Introduction

The French Hazard Wildland–Urban Interface (WUI) Project (Project) is a hazardous fuels reduction and vegetation restoration project which addresses the need to treat within the WUI to reduce the risk of wildfire to values (e.g., private property, forest infra-structure, wildlife habitat, visuals, water quality) (Figure 1). The Project would implement a suite of vegetation management treatments (prescribed burns, mastication, commercial, and noncommercial thinning) and associated road management activities to restore species composition and stand structure and reduce undesirable species and stand densities while favoring retention of larger diameter, more fire-resistant trees throughout the Project area.

Reducing fuel loads, ladder fuels, and stand densities would decrease the likelihood of crown fire and improve the resiliency of treated stands should a wildfire ignition occur. In addition, activities occurring within the WUI would create or enhance defensible space for suppression resources should a wildfire threaten adjacent private properties. Restoring vegetative conditions more reflective of the fire-adapted ecosystem, reducing hazardous fuels, and minimizing risks to public health and safety would allow for safe and effective wildfire management in the urban environment and meet the intent of several goals identified in the National Fire and the Comprehensive Strategy.

More information about the project is available at the French Hazard WUI Project website.

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1 Of the 6,230-acre project area, 6,073 acres falls within the WUI delineation. The remaining 157 acres consist of 5 small areas along the western boundary between the WUI and Inventoried Roadless Area boundary (Figure 2). As the overall objectives of the project are similar for the WUI and non-WUI acres, no distinction will be made during analysis between the two areas.

2 Treatment prescriptions for forest stands within the WUI are anticipated to meet the hazardous fuel objective and Forest Plan standards and guidelines for retention and recruitment of old forest habitat (i.e., WIST08 and WIST09), retention of the large tree size class (i.e., VEST03), retention of live and dead vegetative components (i.e., VEGU07) and retention of snags. However, if one or more of the stands to be treated within the WUI cannot meet the hazardous fuel reduction objectives as well as meet Forest Plan standards for old forest habitat, large tree size class, retention of live and dead vegetative components, and retention of snags, then exemptions to these standards and guidelines allowed under the Forest Plan will be employed. The required site-specific analysis needed to support the use of the exemption for individual stands will be included in the project record.

3 [https://www.fs.usda.gov/project/?project=49636](https://www.fs.usda.gov/project/?project=49636)
Figure 1. French Hazard Project is designed to reduce hazardous fuels and risk of crown fire spread within the wildland–urban interface

Project Location

The French Hazard Project area is located entirely on National Forest System (NFS) lands on the Cascade Ranger District of the Boise National Forest (Forest) approximately 7 miles west of Cascade, Idaho (Figure 2). The Project area is adjacent to the Snowbank Inventoried Roadless Area (IRA), but no Project activities are proposed within the IRA.

The French Hazard Project covers approximately 6,230 acres in Management Area 18, (Cascade Reservoir). The Project is located within the Duck Creek-Cascade Reservoir subwatershed 6th hydrologic unit code (HUC) within the Cascade Reservoir watershed 5th HUC (1705012304). The Project area is located in Sections 4, 5, 9, 15, 16 of Township 13 North, Range 3 East; Sections 1, 2, 11, 12, 13, 14, 24 of Township 14 North, Range 2 East; and Sections 6, 7, 18, 19, 20, 29, 30, 32, 33 of Township 14 North, Range 3 East, Boise Meridian, Valley County, Idaho.

The French Hazard Project lies along the eastern slope of West Mountain. The communities along West Mountain are listed in the National Fire Plan (USDA 2000) as communities at risk from wildfire. In addition, the Project area falls within one of the landscape areas designated by Governor Otter and approved by the Secretary of Agriculture as forests at high risk of insect and disease mortality under Section 8204 of the Agricultural Act of 2014 (Farm Bill).
Figure 2. French Hazard Project boundary and location
Current Condition

The Project area is located along West Mountain with elevations ranging from 4,800 to 7,000 feet with moderate slopes. Winds are predominately out of the south/southwest. Precipitation averages 20–84 inches, which mainly falls as snow during the winter. The Project area has been actively managed, with recorded timber sales dating back to the 1960s (primarily even-aged harvest and grazing). These past management practices, combined with fire suppression, have contributed to minimal large-fire activity (i.e., fires ≥100 acres) in recorded history.

The Project area consists primarily of Potential Vegetation Groups (PVGs) 5, 6, 7 (Table 1). PVGs are forest habitat types that share similar environmental characteristics, site productivity, and disturbance regimes (Mehl et al. 1998; Steele et al. 1981).

