecting infrastructure by mitigating and minimizing the intensity and duration of wildfires and significantly reducing impacts and costs of wildfires. The hazardous fuels reduction strategy of prescribed burning frequently reduced impacts from wildland fires by minimizing the size and duration of wildfires and reducing the cost significantly for each wildfire (USFWS 2012).

Environmental Consequences

Alternative A (Proposed Action)

It is not anticipated that implementation of the Proposed Action would change inputs to the economy from recreational use of the area. Although some short-term impacts to recreation could occur (see Recreation impacts section), the economic impact of recreational use of the area is anticipated to remain the same. It is assumed that temporary disruptions in recreation opportunities would result in substitute behavior in the area, and therefore, there would be no change in the economic contribution from these activities.

The Proposed Action does have the potential to contribute to the economic conditions of the area through an increase in availability of timber and forest products. There has been a long-term decline in the industry, especially primary industry employment, driven by a decline in the state's federal timber sale program. With almost three-fourths of the state's timberlands federally owned, availability of timber is a challenge to Idaho's forest industry. Making timber and forest products available under this alternative has the potential to improve economic conditions within Fremont and Clark counties, as well as surrounding areas. The Proposed Action would increase the amount of timber and forest products available to contribute to the local economy as well as that of the region. The Proposed Action could contribute to the socioeconomic well-being of the local community by providing jobs, requiring services, and producing wood products. The use of stewardship could help offset the cost of treatment and provide a boost to the local economy.

As stated above another important factor to consider when evaluating the costs and economic benefits of the Proposed Action is the potential for wildland fire and the costs that could be incurred due to suppression and rehabilitation treatments if a large and/or severe wildland fire were to occur in the project area. The Proposed Action would reduce the risk of a high intensity wildland fire in the project area and the potential costs of future suppression and rehabilitation treatments. The suppression costs and damage from a large wildland fire could far exceed the cost of the treatments proposed under this alternative. For example, the effects of forest restoration treatments in Arizona's Four Forest Restoration Initiative on fire behavior characteristics and fire suppression costs were examined. Controlling for fire size, they found that alteration of fire behavior and severity alone can decrease fire suppression costs. They estimated a range for wildland suppression costs for similar-sized fires and conditions at $706 to $825 per acre for untreated landscapes, compared with $287 to $327 per acre in treated areas, an approximately 60 percent reduction (Buckley et al. 2014). While this example is not near the project area, it illustrates the effectiveness and cost comparison of a fuels treatment versus the cost of suppression.

Alternative B (WUI Shaded Fuel Breaks)

Socioeconomic impacts under Alternative B would be similar to those described for the Proposed Action, but there would be fewer potential socioeconomic benefits because fewer acres would be treated and there would be less potential for use of timber and forest products. Additionally, because fewer acres would be treated there would be a greater potential for a larger wildland fire to occur along with its associated suppression costs than under the Proposed Action.

Alternative C (Hazardous Fuels Reduction)

Socioeconomic impacts under Alternative C would be similar to those described above for the Proposed Action. Under Alternative C, treatments would include thinning Douglas-fir and lodgepole pine trees on 2,740 acres. Some of these trees could be used for timber and forest products. These thinning activities would improve forest health by breaking up fuel continuity, reducing the risk of the spread of wildland fires from the ground to the forest crown.

Alternative D (No Action)

No direct impacts to socioeconomics would be expected under the No Action alternative. However, selection of the No Action alternative would increase the risk of large and/or severe wildland fire occurring in the project area. The potential for large and/or severe wildland fire would also increase the potential for large fire suppression and rehabilitation expenditures. If the No Action alternative is selected, the potential for wildland fire and the costs that could be incurred due to suppression and rehabilitation treatments would all be higher. If a wildland fire were to occur in the project area, the suppression costs and damage would far exceed the cost of implementation of the Proposed Action. Effects of a large and/or severe wildland fire could include damage and loss of property and loss of revenues to the surrounding businesses from a decrease in recreation use.

A potential indirect socioeconomic effect to the local communities would be the potential loss of revenues generated from recreational use of the area as a result of use restrictions in response to fire and smoke from a large wildland fire. This would be offset to some degree by socioeconomic benefits from goods and services purchased from the community to support treatment activities. A severe fire that affected large areas within the project area or that resulted in a prolonged closure of part or all of the project area would be expected to have greater impacts.

Fisheries, including Threatened, Endangered, and Sensitive Fish

Affected Environment

General Fisheries

The project area is in the Upper Henry's Hydrologic Unit. All drainages in this unit flow into Henry's Lake or the Henry's Fork of the Snake River above the confluence of the Fall River. These drainages are fed by spring-fed creeks that provide an environment capable of producing abundant aquatic insect and plant biomass. Fisheries resources in this hydrologic area are productive and varied. Within the project area there are a total of approximately 1,230 feet (0.2 miles) of perennial streams/shoreline, including riparian perennial wetlands, and 43,424 feet (8.2 miles) of intermittent/ephemeral streams and ditches. Fisheries species that have the potential to occur in perennial and some intermittent drainages include rainbow trout (*Oncorhynchus mykiss gairdneri*), brook trout (*Salvelinus fontinalis*), cutthroat trout (*Oncorhynchus clarkii*), Utah sucker (*Catostomus ardens*), Utah chub (*Gila atraria*), redside shiner (*Richardsonius balteatus*), and sculpin and dace species.

Threatened, Endangered, and Sensitive Fish

The Yellowstone cutthroat trout (*Oncorhynchus clarkii bouvieri*) is the only BLM Type 2 sensitive fish species identified as occurring in the Upper Snake Field Office area. Yellowstone cutthroat trout is the only indigenous trout within the subbasin. This species currently occupies 45 percent of their historic habitat in Idaho; brown (*Salmo trutta*), rainbow, and brook trout have been stocked into many drainages and compete with cutthroat trout. Rainbow trout have likely hybridized with cutthroat trout causing genetic contamination of cutthroat trout populations. No designated Yellowstone cutthroat trout habitat

occurs within the treatment units associated with the proposed project. Occupied stream channels occur southeast of the project area, south of Island Park Reservoir, and would not be affected by the proposed treatments.

Environmental Consequences

Alternatives A (Proposed Action), B (WUI Shaded Fuel Breaks), and C (Hazardous Fuels Reduction)

General Fish

There are multiple perennial and intermittent stream channels/ditches that seasonally support suitable fisheries habitat within the project area. Project activities have the potential to impact fisheries habitat through increased sediment inputs. West Hotel Creek and the shoreline of Sheridan Reservoir are considered perennial and would have 100 foot buffers around them while all other waters would be buffered by 50 feet to reduce impacts to these areas and associated riparian/wetland vegetation as stipulated by Idaho Forestry BMPs. The buffers on all streams would reduce the potential for sedimentation of fish-bearing streams by allowing sediment to be filtered out within the retained vegetation before it reaches the stream. As stated in Chapter 2, if a stream crossing is needed to implement a treatment under any of the action alternatives, a temporary stream crossing would be constructed to minimize sediment input and reduce impacts to riparian vegetation and aquatic species. The location and type of stream crossing needed would be determined based on information and guidance provided by the Idaho Forestry BMPs and Field Office specialists. Following treatment, the temporary crossing would be obliterated and reclaimed back to its previous state. Therefore, the proposed treatments associated with Alternatives A, B, and C are not expected to impact general fish species that may occur in the project area.

Threatened, Endangered, and Sensitive Fish

There is no known Yellowstone cutthroat trout habitat present within the treatment units associated with the proposed project. Implementation of the BMPs and design criteria described above would protect stream channels with the potential to support sensitive fish habitat.

Alternative D (No Action)

General Fish

Implementation of Alternative D is not anticipated to have a direct impact to fisheries habitat within the project area. However, the lack of fuels reduction in the project area could increase the risk of a larger, hotter wildland fire that would remove vegetation cover and indirectly degrade fisheries habitat through sedimentation, increased temperature levels, and loss of biomass.

Threatened, Endangered, and Sensitive Fish

There would be no direct impacts to Yellowstone cutthroat trout from implementation of Alternative D. Potential indirect impacts would be the same as those discussed for general fish under this alternative.

Forest Resources

Affected Environment

Management direction for forestry is set by the fire, fuels, and wildlife programs along with the Healthy Forest Initiative and Healthy Forest Restoration Act with the intent of rejuvenating woodland and commercial forest lands. The most common tree species present in the project area are lodgepole pine and Douglas-fir. Lodgepole pine dominated stands occupy 1,700 acres of the project area and occur primarily as young, even-aged, densely stocked plantations. Douglas-fir occupies an additional 1,562 acres and occurs as multi-aged, densely stocked, closed canopy stands. The remaining vegetation types in the project area are comprised of aspen mixed conifer forest which comprises 345 acres and montane sagebrush steppe (mountain sagebrush) vegetation which occupies 676 acres.

The stands of lodgepole pine and Douglas-fir in the project area are relatively healthy but becoming quite dense. Some areas within the project area are experiencing health declines due to varying levels of spruce budworm, tussock moth, mountain pine beetle, and Douglas-fir beetle infestations. As timber stands age they become more susceptible to insects, disease, and fire, particularly in combination with drought cycles. These conditions are primarily the result of fire suppression activities and a lack of forest management that have contributed to high tree densities and poor growth rates and tree vigor. Conifers have been expanding into many of the historic aspen clones in the project area due to the modification of the natural fire regime that had historically kept the species out of the aspen stands and provided the low intensity disturbance necessary to maintain the clone. However some stands within the project area are comprised of dense even-aged aspen clones.

Environmental Consequences

Alternative A (Proposed Action)

Under the Proposed Action alternative, multiple treatment methods would be implemented to facilitate the thinning of lodgepole pine, Douglas-fir and other vegetative fuels. Treatments would occur within three treatment priorities that focus on improving forested resources based upon resource objectives. Within the WUI Shaded Fuel Break treatment areas, stand density and understory ladder fuels would be reduced in conifer stands. These actions would occur on a total of 784 acres. This proposed treatment would promote an older age class by removing the majority of individuals 12 inches dbh and under within specific treatment areas. In addition, conifers between 12 and 30 inch dbh would be selectively harvested to approximately 40 to 70 square feet of basal area per acre in order to affect a change in the intensity of wildland fires within the area.

Within the Habitat Improvement and Forest Health treatment areas, treatments would include selective thinning, thinning from below, and small scattered patch cuts (<2 acres in size). The trees removed during thinning are typically high risk trees, trees that are crowding desirable trees, undesirable species, and trees of poor quality and low vigor. In addition, conifers between 8 and 30 inch dbh would be selectively harvested to approximately 40 to 70 square feet of basal area per acre. Treatments would strive to break up the continuity of forest fuels while leaving larger diameter trees and aspen, where present, thereby reducing the potential for ground fires to transition to the forest crown and allowing wildfire to return to a natural cycle, where possible. These treatments would promote better health and vigor by allowing remaining trees to receive more sunlight, water, and nutrients. Wildlife habitat improvement treatments would encourage the natural regeneration of aspen with a targeted density of 1,000 suckers per acre, maintenance of adequate thermal cover, and an increase in understory herbaceous vegetation. A total of 1,716 acres would be treated under this treatment priority.

In Aspen Health treatment areas, actions would focus on reducing encroaching conifers from within existing aspen stands. Treatments would encourage the natural regeneration of aspen through the removal of encroaching conifers with the target of increasing aspen sucker density to 1,000 suckers per acre. A total of 251 acres would be treated under this treatment type.

This alternative would result in the greatest impact to forest resources, both beneficial and adverse. This alternative would impact the greatest number of acres through thinning and specialized treatments; however, these impacts would benefit the largest area by reducing fuels and protecting these areas from the risk of stand replacing fires. Thinning activities would reduce competition for nutrients, water, and sunlight for the remaining individuals.

Alternative B (WUI Shaded Fuel Breaks)

Within the WUI Shaded Fuel Break treatment areas, forest resources would be affected by reducing stand density and understory ladder fuels in conifer stands. These actions would occur in three treatment units: W.E. Farms, Yale Road, and Eagle Ridge encompassing a total of 807 acres with treatments focused in and around those populated areas within the northern extent of the Shotgun Valley. This proposed treatment would promote an older age class by removing the majority of individuals 12 inches dbh and under in specific areas. The thinning actions within the 1,000 foot treatment zone around developed private property would aid in creating defensible space and reduce the risk of wildland fire in these areas. In addition, conifers between 12 and 30 inch dbh would be selectively harvested to approximately 40 to 70 square feet of basal area per acre in order to affect a change in the intensity of wildland fires within the area.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, treatments would include thinning and pruning all Douglas-fir and lodgepole pine trees less than 12 inch dbh. In aspen colonies with a patch size of at least one-quarter acre, all conifers 12 inch dbh and under would be removed from within the aspen colonies and out to a distance of approximately 75 feet. Thinning activities would improve forest health by breaking up fuel continuity, reducing the risk of the spread of wildland fires from the ground to the forest crown. Thinning activities would also promote aspen health by removing encroaching conifer individuals.

Inventory data shows the majority of the stems per acre found in the forested stands in the project area are dominated by aspen. Mostly this is represented by stems under 2 inches dbh, and under 6 inches in height. These treatments have the potential to increase total aspen acreage within the project area if these sprouts are allowed to prosper.

However, most timber stands, except the young even aged stands, comprise the majority of the stand basal area in the overstory. Besides reducing ladder fuels, these treatments would do very little to reduce the spacing of the overstory and the overall basal area within the stands. If a crown fire was initiated outside of the project area it could still easily travel through these treated stands.

Alternative D (No Action)

In the absence of fuels reduction under the No Action alternative, the project area would remain at risk of fire and insect and disease epidemics. Dense stands of lodge-pole pine may become stagnated and susceptible to insect attack (Parker et al. 2006). Overstocking, coupled with drought, contributes to increased susceptibility of forest trees to bark beetles and other insects, fire, and disease (Campbell and Liegel 1996). Insects, fire or pathogens acting alone or in concert can stress conifer trees and weaken their defenses, thus making them more susceptible to other pests and they may also suffer greater mortality during fire than healthy trees (Parker et al. 2006). These trends would continue under this alternative.

Invasive, Non-native Species

Affected Environment

Portions of BLM-managed lands in Idaho have been affected by the establishment of non-native, invasive plants. Invasive plants include both noxious weeds and other introduced, non-native plants that usually have no natural enemies to limit their reproduction and spread. Invasive species are generally adept at colonizing disturbed sites, often out-competing native vegetation by faster growth, more prolific seed set and more successful seed germination. Disturbed areas with decreased native vegetative cover can quickly play host to invasive weeds. These species can quickly form a monoculture that reduces plant and animal diversity and wildlife habitat value. Other potentially harmful effects of noxious and invasive species include alteration of soil properties, depletion of soil nutrients, alteration of the composition of native cover types, and alteration of historical disturbance cycles including fire (DOI-BLM 2008).

Invasive plant species in the project area were identified and mapped during field surveys for the project. The primary species identified during field surveys include yellow toadflax (*Linaria vulgaris*), spotted knapweed (*Centaurea maculosa*), and Canada thistle (*Cirsium arvense*) (Table 4). The BLM works closely with Clark and Fremont Counties, who receive federal funding through the BLM (County Weed Agreements) for treating noxious weeds on public lands, and will continue to coordinate with those counties during project implementation.

Table 4: Invasive, Non-native Species within the Shotgun Valley Project Area.

Common Name	Scientific Name	Characteristics	Acres Infested (approx.)
Canada thistle	*Cirsium arvense*	Rhizomatous perennial forb native to southern Eurasia. Aggressively infests riparian and highly disturbed areas.	76 ac. (within and adjacent to project area)
Spotted knapweed	*Centaurea maculosa*	Biennial or short-lived perennial herbaceous plant native to Eurasia. Spreads rapidly in artificial corridors, gravel pits, agricultural field margins and overgrazed pastures.	5 ac. (within and adjacent to project area)
Yellow toadflax	*Linaria vulgaris*	Creeping herbaceous perennial forb native to Eurasia. Forms dense populations in farmlands, pastures, rangelands, riparian corridors, along roadsides, railways, clearcuts, and old fields.	2.5 ac. (within and adjacent to project area)

Integrated invasive plant management has been conducted for the last several years as part of an aggressive weed control program by both the BLM and cooperating counties. Weed control focuses on eradicating new invaders followed by containing wide-spread or established infestations.

Environmental Consequences

Alternative A (Proposed Action)

Fuels reduction treatments can increase the risk of introduction and spread of noxious weeds and/or non-native species. Soil disturbance and canopy openings provide opportunities for the introduction and spread of these species. The presence of temporary roads and skid trails under this alternative would increase the amount of ground disturbance in comparison to the other action alternatives. Temporary roads, skid trails, and other disturbed areas would be rehabilitated after the disturbance to reduce the potential spread of noxious weeds and invasive species. Equipment and supplies necessary for this project are possible threats to the spread of noxious and invasive weeds because weeds can be transported by vehicles and equipment coming into the area. The design features and BMPs to contain and prevent the

introduction and/or spread of noxious weeds and invasive species, including pre- and post-project herbicide treatments, would help to minimize impacts (see Chapter 2, Design Features and Mitigation Measures under All Action Alternatives, and Appendix D). Treatment areas would be monitored for the presence of noxious weed species and if found would be treated using approved methods and chemicals identified in the *Upper Snake-Pocatello Integrated Weed Control Program Programmatic EA* (DOI-BLM 2009a) and while adhering to the chemical label for buffers, restrictions and application rates. Vegetation types supporting noxious/invasive weeds could be treated using herbicides, biological control agents, hand-pulling, and seedings. Weed treatments would reduce the amount of undesirable competition, thereby increasing successful native plant establishment. Understory production would increase after tree removal as herbaceous understory plants re-establish. This would reduce the potential for further invasion of invasive species over large areas in the long-term.

Alternative B (WUI Shaded Fuel Breaks)

Under this alternative, the potential rate of noxious weed and invasive species proliferation would be less than under the Proposed Action alternative due to decreased soil disturbance and vehicle traffic. Because less ground disturbance would occur (due to the different type of equipment proposed and the smaller amount of acreage proposed for treatment) there would be less potential for spread of invasive species. The same design features and BMPs implemented for the Proposed Action alternative would be implemented under this alternative to help to minimize impacts to invasive species.

Alternative C (Hazardous Fuels Reduction)

The potential rate of noxious weed and invasive species proliferation under this alternative would be less than the Proposed Action but greater than Alternative B. No timber removal would occur under this alternative so there would be no disturbance from landings or temporary spur roads. This reduction in disturbance would result in less potential for spread of invasive species. The same design features and BMPs implemented for the Proposed Action alternative would be implemented under this alternative to help to minimize impacts to invasive species.

Alternative D (No Action)

In the short-term, the No Action alternative is not anticipated to increase the risk of spread of noxious weeds and invasive species beyond the rate of spread that currently exists within the project area; because no ground disturbance would occur there would be no direct impact to the rate of noxious weed and invasive species proliferation. The BLM would continue to work with Fremont and Clark Counties to inventory and treat infestations in the area. The increased risk of high intensity, large scale wildland fire under this alternative would indirectly increase the risk of noxious weed and invasive species proliferation, by exposing soils and thereby increasing susceptibility to infestation. If a wildland fire were to occur, full suppression activities would be undertaken. Successful suppression would reduce the size of the area affected; however, if the fire out-paces suppression efforts a large area could potentially be affected. Larger burned areas would lead to longer recovery periods following wildland fire, increasing the potential for the spread of noxious weeds and invasive species into the burned areas because native species recover slowly following high intensity fires.

Recreation

Affected Environment

The Island Park area offers recreation for a variety of sportsmen and tourists, and public lands surrounding Island Park are popular as a recreation destination. The Henry's Fork of the Snake River is located east of US-20 and is a major draw for tourists as well as nearby residents. There are no developed recreational areas within the project area. However, the area is periodically used during all seasons by various recreation and interest groups. Recreational uses typical of the area include hunting, fishing, OHV and snowmobile use, hiking, camping, antler collecting, horseback riding, and scenic viewing. The area is popular for deer and elk hunting during the fall. Wildlife viewing opportunities are available year-round.

Environmental Consequences

Alternative A (Proposed Action)

During project implementation there is the potential for temporary impacts to recreation users. The Proposed Action would temporarily interfere with recreational use during proposed treatment activities. The temporary presence of equipment/personnel in localized areas and alteration of views may affect visitor enjoyment. There could be a short-term reduction in scenic integrity and visitor use during and immediately following thinning and prescribed fire. Displacement of dispersed recreation users would occur due to restrictions in areas where thinning and burning were occurring. Smoke accumulation would be temporary because pile burning and prescribed fires would only be ignited under favorable conditions for smoke dispersion. Fires would not be ignited during the summer months to minimize impacts to recreation activities. Because activities would only occur in a small area each year relative to the total project area size, effects would not be substantial. Hunting success may decrease in localized areas in the short-term, depending upon the response of wildlife to the presence of equipment and personnel in the area as well as the habitat changes. Visual resources and subsequent use of the area for scenic viewing and by other recreationalists would be temporarily impacted until vegetation adequately re-establishes. Accessibility within the area would improve following treatments because of reduced shrub and timber coverage. In the long-term, hunting and wildlife viewing experiences would improve because of the improvement in wildlife habitat.

Alternative B (WUI Shaded Fuel Breaks)

Under Alternative B, impacts to recreation would be similar to those described for the Proposed Action; however, there would be fewer impacts because less acreage would be treated (807 acres versus 2,751 acres). In addition, prescribed burning would not be conducted under this alternative, therefore, there would be less potential for impacts from smoke and visibility of burned areas. However, because fewer acres would be treated, the potential benefits of the fuels reduction would be less, potentially resulting in an increased chance of wildland fire compared to the Proposed Action which would have a greater negative impact on recreation should such an event occur.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, impacts would be similar to those described for the Proposed Action. However, there would be fewer potential impacts to recreation because there would not be any temporary road creation, landing construction, or tree skidding and hauling activities. This would result in less potential ground disturbance from equipment in the project area. Smoke emissions are still likely because

prescribed burning could still occur in the units identified under the Proposed Action in addition to burning of slash piles.

Alternative D (No Action)

The No Action alternative would have little impact on recreation in the area, unless a catastrophic wildfire occurs which could limit recreational opportunities in the short-term. The absence of thinning and prescribed fire under the No Action alternative would avoid the potential for temporary direct impacts to visitor use and experience. However, in the long-term there would be an increased potential for more intense and severe wildland fires that could affect the recreation experience. Successful suppression of wildland fire starts would reduce the size of the area affected; however, if the fire out-paces suppression efforts a large area could potentially be affected. Large burned areas would reduce recreation opportunities in the area and would cause a short-term reduction in scenic integrity and visitor enjoyment.

