Yale Creek Fuels Reduction Project
Environmental Assessment
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Introduction

We prepared this environmental assessment to document our analysis to determine whether implementation of the Yale Creek Fuels Reduction Project may significantly affect the quality of the human environment and thereby require the preparation of an environmental impact statement. By preparing this environmental assessment, we are fulfilling agency policy and direction to comply with the National Environmental Policy Act, the National Forest Management Act, the 1997 revised Targhee National Forest Plan (Forest Plan) and other applicable laws, regulations and policies.

This project is being prepared under the Healthy Forest Restoration Act of 2003 (Public Law 108-148). This project also was developed to be consistent with the goals and objectives of the 2016 Island Park Sustainable Fire Community Strategic Plan. Projects covered under the Healthy Forest Restoration Act may be applied to Federal lands within a wildland-urban interface to protect at-risk communities from the risk of wildfire. This project lies adjacent to the Yale Creek and Old West Ranches subdivisions, an identified wildland-urban interface area as outlined in the Fremont County Community Wildfire Protection Plan. The Act defines an at-risk community as “a group of homes and other structures with basic infrastructure and services such as utilities and collectively maintained transportation routes within or adjacent to Federal lands” (H.R. 1904, page 3).

We are proposing to treat approximately 3,160 acres on the Ashton/Island Park Ranger District of the Caribou-Targhee National Forest to reduce fire behavior potential, improve fire protection of private homes in the wildland-urban interface, and reduce hazardous fuels surrounding the identified subdivisions.

In the fall of 2013, fire and fuels specialists visited the project area to identify areas for treatment. Recommendations were developed for potential vegetation treatments that would reduce future hazardous fuel loading, reduce wildfire risk, and enhance forest health within the wildland-urban interface. Treatments proposed for commercial-sized products are whole-tree yarding using mechanical harvesters and whole-tree skidding. For noncommercial-sized trees and brush, masticators and/or chippers could be used, or the material could be removed as biomass or be piled and burned. A more detailed description is described in the proposed action beginning on page 9.

Format of this Environmental Assessment

CEQ regulations define an environmental assessment as

A concise public document that serves to “briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact (FONSI).”

This environmental assessment focuses on what is relevant and important and concentrates on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1). Legal requirements only requires to provide enough evidence to support our conclusions, address relevant environmental impacts and concentrates on whether the action would “significantly” affect the quality of the human environment.

Therefore this “focused” environmental assessment does not include topics that are not required in an environmental document but have historically been included. Topics that have been eliminated are: table of contents, project summary, NEPA process language, no action alternative (as long as no action is
Location of the Proposed Project Area

The project area is located on the Ashton/Island Park Ranger District adjacent to the Yale Creek and Old West Ranches subdivisions. The southern boundary of the project area is the national forest boundary. The project is located in T13N, R41E, Sec. 2; T13N, R42E, Sec. 2–6; T13N, R43E, Sec. 6; T14N, R41E, Sec. 35–36; T14N, R42E, Sec. 27, 28, 31, 33–36; T14N, R43E, Sec. 31, Boise Meridian, in Fremont County, Idaho (Figure 1). Figure 1 also displays a summary of the proposed treatment units.

The Yale Creek Fuels Management Project analysis area covers approximately 14,696 acres of National Forest System lands and is located in the Centennials Subsection. Elevations range from approximately 6,300 to 9,700 feet above sea level. The project area can be characterized as primarily timbered with open park areas.
Figure 1. Vicinity map and treatment areas
**Background**

The economy of the Island Park area is based on tourism and recreation. The Island Park area is a major gateway to Yellowstone National Park and is a major summer and winter recreation destination of southeastern Idaho. There are few full-time residents (approximately 800), but during the summer season the population expands to over 10,000 residents and visitors, all who value the ecological resources of the area. A change in the surrounding landscape due to fire or other large disturbances would disrupt this type of economy.

A collaborative interagency/user group was formalized in 2012 to lead and coordinate a strategic planning effort toward gaining a “sustainable fire community” situation within the Greater Island Park Area. This cooperative effort, comprised of Idaho state and county agencies, Federal agencies in the area, as well as private individuals, non-profit organizations, and local businesses, was established to address Island Park’s wildfire concerns through a set of integrated strategies focused on the three Cohesive Strategy goals. These goals are: (1) restore and maintain resilient landscapes, (2) create fire-adapted communities, and (3) maintain safe and effective wildfire response.

The Fremont County Community Wildfire Protection Plan rated the fire hazard in the Yale Creek development area as extreme and identified as high priority within the Plan. This area is comprised of 13 subdivisions and over 400 properties. Based on several factors, including ingress/egress difficulties, hazardous fuels, both on private properties and adjacent public lands, communications and utilities, safety zones, and evacuation processes, Yale Creek was therefore chosen as a priority area identified for immediate treatment and is the focus of this Strategic Project Plan.

In addition, forested lands adjacent to these communities can support frequent and intense wildfires, and the predominant south-to-southwest winds of the area would likely push wildfires toward the Yale Creek subdivision. The combination of prevailing winds and high density of homes results in a high risk to values in this wildland-urban interface.

There are “design” shortcomings in the Yale Creek Subdivision and associated access roads. These include steep grades, narrow one-way road prisms, tight radius curves, limited sight distance, inadequate clearing widths and heights, inadequate turnarounds, poorly designed driveways, and lack of proper surfacing. The inability of emergency resources to safely access and egress a structure or group of structures precludes suppression resources from engagement in many cases, hence, individual structures or the entire group of structures could be lost due to unsafe access and escape (Community Wildfire Protection Plan, page 14).

The Old West Ranches Subdivision was also identified in the Fremont County Community Wildfire Protection Plan as needing fuels reduction treatments. The Old West Ranches Subdivision lies to the west of Yale Creek and contains 78 lots and approximately 36 residential structures. As with Yale Creek, the Old West Ranches Subdivision is at risk due to prevailing winds and the subdivision’s proximity to forested lands adjacent to the wildland-urban interface.

**Purpose and Need**

This proposal is needed because the combination of accumulating fuels and increasing development on adjacent private lands has led to an increased risk to human life and property from wildfire. The purpose of this project is to reduce the threat to human life and private property while increasing firefighter safety. This would be achieved by:
• Reducing tree-crown density, and increasing canopy-base height to help reduce the risk of crown fires\(^1\). Crown fires are generally more destructive and difficult to control.

• Removing ladder fuels, which provide vertical and horizontal fuel continuity, would reduce the risk of fire moving into the canopy.

Reducing surface-fuel load would lower the surface-fire intensity. By accomplishing this, we would reduce overall fire behavior and the result would be less intense surface fires.\(^2\) Lower surface-fire intensity results in fires that are less likely to transition into crown fires. Proposed treatments would move the project area to be more resistant and resilient to disturbances such as fire, and create fairly open stands dominated primarily by larger, fire-tolerant trees.

Existing Condition (Affected Environment) and Desired Conditions

Forest Vegetation

Unit #1 and 5 (Adjacent to the Yale Creek Subdivision)

Existing condition

Unit 1 is approximately 1,724 acres and Unit 5 is approximately 635 acres. The surrounding stands around the Yale Creek Subdivision is dominated by Douglas-fir overstory with lodgepole pine, Engelmann spruce, and subalpine fir. Isolated patches of aspen exist and are small in size. Habitat types consist of both Douglas-fir and subalpine fir successfully regenerating. Douglas-fir and Engelmann spruce site productivity ranges from moderate to moderately high.

Vegetation structural stages include: young, middle aged, and mature forest; with both open and moderately closed canopy; dominated by multiple stories. Down fuel loadings range from 5.8 tons per acre to 23.4 tons per acre. Tree density ranges from 585 to 1,767 trees per acre. Tree age ranges from 21 to 190 years of age with an average age of approximately 90 years. Tree competitive interactions are high and trees are growing at less than their full potential. There are no stands that have entered extremely high stand densities known as the “zone of imminent mortality” where density-dependent mortality occurs in earnest. Stand 002-081-0038 located east of the Yale Creek Subdivision was partially cut in 1981 with a shelterwood prescription (preparatory cut for regeneration). This stand has little understory regeneration.

Desired Condition

Overstory trees exist in clumps of three to seven trees dominated by Douglas-fir to reduce active crown fires and, creating more sunlight on the forest floor resulting in a composition of shrubs, forbs and grasses. Where aspen are present, it is desirable to increase the number of trees and areas. Desired conditions would be to regenerate a mix of Douglas-fir and aspen.

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\(^1\) Crown fire: Fire that has ascended from the ground into the forest canopy.

\(^2\) Surface fire: A fire burning along the surface without significant movement into the understory or overstory, with flame length usually below 1 meter.
Unit #2 *(Along the Blue Creek and West Blue Creek Roads)*

**Existing Condition**

Unit 2 is approximately 297 acres. Stands are dominated by Engelmann spruce and subalpine fir with inclusions of Douglas-fir and lodgepole pine overstory. Larger patches of aspen exist along linear openings. Habitat types are dominated by subalpine fir and are successfully regenerating. Vegetation structural stages include young, middle aged, and mature forest with open canopy, dominated by multiple stories. Relative stand densities are in the range where high tree competitive interactions occur and trees are growing at less than their full potential. There are no stands that have entered extremely high stand densities known as the zone of immanent mortality where density-dependent mortality occurs in earnest. Past treatments include tree removal along the roads. Firewood removal has and is occurring along the open road in Blue Creek.

**Desired Condition**

Overstory trees exist in clumps of three to seven trees dominated by Engelmann spruce to reduce active crown fires and, creating more sunlight on the forest floor resulting in a composition of shrubs, forbs and grasses. Where aspen are present, increase the number of trees and areas. Desired conditions would be to regenerate a mix of aspen, Engelmann spruce and Douglas-fir. Where opportunities exist to manage Engelmann spruce, management would focus on uneven-aged management in small group selections.

Unit #3 *(South of the Yale Kilgore Road and east of the Old West Ranches Subdivision)*

**Existing Condition**

Unit 3 is approximately 101 acres. Two types of stands exist in this area. One type is dominated by lodgepole pine and is a subalpine fir/grouse whortleberry habitat type. Species found in these stands include five needle pines (whitebark and limber pines) and Douglas-fir. Subalpine fir is probably present in small quantities, but not recorded in plots. Dwarf mistletoe is present in the stand ranging from moderate to high infection rates. Tree ages range from 10 to 90 years of age. The lodgepole pine stands are rated as middle aged, with moderately closed canopies and single story. Large diameter, relic Douglas-fir trees are present on the site as large as 32.0 inch DBH\(^3\). Relative stand densities are moderate with some tree competitive interactions and no stands have densities entering the zone of immanent mortality.

The other type of stand is dominated by a Douglas-fir overstory and is subalpine fir/grouse whortleberry habitat type. Species found in these stands include aspen, five needle pines, and Douglas-fir. Subalpine fir is probably present in small quantities, but not recorded in plots. Relative stand densities are high and tree competitive interactions are occurring. Trees are growing at less than their full potential, but no stands have densities entering the zone of immanent mortality. Light to moderate defoliation from western spruce budworm was present during inventory in 2012.

**Desired Condition**

In lodgepole pine stands, an average tree spacing between crowns of 15 feet or greater, tree crowns would be separated and not interlocked, and possessing large-diameter Douglas-fir tree relics.

In Douglas-fir stands, overstory tree crowns would be separated and not interlocked except in clumps of three to seven trees, creating more sunlight on the forest floor resulting in a composition of shrubs,

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\(^3\) DBH – diameter at breast height, meaning 4.5 feet distance above ground level.
forbs and grasses. Where aspen are present, increase the number of aspen trees and areas dominated by aspen.

Unit #4 (North of the Yale Kilgore Road and north of the Old West Ranches Subdivision)

Existing Condition
Unit 4 is approximately 404 acres. Eighteen different stands were delineated in this area indicating a rich diversity in species composition and stand structures. Forested vegetation consists of Douglas-fir, lodgepole pine, aspen, five needle pines, subalpine fir, and Engelmann spruce. Isolated linear stands of narrowleaf cottonwood also exist. Stands are primarily dominated by Douglas-fir or lodgepole pine in the overstory. There are some aspen-dominated stands present. Understory trees are varied to include regenerating lodgepole pine, subalpine fir and Douglas-fir. Habitat types are dominated by Douglas-fir/pinegrass/pinegrass. Where aspen is present, it is being shaded out by competition from conifer trees.

Desired Condition
Generally, overstory tree crown horizontal and vertical connectivity would be broken, creating space between individual tree crowns or clumps of trees between other clumps and individuals. Quaking aspen and Douglas-fir mixes would be regenerated and enhanced. Where quaking aspen are present, it would be desirable to increase the number of aspen trees and aspen areas.

Fire and Fuels

Existing Condition
Based on fire behavior fuel models acquired for the project area, the majority of fuels consist of a very high load of dry climate timber-shrub, timber-grass shrub mix and small downed logs. Pockets of heavier down and dead woody surface fuel with a significant shrub and/or small tree understory are found throughout the project area. These heavier fuels could lead to crown fire under drier conditions due to the abundance of ladder fuels. Predicted fire behavior in these fuels types can be of concern due to increased resistance to control. The majority of the non-forested fuel types within the project area consist of a combination of grass and shrubs or areas of sparse grass alone.

Desired Conditions
The fire and fuels management desired conditions for the Forest are to suppress fire in a safe, cost effective manner where necessary to protect human life and safety, developments, structures, and sensitive resource values. Also use prescribed fire and managed natural fire to improve forest health. Fuel accumulations are reduced and managed within their historic range.

In the wildland-urban interface zone, desired conditions are to have fairly open stands, dominated primarily by larger, fire-tolerant trees. Surface and ladder fuel conditions are such that crown fire ignition is highly unlikely, and the openness and discontinuity of over story trees would result in very low probability of a sustained crown fire.

Desired conditions for wildland fire behavior are to keep flame lengths less than 4 feet; and reduce hazards to firefighter by removing hazard trees. Also, reduce the likelihood of crown fire initiation and allow fire fighters an opportunity to safely engage a fire moving towards the subdivisions.

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4 Surface fuels: Needles, leaves, grass, forbs, dead and down branches and boles, stumps, shrubs, and short trees (Scott and Reinhardt 2001).
Aquatic Influence Zones

Existing Conditions
The watershed and streams are in relatively good condition. Most streams in the project area are in fair condition with Yale Creek and the upper portions of Hotel Creek in good condition. However, the Willow Creek sub-watershed is currently 76 percent hydrologically disturbed, exceeding the desired condition of not more than 30 percent hydrologically disturbed. The primary reason is due to the recent Willow Fire. The other principal watersheds (Island Park Reservoir, Hotel Creek, and coffee Pot-henrys Fork are under the desired threshold.

Desired Conditions
Riparian zones (aquatic influence zones) are healthy and productive. Aquatic systems are allowed to function naturally while protecting flows for downstream consumptive uses. Riparian area integrity contributes to productive fisheries and excellent water quality. Native plant and animal species are favored over undesirable nonnative species and sustained populations of all native and desirable species thrive. Habitat conditions contribute toward the recovery of threatened, endangered and sensitive species (Forest Plan, page II-2).

Management Direction

Revised Targhee National Forest Plan
The Forest Plan established long-term management direction for the Forest and contains management standards to achieve Forestwide multiple-use goals and objectives. Ecological subsection and management prescriptions were also established based on ecological units and management themes. Each subsection and associated management prescription has specific goals, objectives, standards, and guidelines that supplement Forestwide standards listed in the Forest Plan.