Fire exclusion in the Project area has disrupted natural fire regimes. A fire regime is the term given to the general pattern in which fires naturally occur in an ecosystem over an extended period. Fire regimes are a combination of factors including frequency, intensity, size, pattern, season, and severity. Individual fires vary greatly in severity; fire risk and resulting fire effects caused by a fire depend on the specifics of its fire regime being out of balance. The lack of disturbance within the project area has contributed to heavy canopy and surface fuel loading. The PVGs within the project area primarily fall into the mixed1–mixed2 fire regimes (Table 1).

Areas with higher wildfire hazard potential represent fuels with higher probability of experiencing torching, crowning, and other forms of extreme fire behavior. The wildfire hazard rating is divided into 5 categories: low, moderate, high, very high, and extreme. Currently, most stands within the Project area are rated between moderate and very high fire risk. The desired condition is to reduce the wildfire risk rating of these stands so they rate as low to moderate. This reduction can be achieved by modifying stand attributes such as crown index, removing ladder fuels, and altering vegetation so that the species composition is comprised of a higher percentage of fire-resilient species such as ponderosa pine, western larch, and Douglas fir.

Table 1. Percentage of fire regime and Potential Vegetation Group (PVG) within the Project area

<table>
<thead>
<tr>
<th>Fire Regimes</th>
<th>Potential Vegetation Group</th>
<th>Percent by PVG</th>
<th>Percent by Regime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonlethal</td>
<td>PVG 1—Dry Ponderosa Pine (Pinus ponderosa)/Xeric Douglas-fir (Pseudotsuga menziesii)</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>PVG 2—Warm Dry Douglas-fir/Moist Ponderosa Pine</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Nonlethal-Mixed1a</td>
<td>PVG 5—Dry Grand Fir (Abies grandis)</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Mixed1a–Mixed2b</td>
<td>PVG 3—Cool Moist Douglas-fir</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PVG 4—Cool Dry Douglas-fir</td>
<td>0%</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>PVG 6—Cool Moist Grand Fir</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>Mixed2b</td>
<td>PVG 7—Warm Dry Subalpine Fir (Abies lasiocarpa)</td>
<td>11%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>PVG 11—High Elevation Subalpine Fir</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Mixed2b–Lethal</td>
<td>PVG 10—Persistent Lodgepole Pine (Pinus contorta)</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Lethal</td>
<td>PVG 8—Warm Moist Subalpine Fir</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PVG 9—Hydric Subalpine Fir</td>
<td>&lt;1%</td>
<td>3%</td>
</tr>
</tbody>
</table>

aMixed 1 Fire Regime: Moderate fire frequency and intensity
bMixed 2 Fire Regime: High intensity, infrequent fires.
Purpose and Need

**Purpose 1:** Reduce hazardous fuels and the risk of a crown fire spread within the WUI and reduce natural fuels accumulation with the Project area.

**Need 1:** A need exists to reduce the fuels hazard with in the Project area. The current stand condition can be described as having high surface fuel loading and continuous dense overstory canopy conducive to high-intensity fires, spotting, crown fire initiation, and crown fire spread. These conditions are present near adjacent private properties and/or structures.

Within the WUI, hazard reduction treatments are needed to reduce the risk of wildfire to values based on their spatial context, their relationship to topography, fire and weather patterns, and hazards on adjacent non-NFS lands.

**Need 2:** A need exists to reduce dense pockets of regeneration within some stands that have produced multi-storied canopies which could facilitate crown fire should an ignition occur.

**Need 3:** A need exists to treat existing surface fuels. Downed fuels are high in some areas, which could increase flame lengths and/or fire intensities.

**Purpose 2:** Manage forest structure and species composition to accelerate development of large tree size class dominated by early seral tree species (e.g., ponderosa pine) that will contribute to achieving Boise National Forest Land and Resource Management Plan (Forest Plan) desired vegetation and associated wildlife source habitat conditions. Increase landscape resiliency to uncharacteristic disturbance events and promote fire’s ecological role in achieving desired conditions.

**Need 1:** Stand structure of small and medium tree size class within all PVGs needs to be changed to accelerate movement towards the large tree size class and old forest habitat dominated by early seral species.