Soil Resources

Affected Environment

The Island Park area is located on the northern edge of the Snake River Plain in the Columbia Plateau Physiographic Province. The Great Basin lies to the south, the Northern Rocky Mountain are located to the north, and the Middle Rocky Mountains lie to the east. The project area is located in the Island Park Caldera. This caldera is an elliptical collapse structure 18 to 23 miles in diameter. It is located in the center of a rhyolite shield. The western semicircle of the scarp is exposed, and the eastern semicircle is buried under flows of rhyolite.

The project area is located in the Shotgun Valley along the southern foothills of the Centennial Mountains near the northern edge of the Eastern Snake River Plain and the western edge of the Yellowstone Caldera. The Centennial Mountains are composed of Cretaceous, Triassic and Permian sedimentary rock. Tertiary volcanic rock and Quaternary alluvium characterize the Centennial foothills. Soils are generally Holocene to Lower Pleistocene colluviums derived from volcanic and hard rock (Golder 2008).

There are several soil types found in the treatment areas (Figure 5). The dominant soil types for each of the treatment areas are described in the table below (Table 5). The primary concern with any treatments that may occur is exposure of the soil surface (for instance, through plant thinning, burning, or other vegetation disturbing activities) which increases the potential for erosion to occur, especially on soils with steeper slopes. Erosion potential for soil types in Table 5 was designated by U.S. Department of Agriculture (USDA), based on the soil unit characteristics.

Table 5. Dominant Soil Types in the Project Area.

Treatment Area	Dominant Soil Type(s)	Description	Erosion Potential	Acres of Soil Type within Treatment Area*
Sheridan Ridge	Stringham complex	Very deep, well drained soils on 1 to 25 percent slopes composed of mixed alluvium and/or eolian deposits	Low	307.6
Sheridan Reservoir	Stringham complex	See above	Low	25.4

Treatment Area	Dominant Soil Type(s)	Description	Erosion Potential	Acres of Soil Type within Treatment Area*
South Slope	Stringham complex	See above	Low	36.7
Taylor Creek	Fourme loam	Very deep, well drained soils on 0 to 4 percent slopes composed of alluvium derived from quartzite, limestone, rhyolite and sandstone	Low	72.9
	Blacknoll V FSL	Very deep, well drained soils on 2 to 15 percent slopes composed of Volcanic ash and/or alluvium derived from igneous rock	Low	85.9
Boundary	Fourme loam	See above	Low	339.3
	Stringham complex	See above	Low	460.7
	Ramrod-Vadnais	Deep, well drained soils on 1 to 12 percent slopes composed of Loess and/or slope alluvium over bedrock derived from basalt	Low	227.8
	Stringham-Judkins	Very deep, well drained soils on 1 to 6 percent slopes composed of Mixed alluvium and/or eolian deposits	Low	130.1
W.E. Farms	Nopla complex	Very deep, well drained soils on 2 to 15 percent slopes composed of volcanic ash and/or alluvium derived from igneous rock	Moderate	218.6
Green Canyon	Koffgo complex	Well drained soils on 2 to 60 percent slopes composed of loess and volcanic ash on less steep soils and loess and mixed alluvium over colluvium on steeper slopes	Moderate to severe	74.9
Icehouse Creek	Nopla complex	See above	Moderate	111.5
Yale Road	Nopla and Koffgo complex	See above	Moderate to severe	Combined 835.4
	Henry's Lake gravelly loam	Very deep, poorly drained soils on 0 to 4 percent slopes formed in gravelly alluvium on outwash plains	Low to Moderate	278.0
	Turnerville silt loam	Very deep, well drained soils on 0 to 30 percent slopes formed from loess	Low to Moderate	79.6
	Fourme loam	See above	Low	148.9
Eagle Ridge	Turnerville silt loam	See above	Low	152.3
	Fourme loam	See above	Low	84.7

*Acreages do not match total acreages for treatment areas because minor soils were not included in descriptions.

Alternative A (Proposed Action)

Actions implemented under this alternative could have short-term adverse consequences on soil resources through the removal of vegetation and exposure of bare soils. Short-term adverse impacts to soils are related to exposure of bare soils following vegetation alterations, which leave the soils vulnerable to wind and water erosion. The duration of time associated with these impacts is anticipated to be one growing season in length. A total of 2,751 acres would be treated under this alternative including habitat improvement/forest health treatments on 1,716 acres, WUI shaded fuel break treatments on 784 acres, and aspen health treatments on 251 acres. The use of heavy mechanical equipment to reduce fuels during commercial thinning, ladder fuels reduction, and aspen treatments can damage soils and lead to compaction and erosion. These impacts could occur in all of the treatment units. Prescribed fire can also expose the soil to wind and water erosion, especially on steeper slopes, which contributes to the loss of organic matter and reduces productivity. The greatest risk of erosion would occur in the steeper Koffgo complex soils where Habitat Improvement and Forest Health treatments are proposed. These primarily occur along the southwest portion of the Green Canyon treatment area (comprising approximately 29 acres) and along the northern slopes of the Yale Road treatment area (comprising approximately 55 acres). Most of the remaining treatment areas are on relatively flat slopes where the soils are much less at risk of erosion from ground disturbing activities.

Ground disturbance would be minimized through implementation of BMPs and project design criteria such as use of non-mechanical treatment practices on areas with steep slopes and/or soils with high erosion hazards. On soils with a rating of moderate or severe, erosion control measures would be implemented including revegetation of bare areas. Impacts would also be reduced once vegetation becomes re-established, particularly the forb and native grass component, which would protect soils from erosion. In the long-term, it is expected that fire-related risks to soils would be reduced. These fire-related risks include the exposure of soils associated with the removal of vegetation and cover, as well as the sterilization of soils when fire conditions reach extreme temperatures. Tree cutting and slash burning would reduce fuel loads, fire severity, and fire size, which in turn, would allow the preservation of organic material and some vegetation on the soil surface, thereby reducing the risk of soil erosion. Slash pile and prescribed burning would result in localized adverse impacts to soils where the fires burn at high temperatures; these impacts would be limited to burned areas. Conducting burns during early spring or winter would minimize the potential for hot burns and for slash pile fires to spread to adjacent areas and ignite wildland fires. Broadcast burning would only occur within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units. In the event of a wildland fire, treated areas are expected to see a reduction in fire intensity and severity compared to untreated areas (Buckley et al. 2014).

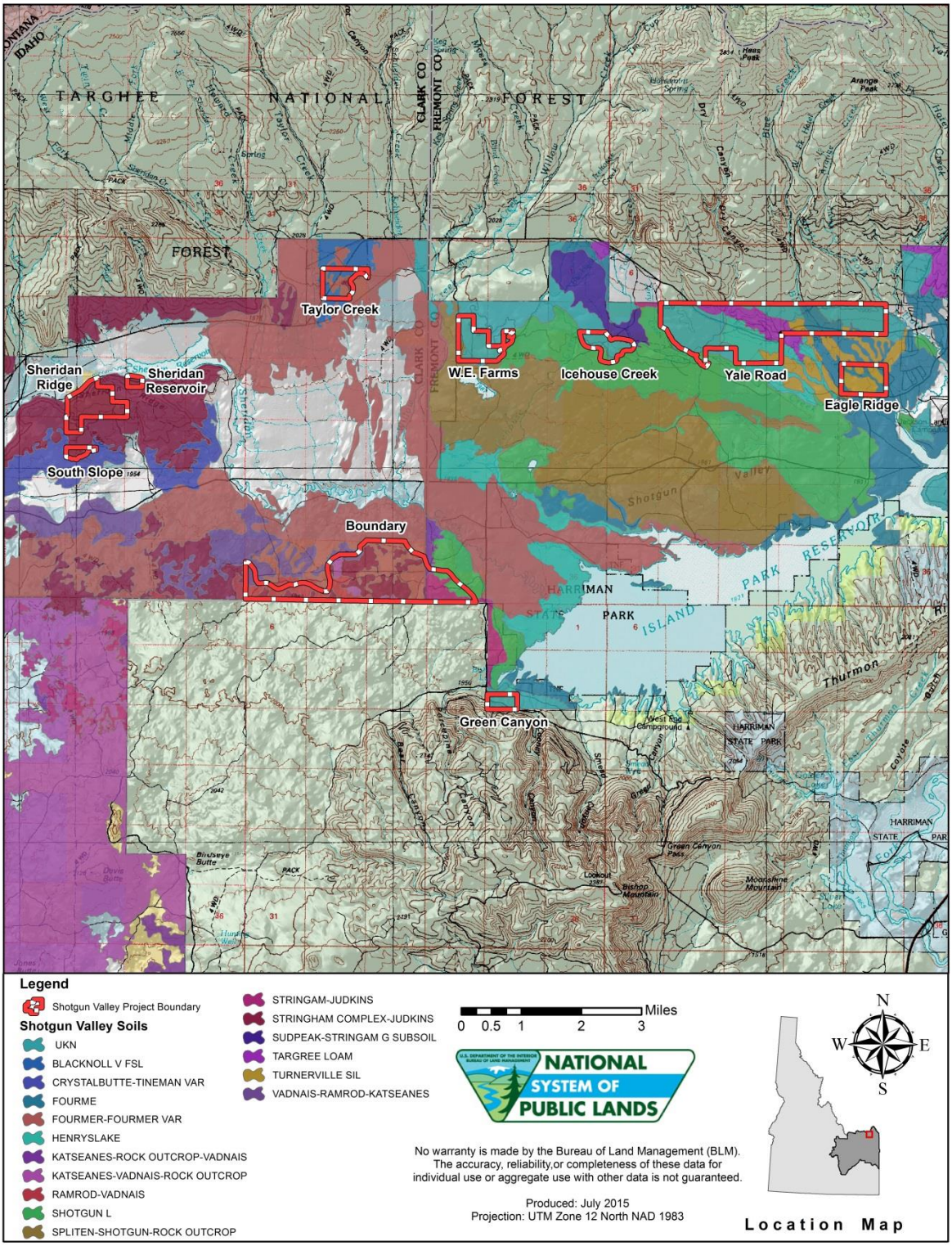


Figure 5. Soil Types in the Project Area.

Alternative B (WUI Shaded Fuel Breaks)

Effects of this alternative would be similar to those described above for the Proposed Action alternative but much less extensive because only the WUI fuels treatments would occur and they would take place only within portions of the W.E. Farms, Yale Road, and Eagle Ridge treatment units. A total of 807 acres could be treated under this alterative, with treatments focused in and around the populated areas within the northern portion of the Shotgun Valley. Mechanical harvesting, including the use of heavy equipment, would occur under this alternative in order to thin conifer stands in all three of the treatment units listed above. Use of heavy equipment could cause soil compaction and reduce site productivity by restricting root growth, seedling establishment and moisture infiltration which in turn can increase surface water runoff and soil erosion. However this impact is expected to be short-term and soils at the site would be expected to be revegetated within a few years. Once vegetation becomes re-established, soil erosion is expected to be negligible, and in the long-term, the reduction in fire-related risk would reduce the risk of soil erosion or other deleterious effects on soils. None of the treatments proposed under this alternative are on steep soils and the risk of erosion is low. Impacts to soils could occur from pile burning, but no prescribed burning would occur so potential impacts would be less than described for the Proposed Action. Overall the impact of this alternative on soils is expected to be short-term and minimal.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, a total of 2,740 acres would be treated by thinning and pruning all Douglas-fir and lodgepole pine trees less than 12 inch dbh to break up fuel continuity and reduce the potential for ground fires to transition to the forest crown. These treatments would occur in all ten of the treatment units and would have similar impacts to those described above for the Proposed Action alternative. As with the Proposed Action, the greatest risk of erosion would occur in the Koffgo complex soils which are located on steeper hillsides in the Green Canyon and Yale Road treatment areas.

Alternative C does not include any commercial thinning prescriptions which would decrease the use of heavy machinery, and the creation of temporary skid trails and landings. This would result in less potential impacts to soils due to less ground disturbance and compaction. However, heavy equipment could still be used for the thinning of ladder fuels. As with the other alternatives, Alternative C would incorporate the treatment of slash by piling and burning, broadcast burning, chipping, or removing off site (if accessible and/or feasible). Impacts would be similar to those described for the Proposed Action.

Implementation of BMPs and project design criteria to reduce the impact of treatments on areas with steep slopes and/or soils with high erosion hazards, and implementing erosion control measures such as revegetating bare areas, would reduce potential risk of adverse soil impacts in these areas. Once vegetation becomes re-established, soil erosion is expected to be negligible, and in the long-term, the reduction in fire-related risk would reduce the risk of soil erosion or other deleterious effects on soils.

Alternative D (No Action)

Under the No Action Alternative, there would be no direct impacts to soils because no ground disturbing activities or fuels reduction work would occur. The area would continue to be at risk of experiencing an uncharacteristic wildland fire due to the density of fuels in the lodgepole pine and Douglas-fir stands. Although wildland fire suppression and rehabilitation efforts would be implemented under this alternative, a high intensity wildland fire could adversely impact soils by reducing soil productivity due to loss of the nutrient rich duff/litter layer and reduced soil organic matter. After a wildland fire, the soil would be exposed to increased risk of wind and water erosion and sedimentation. Soil erosion would increase from pre-burn conditions until vegetation is re-established. Once the burn site is rehabilitated, soil erosion would be equal to or less than before the fire.

Tribal Treaty Rights and Interests

Affected Environment

The 1868 Fort Bridger Treaty, between the United States and the Shoshone and Bannock Tribes, reserves the Tribes' right to hunt, fish, gather, and exercise other traditional uses and practices on unoccupied federal lands. The federal government has a unique trust relationship with federally-recognized American Indian Tribes including the Shoshone-Bannock Tribes. BLM has a responsibility and obligation to consider and consult on potential effects to natural resources related to the Tribes' treaty rights or cultural use. Amongst the resources or issues of interest to the Tribes that could have a bearing on their traditional use and/or treaty rights include access to and availability of traditional use plant and animal species.

Environmental Consequences

Alternative A (Proposed Action)

The BLM would continue to uphold responsibilities to protect, conserve, and manage Tribal resources on unoccupied federal lands. There would be no impact to Tribal treaty rights as the project would not change land status or access; and treatment areas would retain their unoccupied Federal land status. In addition, effects on access to wildlife and plants from the project would be negligible. Therefore, the Shoshone Bannock Tribe's right to access the lands to exercise treaty rights and traditional uses would be unaffected. Because fuels would be reduced within the project area, the potential for loss of resources from a large wildland fire would be also reduced. In the long-term, resource conditions would improve with implementation of the Proposed Action ensuring their continued availability for Tribal use. Consultation with area tribes would continue as the project progresses.

Alternative B (WUI Shaded Fuel Breaks)

Impacts to tribal treaty rights and issues would be similar to those described for the Proposed Action. Although less acreage would be treated under this alternative, fuels would still be reduced within the WUI areas which would decrease the potential for loss of resources from a large wildland fire. Resources on public lands would continue to be available for Tribal use.

Alternative C (Hazardous Fuels Reduction)

Impacts to tribal treaty rights and issues would be similar to those described for the Proposed Action. Fuels treatments would decrease the potential for loss of resources from a large wildland fire; therefore, resources on public lands would continue to be available for Tribal use.

Alternative D (No Action)

Vegetation treatments on public lands would not occur under the No Action Alternative. Fuels would continue to accumulate until removed by human caused or naturally ignited wildland fire. The BLM would continue to protect, conserve, and manage Tribal resources. Loss of resources from wildland fire on BLM-administered public lands could affect the Tribes' ability to exercise treaty rights on unoccupied public lands.

Vegetation

Affected Environment

The project area contains a mosaic of vegetation types. Lodgepole pine forest and Douglas-fir forest are co-dominant in the project area, occupying 1,700 acres (approximately 40 percent) and 1,562 acres (approximately 36 percent) of the project area, respectively. Aspen mixed conifer forest and montane sagebrush steppe vegetation cover types occupy the remainder of the project area, comprising 345 acres (approximately 8 percent) and 676 acres (approximately 16 percent) of the project area, respectively. Table 6 summarizes the monitoring data in relation to trees per acre, basal area and height by species and growth form within the project area.

Douglas-fir and lodgepole pine represent the primary overstory species within the project area. They are currently present as multi-aged, densely stocked, closed canopy stands of Douglas-fir and young, even-aged, densely stocked plantations of lodgepole pine. The timber understory consists of a variety of grasses, forbs and shrubs. The most common native grasses include bluebunch wheatgrass (*Pseudoroegneria spicata*), pinegrass (*Calamagrostris rubescens*), prairie junegrass (*Koeleria macrantha*), Idaho fescue (*Festuca idahoensis*), tufted hairgrass (*Deschampsia caespitosa*), and slender wheatgrass (*Elymus trachycaulus*). Some of the more common native forbs and shrubs include arrowleaf balsamroot (*Balsamorhiza sagittata*), tapertip hawksbeard (*Crepis acuminata*), western yarrow (*Achillea millefolium*), lupine (*Lupinus* spp.), milkvetches (*Astragalus* spp.), penstemon (*Penstemon* spp.), Oregon grape (*Mahonia repens*), mountain big sagebrush (*Artemisia tridentata vaseyana*), Woods' rose (*Rosa woodsii*), mountain snowberry (*Symphoricarpos oreophilus*), common chokecherry (*Prunus virginiana*), and even quaking aspen (*populus tremuloides*).

Conifer stands in the project area have experienced varying levels of infestation of spruce budworm, tussock moth, and Douglas-fir beetle over the last 10 years, and as these forests become denser, competition among trees increases for limited resources, including moisture or nutrients, further stressing the trees and making them more vulnerable to insect attack (O'Laughlin et al. 1993). The overstocking and increasing number of diseased, dead, and dying trees in the stands makes the project area more susceptible to uncharacteristic wildland fire.

Lesser amounts of interspersed aspen and mountain shrublands populate the remainder of the project area not occupied by conifers. In general, aspen landscapes are valuable because they provide numerous benefits, including helping to maintain healthy watershed conditions, enhancing soil productivity, and providing cover and forage for a variety of wildlife species. Periodic active recruitment and retention of new individuals within aspen stands is needed to maintain these values. Currently, aspen stands within much of the west, including Idaho, are being encroached upon by fire-intolerant conifer tree species, potentially leading to the eventual replacement of aspen stands with conifer forest (Bartos and Campbell 1998; Stam et al. 2008). Douglas-fir within the project area have been expanding into many of the historic aspen clones due to the modification of the natural fire regime which had historically kept the species out of the aspen stands and provided the low intensity disturbance necessary to maintain the clone. Aspen stands within the area currently show a moderate density of small diameter, even aged, homogeneous conifers. These conditions are primarily the result of fire suppression activities and a lack of forest management that have contributed to high tree densities and poor growth rates and tree vigor.

The montane sagebrush vegetation cover type is comprised of mountain big sagebrush along with silver sagebrush (*A. cana*), antelope bitterbrush (*Purshia tridentata*), green rabbitbrush (*Ericameria teretifolia*), and shrubby cinquefoil (*Dasiphora* spp.). Some of the more common native grasses and forbs include mountain brome (*Bromus marginatus*), Idaho fescue, Kentucky bluegrass (*Poa pratensis*), slender wheatgrass (*Elymus trachycaulus*), arrowleaf balsamroot, tapertip hawksbeard, geranium (*Geranium* spp.), and lupine. No treatments are proposed in this vegetation type.

Table 6. Tree Cover within the Project Area.

Plot	Common Name	Mature Trees			Sapling	Seedling	Snag	Total Trees/Ac.
		Trees/Ac.	Basal Area (ft^2/Ac.)	Height (ft.)				
1	lodgepole pine	30	25.2	53.0				1350
	quaking aspen	30	8.8	47.7	330	700		
	Douglas-fir	170	206.7	46.9	90		30	
2	quaking aspen					100		1400
	Douglas-fir	200	72.5	36.0	100	1000		
3	quaking aspen				80	5700		6000
	Douglas-fir	160	25.8	23.1	60			
4	quaking aspen				240	5700		6920
	Douglas-fir	210	65.2	33.9	270	500		
5	Douglas-fir	120	38.3	34.2	360	1700	40	2180
6	quaking aspen				10	300		2020
	Douglas-fir	270	76.3	33.8	240	1200		
7	Douglas-fir	100	131.1	62.5	20	6000	120	6120
8	lodgepole pine	280	92.9	40.3	630	500	50	5900
	quaking aspen				80	4400		
	Douglas-fir				10			
9	lodgepole pine	60	17.1	35.5	40	200		1950
	Douglas-fir	150	28.5	24.8	500	1000	10	
10	lodgepole pine	60	21.7	35.8	290	100		980
	Douglas-fir	200	104.4	44.3	330		10	
11	lodgepole pine	200	514.9	60.5	30	0	10	230
12	lodgepole pine	1100	508.2	57.5			10	2510
	quaking aspen				10	0		
	Douglas-fir	1400	513.1	50.3				
13	lodgepole pine	380	79.7	28.8	180	400		960
14	lodgepole pine	490	153.8	46.7				490
15	lodgepole pine	200	83.3	51.3	160	900	20	1740
	Douglas-fir	100	61.9	52.3	380		20	

The amount of acreage observed in each seral state for the vegetation cover types present in the project area is shown in Table 6. Class A generally represents an early seral stage with a relatively open canopy while Class E represents a late seral stage with a relatively closed canopy. Other than widespread infestation of mountain pine beetle in the 1960-1970s and subsequent salvage and replanting of thousands of acres of beetle killed timber in the 1970s, the amount of disturbance in the project area has been relatively small. Fire records dating back to the early 1940s identify only a single, 1-acre wildfire as occurring within the project area. Outside of wildland fire, past treatment activities that have altered forest communities within the project area include the thinning of approximately 1,000 acres of Douglas-fir and lodgepole pine plantations in the Yale Road, Eagle Ridge and Green Canyon Treatment Units between 2008 and 2010.

Table 7. Vegetation Seral Stages for the Project Area.

Vegetation Type	Early Succession Class (A)	Mid-Closed Succession Class (B)	Mid-Open Succession Class (C)	Late-Open Succession Class (D)	Late-Closed Succession Class (E)
Rocky Mountain Lodgepole Pine Forest	5%	85%	10%	N/A	N/A
Middle Rocky Mountain Montane Douglas-fir Forest and Woodland	5%	5%	40%	22%	28%
Inter-Mountain Basins Montane Sagebrush Steppe	10%	26%	34%	20%	10%
Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland	20%	10%	10%	30%	30%

Fire has historically occurred as a periodic disturbance that helped maintain a mosaic of cover types and different seral stages while periodically reducing fuel loads. Currently, however, most fire regimes have been altered, resulting in shifts toward the loss of desirable sagebrush steppe, encroachment of conifers into aspen stands, and decadence in aspen/conifer and dry conifer cover types.