The Forest Plan goals and standards and guidelines summarized below are not comprehensive, but are those that address the project purpose and need statements, relevant issues, and management actions, including timber harvest, silviculture treatments, and fuels management.

Forest-Wide Guidance applicable to the Project

Fire Goals (Forest Plan, page III-6):
Suppress fire in a safe, cost-effective manner where necessary to protect human life and safety, developments, structures, and sensitive resource values. Fuel accumulations are reduced and managed within their historic range.

- When feasible and appropriate, use prescribed burning to dispose of slash in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard, and to provide seed beds for natural regeneration. (Guideline)

Vegetation Goals (Forest Plan, pages III-12–13)
Maintain and restore healthy, diverse forested and non-forested ecosystems through time, including appropriate components of dead and down woody material. Use vegetation management to achieve a broad array of multiple-use and ecosystem management objectives, including: maintenance, improvement, and restoration of forest health; scenic viewsheds and corridors; wildlife habitat effectiveness and quality; hazardous fuels reduction; biological diversity of plant and animal
communities; riparian and watershed health and function; and vegetation structure, composition, and distribution in larger landscapes.

- Where appropriate, use methods of vegetation treatment that emulate natural ecological processes to maintain or restore properly functioning ecosystems. (Guideline)
- In each principal watershed, the combination of old-growth and late-seral forest stage acres would be 20 percent or more of the forested acres. Where it exists, at least half, 10 percent of the forested acres, should meet old-growth characteristics. (Guideline)
- Vegetation manipulation may include mechanical treatments, commercial or non-commercial timber harvest of wood products, prescribed fire, or other appropriate methods. (Guideline)

**Timber Management Goals (Forest Plan, pages III-31 and 33)**

Silvicultural techniques would be used as a tool to manage or manipulate vegetation for the purpose of achieving Forest Plan resource objectives. Emphasis would be placed on restoration of ecological function, structure, and composition.

- Fuel loading on activity areas meets site productivity objectives for wildlife and fire.

**Wildlife Goals (RFP III-16-23)**

Wildlife biodiversity is maintained or enhanced by managing for a diverse array of habitats and distribution of plant communities. Provide suitable habitat conditions for known active and historic goshawk nesting territories.

- On at least 60 percent of the forested acres of each analysis area an average of 21 logs per acre should be left consisting of logs in decomposition classes 1, 2 and 3 where they exist (requirements are interrelated with the woody residue requirements and are not cumulative to those requirements). (Guideline)
- Retain snags within all management prescriptions areas allowing timber harvest. Guideline)

**Issues**

An issue is an effect caused by some element of the proposed action, or an alternative, around which there is disagreement or concern. The Forest Service considered information gathered from public comments to identify any potential issues to be addressed in the environmental analysis. Issues may be addressed through modification of the proposed action, design features, or mitigation measures.

The Forest Service identified issues as those directly or indirectly caused by implementing the proposed action. Non-issues were identified as those (1) outside the scope of the proposed action; (2) already decided by law, regulation, Forest Plan, or other higher-level decision; (3) irrelevant to the decision to be made; or (4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality National Environmental Policy Act (NEPA) regulations explain this delineation in section 1501.7, “…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (section 1506.3)…”

The Forest Service identified one issue from scoping efforts, but did not identify any issues that drove an additional alternative.

**Issue 1: Project conflicts with grizzly bear security habitat and northern goshawk and occupied Canada lynx habitat.**

Comments received by the public expressed concern that vegetation and road management activities may affect grizzly bear habitat security and goshawk and lynx habitat.
Grizzly bears are a threatened species. Any increase in human use may increase the potential for grizzly/human conflict and grizzly bear mortality.

In addition, there is a potential for disturbance to or displacement of northern goshawk, a sensitive species, and Canada lynx, a threatened species, from these same activities from project-related noise, commotion, or disruption.

This project would adhere to the Forest Plan’s goals and standards and guidelines as described above. In addition, implementation of design features would mitigate this issue. Design features are included in the later section, “Project Design Features.”

Changes from Public Comment Period to Final Environmental Assessment

Unit 5 was developed after public scoping to accommodate characteristics associated with Mt. Jefferson Roadless Area, as well as to mitigate for grizzly bear security. This unit is located on the north and east side of Yale Creek Subdivision and the original idea was to treat that area in a similar manner as Unit 1. The deciding official did not want undue affects to roadless and wilderness characteristics so the proposed action was modified to only cut small-diameter trees, and hand pile those trees to remove surface fuels. The option of a timber sale and construction of a temporary road was eliminated from the treatment actions to decrease effects associated with grizzly bear security.

Proposed Action

Unit 1 (Note: Adjacent to the Yale Creek Subdivision)

The proposed treatment for this unit is prescribed as a commercial thin\(^5\) from below\(^6\) combined with coppice with reserve\(^7\) where quaking aspens are present. In this project, coppice with reserve would be implemented where all conifers within a distance of two and one half aspen tree heights of all quaking aspens greater than four feet tall would be removed to enhance aspen regeneration.

A commercial thin would reduce stand density to approximately 54 trees per acre and 80 square feet of basal area. This treatment would reduce the hazard of Douglas-fir beetle, and create a stand structure much less conducive to western spruce budworm infestations. Thinning would raise canopy base height, thus increasing torching index and reducing the potential for crown-fire initiation. Canopy bulk density would be reduced thus reducing the chance of a sustained crown fire (Helmbrecht et al. 2016). Quaking aspen, as a deterrent to fire, would be regenerated and enhanced where possible. Aspen would function as a less volatile fuel reducing both surface and crown fire potential.

The following implementation mechanisms would be:

\(^5\) Commercial thinning: “any type of thinning producing merchantable material at least equal to the value of the direct cost of harvesting.” (The Dictionary of Forestry by the Society of American Foresters [Helms 1998]).

\(^6\) Thin from below: “the removal of trees from the lower crown classes to favor those in the upper crown classes.” (The Dictionary of Forestry by the Society of American Foresters [Helms 1998]).

\(^7\) Coppice with reserves: “a regeneration method using a cutting procedure by which a new age class is created. Coppice methods achieve the majority of regeneration from stump sprouts or root suckers. Reserve trees are retained to attain goals other than regeneration.” (The Dictionary of Forestry by the Society of American Foresters [Helms 1998]).
• Trees would be removed with mechanized equipment for wood fiber use and other forest product purposes. Trees removed would be small diameter, primarily less than 10 inches in diameter, mainly lodgepole pine, subalpine fir, and small-diameter Douglas-fir. The focus for tree removal would be from the lower and mid canopy to decrease ladder fuels.

• All subalpine fir trees would be removed.

• Approximately 4 miles of temporary roads would be opened or constructed to facilitate logging of this unit. A portion of this temporary road would be located on a road prism that was previously reclaimed and obliterated.

• Once all treatments within this unit are complete, the temporary roads would be effectively closed to motorized use. At a minimum, large-diameter downed trees and rocks would be strategically placed along the closed road so these prisms could not be used by off-highway vehicles.

• Whole trees would be removed to a landing to limit down woody material left in the treatment unit. Tops and limbs would be chipped and removed or piled and burned at the landing.

• Slash remaining in the unit would either be masticated within the unit or burned with a low-intensity, understory burn. The understory burn would be patchy across the treated areas and burned in the fall season. The objective of the understory burn is to remove some of the finer fuels such as needles, litter, and leaves.

Results of implementation would achieve the following:

• Overstory canopy cover within Goshawk post-fledging areas would not be less than 70 percent within any treated areas.

• Implementation would leave 40 to 80 square feet of basal area across the entire treatment area. The goal is to retain mature trees in the upper canopy with a crown separation of 15 feet or greater. The remaining trees would be larger-diameter Douglas-fir, Engelmann spruce, and whitebark pine.\n
• All remaining trees within 350 feet of Yale Creek Subdivision boundary and within aquatic influence zones would have limbs pruned up to 6 feet from the ground.\n
• Implementation would leave less than 5 tons per acre of surface fuels less than 3 inches in diameter.\n
• Implementation would leave 5 to 10 tons per acre of large woody debris greater than 3 inches in diameter.

Unit 2 (Note: Along the Blue Creek and West Blue Creek Roads)\n
The proposed treatment for this unit is prescribed as a commercial thin from below. Where aspen are present, all conifers within two-and-one-half aspen-tree heights of all aspen greater than 4-feet tall would be removed to enhance aspen regeneration.

The following implementation mechanisms would be:

• Trees would be cut and removed with mechanized equipment. Trees slated for removal would be designated. Trees removed would be small diameter, primarily less than 10 inches in diameter, mainly lodgepole pine, subalpine fir, and small-diameter Douglas-fir. Tree removal would be from the lower and mid canopy to decrease ladder fuels.

• Remove all subalpine fir.
• Within the treatment unit west of Blue Creek Road, limbs would be pruned up to 6 to 8 feet from the ground and subalpine fir less than 7 inches in diameter would be cut.

• Large wood would be placed in Blue Creek stream channel to retain sediment and restore stream function and stability to a down-cut unstable channel. Large woody debris would be anchored in the channel every 100 feet with small and large wood scattered throughout the rest of the channel.

• Surface fuels (slash) west of Blue Creek Road would be hand piled and burned to meet the desired condition for fuels management. This would occur outside the area within 100 feet of Blue Creek so as not to have slash burned immediately adjacent to the creek.

• Large wood would be placed in Blue Creek stream channel to retain sediment and restore stream function and stability to a down-cut unstab le channel. Large woody debris would be anchored in the channel every 100 feet with small and large wood scattered throughout the rest of the channel.

• Surface fuels (slash) east of Blue Creek would be chipped or masticated or hand piled and burned outside the aquatic influence zone to meet the desired condition for fuels management.

• West Blue Creek Road 018 would be temporarily opened to allow for the purchase of forest products (green firewood, post, and pole material) to be removed by the public (refer to design features limitations of firewood removal in this area). Once treatments are complete West Blue Creek Road would be effectively closed.

Results of implementation would achieve the following:

• Within treatment areas east of Blue Creek Road, 40 to 80 square feet of basal area would be left. The goal is to retain trees with a crown separation of 15 feet or greater. The remaining trees would be larger diameter Douglas-fir, Engelmann spruce, and whitebark pine.

• Surface fuels remaining on site would be less than 5 tons per acre for woody debris less than 3 inches in diameter, and 5 to 10 tons per acre of large woody debris greater than 3 inches in diameter.

Unit 3 (Note: South of the Yale Kilgore Road and east of the Old West Ranches Subdivision)

The proposed treatment for this unit is prescribed as a commercial thin from below combined with coppice with reserve where quaking aspen are present followed by prescribed burn\(^8\) to enhance quaking aspen regeneration. Remove all conifers within two-and-one-half aspen tree heights of all aspen greater than 4-feet tall to enhance aspen regeneration.

The following implementation mechanisms would be:

• Leave mature Douglas-fir and lodgepole pine free of insects and disease with an average spacing between crowns of 15 feet or greater. The focus for tree removal would be from the lower and mid canopy to decrease ladder fuels.

• Remove all subalpine fir.

• A temporary road of 300 feet would be newly constructed to facilitate mechanical removal of trees. Once treatments are complete the temporary road would be obliterated to restore hydrologic function and productivity and restrict motorized vehicle use.

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\(^8\) Prescribed burn: “to deliberately burn wildland fuels in either their natural or their modified state and under specified environmental conditions, which allows the fire to be confined to a predetermined area and produces the fireline intensity and rate of spread required to attain planned resource management objectives.” (The Dictionary of Forestry by the Society of American Foresters [Helms 1998]).
• All remaining trees within 350 feet of Old West Ranch Subdivision boundary and along both sides of Yale Kilgore Road would have limbs pruned up to 6 to 8 feet from the ground.

• Surface fuels (slash) remaining in the unit would be masticated or burned with a low-intensity, understory prescribed burn within the unit. The understory burn would be patchy across the treated areas and burned in the fall. The objective of the understory burn is to remove some of the finer fuels such as needles, litter, and leaves.

Results of implementation would achieve the following:

• Surface fuels remaining on site would be less than 5 tons per acre for woody debris less than 3 inches in diameter and 5 to 10 tons per acre of large woody debris greater than 3 inches in diameter.

Unit 4 (Note: North of the Yale Kilgore Road and north of the Old West Ranches Subdivision)

The prescribed treatment for this unit is prescribed as a commercial thin from below combined with coppice with reserve where quaking aspens are present.

The following implementation mechanisms would be:

• Trees would be removed with mechanized equipment for wood fiber use and other forest product purposes.

• Remove small-diameter trees, primarily less than 10 inches in diameter, mainly lodgepole pine, subalpine fir, and small-diameter Douglas-fir. The focus for tree removal would be from the lower and mid canopy to decrease ladder fuels.

• Coppice with reserves consists of removing all conifers within two-and-one-half aspen tree heights of all aspen greater than 4 feet tall to enhance aspen regeneration; except leave all Douglas-fir within the aspen areas greater than 20 inches in diameter.

• Remove all subalpine fir.

• One mile of temporary road would be newly constructed to facilitate forest product removal. Following treatments, this temporary road would be obliterated to restore hydrologic function and productivity and restrict motorized vehicle use.

• Whole trees would be removed to a landing to limit down woody material left in the treatment unit. Tops and limbs would be chipped and removed or piled and burned at the landing.

• Slash remaining in the unit would be mechanically piled and burned within the unit or burned with a low-intensity, understory burn. The understory burn would be patchy across the treated areas and burned in the fall. The objective of the understory burn is to remove some of the finer fuels such as needles, litter, and leaves.

• All remaining trees within 350 feet either side of Yale Kilgore Road would be pruned 6 to 8 feet from the ground.

• The treatment area along Yale Kilgore Road may be available to the public for forest product (firewood, post, poles) removal.

Results of implementation would achieve the following:

• Leave 40 to 80 square feet of basal area in coniferous areas. The goal is to retain trees with a crown separation of 15 feet or greater. The remaining trees would be larger-diameter Douglas-fir, Engelmann spruce, and whitebark pine.
• Surface fuels remaining on site would be less than 5 tons per acre for woody debris less than 3 inches in diameter and 5 to 10 tons per acre of large woody debris greater than 3 inches in diameter.

Unit 5 (Note: Area within Mt. Jefferson Idaho Roadless Area designated as Backcountry/Restoration (313 acres) and General Forest, Rangeland, and Grassland (322 acres))

The prescribed treatment for this unit is prescribed as a thin from below. Thinning from below would reduce stand density in the lower canopy, decrease ladder fuels, and raise canopy base height; thus increasing torching index and reducing the potential for crown-fire initiation. No temporary or permanent roads would be constructed in Unit 5.

The following implementation mechanisms would be:

• Cut all trees less than 6 inches in diameter with chainsaws.
• Surface fuels, also known as slash, would be hand piled and burned to meet the desired condition for fuels management.
• All remaining trees would have limbs pruned up to 6 feet from the ground.
• Standing dead trees (snags) would be removed where there is an overriding safety concern.

Results of implementation would achieve the following:

• Surface fuels remaining on site would be less than 5 tons per acre for woody debris less than 3 inches in diameter and 5 to 10 tons per acre of large woody debris greater than 3 inches in diameter.