**Need 2:** Tree size class needs to reflect the physical development stage of a forest stand; the desired condition is landscapes dominated by early seral species in the nonlethal and mixed1 fire regime. The grass/forbs/shrub/seedling; sapling; and small and medium tree size classes in the Project area represent a relatively small percentage of the acres within the various PVGs. Although, the large tree size class generally dominates the Project area, currently, the species composition within the large tree size class is dominated by late seral species rather than the desired early seral species (Forest Service 2010a, Appendix A, Table A-5, p. A-8).

- The proportion of ponderosa pine in PVGs 1, 2, 5, and 6 needs to be increased to Forest Plan desired conditions
- Tree densities need to be reduced to allow for regeneration of early seral species such as ponderosa pine and to increase the vigor of existing ponderosa pine throughout the project area.
- Douglas fir is overabundant in PVGs 1, 2, and 5 within the Project area.
- Grand fir is overabundant in the in the overstory and understory of PVG 6, exceeding the desired conditions for species composition by a wide margin.
- The proportion of western larch in PVG 6 needs to be increased.
Need 3: A need exists to manage vegetation in riparian conservation areas (RCAs) to reduce the threat of undesirable wildfire and restore a more natural fire regime. Fire suppression and livestock grazing practices have increased the forested vegetation fire hazard within RCAs. Shade-tolerant climax species, such as grand fir, have increased ladder fuel and tree density conditions beyond what would have historically existed under a nonlethal and mixed1 fire return interval.

Need 4: A need exists to reduce the risk of insect damage, particularly from western spruce budworm, by managing stands in a manner that will begin approaching desired future conditions for vegetative components (Objective 1856; Forest Service 2010a).

Need 5: A need exists to introduce fire disturbance within the Project area. Excluding fire on the forested landscape has increased tree density; increased surface fuels and small coarse woody debris; and restricted natural ecosystem processes (e.g., regeneration of early seral species, nutrient cycling, succession regulations, diversity maintenance, biogeochemical processes, and the creation of cavities for wildlife habitat). Fire exclusion has fostered a dense under- and mid-story condition dominated by shade-tolerant species, with ladder fuels contributing to a high potential for active crown fire initiation and spread. Shade tolerant species, such as grand fir, are inherently less resilient to fire disturbance with crowns often extending to the forest floor.

Need 6: A need exists to reduce densities in plantations and create a more natural grouping of irregularly spaced tree clumps (Forest Service 2010b). Tree densities within plantations are resulting in inter-tree competition that is substantially slowing progression toward the inter-connected large tree patches that are lacking in the Project area. The uniform tree spacing created from the initial planting needs to be broken up to create a more natural structure that can develop functional old forest habitat and source habitat for white-headed woodpeckers and flammulated owls. A diverse spatial patch and pattern would emulate natural vegetative patterns typical of the forest types when historical disturbances were operating on the landscape.

Purpose 3: Utilize wood products resulting from restoration treatments to support local and regional economies and offset the cost of project implementation.

Need 1: A need exists to provide a predictable and recurring supply of wood products from lands identified in the Forest Plan as suitable for timber management. Providing wood products that contribute to sustaining a wood products processing industry is essential for continuing forestland restoration and maintenance services in southwestern Idaho and to support local and regional economic sustainability. Activities that are proposed within Management Prescription Category (MPC) 5.1 (Restoration and Maintenance Emphasis within Forested Landscapes) have been identified in the Forest Plan as suitable for timber management where wood products produced from treatments are an outcome of achieving restoration objectives. MPC 5.1 emphasizes restoring or maintaining vegetation within desired conditions to provide a diversity of wildlife habitats, reduce risk from undesirable disturbance events, and support sustainable human uses of resources (Forest Service 2010a, p. III-90).
Proposed Action

The Proposed Action was developed to meet the Project’s purpose and need and includes the project design features and mitigations described in Appendix A. The Proposed Action includes a variety of prescribed fire, vegetation treatments, road maintenance and construction (Table 2).