Field work to characterize the landscape as it relates to vegetation characteristics, fuel loading and fire hazard was started in 2012 and completed in 2014. FRCC is the classification of a landscape into one of three categories based on the amount of departure from 1) the natural fire regime (historic wildland fire frequency, severity), and 2) the natural vegetation composition, structure, and pattern resulting from a natural fire regime (Hann and Bunnell 2001). An FRCC assessment was completed for the primary vegetation types present in the project area using the LANDFIRE Biophysical Setting (BpS) Model for:

- Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland (BpS #1810610),
- Middle Rocky Mountain Montane Douglas-fir Forest and Woodland (BpS #2111660),
- Rocky Mountain Lodgepole Pine Forest (BpS #1810500), and
- Inter-Mountain Basins Montane Sagebrush Steppe (BpS #1811260).

All of the vegetation cover types in the project area were found to be in FRCC 2. Results of the field inventories are in the project file. The following natural fire return intervals were calculated for the previously discussed vegetation communities: aspen-mixed conifer communities had a <35-year fire interval frequency (average number of years between fires) with low severity surface fires; dry conifer forests had a 35–100+ year fire interval frequency with mixed severity and replacement severity fires (highly dependent upon dominant vegetation type); while mountain shrub communities had a 35–100+ year fire interval frequency with stand-replacement surface fires (LANDFIRE 2007). On average, fuel

loading (1hr.-100hr., live herbaceous and live woody) within these types of sites generally ranged between 3.7 tons/acre in the timber understory to 2.6 tons/acre in the mountain shrub communities (Scott and Burgan 2005). Currently, timber understory fuel loading (those fuels that would be the primary carrier of fire) averaged 5.4 tons/acre which is slightly greater than what should be observed. Additionally, the total fuel load, which includes all of the forest vegetation, averaged 27.4 tons/acre.

The overstocking and increasing number of diseased, dead, and dying trees in the stands makes the project area more susceptible to uncharacteristic wildland fire. FRCC 2 ratings for the major vegetation cover types in the project area suggests that the natural fire regime has been altered allowing conifer encroachment into the remaining aspen vegetation cover type and overstocked Douglas-fir/aspen and lodgepole pine vegetation cover types. Additionally, as development adjacent to the project area increases, there is an increased risk to life and property because of the presence of high fuel loads on adjacent public lands. Homes, ranches, and farms in these areas are vulnerable to wildland fire spread from adjacent BLM lands. The high fuel loading conditions present in the project area can contribute to wildland fires that can quickly spread beyond control resulting in adverse consequences.

Environmental Consequences

Alternative A (Proposed Action)

Vegetation within the project area is dominated by several common plant communities. Douglas-fir and lodgepole pine stands are the most dominant cover types in the project area. Aspen stands are also present, and almost all of them are being encroached upon as conifers expand. Many of the Douglas-fir and lodgepole pine stands are overcrowded and infested with insects and disease. Fuels management and forest health practices can be used to help manage fuel loads, improve ecological integrity of existing vegetation resources, and reduce spread of undesirable, non-native species. For example, mechanical removal of dead or diseased trees, coupled with prescribed fire can reduce fuel loads and stem densities and increase age class diversity in the cover types present in the project area. These actions would promote a more diverse, seral mosaic of aspen and dry conifer forest, as opposed to a landscape dominated by mature and decadent stands of Douglas-fir or young and overstocked stands of lodgepole pine.

The Proposed Action would treat a total of 2,751 acres and would provide for a more diverse ecosystem by reducing competition stress from uncharacteristically high stand densities. Within the WUI Shaded Fuel Break treatment areas, stand density and understory ladder fuels would be reduced in conifer stands. These actions would occur on a total of 784 acres. This proposed treatment would promote an older age class by removing the majority of individuals 12 inches dbh and under. Within the Habitat Improvement and Forest Health treatment areas, treatments would include selective thinning, thinning from below, and small scattered patch cuts (< 2 acres in size). The trees removed during thinning are typically high risk trees, trees that are crowding desirable trees, undesirable species, and trees of poor quality and low vigor. Treatments would strive to break up the continuity of forest fuels while leaving larger diameter trees and aspen, where present, thereby reducing the potential for ground fires to transition to the forest crown and allowing wildfire to return to a natural cycle, where possible. These treatments would promote better health and vigor by allowing remaining trees to receive more sunlight, water, and nutrients. Wildlife habitat improvement treatments would encourage the natural regeneration of aspen with a targeted density of 1,000 suckers per acre, maintenance of adequate thermal cover, and an increase in understory herbaceous vegetation. A total of 1,716 acres would be treated under this treatment priority. In Aspen Health treatment areas, actions would focus on reducing encroaching conifers from within existing aspen stands. Treatments would encourage the natural regeneration of aspen through the removal of encroaching conifers with the target of increasing aspen sucker density to 1,000 suckers per acre. A total of 251 acres would be treated under this treatment type.

Reducing overall stand densities would promote both health and sustainability of vegetation across the landscape. Decreasing stand density would reduce the competition stress, thereby increasing the ability of residual trees to withstand infestations. Removing conifers from aspen stands would also improve the health of these stands.

Under this alternative, broadcast burning could occur within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope, and Boundary treatment units. Prescribed fire could be used to reduce forest fuels and associated wildland fire risk and also to help restore the forest to a FRCC 1, which would represent a lower departure from the natural (historical) fire regime. Fires occurring within ecosystems identified as FRCC 1 would likely have a more natural frequency, severity and pattern, and the potential loss of key ecosystem components would be low. Prescribed broadcast fire would reduce the quantity of duff and litter present. Dead and downed fuel loading and fuel continuity in the live fuels would be reduced; thereby reducing the chance of large and/or severe wildland fires. Low to moderate intensity fire plays a significant role in aspen regeneration by disturbing the area and removing the overstory, thus allowing shade-intolerant aspen to thrive (Schier and Campbell 1978). Aspen would respond positively to the opened canopy, warmer soil temperatures, and increased soil nutrients that result from fire. Healthy aspen stands would serve as live fire breaks in the future allowing firefighters to more easily control an oncoming wildland fire.

In the long-term, treatments would lead to a mosaic of healthy vegetative communities that would help to lessen the intensity, severity and extent of future wildland fires. Fire severity has a large influence on the composition and structure of plant communities that follow fire. Landscapes subject to low-intensity fires generally experience the return of prefire flora relatively quickly, but landscapes subject to large, severe fires often recover slowly (Kline 2004). The actions proposed under this alternative would reduce the potential for significant vegetation losses resulting from high intensity, large-scale wildland fires and the recovery time necessary for revegetation of the burned area.

Alternative B (Shaded WUI Fuel Breaks)

Under Alternative B, vegetation within the WUI Shaded Fuel Break treatment areas would be affected through a reduction in stand density and understory ladder fuels in conifer stands. These actions would occur in the W.E. Farms, Yale Road, and Eagle Ridge treatment units, encompassing a total of 807 acres. The proposed treatment would promote an older age class by removing the majority of individuals 12 inches dbh and under. Overall, impacts would be similar to those described above for the Proposed Action alternative, but the benefits would not be as extensive because of the smaller amount of acreage treated. Treatments would be focused in and around populated areas.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, treatments would include thinning and pruning all Douglas-fir and lodgepole pine trees less than 12 inch dbh. In aspen colonies with a patch size of at least one-quarter acre, all conifers 12 inch dbh and under would be removed from within the aspen colonies to improve aspen health. These treatments would occur on 2,740 acres. These thinning activities would improve forest health by breaking up fuel continuity, thereby reducing the risk of a ground fire transitioning into the forest crown. Thinning activities would also promote aspen health by removing encroaching conifers. Overall, impacts would be similar to those described for the Proposed Action alternative.

Alternative D (No Action)

Under the No Action alternative no fuels management would occur. Fuel levels would continue to increase in the area. Disease and mortality in the dense conifer stands in the project area would continue

in the absence of any action to reduce density and conifers would continue to encroach into aspen stands. Continued suppression of all wildland fire starts would occur. If wildland fires are successfully suppressed as they occur, shade intolerant species would eventually be replaced with shade tolerant species. Stand density would continue to increase, creating unnaturally high fuel loadings and increasing the risk of a broad scale, stand-replacing wildland fire.

Visual Resources

Affected Environment

The BLM uses a Visual Resource Management (VRM) system to inventory and manage visual resources on BLM-administered lands. The primary objective of VRM is to maintain the existing character of the landscape, known as line, form, color, and texture, throughout a planning area and to protect unique and fragile resource values. The VRM system uses four classes to describe the different degrees of modification allowed to the landscape. Class I allows for very limited management activity while Class IV allows management activities which require major modifications of the existing character of the landscape (DOI-BLM 1980). The entirety of the project area is classified as Class II. Class II VRM objectives determine that "activities may be visible, but should not attract attention from the casual observer." Class II VRM objectives are met by retaining the existing character of the landscape. The level of change to the characteristic landscape should be low in Class II areas.

The project area consists primarily of undeveloped public lands. The overall scenic quality is typical or common to the area and is not of a unique landscape character. The form of the landscape consists of mostly flat to gentle slopes. The landscape has a high density of vegetation and an overall medium texture. The line has a transitional edge with two contrasting areas formed by the forested areas and adjacent shrub and grasslands. Color in the project area is a combination of hues between green, brown, gray, and yellow.

Most of the area has a fairly continuous cover of mixed conifers. The predominant species are Douglas fir and lodgepole pine. Intermingled with the stands are aspen and various shrub species. Typical views of the project area are shown in the photographs below. When viewed from area roads, the project area is a more continuous dark green color and texture throughout most of the year. Aspen clones create a lighter color contrast in areas where they are present due to their light trunks and lighter colored leaves as compared to the darker color of the conifers. During the fall there is considerable change in color between the deciduous and conifer species. This creates some diversity in patterns in the landscapes, but is not outstanding or distinct when compared to other landscapes in the area.

Typical views within the project area (2013 and 2015)

Environmental Consequences

Alternative A (Proposed Action)

The Proposed Action would have some effects to visual quality in the short-term because of harvest, thinning, and potential burning activities. Modifying the character of the landscape during vegetation management activities could result in alterations in color, line, and texture that could affect existing visual resources as treatments are conducted to move the project area toward a more desirable FRCC. In general, these contrasts would be weak and over the long-term the expectation would be for an enhanced visual landscape due to the improved health of the forest, including healthy aspen stands.

Tree cutting, piling, and burning would result in soil disturbance in the project area that would create a minor color contrast. Construction of temporary spur roads, skids trails, and landings can also affect scenery resources by exposing light colored soils and creating noticeable color contrasts. Generally temporary roads, once rehabilitated, revegetate quickly and would visually recover once rehabilitation activities are complete and vegetation is re-established. Because temporary roads would be rehabilitated, effects would not be noticeable to the casual observer in the long-term. Remaining vegetation would provide screening that would reduce the potential visibility of color contrasts. Landings would be most evident during project implementation before large piles of logs and slash are removed and immediately after project implementation until revegetation of the landing occurs. With application of BMPs it is anticipated that these disturbances although they may be seen, would remain subordinate to the characteristic landscape. Actions such as rehabilitating temporary roads, skid trails, and landings, and utilizing topography and vegetation screening would all help to reduce impacts.

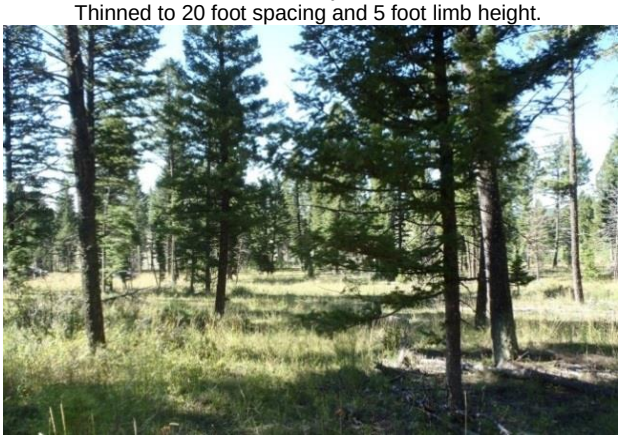
In units where harvesting occurs, the stands would change from dense and continuous to more open, with small patches of dense canopy remaining consisting mainly of larger diameter trees. Openings would be created where trees are removed and in locations where landings are created. Opening the canopy would encourage regeneration by allowing light to reach the forest floor. A reduction of overall stand densities and movement of species composition toward one that is more adapted to a frequent fire interval ecosystem would promote both health and sustainability of the landscape and improve the appearance of the forest. The photographs on the following page show examples of what the project area may look like post-treatment. In the Yale Road fuels reduction project, the post-treatment photo shows a thinning prescription for 20 foot tree spacing and 5 foot limbing height, similar to what is proposed in the WUI treatment areas. In the Moose Commercial Thinning Project the post-treatment photos show what a treatment thinned to both 50 square foot per acre basal area and 70 square foot per acre of basal area look like. Prior to treatment, the Moose project area had high densities of both mature and young (ladder fuel) conifers, similar to current conditions in the project area. Treatments in the Moose thinning project opened the conifer canopy and reduced ladder fuels.

Potential impacts to visual resources related to fire include smoke production during fire and the charred appearance of lands after fire. Resulting slash from treatments could be piled and burned in all of the treatment units and/or broadcast burned within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units. Small blackened areas interspersed with areas of unaltered, live vegetation would create a strong color contrast. The use of prescribed fire would also result in line and texture contrasts. In general, these contrasts would be of small scale associated with the landscape. Burned areas would be most evident during the first year but the color contrast created between the burned and unburned areas would be reduced after a season of snow-cover and spring growth. The effects may remain noticeable to the casual observer for two to three years. Impacts to scenic values from smoke would be short-term, lasting only until the smoke dissipates.

Yale Road Fuels Reduction Project - 2007 Pre-treatment.

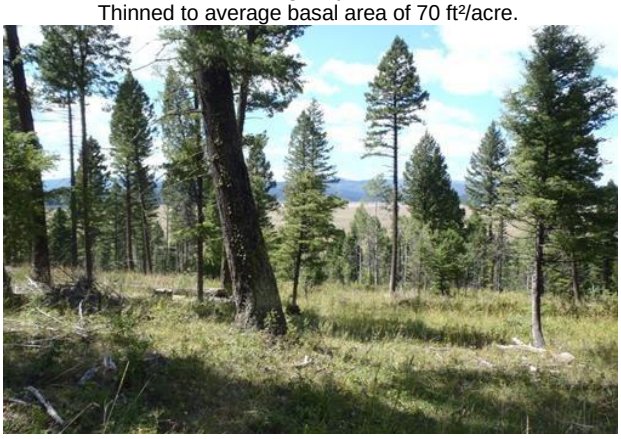
Yale Road Fuels Reduction Project - 2011 Post-treatment.
Thinned to 20 foot spacing and 5 foot limb height.

Moose Commercial Thinning Project - 2005 Pre-treatment.



Moose Commercial Thinning Project - 2011 Post-treatment.
Thinned to average basal area of 70 ft²/acre.

Moose Commercial Thinning Project - 2005 Pre-treatment.



Moose Commercial Thinning Project - 2011 Post-treatment.
Thinned to average basal area of 50 ft²/acre.

Implementation of BMPs and specific resource restrictions specified in the FMDA for protection of visual resources, as well as those identified for the protection of soils, would reduce the potential for impacts. Where possible, vegetation modifications would replicate the natural line, color, and texture found in the surrounding area to meet the Class II objectives of the project area. Measures would be taken to ensure that changes repeat the basic elements found in the predominant natural features of the characteristic landscape. These measures would include avoiding straight lines and designing harvest units with irregular boundaries and leave trees to reduce the potential for attracting the attention of the casual observer. Implementation of these design features as part of the treatments would blend the treatments with the characteristic landscape and ensure that VRM objectives would be met.

Alternative B (WUI Shaded Fuel Breaks)

Effects under this alternative would be similar to the Proposed Action but would treat 1,944 fewer acres. Treatments would only occur in portions of the W.E. Farms, Yale Road, and Eagle Ridge treatment units. In addition to treating fewer acres under this alternative, there would also be less ground disturbance because no temporary spur roads, skids trails, or landings would be built and no prescribed burning would occur. Therefore, there would be fewer potential alterations in color and line that could affect existing visual resources. The same design features identified for the Proposed Action would be implemented under this alternative to ensure that Class II objectives continue to be met.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, a total of 2,740 acres would be thinned to break up fuel continuity and reduce the potential for ground fires to transition to the forest crown. These treatments would occur in all 10 of the treatment units and would have similar impacts to those described above for the Proposed Action. However, less ground disturbance would occur under this alternative as compared to the Proposed Action because of the difference in treatment methods and lack of need for landings because timber removal would not occur. The reduction in the degree of ground disturbance would reduce the potential for impacts to visual resources. The same design features identified for the Proposed Action would be implemented under this alternative to ensure that Class II objectives continue to be.

Alternative D (No Action)

Under the No Action alternative fuel reduction treatments would not occur in the project area. Therefore, there would be no direct effects to visual resources. A possible indirect effect of this alternative would be the occurrence of a large, stand-replacing fire. While it is difficult to predict the actual results and timing of such a wildfire event, it is likely that such an event would result in considerable long-term changes in the scenic environment. If a large, high intensity wildland fire occurred within the project area, the landscape character could be greatly altered with a loss of existing vegetative cover, potential soil scorching, and possible scars from ground disturbing fire suppression activities. The resultant blackened landscape, followed by dead standing and fallen trees could affect the scenic resources for decades, creating a larger scale contrast in the landscape than the proposed treatments. Successful suppression activities would reduce the size of the area affected; however, if the fire out-paces suppression efforts a large area could potentially be affected.

Water Quality

Affected Environment

The Henry’s Fork of the Snake River is the main collector for the Upper Henry’s Fork subbasin which encompasses 1,077 square miles, and is identified as hydrologic unit code (HUC) 17040202. The Upper

Henry's Fork subbasin contains nine watersheds including Island Park Reservoir and Sheridan Reservoir, which encompass the project area. Island Park Reservoir is identified as HUC 1704020203 and Sheridan Reservoir is identified as HUC 1704020204.

The quality of surface waters within the Henry's Fork subbasin is generally good, with almost half of the water derived from springs in nearly pristine condition. Within this subbasin, no streams were originally listed on the Idaho 1998 303d list for temperature pollution. The Environmental Protection Agency (EPA) later added streams to Idaho's 1998 303d list of impaired waters that potentially exceeded Idaho's temperature criteria as well as some that were listed as impaired due to low bioassessment scores as determined by the Idaho Department of Environmental Quality (IDEQ; 2010). However, none of these streams are within the treatment areas.

Within the project area there are a total of approximately 1,230 feet (0.2 miles) of perennial streams/shoreline, including riparian perennial wetlands, and 43,424 feet (8.2 miles) of intermittent/ephemeral streams and ditches. These streams are derived from precipitation, snowmelt, and springs, or were constructed for the purpose of diverting water for agriculture. Perennial streams within or in close proximity to the treatment areas include West Hotel Creek and the shoreline of Sheridan Reservoir. Intermittent drainages within the treatment areas receive occasional runoff from snowmelt and precipitation events draining into either perennial streams or the Henry's Fork. Both perennial streams and riparian perennial wetlands would be treated as perennial streams with 100 foot buffers. Intermittent streams would have 50 feet buffers.

Environmental Consequences

Alternative A (Proposed Action)

Vegetation removal and associated ground disturbing activities have the potential to alter watershed function and degrade downstream water quality through increased erosion and sediment deliver to stream channels. Soil surfaces would be disturbed by removal of vegetation and other fuels treatments that include the use of ground-based equipment. Increased sedimentation could also occur as a result of increased road traffic during timber harvest activities and following burning when less vegetation would cover the ground surface.

Sediment generated from increased road traffic from log hauling would only last the duration of the harvest. Sediment effects related to timber harvest would last between 2-6 years; this is typically the length of time that disturbed ground requires for erosion to return to pre-disturbance levels. Potential short-term minor impacts to water quality would be minimized through the recommended BMPs. Implementation of the proposed design criteria and BMPs would reduce the risk of erosion and sediment delivery in the short and long-term. Most of the risk, especially in terms of short-term sediment production, comes from temporary roads, skid trails, and landings associated with the harvest activity. However, the risk to long-term watershed condition and function is low due to the limited disturbance and temporary nature of those facilities. In addition, the temporary roads would be placed on existing two-track roads. Temporary roads, skids trails, and landings would be rehabilitated as part of the Proposed Action.

Buffers have been added to the Proposed Action to minimize the potential for impacts to water resources; there would be no disturbance in riparian areas, intermittent or perennial streams, ephemeral channels, or wetlands. West Hotel Creek and the shoreline of Sheridan Reservoir are considered perennial and would have 100 foot buffers around them; all other waters would be buffered by 50 feet. Therefore, the risk of sediment coming in contact with water would be reduced because the buffers would filter sediment before it reaches the stream. Increases in unrouted sediment yield to the stream channel typically decrease substantially after the first year.

Because of the small size of the units that would be treated, the scattered nature of the units over the project area, and the long time frame over which the project would occur, the Proposed Action is not anticipated to adversely impact water quality in the project area.

If a wildland fire were to occur, full suppression activities would be undertaken. Successful suppression would reduce the size of the area affected; however, if the fire out-paces suppression efforts a large area could potentially be affected. Water quality could be affected because suppression activities can cause ground disturbance and soil compaction that can affect water quality.

Alternative B (WUI Shaded Fuel Breaks)

Impacts to water quality from Alternative B would be similar to those described above for the Proposed Action; however, this alternative would treat 1,944 fewer acres than Alternative A. Treatments would only occur in portions of the W.E. Farms, Yale Road, and Eagle Ridge treatment units. The reduction in the amount of area disturbed would reduce the potential for impacts to water quality. The same BMPs and design criteria described for the Proposed Action would be implemented under this alternative to reduce potential impacts. West Fork Hotel Creek is a perennial reach that flows for approximately 240 feet within the Yale Road treatment unit. Therefore, this reach would be buffered by 100 feet from any treatment and all other streams within these units would be buffered by 50 feet. Therefore no long-term adverse impacts to water quality are anticipated under this alternative.