Treatment Systems

The type of mechanical equipment used for thinning operations on slopes less than 40 percent would depend on vegetation removal needs, operational feasibility, and cost efficiency. They could include whole-tree yarding using mechanical harvesters and whole-tree skidding. For noncommercial-sized trees and brush, masticators and/or chippers could be used, or the material could be removed as biomass or be piled and burned. For those hand treatment units with roads adjacent to or within the units, mechanical equipment could be used, providing the equipment remains on the roads, landings, and turnouts.

Treatment systems on slopes greater than 40 percent and within sensitive areas would also depend on vegetation removal needs, operational feasibility, and cost efficiency. Mechanized equipment would not be allowed in these areas.

Treatment Definitions

Commercial Thinning from Below: Process of removing merchantable trees from the lower crown to favor over story/upper crown trees.

Jackpot burning: A modified form of an underburn or broadcast burn where the target fuels to be ignited are the concentrations (or jackpots) of vegetative fuel. The result is a mosaic burn pattern. This technique works well when surface fuel loading is very high following vegetation treatments.

Masticate: Mastication helps to moderate fire behavior by reducing fuel bed depth. To accomplish this, a tracked or rubber-tired machine chops, shreds, and/or grinds small trees, limbs, shrubs, and dead woody debris into chips. Mastication would be contingent on access and slope.
**Pile and Burn:** Cut trees, shrubs, pruned limbs, and dead and down woody material would be piled by hand or machine and burned. Piles would be located away from residual trees and shrub patches to minimize scorch to the canopies and trunks of trees.

**Prescribed Burning:** Burning would be accomplished by applying low- to moderate-intensity fire using hand, mechanical, or aerial firing methods. Burning is used to minimize the potential for unwanted wildfires by reducing surface and ladder fuels and breaking up contiguous vegetation.

**Pruning Trees:** Tree branches/limbs would be cut using hand tools and chainsaws. Trees would be pruned approximately 6 feet above ground level.

**Removal:** Cut trees and shrubs, pruned limbs and dead and down woody debris would be removed by hand or machine to an off-site location for utilization or burning.

**Thin by Hand:** This method of thinning trees and shrubs would involve the use of hand tools or chainsaws to create a prescribed spacing. Trees selected for thinning would be 10 inches DBH or less in units 1 through 4 and 6 inches DBH or less in Unit 5.

**Connected Actions**

**Road Construction, Road Maintenance, and Temporary Improvements**

Thinning treatment of some units would require road maintenance, or temporary road construction to obtain access and remove material.

Unauthorized routes within the project area, specifically in the vicinity of Hotel Creek and Yale Creek, would be obliterated if deemed necessary. Forest Service Road 462, near the Forest boundary, and spurs originating from this road, would also be obliterated following implementation. Forest Service Road 018 would be temporarily opened for administrative use for implementation of the treatments, but following implementation the road would be closed again, at which time the two culverts would be replaced with a drivable ford and if necessary, the gate would be moved to the east end of Blue Creek (Figure 1).

Similarly, Forest Service Road 048 would be used for project implementation, and following completion of all treatments, the culvert would be replaced with a drivable ford and the gate moved to the west side of the creek. Obliteration techniques and methods would be site-specific for each route segment, but would occur with the intention of restoring the land to a stable and productive base no longer suitable for motorized travel (Figure 1).

Existing landings would be used where available; otherwise, new landings would be constructed. New landings may average 0.25 to 0.5 acre to safely facilitate the handling and removal of material. When operations have been completed, rehabilitation of landings would also be completed.

**Project Design Features**

The following design features are incorporated into the effects analysis and proposed action.

**Fuels**

- All burning would take place under the guidelines set forth in a prescribed fire burn plan developed specifically for this project area. Prescribed burn plans address parameters for weather, air quality, and contingency resources.
• Natural or activity fuels would be treated on site through pile, jackpot, or under burning to reduce fuel loading levels and meet objectives. Piles would be burned when moisture conditions prevent fire spread in units.

• Hazard trees and snags would only be removed where they pose a safety concern to crew members implementing the project,

• Prescribed burning control lines would be constructed as needed for holding actions and/or to protect resource area concerns. This includes blackline, fireline, pruning, sawline and hose lays. Existing roads, trails, creek drainages, wet meadows, rocky outcrops and other natural barriers would be used as control lines where possible.

• Prescribed fire control lines would be obliterated to reduce the potential for unauthorized use.

• Areas may be open to public firewood gathering, if wood is available. Other resource values, such as aquatic influence zones, wildlife snags, down logs, and soils, would be protected. The public would be notified of firewood opportunities after timber removal activities are completed.

Vegetation

• Desirable leave-tree characteristics include: straight stems, small branch diameters, good foliage coloration, well-formed crown, branches horizontal or slightly angled to bole, free of insect or disease damage and/or symptoms, vigorous annual terminal growth (especially in last 1 to 3 years), crown class of dominant or co-dominant, and crown ratio is 40 percent or larger.

• Characteristics of trees that are not desirable for leave trees include: multiple tops, poor crown form, crook or seep in bole, trees with dead or broken tops, poor coloration, excessive branch diameter, presence of insect or diseases, branches more than 45 degrees from horizontal, existing physical or mechanical damage, suppressed, poor annual growth, or sucker limbs.

• Leave trees shall not be damaged during operations.

• No five needle pines would be cut.

• All conifers except five needle pines would be cut within two-aspen-tree heights of an aspen clump (three or more aspen trees).

• Temporary roads, skid trails and landings will be identified in advance with the purchaser and Forest Service.

• Trees on the ground would provide opportunities to gather firewood, and for post and poles anywhere within the treatment units. Those removing products can only drive within 300 feet of either side of an open Forest Service System road to retrieve their wood.

• Adjust chipping size and depth to provide a variation of chip depth (maximum depth of 3 inches including patches of unchipped) and chip size to allow differing decomposition rates and soil moisture retention lengths and to avoid negatively impacting available soil nitrogen.

Wildlife

• No treatments would occur within an active goshawk nest area.

• In Unit 1, exclude the nest area and most of the post-fledging area for goshawk from treatment. Exclude the area southwest of Hotel Creek and its aquatic influence zone.
• Leave all standing dead trees (snags) within treatment areas. The exception is within 300 feet of either side of Yale Kilgore Road where firewood may be removed by the public or where overriding safety situations exist.
• Treatments would occur within an active goshawk post-fledging area only between October 1 and February 28.
• No timber or firewood harvest would occur within 30 acres of any historic or active flammulated or boreal owl nests.
• No timber or firewood harvest would occur within 20 acres of any historic or active great gray owl nests.
• Use existing road/route prisms where possible for temporary roads or other routes necessary for implementation.
• Only one project would be implemented at one time in the Henrys Lake Bear Management Unit 1 to avoid decreasing secure habitat.
• Temporary reductions in secure habitat created by opening or constructing roads would not exceed 1,227 acres at any one time.
• All reductions in secure habitat would be restored within one year after project completion.
• Treatment activities will be concentrated in activity areas less than 7,000 acres in size between April 1 and September 15.
• All contracts associated with the proposed project will contain wording that emergency cessation or modification of activities will occur to resolve conflicts with grizzly bears. If a human/grizzly bear conflict occurs, Conservation Strategy nuisance bear standards will be applied.
• At least 2 pieces per acre of downed wood over 12 inches in diameter will be retained in all treatment units.
• No timber harvesting or similar type of disturbance activity will occur within the security areas during the time the security areas are designated.
• Project personnel will comply with the Forest’s current food storage order.
• No permanent fire breaks would be constructed on ridges or saddles.
• Project activities during the migratory bird breeding season will commence July 1 (or July 15 if project activity schedules permit) to protect migratory bird breeding activities.

**Hydrology and Aquatic Resources**

**Aquatic Influence Zone**

• Reduce the leave-tree crown spacing to less than 15 feet to ensure for future large woody debris recruitment and maintain shade.
• Within treatment units, obliterate unauthorized, user-created off-highway vehicle routes and rehabilitate stream crossings associated with these routes. Install effective barriers to strongly discourage future use of these user created routes. Consult with a forest watershed or fisheries specialist when obliteration and/or reclamation of these routes occurs.
• Minimize the treatment of woody debris. Treat fuels in the following priority order, unless approved by a hydrologist or soil scientist:
1. Do not treat material (slash) in the aquatic influence zone if it does not compromise the fuel treatment effectiveness. Do not masticate, pile burn, or broadcast burn within the aquatic influence zone unless approved by a forest hydrologist or soils scientist. The first treatment priority is to lop and/or scatter as much material as possible while still providing for an effective fuels treatment. *Note:* In past projects, it has proven effective to lop and scatter material that is less than 2 inches in diameter.

2. If excessive material still exists, move that material completely outside the aquatic influence zone to either scatter, masticate, burn, or otherwise treat.

3. If it is not feasible to move excessive material completely outside of the aquatic influence zone, move the material as far away from stream channels as practical given the local terrain, to burn, masticate, or otherwise treat.
   - Do not remove from the aquatic influence zone any existing dead and down material unless approved by a hydrologist or fisheries biologist.
   - Do not pile slash in ephemeral draws or drainages.

- Within the project area, anchor and place large woody debris in the Blue Creek stream channel to retain sediment and restore stream function and stability to a down-cut unstable channel. Ideally large woody debris would be anchored in the channel every 100 feet with small and large wood scattered throughout the rest of the channel.

- Avoid locating bases, staging areas, hazardous material storage facilities, and other activity centers within the aquatic influence zone. If the only suitable location is within the zone, an exception may be granted following a review and recommendation by a fisheries biologist or hydrologist, who will prescribe the location, use conditions, and rehabilitation requirements. Conduct such work from existing roads and other disturbances. That is, minimize new soil/vegetation disturbances by using existing disturbances as much as practicable.

- Minimize heavy equipment operation (such as, masticator, skidder, etc.) in the aquatic influence zone off of existing routes. If necessary, designate crossings in stable areas to move equipment across an aquatic influence zone.

- No new roads, trails (including skid trails), or landings will be constructed within the aquatic influence zone until appropriate standards for construction, maintenance, and operations are in place (USDA Forest Service 1997 [revised Forest Plan, page III-110]). Use previously disturbed areas for timber sale landings and temporary roads to the greatest extent possible. All landings, skid trails, and temporary roads shall be obliterated (Marr 2017). Log landings would be located only in dry, upland locations rather than wet areas (FS-990a).

- Operations that utilize ground-based equipment that result in logs being skidded or forwarded in or through streams shall not be permitted. When streams must be crossed, adequate temporary structures to carry stream flow shall be installed. Cross the stream at right angles to its channel. Ensure at least one-end log suspension when skidding within the aquatic influence zone.

- Temporary stream crossings will be constructed and used to minimize sediment input and to provide for fish passage. They will be maintained during use and removed and obliterated as soon as they are no longer needed (USDA Forest Service 1997 [revised Forest Plan, page III-111]). The location and type of road/stream crossings shall be approved by the hydrologist or fish biologist prior to construction. Emphasize temporary bridges over culverts if possible.
• Minimize the mechanized treatment of wood residue. All debris associated with treatments shall be left or placed in such a manner as to prevent their entry into streams except for placement of wood in Blue Creek.

• Do not burn material within the bankfull channel.

• Fell trees in a way that protects residual vegetation from damage. Minimize ground-disturbing activities (e.g., fell trees “to the lead,” end-line, etc.).

Road and Trail Closures
• During implementation, maintain enough slash and dead and down wood on site to be incorporated into road obliteration to prevent off-highway vehicle use.

• Obliterate non-system off-highway vehicle trails by incorporating wood and slash to discourage travel.

Soils

Project Wide
• Generally strive to maintain fine organic matter over at least 50% of the area. The preference is for fine organic matter to be undisturbed, but if disturbed, it should be of sufficient quantity and quality to avoid detrimental nutrient cycle deficits. If the soil and potential natural community are not capable of producing fine organic matter over 50% of the area, adjust minimum amounts to reflect potential soil and vegetation capability.

Whole Tree Mechanized Yarding and Landings
• Log landings would be located only in dry, upland locations rather than wet areas.

• Any landings, skid trails, and temporary roads necessary for the project shall be obliterated.

• Areas where natural revegetation is inadequate to prevent accelerated erosion before the next growing season will be covered with slash or chipped material.

• Slopes 40 percent or less will be harvested using ground-based logging equipment (tractors, rubber-tire skidder, low ground pressure equipment, etc.). Ground based logging equipment will not operate on slopes greater than 40 percent.

• Designate skid trails as appropriate to minimize compaction with a focus on dispersing travel routes as much as possible.

• Specify aquatic influence zone layout, boundaries, and operating intentions during project implementation and design plans involving watershed or aquatics staff as needed.

Temporary Road Construction
• Rutting on temporary roads and skid trails will not exceed 6 inches in depth (wet conditions) over more than ten percent of a designated skid trail system. No yarding operations should take place when ground conditions are wet enough that there is a risk of such rutting.

• Cover disturbed areas with large amounts of slash or coarse woody debris (minimum of 75 percent cover) with a rough surface.

• Several legacy route prisms were noted in Unit 1 and Unit 5, plus there are known route prisms around Hotel Creek. Use these existing route prisms where possible for temporary roads or other routes necessary for implementation so that these routes can be reclaimed following project completion.
Non-system Road Obliteration and Illegal All-terrain Vehicle Reclamation
- Ensure that the reclaimed area is effectively closed to minimize future use.

Chipping and Masticating
- Avoid operations if soil is wet (near saturation) to decrease the potential for deep rutting.
- Whenever practical, minimize turning of skid steer or attempt a “rolling turn” to reduce the amount of displacement and top soil mixing with an emphasis on operating over the top of masticated fuels to decrease compaction.
- Plan mastication operations to minimize the amount of passes over any one area to reduce the potential for compaction and rutting.

Post/Pole and Firewood Salvage
- Locate public firewood opportunities as close to the existing road as possible.
- No driving off the west side of Blue Creek Road for firewood cutters. All trees to be cut for firewood would be marked.

Pile Burning and Low Intensity Underburning
- Plan for the burning of piles to occur when soils are wet from snow or rain to limit impacts on soil organic matter, physical properties, and soil organisms.
- Areas of pile burning will be evaluated and monitored to determine if seeding or additional rehabilitation is warranted to minimize introduction and spread of noxious weeds and maintain soil productivity.

Cultural Resources
- If any cultural resources are encountered during the course of this project, the Forest archaeologist will be notified immediately and all project ground-disturbing activities will cease in that area until the Forest archaeologist takes appropriate action in consultation with the Idaho State Historic Preservation Office. Units 1 and 5 have been surveyed. Units 2, 3, and 4 will be surveyed prior to implementation.
- No treatments will occur that would affect a cultural site located in treatment unit 5

Other Alternatives Considered
The Healthy Forest Restoration Act requires that only the proposed action be analyzed, with one exception. If the community has adopted a community wildfire protection plan and the proposed action does not implement the recommendations in the plan regarding the general location and basic method of treatments, the agency is required to analyze the recommendations in the plan as an alternative to the proposed action (HFRA 104(d)(2) and (3)). The proposed action is consistent with recommendations in the 2016 Fremont County Community Wildfire Protection Plan; therefore, no other alternatives were considered or analyzed.