Table 2. French Hazard Wildland-urban Interface Project proposed activities

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prescribed Fire and Vegetation Treatments</strong></td>
<td></td>
</tr>
<tr>
<td>Commercial thinning—tractor/off-road jammer (acres)</td>
<td>2,360</td>
</tr>
<tr>
<td>Commercial thinning—skyline (acres)</td>
<td>933</td>
</tr>
<tr>
<td><strong>Commercial thinning—total (acres)</strong></td>
<td>3,661</td>
</tr>
<tr>
<td>Noncommercial thinning—plantations (acres)</td>
<td>1,369</td>
</tr>
<tr>
<td>Noncommercial thinning—natural stands (acres)</td>
<td>368</td>
</tr>
<tr>
<td>Prescribed burning (acres)</td>
<td>3,876</td>
</tr>
<tr>
<td>Mastication (acres)</td>
<td>950</td>
</tr>
<tr>
<td><strong>Road Construction and Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>National Forest System road construction (miles)</td>
<td>4</td>
</tr>
<tr>
<td>Temporary road construction (will be obliterated after use) (miles)</td>
<td>6</td>
</tr>
<tr>
<td>Temporary road construction on existing prisms (will be obliterated after use) (miles)</td>
<td>2.1</td>
</tr>
<tr>
<td>Road maintenance (miles)</td>
<td>42.2</td>
</tr>
<tr>
<td>New culvert construction (number of culverts)</td>
<td>15</td>
</tr>
<tr>
<td>Existing culvert replacement (number of culverts)</td>
<td>19</td>
</tr>
</tbody>
</table>

Prescribed Fire and Vegetation Treatments

The Proposed Action includes a variety of vegetation treatments on approximately 5,610 acres within the Project area: commercial thinning (thinning with product removal), noncommercial thinning (thinning with no product removal), prescribed fire, and mastication (mechanical chipping). Treatment activities would be used alone, or in combination, to meet the needs for hazardous fuel reduction and vegetation restoration. Activity fuels associated with commercial and non-commercial treatments would be mitigated with the following activities: whole tree yard; lop and scatter; and/or pile burning (mechanical pile and burn, hand-pile and burn, mechanical jackpot burn, and hand pile jackpot burn). See Appendix B for Project maps.

Commercial treatments include 3,661 acres of commercial sawlog removal using tractor/off-road jammer (2,360 acres) and skyline (933 acres) logging systems (Table 2). All treatments with commercial sawlog removal would be followed with a noncommercial thinning of submerchantable trees (i.e., trees <8 inches diameter at breast height) and pruning.

Noncommercial tree thinning would occur in 1,369 acres of plantations and 368 acres of natural stands. (Table 2). Noncommercial thinning would consider the options of removing miscellaneous wood product via commercial and personal use fuelwood, biomass, and/or post and pole permits.

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4 Treatment prescriptions overlap on same acres. Actual number of treatment acres will be refined through the analyses process.
Opportunities to augment species composition by planting tree seedlings, or “regeneration”, will be evaluated for all prescription types, though planting is most likely to occur in group selection with reserves treatment units.

Prescribed burning (broadcast burning) on an estimated 3,876 acres would be conducted where ecologically practicable (Table 2). Ignition would not actively occur within the first 75 feet of riparian conservation areas (RCAs), but fire would be allowed to back through the RCAs. A second entry prescribed burn (maintenance burn) may be necessary 5 to 10 years following the initial entry. This second treatment would ensure the objectives from the purpose and need and Forest Plan continue to be met. This second treatment is included in the Proposed Action.

Mastication of heavy brush and/or smaller diameter trees would be conducted in units (950 acres) where burning is not currently feasible (Table 2). Mastication would be done using a track mounted masticator/mulcher to remove trees up to 8 inches dbh. The existing dead and down material up to 8 inches in diameter along with the created slash would be mulched and left on site. Additional mastication maybe necessary 5 to 10 years following the initial treatment to ensure objectives are maintained. This second treatment is included as part of the Proposed Action.

Treatments within Riparian Conservation Areas

Prescribed burning and vegetation treatments are proposed within RCAs. RCAs within the project areas were defined using Option 2 in the Forest Plan (Forest Service 2010a, p B-34): one site-potential tree height (1 SPTH) for intermittent streams and 2 SPTH 5 for perennial streams (Table 3). Potential treatments would vary by RCA zones (distances from stream channels, ponds, lakes, reservoirs, and wetlands) (Table 3). Figure 3 depicts how these buffer zones would be implemented. Table 4 summarizes the acres of proposed treatment within the mapped RCAs. Unmapped streams identified during implementation would be treated with the same RCA buffers.