Alternative C (Hazardous Fuels Reduction)

Impacts to water quality from Alternative C would be similar to those described above for the Proposed Action. A total of 2,740 acres would be treated under this alternative and would include thinning and pruning all Douglas-fir and lodgepole pine trees less than 12 inch dbh to break up fuel continuity and reduce the potential for ground fires to transition to the forest crown. Overall impacts to water quality under this alternative would be similar to the proposed action as a similar number of acres are being treated although fewer trees would be cut and removed. Most of the potential impact to water quality would come from the creation of access roads and the use of equipment to cut trees. Buffers around water sources and other BMPs would minimize potential short and long-term adverse impacts to water quality.

Alternative D (No Action)

The No Action alternative would not have any direct impact on water quality because no ground-disturbing activities would take place beyond those that are already occurring. The No Action alternative would have potential indirect impacts to water quality because of the risk of a large and/or severe wildland fire occurring in the area. Such a fire would initiate substantial erosion that could impact site productivity and water quality downstream of the project area. Although timing or magnitude of a wildland fire cannot be accurately predicted, the risk would remain should such an event occur. A large and/or severe wildland fire would result in a short-term but very high flush of sediment into streams. Fire suppression activities could also adversely impact water quality through ground disturbing activities.

Wetlands and Riparian Zones

Affected Environment

The abundance of springs in the Upper Henry’s Fork subbasin supports a variety of instream and wetland communities of aquatic plants (Jankovsky-Jones 1996). Numerous riparian areas are also found associated with rivers and streams in the area. Both riparian areas and wetlands are important for providing habitat for wildlife and maintaining water quality.

Sheridan Reservoir has approximately 990 feet of shoreline on BLM-administered lands just north of the Sheridan Reservoir treatment unit; this shoreline comes within 20 feet of the treatment unit boundaries in some areas. In June 2007, the BLM assessed the health of the riparian vegetation along the shore of Sheridan Reservoir and found the riparian vegetation to be in proper functioning condition (DOI-BLM 2007b). The area was observed to have good cover of vegetation and was dominated by spike rush (*Eleocharis palustris*) and sedges (*Carex* spp.). This area would be buffered by 100-feet from any treatment.

West Fork Hotel Creek flows for approximately 240 feet on BLM-administered lands within the Yale Road treatment unit. Although BLM has never assessed this short reach for proper functioning condition, it is believed to be perennial on the BLM reach (personal communication, USFS Hydrologist Brad Higginson). Therefore, this area would be buffered by 100-feet from any treatment.

All remaining streams within the project area are intermittent, ephemeral, or flow in irrigation ditches. For example, Dry Creek is an intermittent stream that flows for approximately 400 feet within the Sheridan Ridge treatment unit. This very low gradient stream was determined to be in proper functioning condition at the last assessment on this reach in 2007. Sheep Creek is another intermittent stream that flows within the Yale Road treatment unit for approximately 1,180 feet. Sheep Creek was assessed for proper functioning condition in 1995, but it is no longer assessed as a riparian area as of 2005 because the natural channel has been dewatered and water is diverted into the Hagenbarth irrigation ditch. All intermittent streams/ditches would have a 50-foot buffer around them such that no treatments would occur in those areas.

Environmental Consequences

Alternative A (Proposed Action)

Under the Proposed Action, up to 2,751 acres would be treated to reduce fuels and improve forest health; no treatments would be conducted within 100 feet of perennial streams/reservoirs or within 50 feet of intermittent/ephemeral streams and tributaries. Therefore, only indirect effects to riparian areas and wetlands are anticipated. These indirect effects would include increased runoff and sediment loads for the first one to two years after treatment. Treatment under this alternative could include mechanical harvesting and broadcast burning within the Taylor Creek, Sheridan Ridge, Sheridan Reservoir, South Slope and Boundary treatment units. The Proposed Action is not expected to affect the proper functioning condition of perennial streams in the project area.

Alternative B (WUI Shaded Fuel Breaks)

Effects of this alternative would be similar to those described above for the Proposed Action alternative but would be less extensive because only the WUI fuels treatments would occur and they would take place only within portions of the W.E. Farms, Yale Road, and Eagle Ridge treatment units. A total of 807 acres could be treated under this alterative. The reduction in the amount of area disturbed would reduce the potential for impacts to wetlands and riparian areas. The same BMPs and design criteria described for the Proposed Action would be implemented under this alternative to reduce potential impacts. The perennial reach of West Fork Hotel Creek that flows for approximately 240 feet within the Yale Road treatment unit would be buffered by 100 feet from any treatment. All other streams and ditches within these units would be buffered by 50 feet, thereby reducing potential adverse impacts to wetlands and riparian areas.

Alternative C (Hazardous Fuels Reduction)

Under Alternative C, a total of 2,740 acres would be treated by thinning and pruning Douglas-fir and lodgepole pine trees less than 12 inch dbh to break up fuel continuity and reduce the potential for ground fires to transition to the forest crown. These treatments would occur in all ten of the treatment units and would have similar impacts to those described above for the Proposed Action alternative. However, less ground disturbance would occur under this alternative as compared to the Proposed Action because of the difference in treatment methods and lack of need for temporary roads, skid trails, and landings because timber removal would not occur. The reduction in the degree of ground disturbance would reduce the potential for impacts to wetlands and riparian areas. The same BMPs and design criteria described for the Proposed Action would be implemented under this alternative to reduce potential impacts. Perennial streams would be buffered by 100 feet and intermittent/ephemeral streams would be buffered by 50 feet, thereby reducing potential impacts to wetlands and riparian areas.

Alternative D (No Action)

No fuels management would occur under this alternative; therefore, there would be no direct impacts to wetlands and riparian areas. The No Action would have potential indirect impacts to wetlands and riparian areas should a large and/or severe wildland fire occur in the area. Continued suppression of all wildland fire starts would occur and fuel levels would continue to increase in the area. In the absence of any action, conifers would continue to encroach into aspen stands. Replacement of aspen would have detrimental effects on the watershed attributes of aspen stands, including potential reductions in sustained stream flow and a decline in water quality due to accelerated erosion (Bartos and Campbell 1998).

Wildlife Resources, including Threatened, Endangered, and Sensitive Animals

Affected Environment

General Wildlife

Many wildlife species are known or suspected to occur within the habitats surrounding the proposed project area. General wildlife species are those common, abundant species that occur in abundance throughout their designated ranges. These species are usually not provided special protection or designations, with the exception of migratory species. However, these species are analyzed to identify possible mitigations that would lessen impacts to individuals or populations to maintain population viability within an impact area.

Non-game species that occur within the project area include predators such as coyotes, skunk, red fox, porcupine, and badgers. Common rodents include voles, gray squirrels, chipmunks, mice, voles, jack rabbits, and cottontail rabbits. Common bird species observed or known to occur within the area include the American robin, western meadowlark, horned lark, various sparrows, chickadee, gnatcatcher, finches, and other small songbirds.

Big game species such as mule deer, elk, and moose use the project area seasonally (Figure 6). All of the treatment areas except for the Boundary and Green Canyon units are classified as “Crucial Elk Summer Range.” The Boundary and Green Canyon units are classified as “General Elk Summer Range.” Mule deer summer habitat occurs in all of the treatment units. Moose are known to use portions of the treatment area throughout the year. The project area is located in Idaho Fish and Game (IDFG) Big Game Management Units 60 and 61.

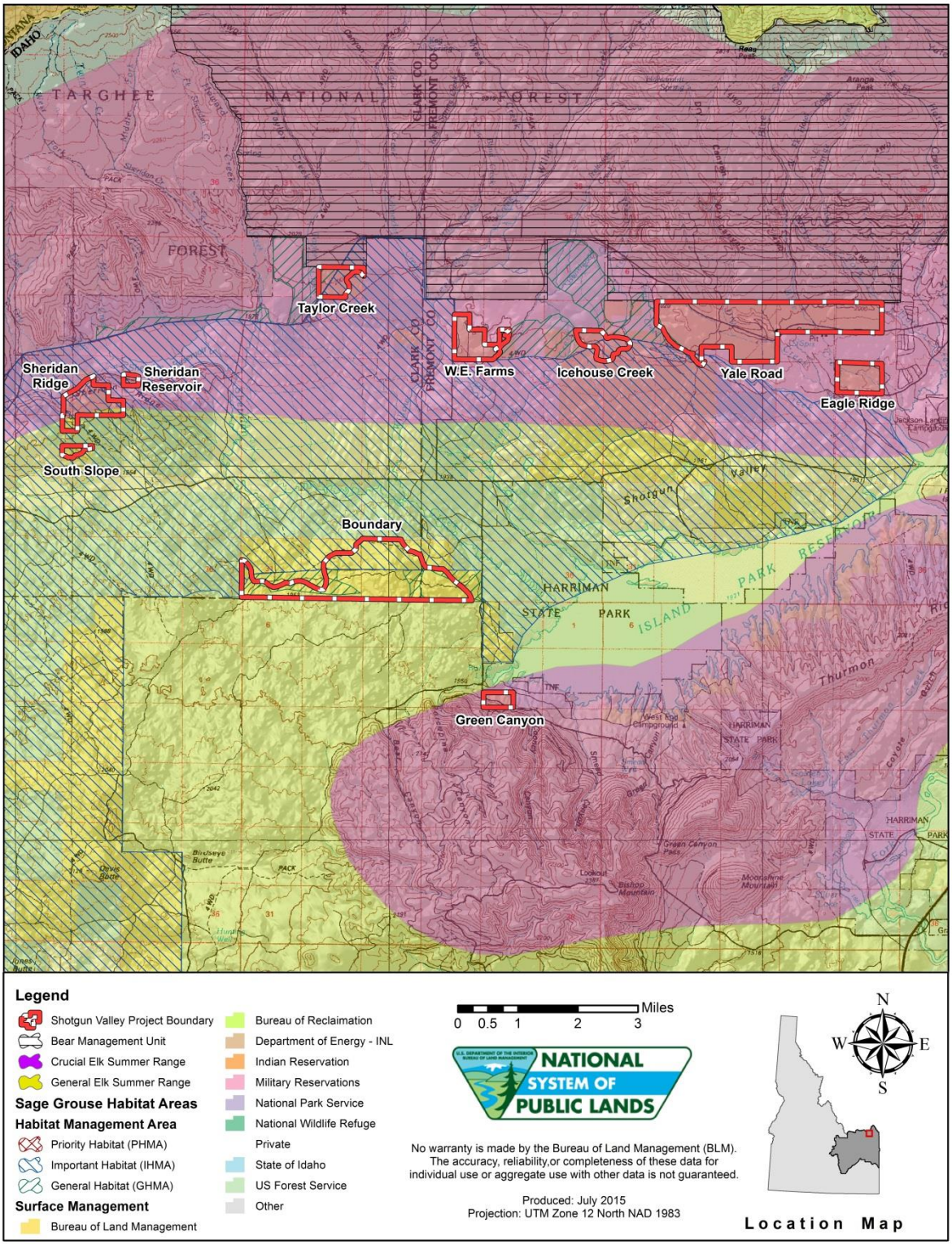


Figure 6. Wildlife Habitat in the Project Area.

Special Status Species (Threatened, Endangered, and Sensitive Animals)

Wildlife species lists and existing wildlife location information were acquired from federal and state agencies to determine which species occur or have the potential to occur within the proposed treatment areas. The federally-listed, proposed and candidate species list for wildlife that potentially occur within the project area was obtained from the USFWS Information for Planning and Conservation website on August 26, 2015. The official species list was given consultation code: 01EIFW00-2015-E-00811 (Appendix E). The list of Idaho BLM Special Status Animal Species for Districts and Field Offices was reviewed for those species known or suspected to occur within the BLM Upper Snake River Field Office (Appendix F). Additional data was gathered from the IDFG's Idaho Wildlife Information System for documented occurrences of BLM Sensitive species and federally-listed wildlife and fish within or adjacent to the project area and from the IDFG for supplemental information concerning general wildlife data such as winter range and migration routes for big game species.

Existing information was used to create lists of federally-listed, BLM Sensitive, and general wildlife species known or suspected to occur within the analysis area. Habitat within and adjacent to the project area was compared to the wildlife lists to focus the analysis on the wildlife species known or suspected to occur within the analysis area (i.e., potentially suitable habitat present within the treatment units).

Habitat for BLM Special Status Species is currently managed under the direction of the BLM Manual 6840, and Instruction Memorandum No. 2015-009 - Idaho BLM Special Status Species List Update (DOI-BLM 2015a). This policy directs land management activities to "…manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat" (DOI-BLM 2009b).

Table 7 lists special status species that have been identified as occurring or potentially occurring within the project area. BLM includes the following as special status species:

Type 1 – ESA Listed Species: includes Endangered and Threatened Species, and

Type 2 – BLM Special Status Species: includes USFWS Candidate species, species delisted within 5 years, proposed species, experimental populations, and BLM Sensitive Species.

The probability of species occurring and rationale for occurrence are listed in Table 7. Species not occupying seasonal ranges or not expected to occur within the 11 treatment units that make up the project area are not discussed in this assessment.

Table 8. Special Status Species and Occurrence within the Shotgun Valley Project Area.

Species	Federal[a]	State[b]	BLM[cd]	Occurrence	Basis for occurrence determination
Canada lynx (*Lynx canadensis*)	T	GSC	S Type 1	Unlikely	Project is not within a lynx analysis unit(s) and critical habitat is not present (USFWS 2014[e]). No effect for Canada lynx therefore no further analysis is needed.
Gray wolf (*Canis lupus*)	XN	E	S Type 1	Possible	Suitable habitat and prey are present but the project is not within known wolf pack territories.
Grizzly bear (*Ursus arctos*)	T	T	S Type 1	Possible	Habitat is present but there are no grizzly bear management units within the project area.
Bald eagle (*Haliaeetus leucocephalus*)	SC	SC	S Type 2	Present	The area contains several known bald eagle nesting and breeding territories. Transient or wintering bald eagles may occur.

Species	Federal[a]	State[b]	BLM[cd]	Occurrence	Basis for occurrence determination
Pygmy rabbit (*Brachylagus idahoensis*)	SC	GSC	S	Not expected	Primary habitat does not occur within the project area.
Northern goshawk (*Accipiter gentilis*)	NS	SC	S	Possible	The area contains possible nesting and foraging habitat.
Black-throated sparrow (*Amphispiza bilineata*)	SC	SC	S	Possible	The area contains possible nesting and foraging habitat.
Ferruginous hawk (*Buteo regalis*)	SC	SC	S Type 2	Possible	Foraging habitat present.
Green-tailed towhee (*Pipilo chlorurus*)	SC	SC	S	Possible	The area contains possible nesting and foraging habitat.
Greater sage-grouse (*Centrocercus urophasianus*)	SC	GSC	S Type 2	Unlikely	Important and general habitat occurs within the Shotgun Valley; however sage-grouse are unlikely to occur within the forested areas of the valley where treatments are proposed.
Columbian sharp-tailed grouse (*Tympanuchus phasianellus*)	SC	GSC	S Type 2	Unlikely	The Shotgun Valley does contain suitable habitat, however no habitat occurs within the treatment units therefore no further analysis is needed.
Boreal owl (*Aegolius funereus*)	NS	SC	S Type 2	Not expected	No suitable habitat.
Flammulated owl (*Otus flammeolus*)	NS	SC	S Type 2	Possible	The proposed project area contains foraging and potential nesting habitat.
Lewis's woodpecker (*Melanerpes lewis*)			S Type 2	Possible	Nesting and foraging habitat present.
Wolverine (*Gulo gulo*)	NS	SC	S Type 1	Not Expected	Prey species inhabit the area, but there have been no documented wolverine sightings.
Townsend's big-eared bat (*Corynorhinus townsendii*)	SC	SC	S Type 2	Possible	Roosting and foraging habitat present.
Big brown bat (*Eptesicus fuscus*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Yuma myotis (*Myotis yumanensis*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Hoary bat (*Lasiurus cinereus*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Little brown myotis (*Myotis lucifugus*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Long-eared myotis (*Myotis evotis*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Long-legged myotis (*Myotis volans*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Pallid bat (*Antrozous pallidus*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Silver-haired bat (*Lasionycteris noctivagans*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Western small-footed myotis (*Myotis ciliolabrum*)	SC	SC	S	Possible	Roosting and foraging habitat present.
Western boreal toad	SC	SC	S	Possible	The Shotgun Valley does contain

Species	Federal[a]	State[b]	BLM[cd]	Occurrence	Basis for occurrence determination
(*Anaxyrus boreas*)			Type 2		suitable habitat, however all possible habitat has been excluded from treatment.
Northern leopard frog (*Rana pipiens*)	SC	SC	S Type 2	Possible	The Shotgun Valley does contain suitable habitat, however all possible habitat has been excluded from treatment.

a. Status Codes: E = Endangered; T = Threatened; SC = Species of Concern; C = Candidate; XN = Experimental, Non-essential; GSC = Game Species of Concern; S = Sensitive; NS= no status.
b. IDFG 2015. Idaho Fish and Wildlife Information System, Idaho's Species of Greatest Conservation Need, Idaho Department of Fish and Game, Boise, ID. https://fishandgame.idaho.gov/ifwis/portal/page/species-status-lists
c. DOI-BLM. IM-2009-039. The Special Status Species Management Manual (47 pp). Washington, D.C.
d. DOI-BLM. IM-2015-009. Idaho Bureau of Land Management (BLM) Special Status Species List Update. (18 pp).
e. USFWS, 2014, "Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary. Federal Register / Vol. 79, No. 177.

Threatened and Endangered Species

The USFWS species list 01EIFW00-2015-E-00811 included three wildlife species: greater sage-grouse (*Centrocercus urophasianus*; Candidate; however, since acquiring the list the greater sage-grouse has been found to not warrant listing [USFWS 2015]), Canada lynx (*Lynx canadensis*; Threatened), and grizzly bear (*Ursus arctos horribilis*; Threatened). More details about each of these species and their habitat types are included in the *Biological Assessment for the Shotgun Valley Fuels Reduction and Forest Restoration Project* (North Wind 2015) that was developed to assess the potential impact of the proposed action on BLM Type 1 (Endangered, Threatened or Candidate) species. There is no designated critical habitat in the project area for these listed species.

BLM Sensitive Species

There are 23 BLM Type 2 Sensitive Species identified as occurring within the USFO that have suitable habitat present within the project area. These species include two amphibians, ten birds, and eleven mammals (see Appendix F). Western boreal toad (*Anaxyrus boreas*) and northern leopard frog (*Lithobates pipiens*) occur in stream channels, ponds, and along shorelines. The bird species analyzed for the proposed project are limited to those that occupy or occur within aspen and coniferous forest habitats. Nine of the mammalian species that occur in the project area are bat and myotis species. These species use caves, rock outcrops, mines, riparian areas, and sagebrush steppe habitats.

Amphibians: There are no BLM Type 1 amphibian species identified as occurring in the USFO. Type 2 amphibian species include western boreal toad and northern leopard frog. Suitable amphibian habitat contains breeding sites (ponds, lakes, oxbows, streams, flooded meadows, etc.) and nearby summer upland sites (forests, sagebrush steppe, meadows) (Keinath and McGee 2005). Boreal toads over-winter in sites such as beaver dams, root channels, underground cavities under rocks or trees, banks, squirrel middens, rodent burrows, crevices in dried aquatic areas, and muskrat tunnels. Northern leopard frogs use a mosaic of habitats varying dependent on life stages. Generally separate sites are used for breeding and overwintering, but this may occur in the same pond in some cases. There are wetland habitats within the bounds of the project area associated with perennial and intermittent waterways that may contain suitable breeding habitat for boreal toads and northern leopard frogs. The currently known/documented toad breeding sites in Island Park are associated with human-made habitats (gravel quarries, reservoirs, roadside ponds). There are no aquatic human-made habitats within the treatment areas.

Birds: Greater sage-grouse is identified as a BLM Type 2 Species. Sage-grouse are sagebrush-obligates, using sagebrush for food and cover throughout the year. Sage-grouse move from summer areas to wintering areas from late August to December, with peak migration in October. Winter habitat is in areas dominated by Wyoming big sagebrush (Connelly et al. 2000). On September 22, 2015 the USFWS concluded in its findings that the greater sage-grouse did not warrant listing under the Endangered Species Act (ESA). Habitat loss from wildfire, invasive plants, energy development, urbanization, agricultural conversion, and infrastructure development was determined to be the primary threat. In addition, the Service determined that the public land agencies (i.e., BLM and USFS) had inadequate regulatory mechanisms in the federal land management plans for sage-grouse conservation. The BLM and contributing agencies have developed the *Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, Utah*, (September 2015) which will be used to manage projects in relationship to greater sage-grouse habitat impacts. Since there are no treatments proposed in montane sagebrush steppe habitat within the project area, the project is not likely to affect greater sage-grouse or its habitat.

BLM Type 2 bird species analyzed for potential impacts were limited to those species with suitable habitat present in the project area. These species have been divided into raptors and upland game birds and other passerines (Table 8).

Table 9. Bird Species Considered in the Analysis.

Raptors	Upland game birds and passerines
Bald eagle Flammulated owl Golden eagle Northern goshawk	Black throated sparrow Cassin's finch Columbia sharp-tailed grouse Lewis's woodpecker Olive-sided flycatcher Pinyon jay Greater sage-grouse

Many of these species occur within 5 miles of the proposed treatment units. Appendix E contains a map displaying known occurrence of individuals within a 5 mile boundary around the project area. Because the treatments being proposed would not occur in sagebrush habitat, sagebrush obligate species or those that use sagebrush as a primary habitat were not analyzed. Raptor species likely use forested habitats within the project area for foraging, roosting, and in some cases nesting. Raptor nest surveys would be conducted prior to implementation and buffers would be applied if occupied nests are discovered to reduce impacts to nesting birds (See Appendix G for seasonal restrictions and buffers). The upland game birds and other passerines use forested habitats for foraging and nesting areas. Many of these species are migratory species which return to Southeastern Idaho for breeding and brood rearing.

Mammals: There are two BLM Type 1 special status mammal species identified as occurring in the project area: Canada lynx (Threatened) and grizzly bear (Threatened).

As part of the Interagency Lynx Biology Team, the BLM is presently re-designating lynx analysis units (LAUs) and lynx linkage habitat and completing an associated EIS. On June 6, 2012, the federal judge of the District Court of Idaho ruled that an EIS needed to be completed for the 2005 LAU map. The previous LAU map of 2001 no longer represents the best available science because it is based upon outdated vegetation layers. Thus, lynx habitat, as described here, is determined using the definition in the Northern

Rockies Lynx Management Direction (USDA 2007). In August 2013 the Interagency Lynx Biology Team published the "*Canada Lynx Conservation Assessment and Strategy*" (ILBT 2013).