Environmental Consequences of the Proposed Action
This section incorporates by reference each resource report located in the project record (40 CFR §1502.21). These documents contain detailed data, methodologies, analyses, conclusions,
assumptions, maps, references, and technical documentation. Each resource section below summarized potential direct, indirect, and cumulative effects of the proposed action, both positive and negative, and contrasted those with the effects of taking no action (FSH 1909.15 section 14.2).

Fire and Fuels

We considered the project’s potential effects on flame length and surface-fuel-loading levels that affect fire intensity and severity. These factors allow us to measure the success of the project in addressing its needs.

Spatial and Temporal Context for Effects Analysis

The spatial scale for effects analysis is focused within the project area to discuss treatment effectiveness in reducing fuels and potentially reducing fire behavior. Although activities outside this boundary could possibly influence fire spreading into the project area, they would not likely have a substantial effect on fire behavior within the project area. Because of this, the spatial size of this boundary was determined adequate from a fire management perspective.

Existing conditions are those present in year 2016. It is estimated all treatments would be completed in 3 to 5 years following the signing of the decision to implement this project.

Direct and Indirect Effects

Flame lengths of less than 4 feet are often considered a benchmark for effective fire control operations because they can be attacked directly by hand crews. Table 8 in the Fire and Fuels specialist report indicates that post-treatment fuel-loading levels would be perceptibly reduced and the range of potential flame lengths would be reduced in most stands, ranging from 0.5’- 3.8 feet in all units except unit 3, which showed a range of 0.7’- 5.2’ flame lengths. Fire hazard ratings are also expected to range from low in all units with Unit 3 ranging from low to low/moderate. Desired condition for surface fuel loadings would be met, as well as most stands for flame length. This would reduce risks to the public and firefighting forces and increase the success of firefighters engaging in fire suppression actions.

In contrast to current conditions, Table 7 in the Fire and Fuels specialist report, fuel-loading levels in some stands have begun to exceed the desired condition. It also suggests that portions of the project area have potential fire behavior characteristics that would make direct suppression strategies ineffective or unsafe for firefighters. These types of conditions are a concern due to the proximity of private land and the wildland-urban interface. Conditions like these can lead to high acreage burned and adverse effects on many resources including (but not limited to) wildlife, soils, and hydrology.

Thinning would raise the canopy base height which would require a higher flame length needed to initiate crown fire activity. The decreased density of the crowns following treatment would reduce the likelihood that a fire can actively spread through the tree crowns.

Surface, ladder, and canopy fuels would begin to accumulate again after treatment. This is due to the growth of the forest over time. There would be some variability in how rapidly fuels accumulate throughout the project area. A single prescribed burn would reduce fuel loading. However, repeated prescribed fires are usually necessary to fully realize the full ecological benefits, such as changes in forest structure and species composition. Proposed treatments would generally decrease potential fire behavior and fire hazard in contrast to current conditions.

These areas would become more resilient to stand-replacing wildfire and would likely allow for increased protection within the wildland-urban interface. It is anticipated treatments would help fire managers introduce more low-intensity prescribed fire in the future. National Forest System lands and
adjacent private lands within this wildland-urban interface setting would benefit from the reduction of hazardous fuels and subsequent modification of potential fire behavior.

In the absence of vegetation treatment activities, there would be an increased accumulation of surface and ladder fuels from insect and disease activity, storm damage, and the progression of forest succession, growth and change. The result would be increased surface and ladder fuels that affect flame length, surface fuel loading levels that affect fire intensity and severity. It is likely the ability of firefighters to safely and effectively suppress wildland fire would become more difficult. Wildfires that escape initial attack may impact adjacent private lands and have adverse effects on resources. In addition, a large wildfire burning in this area could make access and egress to the adjacent subdivisions and private land problematic.

**Cumulative Effects**

Past wildland fire events have had an effect on the landscape and would continue in the future. Decades of fire suppression have resulted in high tree densities from infilling with shade-tolerant, fire-sensitive tree species. This alternative, combined with other fuels reduction activities within and adjacent to the project area, such as those listed in the project record, would modify fire behavior by contributing to the overall reduction of surface, ladder, and crown fuels, thereby reducing fire intensity and crown fire potential within and adjacent to the project area.

Past treatments play a role in shaping the existing vegetation condition and influencing proposed treatments. It is likely past treatments have increased suppression ability and reduced fire hazard in residual stands and have led to some natural regeneration, depending on the treatment and intensity of treatment.

In the spring of 2016, the Bureau of Land Management announced its decision to implement the proposed action outlined in the Shotgun Valley Fuels Reduction and Forest Restoration Project Environmental Analysis. Implementation of the proposed action includes the reduction of hazardous fuel accumulations and improving forest and shrub community health through the use of mechanical treatments, prescribed fire, and biomass utilization on 2,751 acres throughout the Shotgun Valley and surrounding areas over the next 10 years. Of the total 2,751-acre project area, approximately 562 acres of Bureau of Land Management land is directly adjacent to Yale Creek Units 1, 2, and 3. These activities include thinning conifer trees that are 8 to 12 inches diameter breast height and leaving 20- to 30-foot spacing between trees, depending on the specific goals of the unit. The aim for the remaining open mature canopy would be a basal area of 50 to 70 square feet. These are similar specifications proposed by this proposed project, with an overall goal of reducing the threat of high intensity fire behavior in the areas surrounding the Yale Creek and Old West Ranches subdivisions (USDI BLM 2016).

In addition, there is “Fire Wise” hazardous fuels reduction work occurring on private lands adjacent to the project area. These combined treatments would complement the purpose and need for fire and fuels management by reducing fuels and modifying fire behavior to enhance community protection opportunities. The existing condition has been influenced by fire exclusion and large fires, as well as natural and artificial activities including insects and disease, wind and ice events, and past timber harvest. It is impossible to predict when a wildfire may occur in the future, or the subsequent effects of that fire.

**Compliance with Forest Plan and Laws and Regulations**

The proposed action would achieve goals set forth in the National Fire Plan and Healthy Forest Restoration Act, and would comply with direction in the Forest Plan. All burning would be implemented in full compliance with the Idaho Department of Environmental Quality, Air Quality
Division and the Federal Clean Air Act. In addition, the proposed action would be responsive to the Fremont County Wildfire Protection Plan and the Island Park Sustainable Fire Community Strategic Plan. It would promote the collaborative effort occurring between federal, state, city, and private stakeholders in the community.

**Vegetation**

We considered four resource indicators that examine forest health issues. These are properly functioning condition-age class distribution, zone of imminent mortality, Douglas-fir beetle hazard rating, and old-growth and late-seral stages.

**Spatial and Temporal Context for Effects Analysis**

The spatial scale for old-growth and late-seral, and properly functioning condition-age class distribution management indicators was assessed at the Forest Plan Principal Watershed Island Park: Centennials #09A scale (approximately 61,506 acres). The spatial scale for forest health zone of imminent mortality and forest health Douglas-fir beetle hazard ratings management indicators was assessed at the individual stand level using individual stand attributes. The stands were then lumped into treatment units 1-5. Each treatment unit was evaluated at the project scale.

Existing conditions are those present in year 2016. It is estimated all treatments would be completed in 3 to 5 years following the signing of the decision to implement this project.

**Direct and Indirect Effects**

**Properly Functioning Condition-Age Class Distribution.** All five treatment units contribute approximately 6.2 percent of the total age class distribution for age classes for forested vegetation within the watershed. There is an imbalance of age classes for forested vegetation in Principal Watershed 9A. Existing conditions for successional stages in Principal Watershed 9A are dominated by late successional stage (62.4 percent) and mature successional stage (16.6 percent) for the Principal Watershed 9A. The Willow fire of July 6, 2008 was a large scale disturbance (5,686 acres). This fire reduced the number of acres of mature and late successional stages of development to contribute to early successional stage (12.3 percent). Young successional stage (8.7 percent) was created primarily due to past harvest.

The proposed action would remove trees by thinning from below. This would leave the age of the overstory trees basically intact and would not change the successional stages or age class distribution in Principal Watershed 9A. The proposed action would continue to promote an imbalance of age classes. However, the proposed action changes stand structure from multi-story stands to both single and two-storied stands after projected aspen regeneration. Where aspen is regenerated, fire risk and fire hazard are reduced as conifer trees functioning as fuel ladders are decreased and replaced with species that do not function to facilitate ground fire to crown fire.

**Zone of Imminent Mortality.** In the project area, approximately 1,330 acres currently exceed the zone of imminent mortality. Without treatment, an increase in the number of acres achieving the zone of imminent mortality would continue. In 10 years approximately 2,459 acres would exceed the zone of imminent mortality, and 2,755 acres in 20 years, and all of the 3,159 treatment acres in 50 years.

Implementing the proposed action would reduce tree competition and interactions. The effects of density-dependent mortality would be markedly reduced. The proposed action alternative would reduce the number of acres achieving the zone of imminent mortality to zero in 10, 20, and 50 years.
**Douglas-fir Beetle Hazard.** At existing conditions, all stands are rated as high to Douglas-fir beetle hazard. Without treatment, all stands surveyed would rate high to Douglas-fir beetle hazard in 10, 20, and 50 years.

The proposed action markedly reduces the number of acres exposed to a high Douglas-fir beetle hazard rating. Under the proposed action, Units 3 and 5 are rated as high for the Douglas-fir beetle hazard in 50 years. The reduction in the Douglas-fir beetle hazard rating is short lived as remaining Douglas-fir rapidly grow. These units would reduce species composition of subalpine fir which would increase the proportion of basal area of Douglas-fir equal to or greater than 9 inches, thus increasing the hazard rating. Thinning from below would also increase the diameter of the stand and increase the associated value, thus increasing the hazard rating. In 50 years, the Douglas-fir beetle hazard rating is back to high.

**Old Growth and Late Seral.** At existing conditions, approximately 19,534 acres or 38.1 percent of forested acres meet late-seral and old-growth blocks. Without treatment, the number of acres of late seral and old growth would not be reduced. Principal Watershed 9A currently meets and exceed the Forest Plan guideline having old-growth and late-seral blocks equal to and greater than 20 percent of forested acres.

Under the proposed action, approximately 945 acres of existing late seral, old growth within the proposed units would not meet requirements. The proposed action would leave approximately 18,589 acres or 36.3 percent of forested acres that meet late-seral, old-growth blocks. Principal Watershed 9A would continue to meet and exceed the Forest Plan guideline having old-growth and late-seral blocks equal to and greater than 20 percent of the forested acres.

**Cumulative Effects**

**Properly Functioning Condition-Age Class Distribution.** All proposed actions would predominately remove trees by thinning from below. This leaves the age of the overstory trees basically intact and does not change the successional stages and age class distribution in Principal Watershed 9A. Stand structure is changed from all stands currently as multiple story to either single story or two-storied.

In 50 years, existing age class distribution would continue towards succession without any disturbance. That is, acres that are young today would be mature in 50 years, acres that are mature today, would be in a late-successional stage. This process would continue at the landscape scale.

**Zone of Imminent Mortality.** All relative stand density\(^9\) indexes are reduced. Existing conditions of mature and late stands age classes that are within, or predicted to enter, the zone of imminent mortality are reduced and delayed to future decades. This benefits forest health by reducing density-dependent mortality. Stressors from drought, competition, insects and disease can be expected to decrease density-dependent mortality.

**Douglas-fir Beetle Hazard.** At existing conditions, approximately 9.5 percent of high hazard rating for Douglas-fir beetle comes from areas within the five units proposed for treatment. Without treatment, all of the 3,159 treatment acres would be in the high Douglas-fir beetle hazard rating in 50 years.

The proposed action markedly reduces the number of acres exposed to high hazard rating. Under the proposed action, two treatment areas are rated as high in 50 years. Unit 3 would have zero acres rated

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\(^9\)An index measure of tree crowding (competition) which combines average tree size and number of trees per acre.
as high in 10 and 20 years, but would return to high in 50 years. Unit 5 retains a high Douglas-fir beetle hazard rating for all time periods as the thinning from below 7.0 inch diameter breast height has little effect on overstory trees.

**Late-seral and Old-growth Condition.** Modeled stands and predicted stand characteristics for late-seral and old-growth conditions are the same for no treatment and the proposed action.

The proposed action reduces the number of acres for late-seral and old-growth conditions in 10 years by 944.6 acres; in 20 years by 736.6 acres; and by the same 736.6 acres in 50 years.

At existing conditions in 2017, two units are late seral, old growth. Without treatment, in 2067 all of stands modeled would meet late-seral characteristics in 50 years.

**Compliance with Forest Plan and Laws and Regulations**

Watersheds that have old-growth and late-seral blocks equal to or greater than 20 percent of the forested acres meet the Forest Plan guideline. Watersheds below the 20 percent threshold do not meet the guideline. Under the proposed action, Principal Watershed 9A exceeds the Forest Plan guideline having old-growth and late-seral blocks equal to or greater than 20 percent of the forested acres in 2027, 2037 and 2067. However, in 10 years approximately 944.6 acres of existing late seral, old growth would not meet requirements.

Without treatment, Principal Watershed 9A exceeds the Forest Plan guideline of having old-growth and late-seral blocks equal to or greater than 20 percent of the forested acres at existing condition, in 2027, 2037 and 2067.

**Aquatic Resources**

We considered the project’s potential effects on our ability to manage for favorable vegetative species in the aquatic influence zones within the project area’s 11 streams (Aquatics Report, pages 4-8). We also considered whether the project would affect sensitive fish, water temperature, large woody debris, and illegal off-highway vehicle access.

**Spatial and Temporal Context for Effects Analysis**

The spatial scale for effects analysis focused on streams both upstream and downstream of the project units within the Centennial Mountains. Effects analysis included a determination of effects to the next nearest and connected downstream waterway or waterbody. Cumulative effects would include the upstream watershed as applicable and downstream to Island Park Reservoir. This area includes sites that may experience immediate effects from the project and the furthest downstream effects may be observed if any.

**Direct and Indirect Effects**

There are no threatened or endangered fish species that occur within the project area. Yellowstone cutthroat trout currently retains its status as a sensitive species on the Regional Foresters Sensitive Species list. This project is within the Henrys Fork and Island Park Reservoir drainage and historically contained Yellowstone cutthroat. Yellowstone cutthroat have essentially been extirpated from this area (USDA Forest Service 2008), therefore no impacts to Yellowstone cutthroat are anticipated as a result of this project. The species habitat is in good condition except for localized impacts at both system and non-system road and trail crossings.

Brook and rainbow trout, along with nongame fish, do occur within the project area. Stream habitat may be affected in the short term and at temporary road crossings. Design features are expected to
reduce sediment movement and siltation of the creeks. The project has the potential to decrease shade and thereby effect stream temperatures, especially in areas surrounding aspen located within the aquatic influence zones (because nearby conifers would be removed). As a general rule, aspen within the aquatic influence zones is viewed as a more favorable species as it is readily used by beaver and can still provide summer time shade. Until aspen matures, shade could be decreased and could affect water temperatures but negative impacts to fisheries from minor stream warming is not expected.

Woody debris is abundant in most streams with the exception of Blue Creek. The removal of conifers within aquatic influence zones has the potential to reduce short- and long-term large woody debris recruitment to streams. However, appropriate design features should meet the required needs of large woody debris recruitment. This would meet the desired conditions for aquatic influence zones. If no treatment occurred, any opportunities to provide large wood back into previously logged aquatic influence zones would be forgone.

Due to concerns for continued shade and large woody debris recruitment, timber marking would occur in consultation with a hydrologist or fish biologist where larger trees within aquatic influence zones would be favored to remain for future large woody debris recruitment to streams and maintain shade, thereby protecting aquatic influence zone needs.