<table>
<thead>
<tr>
<th>Distance</th>
<th>Vegetation Treatment</th>
<th>Fuels Treatment</th>
<th>Intermittent or Perennial Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–30 feet</td>
<td>No Treatment</td>
<td>No Treatment</td>
<td>Both</td>
</tr>
<tr>
<td>30–75 feet</td>
<td>Noncommercial Thin</td>
<td>Lop and scatter. Backing fire allowed (no piling and no active ignition).</td>
<td>Both</td>
</tr>
<tr>
<td>75 feet to 1 (site potential tree height) SPTH ⁵</td>
<td>Noncommercial Thin</td>
<td>Lop and scatter, Active ignition of piles or prescribed fire.</td>
<td>Both</td>
</tr>
<tr>
<td>1 SPTH to 2 SPTH</td>
<td>All proposed treatments</td>
<td>All proposed treatments</td>
<td>Intermittent</td>
</tr>
<tr>
<td></td>
<td>All proposed treatments</td>
<td>All proposed treatments</td>
<td>Perennial</td>
</tr>
<tr>
<td></td>
<td>No heavy equipment such as skidders or jammers ⁶</td>
<td>All proposed treatments</td>
<td></td>
</tr>
</tbody>
</table>

Where commercial harvest is proposed, cables from equipment such as an off-road jammer would be allowed to extract timber, but the equipment’s tracks would not be allowed within the distance specified.

⁵ Site potential tree height (SPTH), defined as 130 feet for PVG 6, 120 feet for PVG 2, and 110 feet for PVG 1 and 5.
Figure 3. Riparian Conservation Area treatments allowed (Note: Treatments would not occur within 75 feet of Richards Creek RCA)

Table 4. Summary of treatments proposed within Riparian Conservation Areas (RCAs)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Proposed Action (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial thinning</td>
<td>228</td>
</tr>
<tr>
<td>Non-commercial thinning</td>
<td>180</td>
</tr>
<tr>
<td><strong>Total acres thinned within RCAs</strong></td>
<td><strong>408</strong></td>
</tr>
<tr>
<td>Prescribed burning*</td>
<td>423</td>
</tr>
<tr>
<td>Mastication</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total acres of burning or mastication within RCAs</strong></td>
<td><strong>423</strong></td>
</tr>
</tbody>
</table>

*Direct ignition would not actively occur within the first 75 feet of the RCAs, but fire would be allowed to back through the RCAs
Road Maintenance, Construction, and Decommissioning

Road maintenance activities to facilitate commercial sawlog removal would occur on 42.2 miles of NFS roads throughout the project area (Table 2). Road maintenance includes road blading and shaping, vegetation clearing, ditch cleaning, culvert cleaning and replacement, waterbar removal and installation, and surface repair including aggregate placement.

The following construction, reconstruction, and decommissioning is proposed to facilitate commercial timber harvest (Table 2):

- Construct approximately 4 miles of new NFS roads. These roads would be classified as Maintenance Level (ML) 2 roads (open to administrative use only). These roads would allow access for fire suppression and future treatments.
- Construct approximately 6 miles of new temporary roads. These roads would be decommissioned upon completion of project activities.
- Construct approximately 2.1 miles of temporary road using existing prisms. These roads would also be decommissioned upon completion of project activities.
- Culverts would be installed or upgraded as needed as part of road maintenance and construction. On fish-bearing streams, new and replacement culverts would be designed to pass a 100-year return interval flood event and would be designed to provide aquatic organism passage (AOP) as required by Forest Plan Standard SWST08 (Forest Service 2010a, pg. III-22. Three crossings have been identified as needing to provide AOP. On non–fish bearing streams, all new and replacement culverts would be designed to pass a 100-year return interval flood event with debris as outlined by Forest Plan Standard FRST02 (Forest Service 2010a, p. III-61).

As part of the transportation analysis, an addendum to the Forest Transportation Analysis Plan will be prepared. The addendum will update recommendations for future road needs within the Project area.

Relationship of this Project to the 2010 Boise National Forest Plan

In 2003, the Forest issued a revised Forest Plan (Forest Service 2003). On July 1, 2010, Forest Supervisor, Cecilia R. Seesholtz, issued an amendment to the 2003 Forest Plan to integrate a wildlife conservation strategy (WCS) for the forested biological community. This Forest Plan WCS complements the Idaho Comprehensive Wildlife Conservation Strategy (Idaho CWCS) (IDFG 2005) by building on the broad-scale conservation needs identified in the Idaho CWCS for the Forest area.

The vegetation management strategy of the Forest Plan calls for managing within desired conditions that fall into the historical range of variability (HRV) using a combination of passive and active management (Forest Service 2010a, p. 6). The strategy is based on the assumption that conditions within the range of the HRV will promote a network of habitats to support the diverse array of native and nonnative vertebrate wildlife species.