Primary lynx habitat consists of the subalpine fir habitat type, even if the dominant cover is Douglas-fir or lodgepole pine (USDA 2007). However, some subalpine fir habitat types are not considered primary lynx vegetation because they are a lodgepole pine climax seral stage; these are subalpine fir vegetation types with a grouse whortleberry or a pinegrass understory. Secondary lynx habitat includes other cool, moist habitat types of Douglas-fir, when intermingled with and immediately adjacent to primary habitat. Dry forest habitat types of Douglas-fir or lodgepole pine do not appear to be associated with lynx and so are not included as lynx habitat (USDA 2007).

Preferred lynx habitats provide denning and foraging for lynx. The project area is in a secondary lynx area. Secondary lynx areas are defined by sporadic current and historic records of lynx, overall low relative abundance, and no documentation of reproduction. Secondary lynx areas are hypothesized to be important for dispersal of lynx or provide habitat until the animal(s) return to core areas. There is no evidence that lynx occupy the project area based on available information from the Idaho Wildlife Information System database of documented occurrences.

The grizzly bear was designated as threatened under the ESA in the conterminous United States on July 28, 1975. In 2007, the USFWS de-listed the Yellowstone Distinct Population Segment of grizzly bears because the population had met all recovery plan goals. However, in 2009, the Federal District Court in Missoula re-listed the Yellowstone grizzly bear by court order because the decline of whitebark pine stands may be a threat to the grizzly bear in the Yellowstone Ecosystem. Grizzly bears in the Greater Yellowstone Ecosystem emerge from dens from early February through early May, with males emerging before females (Haroldson et al. 2002). Upon emergence, grizzly bears seek out low elevation meadows, riparian areas, south-facing avalanche chutes, and ungulate winter range. During summer, bears use higher elevation habitats. In the fall, habitat use is more variable and occurs in both low and high elevation areas (USFWS 1993). Overall, grizzly bears are opportunistic omnivores and utilize many different habitat types. However, grizzly bear habitat is also defined by human activities. Dens are located on steep slopes, at high elevations (ICST 2007) and are occupied by late September to early December. Duration of denning is greater for females than males (Haroldson et al. 2002). In the Island Park area, grizzly bears den primarily in the Centennial and Henry's Lake Mountains (Landenburger et al. 2015).

There are 11 BLM Type 2 special status mammal species that have been identified as potentially occurring in the project area. Nine of the Type 2 sensitive mammal species are bats and myotis. These species roost and hibernate primarily in caves, mines, rock outcroppings, and old buildings and structures. Individuals forage in open areas around riparian corridors, wetlands, and along the fringes of sagebrush steppe habitats. They are also known to roost under thick bark of trees when available.

The fisher and gray wolf are the other two Type 2 sensitive mammal species. Fishers are strongly associated with mature forest (late-successional coniferous forest in the Rocky Mountains) with a high canopy closure, understory vegetation, and large-diameter downed woody debris; often near riparian areas (Powell and Zielinski 1994). The project area is primarily immature lodgepole pine and Douglas-fir forest that does not provide good habitat for fisher.

Gray wolves tend to use a variety of habitat types including sagebrush steppe, coniferous forests, aspen stands, and riparian areas. All of these habitat types occur within the project area. The most recent annual report from the IDFG documents a minimum of 770 wolves, 104 packs, 55 reproductive packs (IDFG&NPT 2014). There are two active pack territories (Fogg Butte pack and Bishop Mountain pack) present within the boundaries of the project area as well as the historic territory of the Henry's Lake pack that has been terminated. These packs are located within the Island Park Wolf Management Zone. In 2014 the Fogg Butte pack was determined to have a minimum of 10 members, and there was no data collected for the Bishop Mountain pack (IDFG&NPT 2014).

Migratory Birds

The project area is comprised of a variety of vegetation types that provide habitat for numerous bird species. Some of the bird species with the potential to occur in the project area are migratory birds, including songbirds and birds of prey, which spend at least part of the year within the general area. Migratory birds are protected under the 1918 Migratory Bird Treaty Act (16 USC 703), as well as the 2000 Neotropical Migratory Bird Conservation Act (16 USC Chapter 80). The Migratory Bird Treaty Act prohibits the harm or taking of any migratory birds, their parts, nests, or eggs. The project area provides nesting, brooding, and foraging habitat for migratory birds that breed in North America but migrate to Mexico, Central America, or South America for the winter. The migratory bird breeding season is from April or May to August 15. Peak migration periods occur in May and then again from September through early October. Should treatment implementation occur during the migratory bird nesting season, nest surveys would be conducted prior to implementation to reduce impacts to nesting birds. Migratory bird species that breed in the general vicinity of the project area include grebes, loons, geese, ducks, swans, terns, herons, rails, raptors, shorebirds, doves, hummingbirds, swallows, swifts, woodpeckers, jays, flycatchers, and songbirds (USFS 1997).

Environmental Consequences

Alternative A (Proposed Action)

General Wildlife

Implementation of the Proposed Action would occur in habitats used by general wildlife species that are present in the project area and would result in both short and long-term effects on wildlife. The impact scale for effects would be small. Although short-term effects can be detrimental to wildlife (e.g., temporary loss of habitat), the long-term effects of treatments would be beneficial to ecosystem health and wildlife overall.

In the short-term, the removal of conifer cover may temporarily displace wildlife; however, sufficient cover would remain in adjacent untreated areas. The Proposed Action could result in the displacement of wildlife residing within or near the treatment areas due to equipment noise and general human presence. This disturbance could cause displacement and modified behavior during project implementation. However, potential disturbance would be limited to the portion of the project area being treated at a particular time for the duration of those activities. In the long-term, successful treatments in the project area's various cover types would promote more natural fire regimes leading to restoration of habitats with higher values for wildlife. Effects would include an improvement in food and cover for birds and small mammals by increasing shrubs and grasses, and improving seed production due to an increase in resources such as light.

Big game species may be affected by treatment because preferred hiding and thermal cover may be reduced in treated timber stands and aspen. The Proposed Action would cause a minor decline in thermal and security cover for deer, elk, and moose. The thinning of trees would open the canopy within the treatment units, removing security area for big game species, and disturbing designated critical elk summer range. However there should be an increase in the health and amount of big game forage because of increased moisture and light reaching the understory. Treatments in aspen/conifer would permit the rejuvenation of the aspen stands that are essential for big game fawning areas and contribute to the biodiversity of forests.

Overall, the proposed treatments would reduce the probability of a large scale wildland fire occurring within the project area. Treatments would reduce fuel loads and more fire resilient stands would remain. Therefore, treatments would decrease the likelihood of the loss of existing habitat and those species that

rely on this type of habitat during their life cycle. The proposed vegetation treatments would result in long-term beneficial effects to wildlife habitat by reducing the likelihood of stand replacing fire events or the loss of existing habitat.

Special Status Species (Threatened, Endangered, and Sensitive Animals)

BLM Type 1 Sensitive Species

Treatments associated with the Proposed Action would alter habitats suitable for BLM Type 1 (Threatened) sensitive species. The project area is not in Northern Rockies Lynx Management Direction lynx habitat or a designated LAU; rather, it is in a lynx linkage area. Maintenance of habitat connectivity and a lack of lynx movement impediments are paramount in lynx linkage areas (USFWS 2005). This project, which includes vegetation management activities, would not remove habitat connectivity or create lynx movement impediments, even though security cover would be reduced in designated thinning areas and WUI treatment areas. All of the conservation measures identified in the 2013 Canada Lynx Conservation Assessment and Strategy which apply to the Proposed Action have been addressed in the project planning to maintain habitat characteristics even though there has been no documented occurrence of individuals within 5 miles of the project area in the last 18 years. It is determined that this project would have “no effect” to Canada lynx, based on the absence of individuals, and the proposed design criteria intended to protect lynx habitat.

Suitable habitat that is known to be occupied by grizzly bears is present within the project area. Implementation of this alternative would alter suitable habitat for grizzly bears by reducing security habitat in treatment areas. Security habitat would be reduced by opening the understory and canopy during thinning and harvest activities. Disturbance or displacement of grizzly bears has the potential to occur during treatments. High quality grizzly bear habitats occur to the south, north, and east of the project area. Degradation, fragmentation, or loss of grizzly bear habitat is not expected because the project area is primarily adjacent to open roads and developed areas and does not occur in any important grizzly bear habitats, such as whitebark pine forests, riparian areas, or wetlands. Thus, it is determined that project activities “may affect, but not likely to adversely affect” grizzly bears.

BLM Type 2 Sensitive Species

Amphibians: Suitable habitat for the two BLM Type 2 sensitive amphibian species occurs within the project area. There have been no sightings or documented occurrences of either of these species within the project area. The closest documented occurrence of western boreal toad is along the banks of the Island Park Reservoir and along Sheridan Creek northeast of the project area. There have been two documented occurrences of northern leopard frog east of the treatment areas. All of the known occurrences of BLM Type 2 sensitive amphibian species are outside of the proposed treatment areas. Design criteria would be implemented as part of the Proposed Action to lessen or prevent impacts to amphibian habitats (i.e., buffers around riparian areas and wetlands). Therefore, the Proposed Action would not adversely impact the two special status amphibian species with potential to occur in the project area.

Birds: Treatments associated with the Proposed Action would result in the loss of potential roosting and nesting habitat for raptors, songbirds and other passerines. Design criteria would be implemented as part of the Proposed Action to reduce impacts to bird species. For example, raptor nest surveys would be conducted prior to treatment to determine occupancy. If a nest is determined to be occupied, a species specific buffer would be applied to protect the species (see Appendix G). Unoccupied nest trees would be retained unless they pose a public health and safety concern. Limiting the dates of treatment implementation would reduce the potential for impacts to bird species that use habitats in the project area

for nesting and brood rearing. It is anticipated that the Proposed Action would have no impact on BLM Type 2 sensitive bird species which would cause them to trend toward federal listing. Many of the sensitive passerine and song birds nest and forage in sagebrush steppe habitats. Treatments would not occur in sagebrush steppe habitat under the Proposed Action and therefore these species would not be impacted. Since there are no treatments proposed in sagebrush steppe habitat within the project area, the project is not likely to affect greater sage-grouse or its habitat.

Mammals: The BLM Type 2 sensitive mammal species that have the potential to occur in the project area are mostly bats and myotis species. The project area does not contain any known cave habitat or mines. There are areas of rock out-croppings and riparian areas that may be used for roosting and foraging. Activities associated with the treatments in the Proposed Action would occur during daylight hours, outside of normal foraging periods for these species. Implementation of design criteria that includes a 100-foot buffer around perennial streams and a 50-foot buffer around intermittent streams would maintain foraging habitats for these species.

Removal of trees associated with all of the treatments under the Proposed Action would reduce security habitat potentially used by gray wolf and fisher. The WUI areas proposed for treatment are in close proximity to human developments. The level of human presence in these areas would make those areas unsuitable for wolves and fishers. Opening of the understory associated with treatments would remove security habitat for wolves and fishers. The loss of security habitat may cause individuals to avoid the area; however, it would not result in the loss of individuals or cause the species to trend toward federal listing under the ESA because of the large amount of suitable habitat in the areas directly adjacent to the proposed treatments. Therefore, the proposed project may impact individual wolves and fishers by causing them to avoid the project area due to loss of secure habitat but it would not cause the species to trend toward federal listing.

Migratory Birds

The Proposed Action could result in the displacement of migratory birds within or near the treatment area due to equipment noise and general human presence. The disturbance could cause displacement and modified behavior during project implementation. Potential disturbance would be limited lasting for the duration of project activities within the portion of the project area being treated. The actions could affect small numbers of birds but would not be expected to have population-level effects. Treatments associated with the Proposed Action would result in the loss of potential roosting and nesting habitat for raptors, songbirds and other passerines that are migratory species. Design criteria would be implemented to reduce impact to these species. Limiting the dates of treatment implementation would reduce the potential for impacts to migratory bird species that use habitats in the project area for nesting and brood rearing. Although short-term effects can be detrimental (e.g., temporary loss of habitat), the long-term effects of treatments would have an overall beneficial effect on ecosystem health and habitat.

Many of the migratory bird species that have the potential to occur within 2 miles of treatment areas occur in sagebrush steppe and open water habitats. Sagebrush steppe habitat is used for nesting and forage and individuals may make periodic use of adjacent forested and riparian areas. The Proposed Action would not impact sagebrush steppe habitat and therefore these species would not be impacted.

Alternative B (WUI Shaded Fuel Breaks)

General Wildlife

Impacts to general wildlife species from Alternative B would be similar to those described above for the Proposed Action, although 1,944 fewer acres would be treated. Treatments would only occur in portions of three of the treatment units – W.E. Farms, Yale Road, and Eagle Ridge – which are all in close proximity to developed private property. The reduction in the amount of area disturbed and the fact that

the proposed disturbances associated with Alternative B would be located near developed private property would reduce the potential for impacts to general wildlife. There is less potential for impact to critical elk summer range under this alternative because fewer acres would be treated. This alternative would still have long-term beneficial effects to wildlife habitat by reducing the likelihood of stand replacing fire events or the loss of existing habitat within the project area, but not to the same degree as the Proposed Action.

Special Status Species (Threatened, Endangered, and Sensitive Animals)

BLM Type 1 Sensitive Species

Impacts to BLM Type 1 Sensitive Species from Alternative B would be similar to those described above for the Proposed Action, but Alternative B would treat 1,944 fewer acres than Alternative A. Treatments would only occur in portions of three of the treatment units – W.E. Farms, Yale Road, and Eagle Ridge – which are all in close proximity to developed private property. This alternative would not remove habitat connectivity or create lynx movement impediments, although security cover would be reduced in the WUI treatment areas. All of the conservation measures identified in the 2013 *Canada Lynx Conservation Assessment and Strategy* which apply to the Proposed Action would also be implemented under this alternative. It is determined that this alternative would have "no effect" to Canada lynx.

The treatment units that would be treated under Alternative B contain only marginal habitat for grizzly bear due to the proximity to developed private property. Implementation of this alternative would alter this habitat for grizzly bears in the WUI treatment areas by further reducing security habitat. Security would be reduced by opening the understory and canopy during thinning and harvest activities. Although grizzly bears could be disturbed or displaced following implementation of Alternative B, high quality grizzly bear habitats occur to the south, north and east of the project area. Thus, it is determined that project activities "may affect, but not likely to adversely affect" grizzly bears.

BLM Type 2 Sensitive Species

Amphibians: Impacts to BLM Type 2 Sensitive amphibians from Alternative B would be similar to those described above for the Proposed Action, but would treat 1,944 fewer acres. Treatments would only occur in portions of three of the treatment units – W.E. Farms, Yale Road, and Eagle Ridge – which are all in close proximity to developed private property. Design criteria implemented under Alternative B would be the same as those described for the Proposed Action. Therefore, Alternative B would not adversely impact the two special status amphibian species with potential to occur in the project area.

Birds: Impacts to BLM Type 2 Sensitive birds from Alternative B would be similar to those described above for the Proposed Action, but there would be fewer impacts because fewer acres would be treated. It is anticipated that Alternative B would have no impact on BLM Type 2 sensitive bird species which would cause them to trend toward federal listing. Many of the sensitive passerine and song birds nest and forage in sagebrush steppe habitats. Treatments would not occur in sagebrush steppe habitat under Alternative B; therefore, these species would not be impacted. Since there are no treatments or actions proposed in sagebrush steppe habitat within or near the project area, project activities would not effect greater sage-grouse.

Mammals: Impacts to BLM Type 2 Sensitive mammals from Alternative B would be similar to those described above for the Proposed Action, but because 1,944 fewer acres would be treated there would be a decrease in potential impacts to the mammals with potential to occur in the project area. The WUI areas proposed for treatment are in close proximity to human developments, making those areas unsuitable for wolves and fishers. The loss of security habitat from WUI treatments would cause individuals to avoid the area; however, it would not cause the species to trend toward federal listing under the ESA.

Migratory Birds

Impacts to migratory birds from Alternative B would be similar to those described above for the Proposed Action, but 1,944 fewer acres would be treated thereby reducing potential impacts to the migratory birds with potential to occur in the project area. Treatments associated with Alternative B would result in the loss of potential roosting and nesting habitat for raptors, songbirds, and other passerines that are migratory species in the WUI treatment units and temporary disturbance would occur during project implementation. The same design criteria described for the Proposed Action would be implemented to reduce impacts to these species. Alternative B would not impact sagebrush steppe habitat; therefore species that use this habitat would not be impacted.

Alternative C (Hazardous Fuels Reduction)

General Wildlife

Impacts to general wildlife species from Alternative C would be similar to those described above for the Proposed Action. Pruning all Douglas-fir and lodgepole pine trees less than 12 inch dbh to break up fuel continuity and reduce the potential for ground fires to transition to the forest crown would remove security areas for big game species and disturb designated critical elk summer range. Wildlife species that occur in the project area would likely avoid treatment areas during implementation of treatment activities due to increased noise and human activity in these areas. Individuals would likely return following completion of treatments. Leaving some thinned material on site as slash would provide cover and security habitat for small wildlife species that occur in the area. Although this alternative would have short-term impacts, there would be long-term beneficial effects to wildlife habitat by reducing the likelihood of stand replacing fire events and the associated loss of existing habitat within the project area.

Special Status Species (Threatened, Endangered, and Sensitive Animals)

BLM Type 1 Sensitive Species:

Treatments associated with Alternative C would result in similar impacts to BLM Type 1 Sensitive Species as those described above for the Proposed Action. These include actions which would alter habitats suitable for BLM Type 1 (threatened) sensitive species. Similar to the Proposed Action, this alternative would not remove habitat connectivity or create lynx movement impediments, even though security cover would be reduced in designated thinning areas. All of the conservation measures identified in the 2013 *Canada Lynx Conservation Assessment and Strategy* which apply to the Proposed Action would be implemented under this alternative as well to maintain habitat characteristics. It has been determined that this project would have “no effect” to Canada lynx.

Implementation of this alternative would alter habitat for grizzly bears in the treatment areas by reducing security habitat. Security would be reduced by opening the understory and canopy during thinning and harvest activities. Although grizzly bears could be disturbed or displaced following implementation of Alternative C, high quality grizzly bear habitats occur to the south, north, and east of the project area. Thus, it has been determined that project activities “may affect, but not likely to adversely affect” grizzly bears.

BLM Type 2 Sensitive Species

<u>Amphibians:</u> Impacts to BLM Type 2 Sensitive amphibians from Alternative C would be similar to those described above for the Proposed Action. Design criteria implemented under Alternative C would be the same as those described for the Proposed Action. Therefore, Alternative C would not adversely impact the two special status amphibian species with potential to occur in the project area.

Birds: Impacts to BLM Type 2 Sensitive birds from Alternative C would be similar to those described above for the Proposed Action. It is anticipated that Alternative C would have no impact on BLM Type 2 sensitive bird species which would cause them to trend toward federal listing. Many of the sensitive passerine and songbirds use sagebrush steppe habitats for nesting and foraging. Treatments would not occur in sagebrush steppe habitat under Alternative C and therefore these species would not be impacted. Since there are no treatments or actions proposed in sagebrush steppe habitat within or near the project area, the project would not affect greater sage-grouse.

Mammals: Impacts to BLM Type 2 Sensitive mammals from Alternative C would be similar to those described above for the Proposed Action. None of the activities would cause the species to trend toward federal listing under the ESA.

Migratory Birds

Impacts to migratory birds from Alternative C would be similar to those described above for the Proposed Action. Treatments associated with Alternative C would result in the loss of potential roosting and nesting habitat for raptors, songbirds, and other passerines that are migratory species in the treatment units and temporary disturbance would occur during project implementation. The same design criteria described for the Proposed Action would be implemented to reduce impacts to these species. Alternative C would not impact sagebrush steppe habitat; therefore migratory birds that use this habitat would not be impacted.

Alternative D (No Action)

General Wildlife

Implementation of Alternative D would not result in any direct impacts to wildlife, because no proposed activities would occur. There would be no short-term displacement of wildlife or reduction in habitat due to project activities nor would there be long-term benefits because the habitat would not be improved. However, the potential for loss of wildlife habitat due to wildland fire would remain. If a large wildland fire were to occur, it could result in adverse impacts to wildlife through the loss of habitat or mortality of individuals.

Special Status Species (Threatened, Endangered, and Sensitive Animals)

Impacts to special status species would be similar to those described for general wildlife. No thinning, harvesting, or habitat altering activities would occur and habitat for BLM Type 1 and Type 2 special status species would remain in the project area. However, the risk of a large, stand-replacing fire would remain; a large stand replacing fire would adversely affect habitat for special status species.

Migratory Birds

Under this alternative, no proposed activities would occur. There would be no short-term displacement of migratory birds or changes to habitat due to project activities and there would be no long-term benefits either because the habitat would not be improved. Implementation of Alternative D would not result in the direct loss or impact to nesting or foraging habitat for migratory bird species which may seasonally use the project area. Habitat changes for migratory birds would continue to occur due to natural succession and continual chances of human caused or natural caused wildland fire starts. Some bird species that favor dense forest conditions may benefit from the No Action alternative because these conditions would continue to build within the project area. A large, high severity wildland fire could remove forest habitat and result in the loss of habitat within the project area.

CHAPTER 4 – CUMULATIVE IMPACTS

CEQ regulations for implementing NEPA require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant actions, taking place over a period of time.

This section of the document discloses the incremental impacts that Alternatives A, B, C, and D are likely to have when considered in the context of impacts associated with past, present, and reasonably foreseeable future actions that have occurred, or are likely to occur, in the area. The Cumulative Impact Assessment Area (CIAA) for this analysis includes the Island Park, Henry's Lake, Shotgun Valley, and the upper Beaver/Camas Creek areas. The CIAA consists of approximately 905,000 acres located in portions of Clark and Fremont Counties, Idaho (Table 9). The geographical boundary for the cumulative impact analysis is shown on Figure 7.This landscape unit was selected as the unit of analysis based on 4th level hydrologic unit boundaries within the Upper Snake Field Office area, then modified using major highways and ownership boundaries to create a continuous unit of associated land uses and plant communities. In addition to the site specific analysis included below, a comprehensive cumulative effects analysis can be found in Section 5.1 of the Idaho and Southwest Montana Greater Sage-Grouse Approved Resource Management Plan Amendment (September 2015).