The most likely indirect effect that could occur as a result of this project is an increase of illegal off-highway vehicle use and non-system off-highway vehicle trails as stand density is decreased. It would be imperative to follow project design features and obliterate access roads and illegal off-highway vehicle trails and incorporate enough rock and woody debris to eliminate this potential effect.

**Cumulative Effects**

Past timber sales within aquatic influence zones within Ice House and Blue Creek have been noted, and this removal of large woody debris may be the causative factor for the channel downcutting evident in Blue Creek. To counteract the effects of past timber removal, the placement and anchoring of large woody debris within the Blue Creek channel has been incorporated into the project design.

Stream survey crews have noted effects of illegal off-highway vehicle trails and crossings on most the perennial streams within the project area. Motorized recreational use continues to expand, especially in areas associated with private recreational residences. These uses and pressures are expected to continue to increase. To counteract these effects, obliteration of temporary roads and crossings are included in the design features of this project.

Implementing project design features would mitigate any cumulative effects within aquatic influence zones.

**Compliance with Forest Plan and Laws and Regulations**

This project will have “no impact” on Yellowstone cutthroat because cutthroat no longer occur in this area and habitat will be protected.

The project is in compliance with the Forest Plan due to implementing design features that protect and improve aquatic influence zone values.

**Wildlife**

A key issue for this project was effects to grizzly bear, northern goshawk and Canada lynx. These species are discussed below. All other threatened, endangered, proposed, candidate and sensitive species, as well as migratory birds species, are discussed in the wildlife specialist report, the biological
assessment (species associated with the Endangered Species Act) and biological evaluation (all other species and migratory birds).

**Spatial and Temporal Context for Effects Analysis**

**Grizzly Bear (*Ursus arctos*)**
The project area is within the Henrys Lake 1 Bear Management Unit. This unit is on the west side of the Ashton/Island Park Ranger district and includes most of the Centennial Mountain Range. The Targhee National Forest portions of the Henrys Lake 1 Bear Management Unit subunit will be used for the spatial effects analysis for this project as required by the Revised Forest Plan and Grizzly Bear Conservation Strategy.

**Canada lynx (*Lynx canadensis*)**
The spatial scale for Canada lynx was assessed for the Coffeepot Lynx Analysis Unit (LAU) as required by the Northern Rockies Lynx Management Direction. Suitable Lynx habitat within the Coffeepot LAU is 15,913 acres. Acres of habitat in the treatment area determined to be suitable for lynx is 1,496 acres.

**Northern Goshawk (*Accipiter gentilis*)**
The Northern Goshawk is a sensitive species on the Targhee National Forest. The 1997 Revised Forest Plan for the Targhee National Forest contains standards and guidelines to protect goshawk territories. Goshawk territories contain a nest area, a post-fledging family area, and a foraging area. There are standards and guidelines for each area.

The nest area is a 200-acre buffer around the current nest (USDA 1997). It should include all alternate nests. It contains 100 percent mature forested acres with a canopy cover of 75 percent or greater (USDA 1997). The nest area is the focus of all movements and activities associated with nesting. It contains predominantly mature forest (Reynolds et al. 1992).

The post-fledging family area is a 400-acre buffer around the current nest (USDA 1997). The post-fledging family is an area used by adults and young from the time the young fledge until no longer dependent on the adults for food. The post-fledging family area resembles the nest area in vegetative structure (Reynolds et al. 1992).

The foraging area is a 5,400-acre buffer around all known alternate nests (USDA 1997) with a radius of 2,600 meters. The foraging area is related to the home range and contains the area where the male forages for food for the female and young. The foraging area contains mature forest, as well as other cover types (Reynolds et al. 1992).

Suitable goshawk nesting habitat is mature and old-growth forest with a high canopy cover. Douglas-fir and ponderosa pine forest types contain 78 percent of the known goshawk nests in the western United States (Boyce et al. 2006). On the Targhee National Forest, goshawk nest areas had 68 percent mature forest cover and were most likely to be in Douglas-fir, on the middle to lower slopes, on north aspects, with moderate slopes (average 22 percent), and high canopy cover (average 79 percent) (Patla 1997).

Suitable goshawk foraging habitat includes both forested (of all stand ages) and non-forested habitats (TNF 1997), but more goshawk prey may be present in older vegetative structural stages and small openings (Boyce et al. 2006). On the Targhee National Forest, goshawk foraging areas had over 60 percent mature forest cover. However, sage and shrub habitats appeared to be an important component
of foraging areas. Goshawk prey, in order of biomass representation, on the Targhee National Forest were snowshoe hares, grouse, Uinta ground squirrels, and red squirrels (Patla 1997).

**Direct and Indirect Effects**

**Grizzly Bear (Ursus arctos) (Threatened)**

The Henrys Lake Bear Management Unit 1 subunit is 46.1 percent in secure habitat or 55,527 acres. The largest block of secure habitat is adjacent to the project area, providing an area that is over 7,000 acres. The total acreage of this project would not exceed one percent of the acreage of the largest subunit within the bear management unit. Henrys Lake Bear Management Unit 1 allows 1,227 acres of secure habitat to be temporarily lost. When constructed, the proposed temporary roads would reduce secure habitat by 1,012 acres which is below the 1,227 acres allowed. Project activities would not occur in habitats that are important for grizzly bear foraging. No timber harvesting or similar type of disturbance activity would occur within the security areas during the time the security areas are designated.

This would be the only project in the subunit that would affect security. Project activities are expected to displace bears and alter their movements during implementation. The impacts of this displacement would be minimal because of the secure area adjacent to the project area and the treatment units do not contain important habitats for grizzly bears, such as denning areas or key food resources. For these reasons, project activities “may affect, but not likely to adversely affect” grizzly bears.

**Canada Lynx (Lynx canadensis) (Threatened)**

The Ashton-Island Park Ranger District 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. The lynx recovery outline objective for secondary lynx areas is to maintain habitat for occupancy by lynx (USDI Fish and Wildlife Service 2005). It is not believed that secondary areas will support lynx reproduction or home ranges (Interagency Lynx Biology Team 2013). There is no evidence that lynx occupy the Ashton-Island Park District.

Project activities are expected to have very limited effects to Canada lynx. While there are no resident lynx in the project area, traveling lynx are possible within or near the project area. Removing only understory vegetation and some overstory trees in the southern portion of lynx habitat, and maintaining vegetation north of the project area, allows for uninterrupted travel. The Northern Rockies Lynx Management Direction provides objectives and guidelines for all projects on the forest and addresses the inadequate regulatory mechanisms which were the primary reason for the listing of lynx. The land management plan amendments for lynx have substantially reduced the influence of anthropogenic to lynx (Interagency Lynx Biology Team 2013). All management direction in the 2007 Northern Rockies Lynx Management Direction would be met.

Standard Veg S6 from the Forest Plan states that management activities that reduce snowshoe hare habitat (primary diet of lynx) in multi-story mature or late-successional forests may only occur in very limited exceptions or within the wildland-urban interface. This project would reduce the multi-story nature of the project area by thinning overstory trees, removing understory trees, and limbing to 6 feet of some remaining overstory trees. Therefore, snowshoe hare habitat would be reduced.

For these reasons, project activities “may affect, but not likely to adversely affect” Canada lynx.
Northern Goshawk (*Accipiter gentilis*) (Forest Service Sensitive Species)

There is suitable habitat of mature Douglas-fir with a canopy cover of 75 percent or greater in the project area. It is estimated that 50 percent of the Targhee National Forest has been surveyed for goshawks. There are 17 historic or active goshawk territories that have been identified on the Ashton-Island Park District. There is an occupied nest in Unit 1 and another occupied nest near in Unit 3. No treatments in Unit 1 would occur in the nest or foraging areas. The design of Unit 3 avoids this nest and its associated territories.

There is an active goshawk territory in treatment Unit 1. There is a portion of a foraging area in treatment Unit 3. Goshawk territories contain a nest area, a post-fledging family area, and a foraging area. There are Forest Plan standards and guidelines for each area. The target age class distribution in foraging territories is less than 20 percent in the non-stocked/seedlings, saplings, and pole-age classes and 40 percent or more for the mature and old-growth age class. This guideline would be met. Currently, distribution in foraging territories in the earlier age classes are 12.3 percent or less and the mature age class is 79 percent. The project would not create any openings, would maintain snags in foraging areas, and would not remove snags except for safety reasons. The Forestwide down wood standard would be met because more than 60 percent of the watershed is in the mature and old-growth age class. Forest Plan road density standards would increase in this subunit, but would not exceed the allowable standard. The project would return all temporary roads to a condition that would provide security and exclude motorized use within 1 year of completion.

Treatments may impact individuals, unidentified nests, and habitat; however, nest areas and post-fledging family areas would be protected. Also, timing of the project would allow the young to fledge.

This project “may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species”.

Cumulative Effects

Grizzly Bear

The Forest Plan standard for total motorized access route density and open road and open motorized trail route density for both subunits of the Henrys Lake Bear Management Unit is 1.0 and 0.6 mile per square miles, respectively. The current total motorized access route density and open road and open motorized trail route density for the Henrys Lake 1 subunit are 0.77 and 0.56 miles per square mile, respectively (USDA Forest Service 1999). This project involves construction of temporary roads that would temporarily increase the total motorized access route density to 0.826 for this bear management unit. Temporarily, until those roads are obliterated, the Forest Plan road density standards would increase in this subunit, but would not exceed the allowable standard. In addition, the Forest Plan states that each activity area shall not exceed 7,000 acres in size and be concentrated in activity areas on an annual basis between April 1 and September 15. Activity within the project area would be 3,161 acres and would be conducted between the specified dates.

Canada Lynx

Fuel treatment projects within the wildland-urban interface that do not meet Forest Plan standards VEG S1, VEG S2, VEG S5 and VEG S6 shall occur on no more than six percent (cumulatively) of lynx habitat on each administrative unit (a unit is a national forest). The standard that applies to this project is Standard VEG 6 which restricts thinning that removes snowshoe hare habitat except within the wildland-urban interface. On the Forest, six percent of lynx habitat would be 63,000 acres (Lynx Annual Report 2017). This report indicated that there were a total of 2,250 acres of lynx habitat treated inside of the wildland-urban interface where the six-percent-rule applies. Adding the existing
2,250 acres and the 1,496 acres from this project the total would be 3,746 acres or six percent of the limit. The total acres treated within the wildland-urban interface where the six-percent-rule applies would remain well below the 63,000 acres limit.

Northern Goshawk
The project would have few cumulative effects on the goshawk as no known nests would be affected but unknown individuals may be affected. There is potential to affect unknown birds and nests because these nests have not been found. The project would not add to created opening, would retain mature and old overstory, and would not reduce the security of the area for goshawk nesting.

Compliance with Forest Plan and Laws and Regulations

Forest Plan
For reasons stated above, the project is consistent with the 1997 Revised Forest Plan Forestwide management direction for wildlife on pages III-15 to III-23. This includes the 2016 Grizzly Bear Conservation Strategy. In addition, the 2007 Northern Rockies Lynx Management Direction that provides objectives and guidelines for all projects on the Forest would be met. Lynx habitat has been updated using the Targhee National Forest Lynx Habitat Mapping Process (12/17/2013) (USDA Forest Service 2013). It is the latest information on lynx habitat for the Forest.

Endangered Species Act
Biological evaluations were completed for threatened, endangered, proposed, and sensitive animal species. No federally listed or proposed wildlife species would be affected by the proposed action.

Migratory Bird Treaty Act
This project complies with our memorandum of understanding with the USDI Fish and Wildlife Service. Activities that affect migratory birds would not occur until after July 1 when most of the birds are finished nesting.

Soils
Soil quality indicators were developed to give insights as to how well the inherent soil is functioning. Coarse woody debris\textsuperscript{10}, fine organic matter\textsuperscript{11}, and detrimental soil disturbance\textsuperscript{12} were used to discuss effects to soil health.

Spatial and Temporal Context for Effects Analysis
The activity area is considered an appropriate geographic unit for assessing soil environmental effects, because soil productivity is a site-specific attribute of the land. The productivity of one area of soil is not dependent on the productivity of an adjacent area of land. Similarly, if 1 acre of land receives soil impacts resulting from management activities and a second management activity that may affect soil is planned for that same site, then soil cumulative effects are possible on that site. Thus, cumulative effects to soil productivity are appropriately evaluated on a site-specific basis.

\textsuperscript{10} Dead organic materials such as plant stems, branches, roots and logs in all stages of decay with a diameter greater than 3 inches.

\textsuperscript{11} Woody material less than 3 inches.

\textsuperscript{12} Defined in Region 4 by soil displacement, soil compaction, soil puddling, and severely burned soil.
The temporal scope for assessment of soil resource environmental effects will include both short- and long-term impacts. For the purposes of this analysis, short-term effects are defined as those that occur approximately within 1 to 50 years following proposed vegetation treatments. Long-term effects are defined as those that occur approximately within 50 to 100 years, or more, following proposed vegetation treatments. These timeframes were derived from local Forest monitoring and literature applicable to soil chemical and physical properties as well as climatic conditions and accounting for the anticipated level of disturbance found within the Yale Creek prescriptions.

**Direct and Indirect Effects**

Direct effects will result from ground-based mechanized logging, landing construction, temporary road construction, mastication, chipping and burning. No direct effects are anticipated to result from pruning of trees, opening currently existing roads, and construction of burn piles by hand. Therefore, no further discussion is given to these activities.

**Coarse Woody Debris.** Implementing project design features under the proposed action would maintain compliance with the Forest Plan guidelines following proposed treatments.

All units currently meet or exceed Forest Plan guidelines (5- to 10-tons per acre) for coarse woody debris. Without treatment, all units would continue to meet or exceed Forest Plan guidelines.

**Fine Organic Matter.** Activities for all units that would impact fine organic matter include temporary road construction, pile burning, and low intensity understory burning. Pile burning and low intensity understory burning would not impact 50 percent of the activity area. The proposed action would likely result in an increase of fine organic matter as the result of dropped logging slash, chipping, and covering reclaimed temporary road prisms with coarse woody debris and slash.

Based on visual observations completed during the 2016 soil evaluation in Units 1, 2, 4 and 5, plus information gathered for Unit 3 from other field visits through the area, indicate all units are in compliance with Forest Plan fine organic matter guidelines. Without treatment, all units would continue to exceed Forest Plan guidelines of 50 percent or more ground cover of fine organic matter.

**Detrimental Soils Disturbance.** Detrimental soil disturbance from implementing the proposed action varies by unit. In general, Unit 1, 2, 3 and 4 proposes temporary road construction. All units propose varying degrees of mechanical whole-tree harvesting, chipping and removing slash, low intensity understory burn, and pile burning that would negatively impact levels of soil disturbance. Several design features are prescribed to mitigate and minimize these resource impacts.

Activities positively impacting existing detrimental soil disturbance levels in Unit 1 include obliteration of approximately 2 miles of existing non-system road, reclamation of one illegal all-terrain vehicle crossing on East Fork Hotel Creek, in addition to several other miles of illegal routes. In Unit 2 removal of two culverts would occur on West Blue Creek Road 018 and one culvert on Forest Service Road 048 to be replaced with a drivable ford. Temporary road construction proposed in this unit would re-open an existing template\(^\text{13}\) that is currently closed to the public and tank trapped at the beginning.