The Forest Plan identifies conservation and restoration of low- to mid-elevation ponderosa pine forests as a management priority. The analysis for the 2010 Forest Plan amendment found that habitats for some wildlife species have declined substantially compared to historical conditions. An underlying philosophy of the 2010 Forest Plan and the WCS is that restoring desired conditions within the HRV and emulating natural disturbance processes where they are not currently operating as desired, within individual forested
stands and across landscapes, will contribute to species conservation and recovery (Noss 1987; Hunter et al. 1988; Haufler et al. 1996; Raphael et al. 2000; Wisdom et al. 2000; McComb and Duncan 2007; Forest Service 2010c, p. 6).

The 2010 amendment added a comprehensive and diverse set of management direction for vegetative and wildlife habitat conservation and restoration. Wildlife guideline WIGU15 emphasizes using conservation principles to identify treatment priorities, design restoration treatments, and help understand the effects of proposed activities on vegetative and wildlife habitat diversity (Forest Service 2010a, p. III-28 and Appendix E).

The Forest Plan includes objectives that identify the need to focus restoration-related management activities for the remainder of the planning period within priority watersheds. In addition, the Forest will address and integrate related multiple-use objectives in vegetative restoration projects where practical and efficient to do so. The Proposed Action for the Project addresses the following priorities and management objectives from the 2010 Forest Plan:

• **Fire Management and the WUI**—In spring 2014, the Forest developed a step-down process for identifying the WUI zone, using documentation from *Delineation of a Community Protection Zone (CPZ) Under the Idaho Roadless Rule* (Forest Service 2011) and the *Handbook for Wildland-Urban Interface Communities* (NASF 2004). This process was used to define where hazardous fuels pose risks to life, property, infrastructure, and firefighter safety. The boundary was delineated based on potential fire behavior and physical features that could be used for effective fuel breaks, such as a road and ridge top. Forest Plan Objective 1655 (Forest Service 2010a, p. III-347) highlights the need to initiate prescribed fire and mechanical treatments within WUIs to reduce fuels and wildfire hazards. It also emphasizes coordination with local and tribal governments, agencies, and landowners in the development of county wildfire protection plans to manage fuel loadings to reduce wildfire hazards. As a part of using prescribed fire, the Forest Plan directs operations to comply with the Clean Air Act, State Smoke Management Programs, the Montana/Idaho Airshed Group, and the Utah Interagency Smoke Management Program to limit potential unacceptable smoke impacts (ASOB01, ASST01, and ASST02). Burning activities shall be further restricted if local conditions indicate potential unacceptable smoke impacts to ambient air quality and/or visibility.

**Restoration and maintenance of priority forested acres**—The Forest Plan includes a Vegetation and Wildlife Habitat Restoration Strategy (Strategy) that lists Forest-wide restoration priorities. The Strategy focuses forest restoration and maintenance in low- to mid-elevation forests dominated by ponderosa pine in the nonlethal and mixed1 fire regimes. The Strategy identifies the area included within the French Hazard Project area as a high priority for restoration and specifies that active treatments are needed for restoration. The Strategy also identifies all areas within the project as a high priority for short-term wildlife habitat restoration. High-priority, active forest restoration watersheds were historically dominated by nonlethal and mixed1 fire regimes. These areas are most likely to be successfully restored because of their current acreage in medium and large tree class size (Forest Service 2010a, Appendix A, p. A-16). In addition, maintenance activities designed to retain patches within desired conditions are used to develop and sustain functional landscape patches over time. To facilitate development of this structure, the Forest Plan provides a standard (VEST03) to retain forest stands that meet the definition of large tree size class (Forest Service 2010a, Appendix A, p. A-6) and a guideline to retain all legacy trees (VEGU08). The Proposed Action would maintain and restore forested stands/patches in the nonlethal and mixed1 fire regimes and components necessary for functioning wildlife habitat, such as legacy trees, within the Project area.
• *Restoration of forested stands in the Duck Creek subwatersheds*—The Project is located in Management Area (MA) 18, Cascade Reservoir. Forest-wide desired conditions outlined in Appendix A (Forest Service 2010a, Table A-5, p. A-8) identify a need to increase the proportion of ponderosa pine in PVGs 1, 2, 5, and 6. Objective 1833 (Forest Service 2010a, p. III-347) identifies a need to restore and maintain western larch in PVG 6 within MA 18. In addition, Objective 1856 (Forest Service 2010a, p. III-349) identifies a need within MA 18 to reduce risk from undesirable levels of insect damage, particularly from western spruce budworm, by maintaining stands in a manner that will begin approaching desired future conditions for vegetative components.