Table 10. Surface Management Status within the Upper Henry's CIAA.

Ownership	Acres
U.S. Forest Service	622,850
Private Property	139,330
Idaho State Lands	53,570
U.S. Park Service (Yellowstone National Park)	35,630
Bureau of Land Management	31,750
Idaho State Park Lands (Harriman State Park)	11,820
Other (Historic Waters)	5,650
Bureau of Reclamation	4,380
Idaho Fish and Game Lands	30
Total	905,010

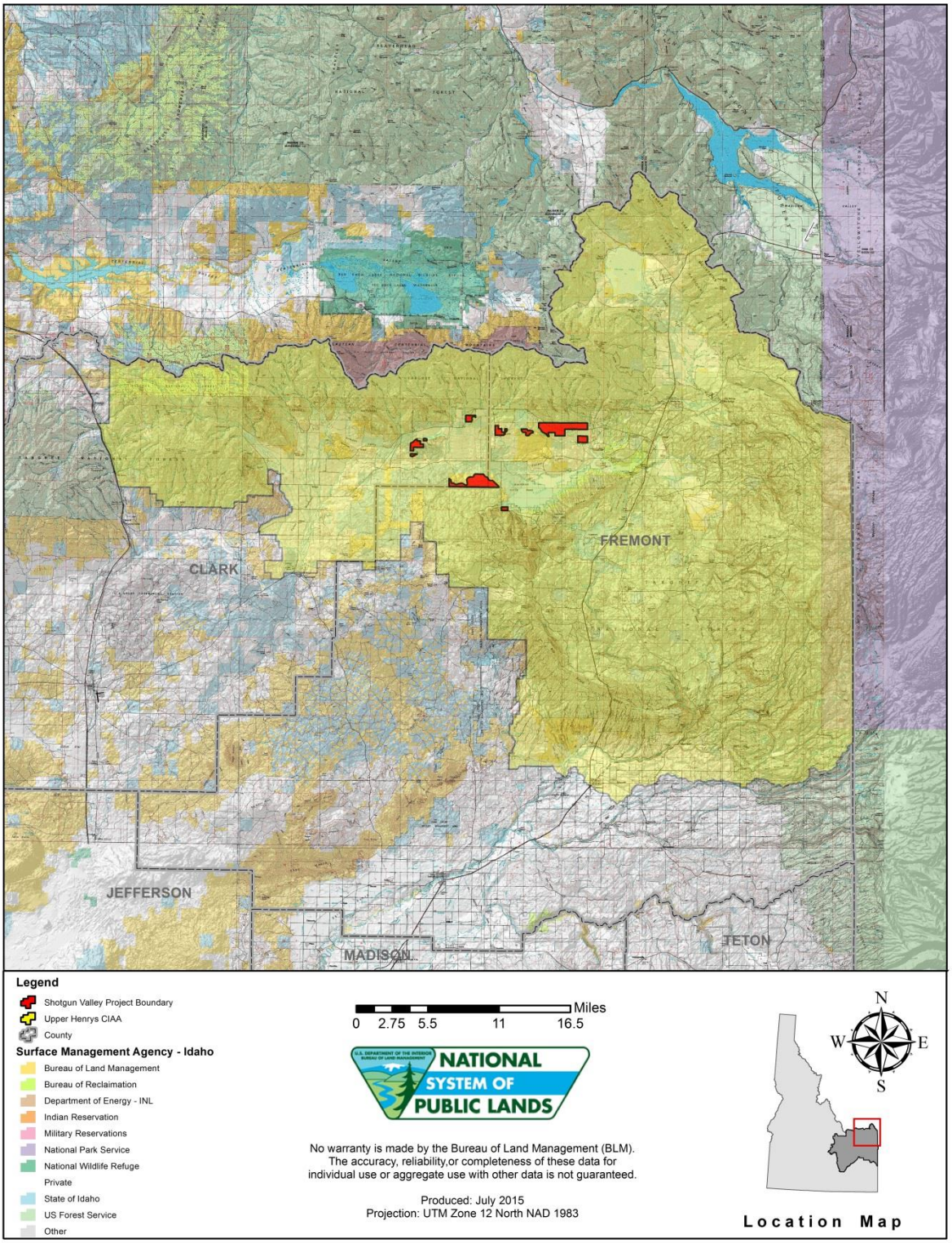


Figure 7. Upper Henry's Cumulative Impact Assessment Area.

Past and Present Actions

Past and present actions with the potential to contribute to cumulative impacts to the resources considered in this analysis include fuels removal and timber cutting, invasive species treatment, wildland fire, continued residential development, livestock grazing, and recreational use. These activities are discussed briefly in the following paragraphs.

The CIAA encompasses numerous other vegetation treatment projects that have been conducted by BLM, USFS, and the State of Idaho Department of Lands. Treatments have been similar to what is proposed in this analysis. Over the past decade, approximately 84,500 acres of USFS lands within the assessment area boundary have been treated using a variety of methods including: precommercial thinning; tree encroachment control; fuel breaks; wildland fire use; range cover manipulation; reforestation; and piling and burning of fuels. Over that same time period, a number of vegetation treatments have occurred on approximately 7,660 acres of BLM lands including: conifer control and aspen restoration; thinning and timber sales; and WUI and hazard fuel reduction. Vegetation treatments have also been conducted on approximately 45,000 acres of a combination of BLM, State, and private lands. These treatments include: invasive control; chemical treatment with seeding and drilling; thinning; conifer control and aspen restoration; and WUI and hazard fuel reduction. Timber sales have also occurred on approximately 2,780 acres of State lands. Within the CIAA boundary, approximately 15 percent of the acreage has had some type of treatment in recent years. Other disturbances on public lands include right-of-ways for power line corridors, gas lines, roads, and railroad tracks. Communication sites, gravel pits, fences, and other developments represent additional disturbances.

There have been numerous fires within the assessment area boundary; however, most have been less than 100 acres (Fire Sciences Lab 2013). Notable large fires that have occurred in the assessment area include the Willow Fire that burned in the Centennial Mountains north of Island Park Reservoir in 2008. This fire was managed as a wildland use fire for resource benefit and burned over 5,600 acres. The North Fork Fire is another fire of notable size that burned within the assessment boundary. This fire was started in 1988 and burned over 422,000 acres, mostly in Yellowstone National Park, which is adjacent to the assessment area boundary (Fire Sciences Lab 2013).

Weed species are treated within portions of the assessment area by Clark and Fremont Counties and the BLM in attempts to control weed populations and reduce spread within and adjacent to public land. These entities in addition to other agencies have conducted weed treatments within the assessment area boundaries and these activities will continue into the foreseeable future. Any noxious weeds discovered during treatment or during post-treatment monitoring would be treated consistent with the Upper Snake-Pocatello Integrated Weed Control Program Programmatic Environmental Assessment (DOI-BLM 2009a).

Livestock grazing occurs on both private and public land within the assessment area. Within the project area boundaries there are nine grazing allotments; additional allotments occur on BLM land, State land, and USFS land in the assessment area boundary. This use has occurred for decades and is expected to continue into the future with minor adjustments made to use depending on resource conditions in the allotments. Watering troughs, fences, and trails are common disturbances within grazing allotments.

Recreational opportunities in the project area are dispersed and seasonal and include OHV use, hiking, horseback riding, hunting, camping, sightseeing, and picnicking. Similar opportunities are available throughout the assessment area. Of these uses, OHV use has the greatest potential to contribute to cumulative effects to resources because of the potential ground disturbance created by this activity.

Development is not occurring in the project area; however, development has occurred in the interface area adjacent to the project area and other public lands as well as throughout portions of the assessment area. The assessment area boundary is comprised of approximately 16 percent private land; each year more

residential property is being developed in and around wildland areas. Buildings in this interface area can be in danger from wildland fires in areas where fuel has accumulated. The Island Park Sustainable Fire Community is a collaborative group of individuals from federal and state agencies, city and county representatives, local homeowners, interest groups, and industry representatives that are working together to educate private homeowners about defensible space and FireWise principles to reduce the potential for wildland fire to spread to private lands (Fire Sciences Lab 2013).

Reasonably Foreseeable Future Actions

Most of the past, present, and ongoing actions discussed above are expected to persist and remain steady throughout the time frame considered in this analysis with relatively little change in intensity expected. Continued development within the assessment area in the future would result in a continuation of effects similar to those that have resulted from past activities. These effects include soil and vegetation disturbance and habitat loss and fragmentation. Existing and new structures built in the WUI would continue to be susceptible to wildland fire events. Fire suppression would continue as described in the FMDA and firefighter safety and the potential for resource damage would continue to be a concern. Normal fire rehabilitations activities would be conducted if a wildland fire occurs in the area. No other specific plans are known at the time of this assessment.

Cumulative Impacts Summary

Effects from the treatments under the Proposed Action alternative and Alternative C, Hazardous Fuels Reduction Treatments, would affect approximately 0.3 percent of the CIAA. Effects from Alternative B, WUI Shaded Fuel Break Treatments, would affect approximately 0.09 percent of the CIAA. The No Action alternative would, in most cases, indirectly contribute to adverse cumulative impacts because fuels would continue to accumulate, increasing the potential for a larger and more destructive wildland fire. While it is difficult to predict the actual results and timing of such a wildland fire event, it is likely that such an event would result in considerable long-term changes to the resources in the project area. Presumably, wildland fires would be larger and burn hotter under the No Action alternative than the action alternatives. Therefore, the No Action alternative would result in a relatively higher increase in adverse effects from wildland fire as compared to the action alternatives. Table 10 summarizes the effects of the alternatives in combination with past, present, and reasonably foreseeable future actions.

Table 11. Cumulative Impacts of the Alternatives.

Resource	Alternative A Proposed Action	Alternative B WUI Shaded Fuel Breaks	Alternative C Hazardous Fuels Reduction	Alternative D No Action
Air Quality	Agricultural activity, wildland fire, vegetation treatment, prescribed burning, OHV use, and construction have the potential to affect air quality through soil disturbance, increased potential for fugitive dust, and/or smoke production. Most of these activities result in temporary localized effects that disperse once the activity is completed. The Proposed Action Alternative in combination with past, present, and reasonably foreseeable future actions would not	Cumulative impacts to air quality from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to air quality from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	Although the No Action alternative would not directly result in impacts to air quality, potential indirect effects of continued fuel buildup in the project area could indirectly affect air quality. Fuel buildup and stand mortality would continue, thus creating fuel conditions that increase the potential for a catastrophic wildland fire that would produce large amounts of smoke. Emissions from wildland fires are substantially higher than from prescribed burning. Air quality would be impacted for the duration of

Resource	Alternative A Proposed Action	Alternative B WUI Shaded Fuel Breaks	Alternative C Hazardous Fuels Reduction	Alternative D No Action
	result in noticeable changes to the current air quality conditions. Impacts would be temporary and localized, affecting approximately 0.3% of the assessment area.			the wildland fire and until smoke could disperse from the area. These impacts would combine with other activities that are occurring at the same time.
Cultural Resources	Past ground disturbing activities within the assessment area boundary have had the potential to affect cultural resources. BMPs similar to those proposed for this project are used in other state and federal projects, thereby minimizing potential impacts from these projects. The Proposed Action alternative in combination with past, present, and reasonably foreseeable future actions would not be expected to result in noticeable impacts to cultural resources because of implementation of BMPs.	Cumulative impacts to cultural resources from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. Implementation of BMPs would reduce potential effects.	Cumulative impacts to cultural resources from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. Implementation of BMPs would reduce potential effects.	Although the No Action alternative would not directly result in impacts to cultural resources, potential indirect effects of continued fuel building up in the project area could indirectly affect cultural resources. Without the fuels reduction activities there would be a greater chance of a large, severe wildland fire that could damage or destroy sites that may be eligible for the NRHP. Ground disturbing activities associated with other actions in the assessment area could also result in damage or destruction of cultural resources. Implementation of BMPs would reduce potential effects.
Economic and Social Values	The Proposed Action has the potential to contribute to the economic conditions of the area through an increase in availability of timber and forest products and the use of stewardship. Any impacts would be short-term and temporary and would not be expected to be noticeable in combination with other actions at the scale of the assessment.	Cumulative impacts to socioeconomics under Alternative B would be similar to those described for the Proposed Action. Although fewer acres would be treated and there would be less potential for use of timber and forest products, the effects would be similar at the scale of the assessment.	Cumulative impacts to socioeconomics under Alternative C would be similar to those described for the Proposed Action. Although there would be fewer products available for stewardship or timber sales, the effects would be similar at the scale of the assessment.	Although the No Action alternative would not result in direct impacts to socioeconomics, it would increase the risk of a larger, hotter wildland fire occurring in the project area. In turn this would increase potential fire suppression and rehabilitation expenditures. If the No Action alternative is selected, the potential for wildland fire and the costs that could be incurred due to suppression and rehabilitation treatments would all be higher.
Fisheries	Past and present ground-disturbing actions occurring in the assessment area have the potential to affect fisheries. The proposed treatments under Alternative A are not expected to impact general fish species that may occur in the project area because of 100 foot buffers on perennial streams and 50 foot buffers on intermittent streams that would reduce the potential for sedimentation of fish-bearing streams by filtering	Cumulative impacts to fisheries from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment in light of BMPs for water quality protection.	Cumulative impacts to fisheries from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment in light of BMPs for water quality protection.	Although the No Action alternative would not directly result in impacts to fisheries, potential indirect effects of continued fuel building up in the project area could indirectly affect this resource. The lack of fuels reduction in the project area could increase the risk of large and/ or severe wildland fire that would remove vegetation cover and indirectly degrade fisheries habitat through sedimentation, increased temperature levels, and loss

Resource	Alternative A Proposed Action	Alternative B WUI Shaded Fuel Breaks	Alternative C Hazardous Fuels Reduction	Alternative D No Action
	sediment before it reaches the stream. Therefore, the Proposed Action alternative in combination with past, present, and reasonably foreseeable future actions would not be expected to result in noticeable cumulative impacts to fisheries.			of biomass. These impacts would combine with other activities that are occurring at the same time, but are expected to be minor at the scale of the assessment area.
Forest Resources	Past and present activities such as vegetation treatments in other locations have occurred that have affected the forestry resource. Drought and disease have also affected this resource. Other actions occurring within the assessment boundary have the potential to contribute to cumulative effects to forest resources. Because the amount of forestry resources removed would be negligible in comparison to the amount that would remain, the impacts would not be noticeable at the scale of the assessment; approximately 0.3 percent of the assessment area could be affected under the Proposed Action.	Cumulative impacts to forest resources from Alternative B would be similar to the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to forest resources from Alternative C would be similar to the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	Although the No Action alternative would not directly result in impacts to forest resources, potential indirect effects of continued fuel building up in the project area could indirectly affect this resource. As timber stands age they become more susceptible to insects, disease, and fire, particularly in combination with drought. These trends would continue under this alternative thus creating fuel conditions that increase the potential for a catastrophic wildland fire that would affect a larger amount of forest resources than would be affected by the action alternatives.
Invasive, Non-native Species	Most of the actions identified above have affected vegetation through ground disturbance or direct effects to vegetation. These types of activities provide opportunities for establishment and spread of invasive species. The Proposed Action in combination with past, present, and reasonably foreseeable future actions have the potential to contribute to an increase in invasive species. Treatment of weeds and restoration of disturbed areas would help reduce the spread of invasive species. The Proposed Action in combination with past, present, and reasonably foreseeable future actions would not be expected to result in noticeable cumulative impacts to invasive, non-native	Cumulative impacts to invasive, non-native species from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to invasive, non-native species from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	The No Action alternative would not directly result in impacts to invasive species because no ground disturbance would occur. However, potential indirect effects of continued fuel building up in the project area could indirectly lead to an increase in invasive species. The increased risk of high intensity, large scale wildland fire under this alternative would indirectly increase the risk of noxious weed and invasive species proliferation, by exposing soils and thereby increasing susceptibility to infestation. Inventories and noxious/invasive weed treatment in the project area would continue under this alternative.

Resource	Alternative A Proposed Action	Alternative B WUI Shaded Fuel Breaks	Alternative C Hazardous Fuels Reduction	Alternative D No Action
	species.			
Recreation	Other actions occurring in the assessment area also have the potential to affect recreation resources. Impacts to this resource from the Proposed Action would be temporary and localized and would not be expected to contribute a noticeable amount to cumulative impacts. This alternative would affect 0.3% of the assessment area.	Cumulative impacts to recreation from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to recreation from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	Although the No Action alternative would not directly result in impacts to recreation, potential indirect effects of continued fuel building up in the project area could indirectly affect this resource. The absence of thinning and prescribed fire could contribute to an increased potential for more intense and severe wildland fires that could affect the recreation experience for a longer period of time. This would combine with other actions occurring in the assessment area that are affecting recreation.
Soil Resources	Most of the actions identified above have potentially affected soil resources through ground disturbance and increased potential for erosion. The accumulated impacts from Alternative A in combination with past, present, and reasonably foreseeable future actions are not likely to result in noticeable impacts given the small percentage of land that would be treated under this alternative (0.3%). In the long-term, fuel loads, fire severity, and fire size, would be reduced, which in turn, would reduce the long-term risk of soil erosion.	Cumulative impacts to soils from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to soils from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	The No Action alternative would not directly result in impacts to soils because no ground disturbance would occur. However, potential indirect effects of continued fuel building up in the project area could indirectly affect soils. A high severity wildland fire would affect soil productivity and increase soil erosion over existing levels by reducing large tracts of vegetative ground cover. This would combine with other actions occurring in the assessment area that are affecting soils.
Tribal Treaty Rights and Interests	Traditional resources located on unoccupied (public) lands have likely been impacted by many of the past and present actions discussed above, although the extent is not well-known. The Proposed Action would be beneficial to tribal treaty rights over the long-term; the cumulative effects from other actions would not be noticeable at the scale of the assessment. Consultation with the Tribes would continue in the future to ensure continuation of the Tribes' ability to exercise their treaty rights.	Cumulative impacts to tribal treaty rights from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to tribal treaty rights from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	This alternative would not directly affect tribal treaty rights. However, continued accumulation of fuels could lead to a large wildland fire. Loss of resources from wildland fire on BLM-administered public lands could affect the Tribes' ability to exercise treaty rights on unoccupied public lands and would be combined with other activities occurring in the assessment area that also may be impacting tribal treaty rights. The BLM would continue to protect, conserve, and manage tribal resources.
Vegetation	The past and present actions identified above	Cumulative impacts to vegetation from	Cumulative impacts to vegetation from	Under the No Action alternative no fuels

Resource	Alternative A Proposed Action	Alternative B WUI Shaded Fuel Breaks	Alternative C Hazardous Fuels Reduction	Alternative D No Action
	have affected vegetation indirectly through ground disturbance as well as through direct effects to vegetation. Effects of the Proposed Action in combination with past, present, and reasonably foreseeable future actions would result in an improvement in vegetative conditions in the long-term; fuel loads, fire severity, and fire size would be reduced, which in turn, would protect vegetation present. The impacts of the Proposed Action in combination with other actions would not result in noticeable effects to this resource at the scale of the assessment.	Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	management would occur. Fuel levels would continue to increase in the area. Disease and mortality in the dense conifer stands in the project area would continue in the absence of any action to reduce density and conifers would continue to encroach into aspen stands. Stand density would continue to increase, creating unnaturally high fuel loadings and increasing the risk of a broad scale, stand-replacing wildland fire. A high severity wildland fire would damage or kill more vegetation than a lower severity fire; therefore, more burned acres would require rehabilitation. This would combine with other actions occurring in the assessment area that are affecting vegetation.
Visual Resources	Most of the past and present actions identified above have potentially affected visual resources through changes to the existing condition. Effects of the Proposed Action in combination with past, present, and reasonably foreseeable future actions would contribute to changes to visuals resources. In the long-term, fuel reduction would decrease the chance for wildland fires that would negatively impact visual resources at a larger scale.	Cumulative impacts to visual resources from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to visual resources from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	No direct effects to visual resources would result from the No Action alternative. A possible indirect effect of this alternative would be the occurrence of a large, stand-replacing fire that could result in considerable long-term changes in the scenic environment. If a large, high intensity wildland fire occurred within the project area, the landscape character could be greatly altered with a loss of existing vegetative cover, potential soil scorching, and possible scars from ground disturbing fire suppression activities. This would create a larger scale contrast in the landscape than the proposed treatments and would contribute to cumulative effects from other actions occurring in the assessment area.
Water Quality	The past and present actions identified above have potentially affected water quality indirectly through ground disturbance. BMPs implemented with state and federal projects would have minimized impacts from these other activities. The accumulated impacts from Alternative A in	Cumulative impacts to water quality from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect	Cumulative impacts to water quality from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would	The No Action alternative would not have any direct impact on water quality because no ground-disturbing activities would take place beyond those that are already occurring. The No Action alternative would have potential indirect impacts to water quality because of the risk of a large and/or severe

Resource	Alternative A Proposed Action	Alternative B WUI Shaded Fuel Breaks	Alternative C Hazardous Fuels Reduction	Alternative D No Action
	combination with past, present, and reasonably foreseeable future actions are not likely to result in noticeable impacts given the small percentage of land that would be treated under this alternative (0.3%).	0.09% of the assessment area.	affect 0.3% of the assessment area.	wildland fire occurring in the area. Such a fire would initiate substantial erosion that could impact site productivity and water quality downstream of the project area. This would contribute to cumulative effects from other actions occurring in the assessment area.
Wetlands and Riparian Areas	Some of the past and present actions identified above have potentially indirectly affected wetlands and riparian zones; however, implementation of BMPs has likely minimized impacts to these resources. No treatments would be conducted within 100 feet of active streams or within 50 feet of intermittent/ ephemeral streams and tributaries. Therefore, only indirect effects to riparian areas and wetlands are anticipated from the Proposed Action. The accumulated impacts from Alternative A in combination with past, present, and reasonably foreseeable future actions are not likely to be noticeable given the small percentage of land that would be treated under this alternative (0.3%) and the fact that BMPs would be implemented to protect the resources.	Cumulative impacts to wetlands and riparian areas from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to wetlands and riparian areas from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	No fuels management would occur under the No Action alternative; therefore, there would be no direct impacts to wetlands and riparian areas. The No Action alternative would have potential indirect impacts to wetlands and riparian areas should a large and/or severe wildland fire occur in the area. In the absence of any action, conifer encroachment into aspen stands would continue. Replacement of aspen would have detrimental effects on the watershed attributes of aspen stands, including potential reductions in sustained stream flow and a decline in water quality due to accelerated erosion. These impacts would combine with effects from other activities that are occurring in the assessment area.
Wildlife Resources	Most of the past and present actions identified above have potentially affected wildlife through disturbance and/or habitat loss and fragmentation. In particular, development in the WUI has led to habitat loss and fragmentation. There would be an improvement in wildlife habitat in the project area in the long-term from the Proposed Action. The contribution to cumulative effects from other ongoing or foreseeable actions would not be expected to be noticeable at the scale of the assessment.	Cumulative impacts to wildlife from Alternative B would be essentially the same as the Proposed Action. Although fewer acres would be treated, the effects would be similar at the scale of the assessment. This alternative would affect 0.09% of the assessment area.	Cumulative impacts to wildlife from Alternative C would be essentially the same as the Proposed Action. Although treatments would be slightly different, the effects would be similar at the scale of the assessment. This alternative would affect 0.3% of the assessment area.	Implementation of Alternative D would not result in any direct impacts to wildlife. However, the potential for loss of wildlife habitat due to wildfire would remain. If a large wildland fire were to occur, it could result in adverse impacts to wildlife, through the loss of habitat or the mortality of individuals. This would contribute a minor amount to cumulative effects from other actions occurring in the assessment area.