Without treatment, no new soil effects would occur. Units 1 and 5 would continue to be impacted from illegal all-terrain vehicle use from multiple trails resulting in erosion, compaction, soil displacement, and rutting. In addition, if a wildfire became established it could generate very high heat and be difficult to control. Such a high-severity wildfire would directly impact soil health and site

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\(^{13}\) The area disturbed from the cut and fill of road construction.
productivity. Intense, longer duration heat near the soil surface could impact microbial activity near the soil surface and result in hydrophobic conditions, increased amounts of bare soil, increased potential for surface runoff, soil detachment, large scale erosion, slower recovery of effective vegetative cover and sedimentation generation. The likelihood of this alternative meeting the Forest Plan’s specified desired future condition for sustaining long-term soil productivity by retaining fine organic matter and woody residue on activity areas is low.

**Cumulative Effects**

An overall improvement of existing conditions is anticipated for cumulative effects on coarse woody debris and fine organic matter.

Cumulative effects of detrimental soil disturbance resulting from the proposed action in each unit are not anticipated to result to the extent that would reduce soil function beyond thresholds that would retard soil productivity. Specifically, soil conditions are anticipated to improve in Unit 1 following road obliteration and rehabilitation of illegal all-terrain vehicle routes.

**Compliance with Forest Plan and Laws and Regulations**

The project is in compliance with all national, regional and forest regulations with the proper application of design features.

**Hydrological Resources**

**Hydrologic Disturbance**

A guideline in the Forest Plan states “Not more than 30 percent of any of the principal watersheds and their subwatersheds should be in a hydrologically disturbed condition at any one time” (Forest Plan Guideline, page III-10). Table 1 provides estimates of the current hydrologic disturbance in Targhee Principal Watershed 009A and the subwatersheds. The Willow Creek Subwatershed is currently over 30 percent hydrologically disturbed, mainly due to the 2008 Willow Fire.

<table>
<thead>
<tr>
<th>Targhee Principal Watershed</th>
<th>Area (acres)</th>
<th>Hydrologic Disturbance Area (acres)</th>
<th>Hydrologic Disturbance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPW 009A-Island Park (Centennials)</td>
<td>61,506</td>
<td>14,116</td>
<td>23</td>
</tr>
<tr>
<td>Subwatersheds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>170402020201 - Willow Creek</td>
<td>15,376</td>
<td>11,713</td>
<td>76</td>
</tr>
<tr>
<td>170402020305 - Island Park Reservoir</td>
<td>13,803</td>
<td>1,891</td>
<td>14</td>
</tr>
<tr>
<td>170402020306 - Hotel Creek</td>
<td>16,798</td>
<td>276</td>
<td>2</td>
</tr>
<tr>
<td>170402020307 - Coffee Pot-Henrys Fork</td>
<td>15,899</td>
<td>3,702</td>
<td>23</td>
</tr>
</tbody>
</table>

1 HUC = Hydrological unit code.

**Water Quality**

The Idaho Department of Environmental Quality identifies surface water use designations (beneficial uses) and the water quality standards necessary to support those uses (Idaho Department of Environmental Quality 2017a). Table 2 lists the beneficial uses of the relevant waterbodies in the analysis area.
Table 2. Beneficial uses of relevant waterbodies

<table>
<thead>
<tr>
<th>Area Streams</th>
<th>Beneficial Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arranget Creek</td>
<td>Coldwater Aquatic Life</td>
</tr>
<tr>
<td>Blue Creek</td>
<td>Primary Contact Recreation</td>
</tr>
<tr>
<td>Bunkhouse Creek</td>
<td>Agricultural and Industrial Water Supply</td>
</tr>
<tr>
<td>Dry Creek</td>
<td>Wildlife Habitats</td>
</tr>
<tr>
<td>Mill Creek (including West Fork)</td>
<td>Aesthetics</td>
</tr>
<tr>
<td>Tom Creek</td>
<td>Protected for all recreational uses and the propagation of fish, shellfish, and</td>
</tr>
<tr>
<td>Jerry Creek</td>
<td>wildlife, wherever attainable</td>
</tr>
<tr>
<td>Willow Creek</td>
<td></td>
</tr>
<tr>
<td>Hotel Creek (including East &amp; West</td>
<td>Coldwater Aquatic Life</td>
</tr>
<tr>
<td>Forks)</td>
<td>Salmonid Spawning</td>
</tr>
<tr>
<td>Icehouse Creek</td>
<td>Secondary Contact Recreation</td>
</tr>
<tr>
<td>Yale Creek</td>
<td>Agricultural and Industrial Water Supply</td>
</tr>
<tr>
<td>Downstream of Project Area</td>
<td>Wildlife Habitats</td>
</tr>
<tr>
<td>Island Park Reservoir</td>
<td>Aesthetics</td>
</tr>
</tbody>
</table>

Source: Idaho Department of Environmental Quality (2017a).

There are no §303(d) listed waters or total maximum daily loads in the project area (Idaho Department of Environmental Quality 2014, 2017b). All of the waters assessed by the Idaho Department of Environmental Quality are currently supporting the beneficial uses.

The Hydrology report, Table 5, summarizes stream conditions in the Blue Creek Watershed Analysis (USDA Forest Service 2008). Most streams in the project area are in fair condition with Yale Creek and the upper portions of Hotel Creek in good condition.

Spatial and Temporal Context for Effects Analysis

The hydrology analysis area for this project is the Targhee Principal Watershed 009A-Island Park (Centennials) and the four, sixth-level hydrologic unit codes that intersect the proposed treatment units. The analysis area was chosen to ensure consistency with a Forest Plan guideline for hydrological disturbance.

The temporal scope of this analysis is approximately 30 years into the past and 10 years into the future.

Direct and Indirect Effects

Hydrologic Disturbance

As shown in Table 3, the proposed units and temporary roads would potentially create hydrologically additional disturbed conditions. It is important to note that the proposed temporary roads are either contained within the proposed units or located on existing disturbances (Hydrology report, appendix A).
Table 3. Estimate of the project-generated hydrologic disturbance in TPW 009A and the subwatersheds

<table>
<thead>
<tr>
<th>Targhee Principal Watershed</th>
<th>Area (acres)</th>
<th>Project-generated Hydrologic Disturbance (acres)</th>
<th>Project-generated Hydrologic Disturbance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPW 009A-Island Park (Centennials)</td>
<td>61,506</td>
<td>3,162</td>
<td>5</td>
</tr>
<tr>
<td>Subwatersheds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HUC1 Area on NFS Lands (acres)</td>
<td>Project Generated Hydrologic Disturbance (acres)</td>
<td>Project Generated Hydrologic Disturbance (%)</td>
<td></td>
</tr>
<tr>
<td>170402020201 - Willow Creek</td>
<td>15,376</td>
<td>16</td>
<td>0.1</td>
</tr>
<tr>
<td>170402020305 - Island Park Reservoir</td>
<td>13,803</td>
<td>191</td>
<td>1</td>
</tr>
<tr>
<td>170402020306 - Hotel Creek</td>
<td>16,798</td>
<td>2,450</td>
<td>15</td>
</tr>
<tr>
<td>170402020307 - Coffee Pot-Henrys Fork</td>
<td>15,899</td>
<td>505</td>
<td>3</td>
</tr>
</tbody>
</table>

Water Quality
The greatest potential impact comes from the treatments proposed within aquatic influence zones. The proposed action would result in approximately 3,160 acres of vegetation treatment; up to 461 acres of which would be located in aquatic influence zones. In addition, approximately six streams would require temporary road crossings within these zones resulting in roughly 4 acres of aquatic influence zone disturbance. Although there may be short-term minor impacts to water quality in the form of sediment delivery to stream channels, overall water quality is expected to remain high and beneficial uses would be protect with proper implementation of the project-specific design features.

Project-specific design features have been incorporated into the project design to protect riparian resources. Large woody debris plays an important role in the stability of the streams in the project area. Ensuring long-term large woody debris recruitment to the steam channels is a key component of the design features. Minimizing ground disturbances in aquatic influence zones is also important. Design features have been incorporated to ensure long-term large woody debris recruitment, minimize ground disturbances, and protect water quality.

Cumulative Effects

Hydrologic Disturbance
Changes in the timing and/or duration of flows are not expected to be a concern because of the relatively small area proposed for treatment within the larger watershed (USDA Forest Service 2002). Table 4 lists the cumulative hydrologic disturbance information for the analysis areas. Additional information on this analysis is found in the Hydrology report, Appendix A.

Hotel Creek and Willow Creek are two subwatersheds noteworthy of additional discussion.

**Hotel Creek.** The greatest potential for change is in the Hotel Creek subwatershed because that is where the majority of treatment is proposed. Currently, Hotel Creek is relatively undisturbed with only two percent hydrologic disturbance. However, large changes in water yield are not expected in Hotel Creek because it will cumulative remain well below the guideline for 30 percent hydrologic disturbance.

**Willow Creek.** Willow Creek is currently very disturbed at 76 percent and far exceeds Forest Plan guidelines of less than 30 percent hydrologically disturbed. Very little treatment is proposed in this
subwatershed (16 acres or approximately 0.1 percent of the watershed area). Willow Creek would remain relatively unchanged at 76 percent hydrologically disturbed pre- and post-project.

Table 4. Cumulative hydrologic disturbance

<table>
<thead>
<tr>
<th>Targhee Principal Watershed</th>
<th>Current Hydrologic Disturbance (percent)</th>
<th>Project Generated Hydrologic Disturbance (percent)</th>
<th>Cumulative Hydrologic Disturbance (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPW 009A-Island Park (Centennials)</td>
<td>23</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Subwatersheds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>170402020201 - Willow Creek</td>
<td>76</td>
<td>0.1</td>
<td>76</td>
</tr>
<tr>
<td>170402020305 - Island Park Reservoir</td>
<td>14</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>170402020306 - Hotel Creek</td>
<td>2</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>170402020307 - Coffee Pot-Henrys Fork</td>
<td>23</td>
<td>3</td>
<td>26</td>
</tr>
</tbody>
</table>

Water Quality
Past timber harvesting, roads, livestock grazing, and unmanaged all-terrain vehicle travel have had the greatest impact to watersheds and streams within the analysis area (USDA Forest Service 2008).

Long-term water quality would be maintained under the proposed action if the design features are properly implemented. These features are designed to limit disturbances in close proximity to waterbodies, thereby reducing the risk of runoff and sediment being delivered to waterbodies. Large woody debris plays an important role in the stability of the streams in the project area. Ensuring long-term large woody debris recruitment to the steam channels is a key component of the recommended design features. Minimizing ground disturbances in aquatic influence zones is also important. The beneficial uses, along with the water quality necessary to provide for those uses, would be protected. Water quality is expected to remain high in the project area.

Minor short-term ground disturbances are expected in the treatment units. Design features have been incorporated to minimize ground disturbances and protect water quality.

Compliance with Land and Resource Management Plan and Other Relevant Laws, Regulations, Policies and Plans
The Willow Creek subwatershed presently does not meet the Forest Plan guideline for hydrologic disturbance. Although Willow Creek is currently very hydrologically disturbed at 76 percent, very little treatment is proposed in this subwatershed (16 acres or approximately 0.1 percent of the watershed area). This subwatershed would be 76 percent hydrologically disturbed with or without implementation of the proposed action.

With the exception of Willow Creek exceeding 30 percent hydrological disturbance, the remainder of the proposed action complies with the applicable hydrology-related direction and standards and guidelines from the Forest Plan, including the hydrologic disturbance guideline and aquatic influence zone management direction.

The proposed action is consistent with the Clean Water Act, Executive Order 11988–Floodplain Management, Executive Order 11990–Protection of Wetlands, and the Idaho Water Quality Standards. The treatment areas do contain floodplains or wetlands. The appropriate management direction is in
place to protect and manage those resources to function properly. The potential effect of the action alternative on these resource conditions is minimized through implementation of design features. No significant effects are expected related to hydrology.

Botanical Resources
The purpose of the biological assessment is to analyze the effects of the proposed action on threatened, endangered, and sensitive species in compliance with section 7 of the Endangered Species Act of 1973 (as amended). There are no plants listed as endangered. Ute ladies'-tresses (Spiranthes diluvialis), a threatened species, is the only plant species listed under the Endangered Species Act found on the Forest. No habitat suitable for the species exists within or near the project area. Therefore, it has been determined that there would be “No effect” on Ute ladies'-tresses and the species will not be discussed further.

The biological evaluation’s purpose is to review the proposed project in sufficient detail to determine its effects on plant species listed as a Forest Service sensitive species by the Regional Forester for the Targhee portion of the Caribou-Targhee National Forest. All sensitive plant species found on the Forest, including whitebark pine (Pinus albicaulis), a listed Forest Service sensitive species and a candidate species for Federal listing, were analyzed. All sensitive species, other than whitebark pine were found to have a determination of “No impact” and will not be discussed further.

In addition, available information was reviewed to document if any plant species of special concern in Idaho (not listed under the Endangered Species Act or as a Forest Service sensitive species) are known to occur in the project analysis area or if any insect pollinator concerns are associated with the project activity. None are known or expected.

Spatial and Temporal Context for Effects Analysis
The spatial scale for effects analysis for rare plants are the project activity units. The temporal scale is the duration of the project.

Direct and Indirect Effects
A few whitebark pine, as well as limber pine, are found within the project area, but none of the treatment areas occur within or near stands of whitebark pine. Most of the Whitebark pine in the treatment area are immature, non-cone producing. Stands of mature Whitebark pine are found at higher elevations outside the treatment areas. A design feature common to all treatments relevant to whitebark pine include that no five needle pines (whitebark and limber pine) would be cut.

The project would benefit whitebark pine twofold; 1) successional displacement of shade-tolerant conifers would be less likely; 2) the probability of high-intensity fire would be lowered. The influence of fire on whitebark pine varies with fire severity. Mixed-severity fire may benefit established whitebark pine by killing competitors while severe fire often kills whitebark pine along with its competitors (Hansen et al. 2016). Without treatment, the potential of a lethal high-intensity fire killing whitebark pine and successional displacement of whitebark pine by shade-tolerant conifers is more likely to occur.

Since the project is not specifically designed for the benefit of whitebark pine and because a small potential of individual trees being inadvertently trampled or otherwise damaged does exist, a determination of “may impact individuals or habitat, but would not likely contribute to a trend toward Federal listing or cause a loss of viability to the population or species”. A measureable impact would not occur and the species ability to continue to exist within the project area would not be altered.
Cumulative Effects
 Cumulative effects to botanical resources would be the same as the discussion of cumulative effects in the Vegetation discussion.

Compliance with Forest Plan and Laws and Regulations
 The project is in compliance with all national, regional and forest regulations related to the management of whitebark pine as a sensitive species.

Whitebark pine management is coordinated by the Whitebark Pine Subcommittee of the Greater Yellowstone Coordinating Committee. We are an active member of the subcommittee and follow the agreed upon strategy of the committee.

Climate
 The Forest Service and other Federal agencies are asked to consider greenhouse gas emissions and the effects of climate change on a proposed action and its environmental impacts in NEPA reviews (USDA Forest Service 2009) that may be relevant to the decision-making process. It is not a rule, policy, or regulation that climate change is considered in NEPA reviews; however, climate change could be a reasonable consideration if there are meaningful measures on site-specific ecological, recreational, and economic trends that relate to the Forest Service overall mission “…to sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations” (USDA Forest Service 2015).