• *Management of the transportation system*—The Forest Plan identifies objectives to cooperate transportation management with other agencies to attain resource goals (FROB02) and objectives to cooperate with the public to develop a shared transportation system serving the needs of all parties to the extent possible (FROB05).

• *Removal of wood products as an outcome of forest maintenance and restoration treatments on acres in the suited timber base*—The 2010 Forest Plan amendment reallocated acres previously assigned to MPC 5.2 (Commodity Production Emphasis) to MPC 5.1 (Restoration and Maintenance Emphasis). Although this reallocation did not change the number of acres in the suited timber base, it did change the focus of treatments from an emphasis on wood product growth and yield to an emphasis on forest restoration with wood products as an outcome or byproduct of restoration activities. All acres within the Project area are now allocated to MPC 5.1. The Proposed Action includes removing wood products as a byproduct of forest restoration and maintenance treatment on acres in the suited timber base. The Proposed Action facilitates Forest Plan Objective 1646 to manage suited timberlands for a sustained yield, even flow of forest products, while reducing sediment delivery and moving toward desired vegetation conditions.
Literature Cited


Appendix A—Preliminary Design Features

Air Quality

AQ-1—Ensure atmospheric conditions are within prescription when a burn is ignited, and smoke is monitored throughout ignition. If smoke threatens unacceptable impacts to transportation safety or communities, ignition will cease, provided control of the burn is not compromised.

AQ-2—Identify coordination needs with other federal, State, and local governments, as well as public notification in potentially affected areas through the burn plan.

Botanical Resources

BR-1—Protect all known live whitebark pine trees and any discovered during layout of fuels and vegetation treatment units to the maximum extent practicable\(^6\).

Cultural Resources

CR-1—Avoid and protect all known historic properties during Project implementation.

CR-2—In the event new cultural sites are discovered, ground-disturbing activities in the area shall stop until a qualified archaeologist is consulted and appropriate mitigation identified, as needed, to avoid/protect these sites.

Fire and Fuels

FF-1—Construct no fire line and/or hand line within RCAs.

FF-2—Store hazardous material utilized for burning activities away from RCAs.

FF-3—Post public notification in the form of newspaper articles and notices, or personal contacts to residents in Cascade and the surrounding areas, prior to implementing any prescribed burn activities, especially if fall burning is conducted when hunters and woodcutters may be present in or near the project area.

FF-4—Post warning signs on primary routes accessing the area(s) being burned to alert drivers of the potential for reduced visibility due to smoke.

FF-5—Develop a burn plan according to the Interagency Prescribed Fire Management Handbook and Forest Service Manual direction 5140 to address prescribed fire mitigations for air quality, contingency, safety, and environmental effects (fire behavior). Integrate requirements of the Montana/Idaho Airshed Group and those found in the Forest Plan (Forest Service 2010a). Ensure the plan specifies weather parameters that affect fire behavior are within a desired range.

FF-6—Restrict burning activities to early spring or fall to avoid nesting periods for ground-nesting birds. Consult the wildlife biologist during development of the burn plan.

\(^6\) Maximum Extent Practicable—Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (40 CFR 230.10(a)(2))
**FF-7**—Prescribed fire ignition will not actively occur within the first 75 feet of RCAs. Broadcast burns will be allowed to back into RCAs or adjacent stands, where they will either go out by themselves or be extinguished if burning is expected to result in unanticipated adverse effects.

**FF-8**—Landing slash piles created by harvest activities will be available for biomass utilization and/or firewood opportunities to the public. Burn material will be left onsite.

**Noxious Weeds**

**NX-1**—Avoid or reduce the introduction and spread of weed seeds and propagates by including provisions in all contracts to ensure appropriate off-road equipment is cleaned. All contractors and/or purchaser of any timber sale shall be required to ensure that, prior to moving onto the sale area, all off-road equipment is free of soil, seeds, vegetative matter, or other debris that could contain seeds.

**NX-2**—Ensure seed mixes and/or plant materials used during restoration and soil erosion prevention activities shall be comprised of certified weed-free native or desirable non-native seed mixes and/or native cultivars, as recommended by the Forest or District botanist.

**NX-3**—Require all straw and/or hay brought onto the Project area for land management purposes be certified weed-free.

**NX-4**—Evaluate aggregate source(s) for noxious weed presence under the direction of the Forest or District Noxious Weed Specialist. If noxious weeds are present at the aggregate source(s), treat noxious weeds, remove and set aside the material to a depth of 6 inches, and use aggregate from depths greater than 6 inches for Project activities.