CHAPTER 5 – CONSULTATION AND COORDINATION

The following were contacted during preparation of this EA (Table 12).

Table 12. Persons and Agencies Contacted.

Persons / Agency	Organization
Natural Resource Conservation Service	Federal Government
Idaho Department of Lands	State Government
U.S. Forest Service, Ashton-Island Park Ranger District	Federal Government
Idaho Conservation League	Non-governmental Organization
Idaho Department of Fish and Game	State Government
Greater Yellowstone Collation	Non-governmental Organization
Western Watersheds Project	Non-governmental Organization
Idaho State Dept. of Agriculture	State Government
Wildlands Defense	Non-governmental Organization
Chairman, Land Use Policy Committee, Shoshone-Bannock Tribes	Shoshone-Bannock Tribe
Clark County Commissioners / Clark Emergency Management	County Government
Fremont County Commissioners / Fremont Emergency Management	County Government
Jim Hagenbarth	Permittee
Natural Guardian	Permittee
Davis Lake Livestock	Permittee
Cottle Farms	Permittee
Table Butte Cattle Co.	Permittee
Sheridan Valley Grazing Association	Permittee
Thomas Brooks	Permittee
Trude Ranch, LLC	Permittee
Mitch Jacobs	Permittee

The following individuals assisted with preparation of this EA (Table 13).

Table 13. List of BLM Preparers.

Name	Title	Resources
Ben Dyer	*Fire Ecologist*	Project Co-lead; Vegetation; Air Quality; Tribal Treaty Rights
Channing Swan	*Forester*	Project Co-lead; Forest Resources
Devin Englestead	*Wildlife Biologist*	Wildlife; Threatened, Endangered and Sensitive Animal Species; Migratory Birds
Marissa Guenther	*Archaeologist*	Cultural Resources
Scott Minnie	*RMS/Weed Specialist*	Invasive, Non-native Species; Range
Brandy Janzen	*Soils Specialist*	Soils
Dan Kotansky	*Hydrologist/Fisheries*	Water Quality; Fisheries
Deena Teel	*Riparian Specialist*	Wetland and Riparian Zones
Monica Zimmerman	*Outdoor Recreation Planner*	Recreational Use; Visual Resources
Gloria Jakovac	*NEPA Planner*	NEPA Review

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APPENDIX A – FRCC METHODOLOGY

Fire Regime Condition Class (FRCC) is the classification of a project area (a landscape) into three categories based on the amount of departure from 1) the natural fire regime (historic wildland fire frequency, severity), and 2) the natural vegetation composition, structure, and pattern resulting from a natural fire regime (Hann and Bunnell 2001). The three fire regime condition classes are based on no or low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the reference conditions (Hann and Bunnell 2001; Hardy et al. 2001; Schmidt et al. 2002). Departure in the natural fire regime can result in changes to one (or more) of the following ecological components and processes such as vegetation characteristics (species composition, structural stage, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances, such as insect and disease mortality, grazing, and drought. Possible causes of this departure include (but are not limited to) fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, and introduced insects and disease (Schmidt et al. 2002). Both the departure from a natural fire regime and the resulting departure from the natural vegetation composition, structure, and pattern can be graphed (regime on the x-axis, vegetation on the y-axis), and an overall FRCC rating for each biophysical setting (BpS) within a landscape assigned.

General descriptions of each FRCC rating are as follows:

- FRCC I (0-33% departure) describes an area that is within the historical range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances. Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. Composition and structure of vegetation and fuels are similar to the natural (historical) regime.
- An FRCC II (34-66% departure) represents a moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances. Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe). Composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate.
- An FRCC III (67-100% departure) is defined as having high departure from the natural/historical fire regime – vegetation composition, structure, and fuels have high departure from the historical regime and predispose the system to high risk of loss of key ecosystem components. Wildland fires are highly uncharacteristic compared to the historical fire regime behaviors, severity, and patterns. Disturbance agents, native species habitats, and hydrologic functions are substantially outside the historical range of variability.

In order to determine departure and assign FRCC, reference condition characteristics are needed so that a comparison with current conditions can occur. As part of the national-scale LANDFIRE project (see http://www.LANDFIRE.gov) reference condition characteristics have been identified and descriptions developed for the western U.S., eastern U.S., and Alaska concerning vegetation-fuel class composition, fire frequency, and fire severity for BpS. Biophysical settings are the primary environmental settings used in determining a landscape's natural fire regime(s) and FRCC. These settings incorporate both classification (taxonomic) and map unit concepts. Ecosystems can be classified based on a single attribute—vegetation, soils, or geomorphology, for example—or they can be classified based on integrated attributes, such as ecological types (Winthers et al. 2004), ecological sites (USDA-NRCS 2003), or ecological systems (Comer et al. 2003). The taxonomic units of these classifications can be considered biophysical classes. When these classes are mapped in organized, repeating map units, they become biophysical units. These units are land delineations based on the geographic area, physical setting, and vegetation community that can occupy the setting. Physical characteristics include climate,

geology, geomorphology, and soils. Vegetation includes the area's native species and associated successional stages—determined according to our best understanding of the historical or natural range of variation, including disturbances. In addition to these attributes, each biophysical setting also features characteristic ecological processes of fire frequency and severity and therefore provides a cogent, robust foundation for determining fire regime and fire regime condition class.

The FRCC analysis completed used the procedures described in the national Interagency Fire Regime Condition Class Guidebook, Version 1.3.0 (http://www.frcc.gov June, 2008). For the purposes of this analysis the Shotgun Valley landscape was stratified into four biophysical settings regardless of land ownership (LANDFIRE 2007); 1) **Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland** (BpS #1810610), 2) **Middle Rocky Mountain Montane Douglas-fir Forest and Woodland** (BpS #2111660), 3) **Rocky Mountain Lodgepole Pine Forest** (BpS #1810500), **Inter-Mountain Basins Montane Sagebrush Steppe** (BpS #1811260).

The "current" vegetation composition, structure, and pattern was determined using one meter spatial resolution 2011 aerial photography, fuels and forestry inventory (FORVIS) and monitoring data collected during the summer of 2012 and 13, GIS, and additional field work to stratify the landscape into four Bps's and then further into associated successional classes. Fuels monitoring and inventory data can be found at the BLM USFO. These classes were identified on the aerial photography and digitized into GIS coverage. The acreage of each Bps class and percentage of the total Bps acreage for each class was calculated. These percentages were compared to the reference percentages identified for that Bps. Differences between current and reference was calculated and an FRCC rating was assigned.

Aspen-Mixed Conifer (BpS 1810610)		
Successional Stage	Reference%	Current%
Class A- Early Development 1 All Structures	10	20
Class B- Mid Development 1 Closed	35	10
Class C- Mid Development 2 Closed	25	10
Class D- Late Development 1 Open	20	30
Class E- Late Development 1 Closed	10	30
Douglas-fir Forest (BpS 2111660)		
Successional Stage	Reference%	Current%
Class A- Early Development 1 All Structures	10	5
Class B- Mid Development 1 Open	10	5
Class C- Mid Development 1 Open	10	40
Class D- Late Development 1 Open	50	22
Class E- Late Development 1 Closed	20	28
Lodgepole Pine Forest (BpS 1810500)		
Successional Stage	Reference%	Current%
Class A- Early Development 1 All Structures	20	5
Class B- Mid Development 1 Closed	50	85
Class C- Late Development 1 Closed	30	10
Montane Sagebrush Steppe (BpS 1811260)		
Successional Stage	Reference%	Current%
Class A- Early Development 1 Open	20	10
Class B- Mid Development 1 Open	50	26
Class C- Late Development 1 Closed	15	34
Class D- Late Development 1 Open	10	20
Class E- Late Development 2 Closed	5	10

APPENDIX B – TREE SELECTION CRITERIA

Tree Selection Criteria for the Shotgun Valley Community Forest Management Project Commercial Thinning

- Leave trees are to be marked with tree marking tracer paint applied heavily. Yellow or orange will designate leave trees. Mark butts from the ground up at least 12 inches high on both the uphill and downhill sides of the tree butt and mark the tree at dbh with a mark at least 3 inches wide that goes completely around the tree.
- Cut trees to leave a residual average basal area of 40 to 70 square feet per acre.
- Generally cut trees as to not leave crowns touching except where healthy clumps occur.
- Generally cut trees that have low live crown ratios (less than 30 percent); the volume of live crown relative to tree height.
- Generally cut trees that show evidence of disease or insect presence.
- Generally cut suppressed trees.
- Generally cut trees keeping the trees proximity to other tree species (aspens and maples) in mind.
- Do not cut trees with old characteristics (defined by Hamilton 1993) – trees with dbh greater than 30 inches.
- Do not cut trees with significant “cat-faces” or spiral lighting cracks.
- Some trees with poor form (multi or broken tops) may be reserved for snag retention for wildlife habitat.
- When present, existing snags would remain on site at a per acre density of two snags between 15 and 20 inch dbh, four snags between 10 and 15 inch dbh, and eight snags between 5 and 10 inch dbh for wildlife benefit.
- Do not cut trees on slopes greater than 40 percent unless after being felled they can be reached with a 150 foot bull line.
- All identified trees that contain raptor nests will be left as reserve trees.

APPENDIX C – PROPOSED SEED MIXES FOR REHABILITATION

The following proposed seed mix is a native mix that would be used for rehabilitation when available and economically feasible. It was formulated specifically for the Shotgun Valley project area based on current vegetation.

Species(1)	Common Name	Percent	Lb. Pure Live Seed/ Acre(2)	Comments
Grasses				
Elymus trachycaulus	Slender wheatgrass "Revenue"	24	5	Establishes easily and quickly.
Bromus marginaatus	Mountain brome "Bromar"	19	4	Establishes quickly and easily on disturbed high elevation sites.
Poa ampla	Big bluegrass "Sherman"	5	1	Excellent palatability to livestock and wildlife.
Festuca idahoensis	Idaho Fescue	19	4	Excellent for revegetation at higher elevations.
Poa alpine	Alpine timothy	5	1	Good palatability for wildlife.
Elymus lanceolatus ssp. riparium	Streambank wheatgrass	24	5	Strongly rhizomatous.
Forbs				
Linum lewisii	Blue flax	2.5	0.50	Establishes quickly on open rocky slopes.
Erigeron speciosus	Aspen daisy	0.5	0.10	Open slopes, under aspens spruce or fir.
Aster englemannii	Engleman aster	0.5	0.10	Woods, meadows and open slopes at higher elevation.
Trifolium fragiferum	Strawberry clover	0.5	0.10	Non-native, nitrogen-fixing forb, food for livestock and wildlife.
Achillea millefolium	Western yarrow	0.5	0.10	Early successional species that readily establishes on disturbed sites.
Balsamorhiza sagittata	Arrowleaf balsamroot	0.5	0.10	Good palatability for wildlife.
Total 21 lb pure live seeds/acre				

(1) Forbs that are unavailable or cost prohibitive may be deleted from the list. The forbs were added for species diversity and wildlife value.
(2) Based on a broadcast or hydro-seeding seeding rate of 21 lb pure live seeds/acre. Rate should be halved for drill-seeding.

The grasses and forbs used in this seed mix are primarily native (except strawberry clover), non-aggressive plants that would allow for the re-establishment of other native species over time. Critical factors considered for development of the species list was:

- utilizing primarily native species,
- adaptability to variety of hydrologic regimes (i.e. aspect, slope; soil texture),
- the ability to establish easily and quickly to facilitate soil stabilization,
- deter initial weed and other volunteer weedy species invasions,
- reduce weed competition,
- provide wildlife forage, and
- species diversity.

Species such as slender wheatgrass, strawberry clover, and mountain brome establish early to reduce weed infestations. Species with rhizomatous root systems such as the stream bank wheatgrass also would out-compete annual weeds for moisture and nutrients.

APPENDIX D – FMDA MITIGATION MEASURES

Fire and Non-fire Vegetation Treatment Restrictions

Vegetation Management

- No chemical treatment would conflict with existing or future national vegetative treatment guidance. To reduce potential resource impacts from chemical treatments, herbicide use would conform to application criteria described in the 1991 document, Environmental Impact Statement for Vegetation Treatment on BLM Lands in Thirteen Western States or in subsequent revisions and/or replacements of this document. Use would conform to instructions from BLM Manual 9011 Chemical Pest Control, as well as label restrictions and current policies and state statutes. In addition, the prescription for herbicide application (desired, optimum environmental conditions) would evaluate off-site migration and non-target species by assessing wind speed and direction, temperature, precipitation forecast, soil infiltration potential, constraints on overland water transport due to precipitation or flooding, establishment of riparian buffer strips, and risk to special status species. Fishery and/or wildlife biologists would assist project planners in selecting appropriate herbicides for use among or near terrestrial and aquatic flora and fauna sensitive to herbicides.
- The economic effects of alternative fuels management practices would be considered. Local involvement and economic benefits from fuels reduction projects would be promoted.
- Collaboration with local partners to assess WUI areas would be continued, and existing mitigation plans would be updated to implement fuels treatments.
- Vegetation treatment activities would continue to exercise Native American Tribal trust responsibilities.
- Fuels treatments would be utilized to reduce the overall threat of the establishment and spread of noxious/invasive plant species.
- The economic effects of alternative fuels management practices would be considered. Local involvement and economic benefits from fuels reduction projects would be promoted.
- Collaboration with local partners to assess WUI areas and to update existing County Wildfire Protection Plans would continue.
- Limber pine would be identified and avoided.

Air Quality

- All fire activities on BLM-administered lands would be coordinated with the Montana/Idaho Airshed Group Smoke Management Program. Under this program, Prescribed Fire and WFU could be restricted when regional or local air quality is compromised, or if the project would negatively affect visual quality in Class 1 Airsheds (Yellowstone and Grand Teton National Parks, Bridger Wilderness, Sawtooth Wilderness, and Craters of the Moon Wilderness), Non-attainment Areas, and sensitive receptors.

Cultural Resources and Historic Trails

- The Field Office will ensure that required and appropriate cultural resource inventories/surveys are completed prior to implementing site-specific fuels projects to meet BLM policy.
- A Class II or Class III inventory will be conducted for all proposed Prescribed Fire areas unless previous inventory has been deemed adequate in consultation with the SHPO and Native American Tribes.
- All prescribed fires and fuels projects will be subject to further site-specific analyses and Section 106 of the National Historic Preservation Act compliance and consultation.
- All proposed fire and non-fire (mechanical, chemical, and seeding) vegetation treatment actions will be assessed in consultation with the SHPO and Native American Tribes for their potential to

affect cultural resources. Where previous inventory has been sufficient to identify vulnerable cultural resources, no inventory should be needed. However, where adequate inventory is lacking, appropriate and required inventory of the area as determined in consultation with the SHPO will be conducted.

- Fire project planners should coordinate with the archeologist to incorporate, as necessary, best cultural protection practices in burn plans. Examples of cultural protection practices to be considered may include but are not limited to:
  - Manual reduction of fuels on vulnerable sites/features; disposal of debris away from cultural features.
  - Use of low-intensity backing fire in areas near historic features.
  - Saturation of ground/grass adjacent to vulnerable structures with water, foam, or gel before burning.
  - Pre-burning of site(s) at lower intensity than planned for surrounding areas.
  - Limiting fire intensity and duration over vulnerable sites.
  - Use of a fast-moving, higher intensity fire over lithic scatters, where rock materials are vulnerable to longer-duration heating.
  - Creation of fire breaks near or around sites.
  - Wrapping of structures in fire-proof materials or use of retardant/foam to protect structures.
  - Flush-cutting and covering of stumps with dirt, foam, or retardant where subsurface cultural resources could be affected.
  - Identification of and reduction of hazard trees next to structures.
  - Covering of rock art or wrapping of carved trees, dendroglyphs, and other such features in fire retardant fabric.
  - Limbing of carved trees to reduce ladder fuels.
  - Reduction of fuels and smoke near rock art.
  - Covering of fuels near rock art with foam, water, or retardant, avoiding the rock art.
  - Dozer blading should not occur within 300 feet of known historic trails and cultural sites.

Placeholder Species

- Plant materials used in re-vegetation actions would be native when appropriate and practical. However, desirable non-native species may be used in re-vegetation actions on harsh or degraded sites, when native seed is not available, or where they would structurally mimic the natural plant community and prevent soil loss and invasion by exotic annual grasses and noxious weeds. The species used would be those that have the highest probability of establishment on these sites. These "placeholders" would maintain the area for potential future native restoration. Native seed would be used more frequently and at larger scales as species adapted to local areas become more available.

Recreation

- Treatments in developed or high-use recreation areas would be designed to minimize impacts to the recreational resource or users.

Riparian Areas

- No dozer blading should occur within 300 feet of perennial streams. Buffer zones greater than 300 feet are preferable.

Visual Resources

- Treatments occurring in areas classified or inventoried as Visual Resource Management (VRM) Class I and II would consider visual qualities to preserve the landscape character. Wherever

possible, landscape modifications would replicate the natural line, form, color, and texture found in the surrounding area. Treatments that result in long-term disruption of natural visual qualities (e.g., drill seeding that establishes vegetation rows) should be avoided or hidden by design.

Wildlife

- Seasonal guidelines may be applied if needed to mitigate the impacts to big game species from planned fuels management and vegetation treatments as specified in the Land Use Plans (LUPs).
- Restrictions may be imposed on fuels management and vegetation treatment projects in areas supporting nesting raptors as per amended LUPs. Treatment proposals would be coordinated with IDFG.
- Species with recovery plans, conservation agreements, Partners in Flight species, and Birds of Conservation Concern will be protected as specified in their respective plans/agreements.
- Habitat Conservation Assessment and Conservation Strategies have been prepared and are currently being implemented for the following BLM sensitive species: northern goshawk, Columbian sharp-tailed grouse, greater sage grouse (Idaho plan pending), mountain quail. Vegetation treatments proposed in areas supporting sage grouse and sharp-tailed grouse would be coordinated with IDFG and would be implemented under LUP guidance or restrictions. Project activities in sagebrush would be avoided from March 1st to May 31st to avoid disrupting sage-grouse during the breeding season.
- Seasonal guidelines may be applied to mitigate the impacts to big game species from planned vegetation treatments as specified in LUPs.
- Nest surveys for avian species including sharptailed grouse, sage grouse and various passerine species would be conducted prior to treatment.
- BMPs for ground nesting birds would be incorporated for treatments near nesting areas; thinning and burning would be avoided between May 7 and July 15.

Wildland Fire Suppression Restrictions

Cultural Resources

- Dozer blading should not occur within 300 feet known historic trails, cultural sites, National Register of Historic Places Districts, Landmarks, and Areas of Critical Environmental Concern designated for cultural resources.
- Through the Field Office Manager or Resource Advisor, an archaeologist will be notified to: 1) provide technical expertise, 2) identify cultural resources that may be encountered, and 3) identify best cultural protection practices to be used during suppression activities. Examples of cultural protection practices may include but are not limited to:
    - Manual reduction of fuels from vulnerable sites/features; disposal of debris away from cultural features.
    - Creation of fire breaks near or around sites.
    - Wrapping of structures in fire proof materials or use of retardant/foam to protect structures.
    - Flush-cutting and covering of stumps with dirt, foam, or retardant where subsurface cultural resources could be affected.
    - Identification of and reduction of hazard trees next to structures.
    - Use of low intensity, backing fire in areas near historic features.
    - Saturation of ground/grass adjacent to vulnerable structures with water, foam, or gel before burning.
    - Covering of rock art or wrapping of carved trees, dendroglyphs, and other such features in fire retardant fabric.
    - Limbing of carved trees to reduce ladder fuels.

  - Reduction of fuels and smoke near rock art.
  - Covering of fuels near rock art with foam, water, or retardant, avoiding the rock art.

Noxious Weeds

- To minimize spread of noxious weeds, equipment used for extended attack or Type I/II incidents should be cleaned before arriving on-site and prior to leaving the incident.
- Staging areas and fire camps should avoid sites with noxious weed infestations.

Recreation

- Developed recreation sites and structures on public lands will be protected.
- Minimum Impact Suppression Techniques guidelines will be followed where appropriate as identified in the Interagency Standards for Fire and Fire Aviation Operations (USDA and USDI 2006).

Riparian Areas

- Dozer blading should not occur within 300 feet of perennial streams unless approved by the authorized officer. Buffer zones greater than 300 feet from riparian areas are preferable.
- Application of retardant or foam, adjuvant/surfactant should be avoided within riparian areas and 300 feet adjacent to riparian areas and waterways.

Vegetation

- Blading should occur on existing roads where possible. Blading through undisturbed areas, especially those supporting native cover types, should be avoided unless necessary to protect life, property, or resource values.

Wildlife

- When conducting fire suppression actions, species with recovery plans, conservation agreements, Partners in Flight species, and Birds of Conservation Concern will be protected as specified in their respective plans/agreements.
- Establishment of control lines, base camps, and support facilities in known special status species habitat will be avoided unless life and property are threatened.

Threatened, Endangered and Candidate Species

- Control lines, base camps, support facilities, and other suppression-related facilities should not be established within the following:
  - 1 mile of occupied gray wolf den sites (April 15 – June 30)
  - Secure habitat within a designated grizzly bear management unit (BMU).
- Where grizzly bears may reasonably occur:
  - The BLM resource advisor will brief all fire crews on general operating procedures including proper bear safety, sanitation, and food storage.
  - Incident Commanders, Fire Management Officers, and Scouts should be equipped with and trained to use bear deterrent spray.
  - Garbage should be disposed of in bear-proof containers when possible and removed from camps daily, preferably in the evening.
- If chemical products will be injected into the system, water will not be pumped directly from the streams. If chemicals are needed, water will be pumped from a portable tank, or a backflow check valve will be used.