Climate change has been an agency-wide priority for the Forest Service, which has issued direction to administrative units for responding to climate change. In 2010, the Forest Service provided specific direction to the National Forest System in the form of the National Roadmap for Responding to Climate Change (USDA Forest Service 2010a) and the Performance Scorecard for Implementing the Forest Service Climate Change Strategy (USDA Forest Service 2010b). The goal of the Forest Service climate change strategy is to “ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources” (USDA Forest Service 2010a).

The Caribou-Targhee National Forest is included in the Northern Region Adaption Partnership and the Intermountain Region Adaptation Partnership. The objectives of both partnerships are to develop a framework and tools for resources managers to incorporate the best available science; and synthesize the best available scientific information to assess climate change on natural resources and ecosystem services (Halofsky 2016). The Northern Region Adaption Partnership completed the final draft Northern Rockies Adaptation Partnership General Technical Report on July 2016. The Intermountain Region Adaptation Partnership is in the process of finalizing this report and would become an additional reference for the Forest to refer to in the future when considering climate change (Halofsky 2016).

Spatial and Temporal Context for Effects Analysis
 The project area is within the Greater Yellowstone Area. This is a focus area included in the Northern Region Adaption Partnership and is a meaningful scale when considering climate and potential climate changes for the area.

Direct and Indirect Effects
 Climate change and natural disturbances would have a major influence on the future health and productivity of natural ecosystems. Uncertainty about future local-and regional-scale changes in
climate and disturbances implies uncertainty about projected impacts on nature and society (USDA Forest Service 2016, page XV).

Not to diminish the concern of climate change to the Forest Service mission or as a concern for forest management, greenhouse gas emissions, carbon cycling, and potential effects of climate change on this project are not meaningful measures and speculations on site-specific ecological, recreational, and economic trends are too uncertain for climate change to be a specific resource for analysis.

This project would help build resistance to climate-related stressors such as drought, wildfire, insects, and disease. Reducing stocking levels and leaving the healthiest trees promotes tree growth. More open grown conditions leave stands less desirable for disease and insect attacks (Gibson et al. 2008; Hoffman et al. 2008).

In the long term, thinning can be effective in reducing the vertical fuel continuity that fosters initiation of crown fires. The net effect of removing ladder fuels is that surface fires\(^{14}\) burning through treated stands are less likely to ignite the overstory canopy fuels. Stand-replacing fires alter the balance between carbon gained through tree growth and carbon lost through decomposition of dead wood, and may shift the landscape from a carbon sink to a carbon source for several decades following the disturbance (Kashian et al. 2006). A technique to help sequester carbon is to reduce forest densities to keep trees healthy and minimize the risk of stand-replacing fires (Oregon Forest Resources Institute 2006).

Although it is possible to quantify a project’s effects on carbon sequestration and greenhouse gas emissions, there is no certainty about the actual intensity of individual project indirect effects on global climate change. Uncertainty in climate change effects is expected because it is not possible to meaningfully link individual project actions to quantitative effects on climatic patterns. Complete quantifiable information about project effects on global climate change is not currently possible and is not essential to a reasoned choice among alternatives (Climate Change Considerations in Project Level NEPA Analysis, January 13, 2009).

**Cumulative Effects**

Forests play a major role in the carbon cycle. Carbon stored in live biomass, dead plant material, and soil represents the balance between carbon dioxide absorbed from the atmosphere and its release through respiration, decomposition, and burning. As long as forests exist, they would continue to absorb carbon (Climate Change Considerations in Project Level NEPA Analysis, January 13, 2009). Stands dominated by older, larger trees store large amounts of carbon and generally exhibit high carbon loss when disturbed compared with those dominated by younger, faster-growing trees (Kashian et al. 2006).

Climate change science has detected measurable shifts to long-term climatic trends in combination with greater climatic variability, and both are projected to continue in the future. These changes in climate are a consequence of increasing atmospheric concentrations of greenhouse gases that have contributed to a global temperature increase (Joyce et al. 2013). A warming atmosphere is projected to modify both mean annual precipitation and its variability, and increasing atmospheric energy is anticipated to amplify the frequency and intensity of severe weather events (Intergovernmental Panel on Climate Change 2007a, 2012; Natural Resources Council 2010, as referenced in Joyce et al. [2013]).

\(^{14}\) Surface fire: A fire burning along the surface without significant movement into the understory or overstory, with flame length usually below 1 meter.
Projected climate changes within the Greater Yellowstone Area include an increase in average temperature and changes in the timing and magnitude of weather events. Some models predict an increase in precipitation, some a decrease; but mostly there is uncertainty in changes in precipitation that may occur in the Greater Yellowstone Area due to changes in the climate. A basic consensus in the literature concerning management of vegetation at the landscape-scale is for maintaining and improving structural and species diversity that contributes towards resilience of habitats that helps ensure long-term conservation of plant and animal diversity.

**Roadless Resource**

This analysis pertains only to those activities that would occur within the Mt. Jefferson Roadless Area that overlaps 635 acres in treatment Unit 5. Other activities associated with this proposal do not occur within a roadless area and would not affect the characteristics that may lead to future wilderness designation.

Roadless and wilderness characteristics as described in Roadless Area Conservation, appendix C, volume 5 (USDA Forest Service 2008) are untrammeled, natural, undeveloped; outstanding opportunities for solitude or a primitive and unconfined type of recreation; solitude; opportunities for primitive recreation; special features; manageability; soil, water, and air resources; sources of drinking water; diversity of plant and animal communities; habitat for threatened, endangered, and sensitive species dependent on large undisturbed areas of lands; primitive and semi-primitive classes of recreation; reference landscapes for research study or interpretation; landscape character and integrity; and traditional cultural properties and sacred sites. An explanation of each roadless and wilderness characteristic, as well as their indicators and how they relate to existing conditions, can be found in the Roadless Resource report, Table 1 and Table 2.

**Spatial and Temporal Context for Effects Analysis**

**Direct/Indirect Effects Boundaries**

The spatial boundaries for analyzing the direct and indirect effects to Mt. Jefferson Roadless Area are the entire roadless area as described in Idaho Roadless Areas (USDA Forest Service 2008) because the entire area would be considered for a future wilderness. The other area considered for effects is 630 acres of the roadless area within treatment Unit 5 because this is the area affected by the proposed treatments.

The temporal boundaries for analyzing the direct and indirect effects are time between 2008 and the present because 2008 is when Mt. Jefferson Roadless Area was reconfirmed as a roadless area and potential wilderness area during that analysis process. Future timeframe is five years from year of decision because that is the timeframe most project planning encompasses.

**Cumulative Effects Boundaries**

The spatial boundaries for analyzing the cumulative effects to Mt. Jefferson Roadless Area are the entire roadless area as described in Idaho Roadless Areas (USDA Forest Service 2008) because the entire area would be considered for a future wilderness.

The temporal boundaries for analyzing the cumulative effects are when the roadless area was reconfirmed as a roadless area and potential wilderness area during that analysis process. Future timeframe is five years from year of decision because that is the timeframe most project planning encompasses.
Direct and Indirect Effects

Effects are discussed in Table 6 for wilderness and roadless characteristics. Overall, in the long term, actions proposed in treatment Unit 5 would maintain all roadless and wilderness characteristics. In the short term, cutting of trees and burning slash piles would affect the opportunity for solitude, and habitat for threatened, endangered and sensitive species. The area could still be considered for wilderness in future planning efforts.

A comparison between existing conditions and the proposed action to roadless and wilderness characteristics are not changed in the following resource elements: undeveloped; special features; manageability; soils, water, and air resources; sources of public drinking water; diversity of plant and animal communities; primitive and semi-primitive classes of recreation; reference landscapes for research study or interpretation; and landscape character and integrity.

Table 5 compares the resource elements that are different in the proposed action and existing conditions.
Table 5. Resource indicators and measures for proposed action direct/indirect effects

<table>
<thead>
<tr>
<th>Resource Element</th>
<th>Direct and Indirect Effects of Proposed Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrammeled</td>
<td>Manipulation of the vegetation to reduce fire behavior within 635 acres of Mt. Jefferson Roadless Area would reduce the chance a fire would burn within that area at the magnitude it would burn if the vegetation were not treated; the high-severity, natural fire process would be altered. This would potentially continue in perpetuity as maintenance of these treatments occur. These treatments and follow-up maintenance would not preclude fire from those acres treated; a low-severity fire could still burn within the treated acres. The overall untrammeled quality of the roadless area would still meet wilderness qualifications.</td>
</tr>
<tr>
<td>Natural</td>
<td>Cutting trees would leave stumps that would be visible to those walking through the area. The treatments would not add any motorized features such as trails or roads or skid trails. About 635 acres within the Mt. Jefferson Roadless Area would be altered by humans. The affected area is immediately adjacent to a developed subdivision so the overall wilderness qualities are affected by the human influence in the adjacent development. The overall naturalness of this roadless area would still meet minimum wilderness qualifications.</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>The actions associated with the proposed action would not include any structures or construction of roads or other habitations. The remaining stumps from the cut trees would be evidence of modern human use and this would only be evident by a user who is walking through the treated area. During treatments the sound of chainsaws would be heard by humans in the near vicinity; this disturbance to the undeveloped nature of the roadless area would be short duration and only during the time the thinning occurs. Once the piles of slash are burned, the burned area would be visible to a person walking through the area. The overall undeveloped nature of the Mt. Jefferson Roadless Area would meet wilderness qualifications.</td>
</tr>
<tr>
<td>Outstanding opportunities for solitude or a primitive and unconfined type of recreation</td>
<td>Opportunity for solitude within the project area is low as is the opportunity to experience primitive recreation. This low opportunity is due to the adjacent subdivision and its human presence as well as the lack of solitude during project implementation. Chainsaws involved with the treatments would be noisy.</td>
</tr>
<tr>
<td>Solitude</td>
<td>Opportunities for solitude within the entire Mt. Jefferson Roadless Area are moderate. Solitude would be interrupted during implementation by the sound of chainsaws within the 635-acre treatment area and immediately adjacent to that area. The treatment area is within 1.3 miles of the Yale Creek Subdivision making existing solitude low due to the sounds of human habitation emanating from the subdivision. The overall solitude of the roadless area would not change from moderate and would continue to meet wilderness qualifications.</td>
</tr>
<tr>
<td>Opportunities for primitive recreation</td>
<td>Currently opportunities for a challenging experience are rare in this roadless area and primitive recreation is enhanced by the Continental Divide Trail. The proposed action would not modify the Continental Divide Trail, nor would it add any new opportunities or detract from the existing opportunities. No new developments would result from implementation of the actions within treatment Unit 5. The actions proposed would not change existing opportunities for primitive recreation.</td>
</tr>
<tr>
<td>Special features (ecological, geologic, scientific, educational, scenic or historical values)</td>
<td>Slide Mountain, Bloomington Lake, and the Continental Divide Trail are all special features in this roadless area. The proposed treatments would not affect any of these areas nor are the treatments in the vicinity of these areas. The characteristics of the special features in Mt. Jefferson Roadless area would remain as they are currently.</td>
</tr>
<tr>
<td>Manageability (as wilderness)</td>
<td>The proposed treatments would not require a change in the boundary or reduction in size of the roadless area thus allowing it to be managed as a wilderness in the future.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Resource Element</th>
<th>Direct and Indirect Effects of Proposed Action</th>
</tr>
</thead>
</table>
| Soil, water, and Air resources | **Soils:** No road construction, reconstruction, or ground-disturbing activities would occur with the proposed action. All cut trees would be lopped, scattered, or piled and burned on site. Slash pile designated for burning would be kept to a minimum size to avoid detrimental soil conditions from high temperatures in the soils. The obliteration of the user-created route in the northeast corner of Yale Creek Subdivision would improve soil stability and enhance roadless and wilderness characteristics within the roadless area.  
**Water:** The action alternative, implemented with the design features, complies with the applicable hydrology direction and standards and guidelines from the Forest Plan, as well as other pertinent laws, regulations, and directives. No significant effects are expected.  
**Air:** Slash piles would be burned one to two seasons after the slash has been piled. The proposed action does result in short-term increases in emissions during the time the piles are burned. Burning of slash piles has fewer emissions compared to wildland fires. Due to the limited duration and quantity of emissions there are no cumulative effects. |
| Sources of public drinking water | The sources of public drinking water cited in the current condition are not located in the project area. The treatments would not affect any sources of public drinking water. |
| Diversity of plant and animal communities | The effects of pile burning may provide areas conducive for the introduction of invasive plants that are not native to the area. Invasive plants could reduce plant diversity of the area. These areas would be monitored and treated for invasive plants to avoid spreading of invasive non-native plants. The prosed activities would have no impact to sensitive plants (see plant biological evaluation for additional information). |
| Habitat for threatened, endangered, or sensitive species, and species dependent on large undisturbed areas of land | A biological assessment has been completed and the analysis completed by the interdisciplinary team wildlife biologist determined that this project “may affect but is not likely to adversely affect Canada lynx and grizzly bear”. The proposed action would have “No effect” on the greater sage-grouse, wolverine, or yellow-billed cuckoo. Additional analysis concluded that the proposed action “may impact individuals or habitat but would not likely contribute to a trend toward Federal listing or loss of viability to the population or species of the American three-toed woodpecker, boreal owl, great gray owl, and Townsend’s big-eared bat”. Further, this decision would have “No impact” on the following Forest Service sensitive species: boreal toad, spotted frog, bald eagle, Columbian sharp-tailed grouse, common loon, flammulated owl, harlequin duck, northern goshawk, peregrine falcon, trumpeter swan, bighorn sheep, fisher, gray wolf, pygmy rabbit, spotted bat, and Yellowstone cutthroat trout.  
There would be no impact to herbaceous Forest Service sensitive plants listed for the Targhee National Forest. Whitebark pine is the only species of concern in the analysis area; but none of the treatment areas occur within or near stands of whitebark pine. No known occurrences of, or suitable habitat for, any other threatened, endangered, or proposed plant species, occur in the project areas. The results of the botanical analysis indicate that the proposed project “may impact individuals or habitat, but would not likely contribute to a trend toward Federal listing or cause a loss of viability to the population or species”. A measureable impact would not occur and the species ability to continue to exist within the project area would not be altered.  
Reference the biological assessment/evaluation for detailed information concerning the analyses completed for listed and sensitive plant and animal species. |
<p>| Primitive and semi-primitive classes of recreation | This area is classified as semi-primitive, non-motorized in the Targhee Revised Forest Plan. The activities associated with the proposed action would not change this classification and it may enhance the non-motorized experience as the user-created motorized route extending from the north east corner of Yale Creek Subdivision would be obliterated. Tree removal would remove trees from the understory making it more inviting and conducive for additional user-created motorized routes stemming from the subdivision where the terrain and vegetation allow. This would reduce the non-motorized experience for users. |</p>
<table>
<thead>
<tr>
<th>Resource Element</th>
<th>Direct and Indirect Effects of Proposed Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference landscapes for research study or interpretation</td>
<td>No reference landscapes exist within the project area.</td>
</tr>
<tr>
<td>Landscape character and integrity</td>
<td>Landscape character and scenic quality within the area is good to excellent with some evidence of past harvest activities. The implementation of the treatments associated with the proposed action would result in evidence of man's activities being apparent within the area for approximately 5 years after which evidence of this activity would largely be unnoticeable. In the short term, the scenic quality within the activity area would be reduced but no effect would be realized in the long term. There are no visually sensitive travel ways or use areas within this analysis area.</td>
</tr>
<tr>
<td>Traditional cultural properties and sacred sites</td>
<td>No effects to archeological sites and historic properties or areas are anticipated as the known sites would be avoided during implementation. A cause-effect relationship between the proposed action and potential to effect cultural resources does not exist due to project design.</td>
</tr>
<tr>
<td>Other locally unique characteristics Identify any locally unique characteristics and describe how the project would affect these values.</td>
<td>No locally unique areas have been identified by Forest Service resource specialists or the public.</td>
</tr>
</tbody>
</table>
Table 6. Summary comparison of environmental effects between existing condition and proposed action

<table>
<thead>
<tr>
<th>Resource Element</th>
<th>Resource Indicator</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrammeled</td>
<td>Actions taken to hinder, manipulate, or control the long-term natural ecological processes of the area.</td>
<td>Manipulated</td>
<td>Additional evidence of manipulation within 635 acres of 65,000 acres.</td>
</tr>
<tr>
<td>Natural</td>
<td>Past and proposed activities on the natural conditions of the area.</td>
<td>Natural fire occurs</td>
<td>Manipulate natural fire cycles in 635 acres of 65,000 acres.</td>
</tr>
<tr>
<td>Outstanding opportunities for solitude or a primitive and unconfined type of recreation</td>
<td>Ability for people to experience unconfined recreation and physical and mental challenge.</td>
<td>Moderate</td>
<td>Moderate in overall roadless area. Low in 635 acres of area treated.</td>
</tr>
<tr>
<td>Solitude</td>
<td>Solitude is measured by considering the presence of screening, distance from impacts to the rest of the area, mitigation measures such as the timing of disturbances. Ability of a visitor to escape project impacts on solitude within the area.</td>
<td>Moderate</td>
<td>Moderate in overall roadless area. Low in 635 acres of area treated.</td>
</tr>
<tr>
<td>Opportunities for primitive recreation</td>
<td>Project activities might affect the number and type of opportunities available, the challenge of the opportunities, and the addition or absence of facilities.</td>
<td>Moderate</td>
<td>Moderate in overall roadless area. Low in 635 acres of area treated.</td>
</tr>
<tr>
<td>Habitat for threatened, endangered, or sensitive species, and species dependent on large undisturbed areas of land</td>
<td>Affects to threatened, endangered, or sensitive species habitat as cited in the biological assessment and biological evaluation.</td>
<td>The eastern half of this area is included in the Primary Conservation Area for the grizzly bear, a threatened species. It is also considered habitat for Canada lynx, a threatened species. Sensitive raptors use the project area for nesting and foraging.</td>
<td>Slight impact to grizzly bear habitat. Affect to lynx habitat in the form of horizontal cover. Change in raptor foraging areas.</td>
</tr>
<tr>
<td>Traditional cultural properties and sacred sites</td>
<td>Findings in cultural resource report.</td>
<td>Present</td>
<td>Present and protected.</td>
</tr>
</tbody>
</table>

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Yale Creek Fuels Reduction Environmental Assessment
Cumulative Effects
Projects considered for cumulative effects in the Mt. Jefferson Roadless Area within Unit 5 were:

- The Willow Fire (wildland) occurred July 2008, and affected approximately 5,600 acres located primarily in the roadless area. Suppression tactics and effects to vegetation are considered in the current condition of the roadless area. The results did not contribute negatively to roadless or wilderness characteristics.

- Past Bureau of Land Management fuels projects affect approximately 520 acres adjacent to the project area and are not in the roadless area. Therefore these projects do not affect roadless or wilderness characteristics.

- Future Bureau of Land Management fuels projects are proposed on approximately 1,500 acres adjacent to the project area and are not within the roadless area. Therefore these projects do not affect wilderness or roadless characteristics.

- Past timber sales and tree plantings were not in the roadless area except for Whitebark pine planting in the Willow Fire. Planting was by hand techniques and enhanced an important tree species that contributes to roadless and wilderness characteristics now and in the future.

Compliance with Forest Plan and Laws and Regulations
This project complies with two plans that impact roadless areas: Forest Service Roadless Area Conservation, May 2000; and Roadless Area Conservation National Forest System Lands in Idaho, August 2008.
Table 7. Resource indicators and measures for proposed action cumulative effects

<table>
<thead>
<tr>
<th>Resource Element</th>
<th>Cumulative Effects of Proposed Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrammeled</td>
<td>None of the projects considered in cumulative effects analysis would contribute to long-term untrammeled qualities of the roadless area. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Natural</td>
<td>Reduction of fuels within 635 acres of the roadless area would preclude a stand-replacing fire in the future which is a natural process in the mixed conifer vegetation type. This is a direct result of human manipulation of the vegetation within this portion of the roadless area. The natural quality would be affected in the 635 acres of the project area.</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>None of the projects considered in cumulative effects analysis would contribute to long-term undeveloped qualities of the roadless area because no new developments associated with this project would be constructed. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Outstanding opportunities for solitude or a primitive and unconfined type of recreation</td>
<td>None of the projects considered in cumulative effects analysis would contribute to long-term reduction in opportunities for solitude or unconfined recreation of the roadless area. The opportunity for solitude is moderate in the entire roadless area and would remain low in the area affected by this project. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Solitude</td>
<td>None of the projects considered in cumulative effects analysis would contribute to long-term reduction in opportunities for solitude. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Opportunities for primitive recreation</td>
<td>None of the projects considered in cumulative effects analysis would contribute to long-term reduction in opportunities for solitude or unconfined recreation of the roadless area. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Special features (ecological, geologic, scientific, educational, scenic or historical values)</td>
<td>None of the projects considered in cumulative effects analysis would contribute to long-term effect to special features in the roadless area because these features are not within the 635 acres affected by the proposed action. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Manageability (as wilderness)</td>
<td>None of the projects considered in cumulative effects analysis would change the boundaries of the roadless area. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
</tbody>
</table>
| Soil, water and air resources                                                   | **Soil:** Overall there would be an improvement to soil properties within the project area.  
**Water:** Water quality would be maintained over the long term and hydrologic disturbance would remain below 30 percent.  
**Air:** Cumulatively, air quality would remain the same as current condition and not be affected long term due to this project.                                                                                                                                                                                                                     |
| Sources of public drinking water                                               | None of the projects considered in cumulative effects analysis would affect public drinking water in the roadless area because they are not located in the portion affected by these actions. The area would still meet wilderness characteristics and be considered for future wilderness area.                                                                                                                                                                                                                                             |
| Diversity of plant and animal communities                                       | The proposed activities have no direct, indirect, or cumulative impacts to sensitive plants.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Habitat for threatened, endangered, or sensitive species and species dependent on large undisturbed areas of land | Long-term affects to habitat across the roadless area would not be reduced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
None of the projects considered in cumulative effects analysis would affect primitive or semi-primitive recreation of the roadless area as the actions. The area would still meet wilderness characteristics and be considered for future wilderness area.

None are found in this portion of the roadless area.

None of the projects considered in cumulative effects analysis would affect the scenic qualities in the roadless area because they are not affected by these actions. The area would still meet wilderness characteristics and be considered for future wilderness area.

Known sites would be avoided during the actions and maintained in their current condition.

None have been identified in this portion of the roadless area.

<table>
<thead>
<tr>
<th>Resource Element</th>
<th>Cumulative Effects of Proposed Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primitive and semi-primitive classes of recreation</td>
<td>None of the projects considered in cumulative effects analysis would affect primitive or semi-primitive recreation of the roadless area as the actions. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Reference landscapes for research study or interpretation</td>
<td>None are found in this portion of the roadless area.</td>
</tr>
<tr>
<td>Landscape character and integrity</td>
<td>None of the projects considered in cumulative effects analysis would affect the scenic qualities in the roadless area because they are not affected by these actions. The area would still meet wilderness characteristics and be considered for future wilderness area.</td>
</tr>
<tr>
<td>Traditional cultural properties and sacred sites</td>
<td>Known sites would be avoided during the actions and maintained in their current condition.</td>
</tr>
<tr>
<td>Other locally unique characteristics</td>
<td>None have been identified in this portion of the roadless area.</td>
</tr>
</tbody>
</table>
Finding of No Significant Impact

CEQ regulations define a finding of no significant impact (FONSI) as a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (§1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (§1501.7(a)(5)).

As the responsible official, I am responsible for evaluating the effects of the project relative to the definition of significance established by the CEQ Regulations (40 CFR 1508.13). I have reviewed and considered the environmental assessment and documentation included in the project record, and I have determined that the proposed action will not have a significant effect on the quality of the human environment. As a result, no environmental impact statement will be prepared. My rationale for this finding is as follows, organized by sub-section of the CEQ definition of significance cited above.

Context

For the proposed action the context of the environmental effects is based on the environmental analysis in this environmental assessment. Through my review of the environmental assessment, specialist reports, and conversations with staff that the effects of the proposed action are localized, with implication for only the immediate area. The cumulative effects analysis of past and future activities along with the current proposal is discussed in the environmental assessment, pages 21-48). These effects were considered in my determination. The proposed action is consistent with the direction, standards, and guidelines outlined in the 1997 revised Targhee National Forest Plan.

Intensity

Intensity is a measure of the severity, extent, or quantity of effects, and is based on information from the effects analysis of this environmental assessment and the references in the project record. The effects of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised by the public. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. My finding of no significant impact is based on the context of the project and intensity of effects using the ten factors identified in 40 CFR 1508.27(b).

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Beneficial and adverse impacts of implementing the proposed action have been fully considered in the environmental assessment. While there will be beneficial effects, this action does not rely on those effects to balance any adverse effects of the project. Detailed analyses, summarized in the environmental assessment and part of the project record contain comprehensive effects analyses, and form the basis of my finding. The adverse effects of the project would be minimized or controlled by the design features, remain localized, and short lived. I find that the proposed action will have neither a significant beneficial or adverse impact because the anticipated effects are similar to past fuel reduction and forest health projects which have not proven to have significant impacts to the human environment.

The degree to which the proposed action affects public health or safety.

There are limited health and safety hazards to the general public, adjacent landowners, permittees, and Forest Service employees as a result of project activities. The fuel reduction treatments are designed to
increase the efficiency of fire suppression efforts and reduce risks to firefighters, local residents, the public, structures, and natural resources. Project design features, as well as following law, regulation, and policy will protect air and water quality. I find that the project, as proposed, will not likely have a significant impact to public health or safety.

Unique characteristics of the geographic area such as the proximity to historical or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The project area does not contain national parks or monuments, prime farmlands, wild and scenic rivers, or ecologically critical areas. Heritage surveys have been completed in Units 1 and 5. The remaining units will be surveyed prior to implementation. If any historical properties are discovered proper action or avoidance will occur in conjunction with consultation with State Historic Preservation Office. Based upon this information I find that the proposed action will not have significant impacts to unique resources.

The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The effects on the quality of the human environment are not likely to be highly controversial. During the comment period there was no information presented that indicates substantial scientific disagreement about the effects of the project. Based upon the limited context of the project, my review of comments received during scoping, and the analysis of the environmental assessment and project record, I do not find any highly controversial effects to the human environment.

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

Public scoping, or other communication with the public and stakeholders did not reveal any highly uncertain, unique, or unknown risks associated with the effects of the project. The Agency has considerable experience with this type of activity and given the limited context of the project, the effects to the human environment are not significant or outside what would be expected with a project of this type. I find that the effects of this project are well established and predictable.

The degree to which the action may establish precedent for future actions with significant effects or represents a decision in principle about a future consideration.

This is a sight specific project that does not set precedence for any future actions or present a decision in principle about future considerations. Any proposed future projects must be evaluated on its own merits and effects. I find that the proposed action is will not establish any precedent for any future actions.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

Connected, cumulative, and similar actions have been considered and included in the scope of analysis (EA pages 21-48). The analysis accounts for past, present, and reasonably foreseeable future actions of the Forest Service and private land owners in the project area. The analysis of cumulative effects in the environmental assessment follows the National Environmental Policy Act (NEPA) regulations (36 CFR 220.4(f)). Based upon review of the analysis in the environmental assessment and project record I find that the project does not represent a potential cumulative significant impact on the environment.
The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

If any cultural resources are encountered during the course of this project, the forest archaeologist will be notified immediately and all project ground-disturbing activities will cease in that area until the forest archaeologist takes appropriate action in consultation with the Idaho State Historic Preservation Office. Units 1 and 5 have been surveyed. Units 2, 3, and 4 will be surveyed prior to implementation and will have State Historic Preservation Office concurrence before implementation.

This action complies with the National Historic Preservation Act. I find that the proposed action will not have a significant effect on scientific, cultural, or historic properties.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

A biological assessment has been prepared for threatened and endangered species analyzing the effects of the proposed action on Canada lynx and grizzly bear (EA, page 30). Consultation with the United States Fish and Wildlife Service has been completed. It was determined that the project will “may affect, but not likely to adversely affect” grizzly bears and Canada lynx (EA, pages 27-29). After a full review of the environmental assessment, the project record, and biological assessment, I find that the project will not likely significantly affect any threatened or endangered species or critical habitat.

A biological assessment for botanical species has been prepared for only one threatened species, Ute ladies’-tresses, which is the only plant species listed under the Endangered Species Act found on the forest. Since no habitat suitable for the species exists within or near the project area, it has been determined that there would be “no effect” on Ute ladies’-tresses (EA, page 37).

There are no threatened or endangered fish species that occur within the project area.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The proposed action was developed to be consistent with all applicable laws or requirements imposed for the protection of the environment. These include the Clean Water Act, Wetlands and Floodplains Executive Orders (EA, page 36), the Endangered Species Act (EA, page 30), the National Historic Preservation Act (project record), the National Environmental Policy Act (EA, page 1), and the National Forest Management Act (EA, page 1). The environmental assessment analyzed the effects of the project, in part, to determine consistency with law, regulation, and policy. I find that based upon my review of the project that this project will not violate Federal, State, or local laws or requirements for the protection of the environment.

Agencies and Persons Consulted

In accordance with 40 CFR 1501.2a, the Responsible Official selected a team of resource specialists to utilize a systematic, interdisciplinary approach in planning and analyzing the Yale Creek Fuels Reduction Project:

Fuels Specialist – Tracie Buhl
Hydrology – Brad Higginson
Aquatics – Lee Mabey
Soils – Dave Marr
Heritage – Ali Abusadi
Botany – Rose Lehman
Wildlife – Dave Ovard  
Vegetation Specialist – Avery Beyer  
Silviculturist – Jim Robertson  
Roadless – Liz Davy  

The Forest Service provided information concerning this project directly to approximately 93 individuals and organizations, including local and State agencies, municipal offices, businesses, interest groups, and individuals. Tribal government to government consultation was completed in the form of a letter from the District Ranger to the tribal leads of the Shoshone Bannock Tribe. A legal notice was published in the Idaho Falls Post Register on May 7, 2016, seeking comments on the Yale Creek fuels reduction project. In addition, an open house was held on August 30, 2016, at the Forest Service Ranger Station in Island Park, Idaho. Representatives from the Forest Service and Yale Creek and Old West subdivisions and the members of the general community attended the meeting.  

Comments were received from representatives of Native Ecosystem Council, Alliance for the Wild Rockies, American Forest Resource Council, and three individuals.