APPENDIX E – OFFICIAL USFWS SPECIES LIST

United States Department of Interior
Fish and Wildlife Service

Project name: Shotgun Valley Fuels Reduction and Forest Restoration Projec

Official Species List

Provided by:

Idaho Fish and Wildlife Office
1387 SOUTH VINNELL WAY, SUITE 368
BOISE, ID 83709
(208) 378-5243

Consultation Code: 01EIFW00-2015-SLI-0736
Event Code: 01EIFW00-2015-E-00811

Project Type: VEGETATION MANAGEMENT

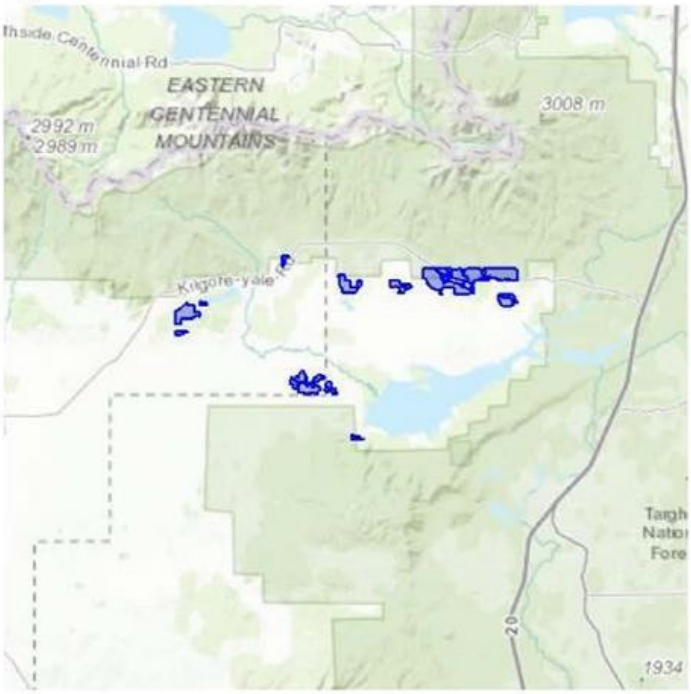
Project Name: Shotgun Valley Fuels Reduction and Forest Restoration Projec
Project Description: The Shotgun Valley project is located approximately 6 miles west of Island Park, Idaho. The 4,283 acre project area is comprised of 10 parcels of BLM-administered public lands (Figure 1). The project area is located in whole or in part within Townships 12 & 13 North, Ranges 40, 41 & 42 East. The individual parcels within the project area are disconnected from one another by adjacent private lands or lands administered by the U.S. Forest Service or State of Idaho.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

United States Department of Interior
Fish and Wildlife Service

Project name: Shotgun Valley Fuels Reduction and Forest Restoration Projec

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Clark, ID | Fremont, ID

United States Department of Interior
Fish and Wildlife Service

Project name: Shotgun Valley Fuels Reduction and Forest Restoration Projec

Endangered Species Act Species List

There are a total of 4 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Greater sage-grouse *(Centrocercus urophasianus)* Population: entire	Candidate		
Conifers and Cycads			
Whitebark pine *(Pinus albicaulis)*	Candidate		
Mammals			
Canada Lynx *(Lynx canadensis)* Population: (Contiguous U.S. DPS)	Threatened	Final designated	
Grizzly bear *(Ursus arctos horribilis)* Population: lower 48 States, except where listed as an experimental population or delisted	Threatened		

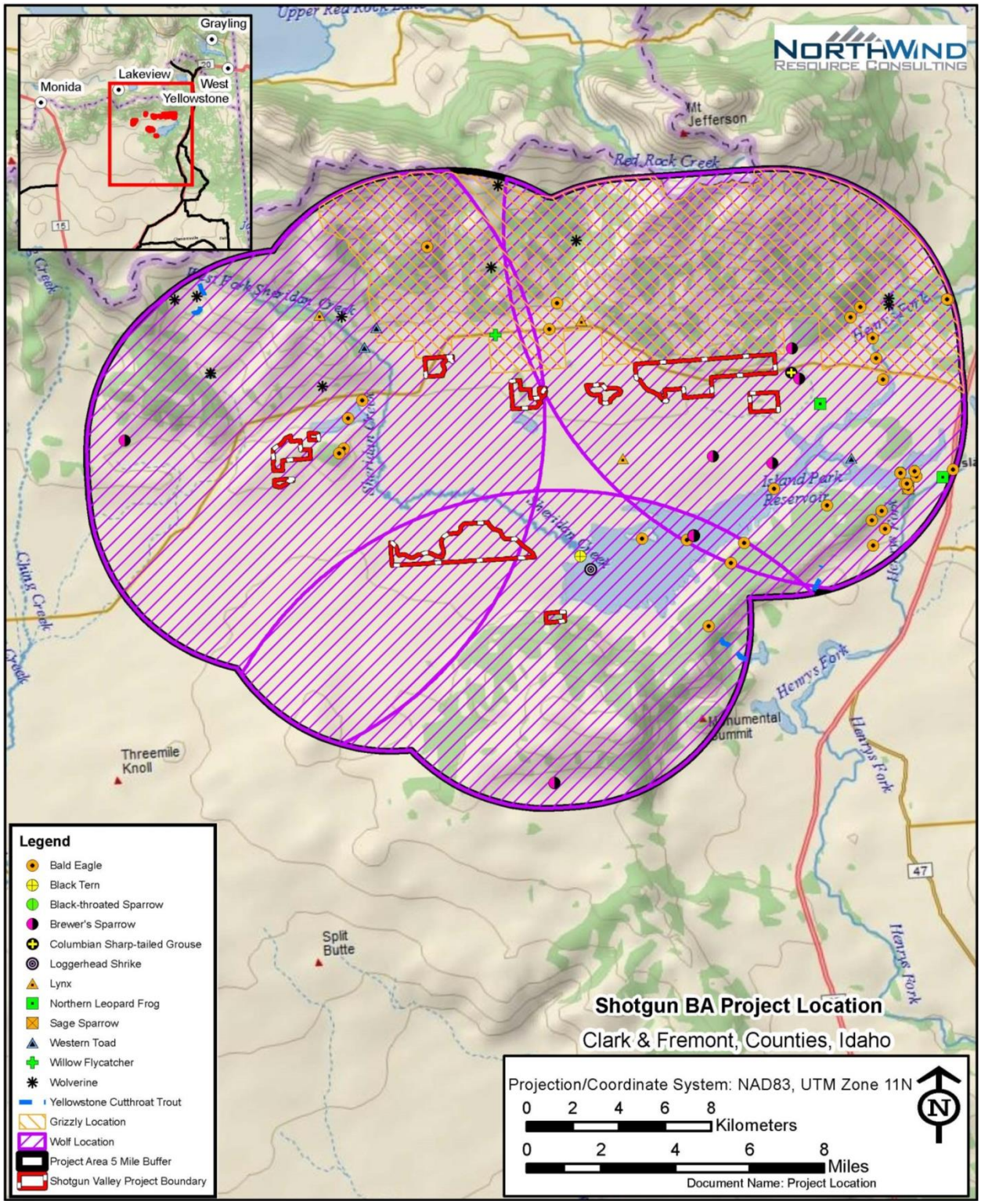
United States Department of Interior
Fish and Wildlife Service

Project name: Shotgun Valley Fuels Reduction and Forest Restoration Projec

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Species within 5-mile buffer around the project area.



APPENDIX F – BLM TYPE 2 SENSITIVE SPECIES LIST

Species Name	Habitat Requirements	Habitat Present In The Project Area
Amphibians		
Western/Boreal Toad *(Anaxyrus boreas)*	Streams, ponds, shoreline	X
Northern Leopard Frog *(Lithobates pipiens)*	Streams, ponds, shoreline	X
Birds		
Bald Eagle *(Haliaeetus leucocephalus)*	Widely distributed	X
Black Tern *(Chlidonias niger)*	Marshes, wetlands, riparian	
Black-throated Sparrow *(Amphispiza bilineata)*	Mountain shrub, riparian shrub, sagebrush steppe	X
Brewer's Sparrow *(Spizella breweri)*	Sagebrush steppe	
Burrowing Owl *(Athene cunicularia)*	Sagebrush steppe, pastures, agricultural lands, grasslands	
Cassin's Finch *(Carpodacus cassinii)*	Aspen, cottonwood, and/or coniferous forests	X
Columbian Sharp-tailed Grouse *(Tympanuchus phasianellus columbianus)*	Mountain shrub, riparian shrub, sagebrush steppe	X
Ferruginous Hawk *(Buteo regalis)*	Agricultural lands, shrubland, prairies	
Flammulated Owl *(Otus flammeolus)*	Aspen, cottonwood, and/or coniferous forests	X
Golden Eagle *(Aquila chrysaetos)*	Widely distributed	X
Grasshopper Sparrow *(Ammodramus savannarum)*	Agricultural lands, prairies, sagebrush steppe	
Greater Sage-grouse *(Centrocercus urophasianus)*	Sagebrush steppe	
Green-tailed Towhee *(Pipilo chlorurus)*	Sagebrush steppe, juniper woodlands	
Harlequin Duck *(Histrionicus histrionicus)*	Mountain stream channel	
Lewis' Woodpecker *(Melanerpes lewis)*	Aspen, cottonwood, and/or coniferous forests	X
Loggerhead Shrike *(Lanius ludovicianus)*	Sagebrush steppe, juniper woodlands, riparian areas, and annual grasses	
Long-billed Curlew *(Numenius americanus)*	Shorelines, agricultural lands	
Northern Goshawk *(Accipiter gentilis)*	Aspen, cottonwood, and/or coniferous forests	X
Olive-sided Flycatcher *(Contopus cooperi)*	Aspen, cottonwood, and/or coniferous forests	X
Pinyon Jay *(Gymnorhinus cyanocephalus)*	Aspen, cottonwood, and/or coniferous forests, Sagebrush steppe, juniper woodlands	X
Sage Sparrow *(Amphispiza belli)*	Sagebrush steppe obligate	
Sage Thrasher *(Oreoscoptes montanus)*	Sagebrush habitat	

Species Name	Habitat Requirements	Habitat Present In The Project Area
Short-eared Owl *(Asio flammeus)*	Sagebrush grasslands, agricultural fields, pastures	
Trumpeter Swan *(Cygnus buccinator)*	Open water, Lakes, ponds, rivers.	
Virginia's Warbler *(Vermivora virginiae)*	dense oak and pinyon woodlands and brushy streamside hills	
Willow Flycatcher *(Empidonax traillii)*	Willow and riparian habitats	
Fish		
Yellowstone Cutthroat Trout *(Oncorhynchus clarki bouvieri)*	Streams, rivers, lakes	
Invertebrates		
Blind Cave Leiodid Beetle *(Glacicavicola bathyscioides)*	lava tube ice caves	
California Floater *(Anodonta californiensis)*	Freshwater lakes, rivers, streams	
Idaho Point-headed Grasshopper *(Acrolophitus pulchellus)*	endemic known to occur only in east-central Idaho in the Birch Creek and Big Lost River drainages. This species occurs in xeric shrub-dominated habitat.	
St. Anthony Sand Dunes Tiger Beetle *(Cicindela arenicola)*	Sand dunes in southeast Idaho	
Mammals		
Big Brown Bat *(Eptesicus fuscus)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Bighorn Sheep *(Ovis canadensis spp.)*	Steep open slopes in mountainous areas.	
Fisher *(Martes pennanti)*	Aspen, cottonwood, and/or coniferous forests,	X
Gray Wolf *(Canis lupus)*	Coniferous forest, sagebrush steppe, riparian, and juniper shrublands	X
Hoary Bat (*Lasiurus cinereus*)	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Little Brown Bat *(Myotis lucifugus)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Long-eared Myotis *(Myotis evotis)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Long-legged Myotis *(Myotis volans)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Pallid Bat *(Antrozous pallidus)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Piute Ground Squirrel *(Urocitellus mollis)* *[formerly Spermophilus mollis artemisae]*	Open sagebrush steppe, prairies, croplands	
Pygmy Rabbit *(Brachylagus idahoensis)*	Sagebrush steppe	
Silver-haired Bat *(Lasionycteris noctivagans)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Townsend's Big-eared Bat *(Corynorhinus townsendii)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X
Western Small-footed Myotis *(Myotis ciliolabrum)*	Caves, mines, rock outcrops, riparian, sagebrush steppe	X

Special Status Animal Categories:
Type 1. Federally listed Threatened or Endangered Species, Experimental Essential populations and designated Critical Habitat.
Type 2. Idaho BLM Sensitive Species, including USFWS Proposed and Candidate species, ESA species delisted during the past 5 years, and ESA Experimental Non-essential populations.
01/13/2015 Instruction Memorandum No. ID-2015-009, Change 1

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APPENDIX G – NESTING PERIODS AND RECOMMENDED SEASONAL RESTRICTIONS FOR RAPTORS WITHIN THE SHOTGUN VALLEY PROJECT AREA

Species	Spatial Buffer (miles)	Seasonal Buffer	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bald eagle	1	2/1 - 8/31												
Northern goshawk	0.5	3/1 - 8/15												
Northern harrier	0.5	4/1 - 8/15												
Cooper's hawk	0.5	3/15 - 8/31												
Red-tailed hawk	0.5	3/15 - 8/15												
Sharp-shinned hawk	0.5	3/15 - 8/31												
Swainson's hawk	0.5	3/1 - 8/31												
Osprey	0.5	4/1 - 8/31												
American kestrel	0.25	4/1 - 8/15												
Boreal owl	0.25	2/1 - 7/31												
Flammulated owl	0.25	4/1 - 9/30												
Great horned owl	0.25	2/1 - 9/30												
Long-eared owl	0.25	2/1 - 8/15												
Northern saw-whet owl	0.25	3/1 - 8/31												
Northern pygmy owl	0.25	4/1 - 7/31												
Western screech owl	0.25	3/1 - 8/15												

APPENDIX H – IDAHO GREATER SAGE-GROUSE IMPLEMENTATION PLAN CONFORMANCE REVIEW

GRSG Plan Amendment Conformance:

Conducted by Brent Ralston, Ammon Wilhelm, Bonnie Claridge, Jon Porter, Ethan Ellsworth, Kyra Povirk, Natalie Cooper, and Scott Pavey on January 13, 2016.

Project Name: Shotgun Valley Fuels Reduction and Forest Restoration Project - EA# DOI-BLM-ID-I010-2015-0022-EA

Project Type: Fuels Reduction and Forestry Restoration

Location: The Shotgun Valley project is located at the northeastern margin of the Eastern Snake River Plain, approximately 6 miles west of Island Park, Idaho. The 4,283 acre project area is comprised of 10 parcels of BLM-administered public lands. The project area is located in whole or in part within Townships 12 & 13 North, Ranges 40, 41 & 42 East. Of the approximately 4,283 acres identified for treatment, 1,781 acres are within the Sheridan Creek Watershed while the remaining 2,502 acres are within the Henry's Fork-Island Park Reservoir Watershed.

Conservation Area: Mountain Valleys Conservation Area (MD SSS 1)

Designation: The project area contains both IHMA and GHMA, and is considered late brood rearing habitat. There are approximately 1,051 acres of IHMA and 390 acres of GHMA within the project area, however most of the designated area is considered an evergreen forest vegetation type. The sagebrush shrublands are located adjacent to the treatment areas and are excluded from treatment under this plan.

Area of Impact: The 4,283 acre project area is comprised of 10 parcels of BLM-administered public lands.

Adaptive Management: Neither BSUs within the Conservation Area are engaging adaptive management actions. This project is outside of both the Priority and Important Habitat BSUs.

Disturbance Cap: This project does not fit any of the categories for being included in the disturbance calculation. Therefore this project is not subject to the management decisions regarding disturbance and will not impact the level of disturbance within the Mountain Valleys Conservation Area.

Allocation: There are no allocation level designations regarding this type of project and there are specific objectives and management decisions allowing these types of actions. Therefore the allocation would be considered open.

Management Decisions Authorizing Activity:

MD SSS 5: Prioritize activities and mitigation to conserve, enhance and restore GRSG habitats (i.e., fire suppression activities, fuels management activities, vegetation treatments, invasive species treatments etc.) first by Conservation Area, if appropriate (Conservation Area under adaptive management or at risk of meeting an adaptive management soft or hard trigger), followed by PHMA, then IHMA then GHMA within the Conservation Areas. Local priority areas within these areas will be further refined as a result of completing the GRSG Wildfire and Invasive Species Habitat Assessments as described in **Appendix H of the ARMPA**. This can include projects outside GRSG habitat when those projects will provide a benefit to GRSG habitat.

> Project is within mapped sage-grouse habitat but in reality the treatment areas all consist of stands of lodgepole pine, Douglas fir, and aspen. The treatment areas are not sage-grouse habitat at all and the proposed treatments will have no effect on sage-grouse habitat.

MD SSS 7: GRSG habitat within the project area will be assessed during project-level NEPA analysis within the management area designations (PHMA, IHMA, GHMA). Project proposals and their effects will be evaluated based on the habitat and values affected.

> See response to MD SSS 5.

MD SSS 33: Conduct implementation and project activities, including construction and short-term anthropogenic disturbances consistent with seasonal habitat restrictions described in **Appendix C of the ARMPA**.

> Project is outside of seasonal grouse habitats.

MD SSS 38: Monitor the effectiveness of projects (e.g., fuel breaks. fuels treatments) until objectives have been met or until it is determined that objectives cannot be met, according to the monitoring schedule identified for project implementation.

> Monitoring is proposed as described on page 20 of the EA.

MD SSS 39: Monitor invasive vegetation post vegetation management treatment.

> Monitoring is proposed as described on page 20 of the EA.

Objective VEG 1: Reconnect and expand areas of higher native plant community integrity/rangeland health to increase the extent of high quality habitat and, where possible, to accommodate the future effects of climate change.

MD VEG 1: Implement habitat rehabilitation or restoration projects in areas that have potential to improve GRSG habitat using a full array of treatment activities as appropriate, including chemical, mechanical and seeding treatments.

> See response to MD SSS 5.

MD VEG 2: Implement vegetation rehabilitation or manipulation projects to enhance sagebrush cover or to promote diverse and healthy grass and forb understory to achieve the greatest improvement in GRSG habitat

based on FIAT Assessments, HAF assessments, other vegetative assessment data and local, site specific factors that indicate sagebrush canopy cover or herbaceous conditions do not meet habitat management objectives (i.e. is minimal or exceeds optimal characteristics). This may necessitate the use of prescribed fire as a site preparation technique to remove annual grass residual growth prior to the use of herbicides in the restoration of certain lower elevation sites (e.g., Wyoming big sagebrush) but such efforts will be carefully planned and coordinated to minimize impacts on GRSG seasonal habitats.

See response to MD SSS 5.

MD VEG 4: Implement management changes in restoration and rehabilitation areas, as necessary, to maintain suitable GRSG habitat, improve unsuitable GRSG habitat and to ensure long-term persistence of improved GRSG habitat (Eiswerth and Shonkwiler 2006). Management changes can be considered during livestock grazing permit renewals, travel management planning, and renewal or reauthorization of ROWs.

See response to MD SSS 5.

MD FIRE 19: Apply appropriate seasonal restrictions for implementing vegetation and fuels management treatments according to the type of seasonal habitats present. Allow no treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around and/or in the winter range and will protect, maintain, increase, or enhance winter range habitat quality.
Ensure chemical applications are utilized where they will assist in success of fuels treatments.
Strategically place treatments on a landscape scale to prevent fire from spreading into PHMA or WUI.

See response to MD SSS 5.
Project is outside of seasonal grouse habitats.

MD FIRE 22: Fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, and protect GRSG habitat which considers a full range of cost effective fuel reduction techniques, including: chemical, biological (including grazing and targeted grazing), mechanical and prescribed fire treatments.

See response to MD SSS 5.

MD FIRE 26: Protect vegetation restoration and rehabilitation efforts/projects from subsequent fire events.

The purpose of this project is to reduce the risk of high intensity wildfire.

Applicable Required Design Features (MD SSS 22 and Appendix C)**:**

RDF 1: Solicit and consider expertise and ideas from local landowners, working groups, and other federal, state, county, and private organizations during development of projects.

This has occurred as described on pages 7-9 of the EA.

RDF 2: No repeated or sustained behavioral disturbance (e.g., visual, noise over 10 dbA at lek, etc.) to lekking birds from 6:00 pm to 9:00 am within 2 miles (3.2 km) of leks during the lekking season.

Nearest Occupied lek is over 10 miles away therefore this RFD does not apply.

RDF 3: Avoid mechanized anthropogenic disturbance, in nesting habitat during the nesting season when implementing: 1) fuels/vegetation/habitat restoration management projects, 2) infrastructure construction or maintenance, 3) geophysical exploration activities; 4) organized motorized recreational events.

The project area is outside of nesting habitat as modeled by IDFG therefore this RDF does not apply.

RDF 4: Avoid mechanized anthropogenic disturbance during the winter, in wintering areas when implementing: 1) fuels/vegetation/habitat restoration management projects, 2) infrastructure construction or maintenance, 3) geophysical exploration activities; 4) organized motorized recreational events.

The project area is outside of wintering habitat as modeled by IDFG therefore this RDF does not apply.

RDF 20: Where applicable, design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which most benefit sage-grouse habitat.

This project will reduce the potential for high intensity wildfires in timber adjacent to shrubsteppe habitat within the project area.

RDF 26: Power-wash all vehicles and equipment involved in fuels management activities, prior to entering the area, to minimize the introduction of undesirable and/or invasive plant species.

This RDF is part of the design features and mitigation measures for all alternatives described in the EA (pg 18-20).

RDF 30: Remove standing and encroaching trees within at least 110 yards of occupied sage-grouse leks and other habitats (e.g., nesting, wintering and brood rearing) to reduce the availability of perch sites for avian predators, as resources permit.

No Leks are within 10 miles of the project area therefore this RDF does not apply.

Mitigation Required:

This project is a vegetative treatment that is occurring outside of sage-grouse habitat. Therefore, no impact to sage-grouse is expected and no mitigation for sage-grouse habitat loss will be required.

Conclusion:

Based on the above review, this is in conformance with the Approved Sage-grouse Resource Management Plan Amendment (Sept 2015) and NEPA process should continue.

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