**NX-5**—During Project implementation, report the identification of undocumented noxious weed populations in the Project area to the District Weed specialist for inclusion in noxious weed treatment plans.

**Range**

**RG-1**—Notify the District Range Management Specialist of the timing of Project activities, including timber harvest, prescribed fire, precommercial thinning, and road activities. Inform permittee(s), through the allotment annual operating instructions (AOI), of pending Project activities to minimize the potential for conflicts and allow for short-term modification of grazing practices where necessary. Short-term modifications of grazing practices during project implementation should be coordinated with the hydrologist, fish biologist, and soil scientist to ensure compliance with the Forest Plan Rangeland Resource direction.

**Road Management**

**RM-1**—Install erosion control devices as required to minimize sediment delivery to streams from road management activities, including new roadbed construction, road maintenance, and/or road decommissioning activities where activities occur in RCAs. Erosion control devices may include, but are not limited to, certified weed-free straw waddles or bales, slash filter windrows, and/or biodegradable erosion cloth. The District Hydrologist or Fisheries Biologist in consultation with the Engineering Representative/Timber Sale Contract Administrator shall determine the locations within the RCAs where erosion control devises are required and the most cost-effective sediment control method. Erosion control materials would be allowed to deteriorate in place.
 RM-2—Public motorized access shall be restricted on all permanent and temporary roads built for the purpose of supporting of vegetation management during activity implementation. Temporary roads would be fully obliterated within three years from when the project is completed.

Recreation and Scenic Resources

 RR-1—Prohibit snow plowing on established groomed snow routes within the Project area.

 RR-2—The following would apply within the immediate foreground (300 feet) of Maintenance Level 2 and 3 National Forest System roads in the project area:

- Stumps should be 12 inches or less on the uphill side to reduce visibility.
- Slash should be lopped and scattered below 36 inches (less if visually intrusive). Material in excess to other resource needs should be removed or piled and burned within one field season.
- After project completion, the remaining slash should appear to be mostly natural occurring downed material.

 RR-3—Temporary roads and skid trails should blend into the characteristic landscape of the surrounding area. Cut and fill banks should be sloped to accommodate natural revegetation and to reduce sharp contrasts viewed from any distance. Where temporary roads and skid trails meet a primary travel route open to motorized use, they should intersect at a right angle and, where practicable, curve after the junction to minimize the length of route seen from the primary travel route.

 RR-4—Skyline corridors for cable yarding will be designed to minimize linear edges by utilizing existing openings and clearing the vegetation to promote meandering edges.

 RR-5—Pile burn will be implemented (not lop and scatter) in visible foreground (300 feet) of private residences, developed recreation sites, and sensitive travel route NFS road 422.

Soil, Water and Fisheries

 SW-1—Allow commercial harvest within RCAs, with no commercial harvest within one site potential tree height of stream channels, ponds, lakes, reservoirs, and wetlands. Keep heavy mechanical equipment, such as skidders, out of the entire RCA.

Trees or snags that are felled within RCAs (commercial or noncommercial) will be left unless determined not to be necessary for achieving soil, water, riparian, and aquatic desired conditions as described in Appendices A and B of the Forest Plan. Felled trees or snags that are left in the RCA shall be left intact unless resource protection (e.g. the risk of wildfire is unacceptable) or public safety requires bucking them into smaller pieces.

 SW-2—Allow thinning of noncommercial trees in RCAs, except within 30 feet of stream channels, ponds, lakes, reservoirs, and wetlands (along Richards Creek the exclusion zone is 75 feet). Trees felled as part of noncommercial thinning within RCAs will be left onsite so long as retention is consistent with fire hazard reduction objectives within the WUI. Piles will not be burned within RCAs.

 SW-3—Provide fish passage at all new and reconstructed stream crossings of existing and potential fish-bearing streams. Acceptable ranges for gradient, water flow velocity, jump/drop height, and other parameters will be based on the best scientific data available.
SW-4—Water drafting locations, methods, and timing shall be approved by the Engineering Representative/Timber Sale Contract Administrator in consultation with the Fish Biologist and/or Hydrologist. Screen opening size for intake hoses shall be the standard 3/32 inch or smaller with the appropriate surface area for the volume being pumped.

SW-5—Maintain at least 6 tons per acre of coarse wood leaving pieces greater than 15 inches in diameter whenever practicable.

SW-6—Seed disturbed areas with an approved seed mixture (Design Feature NX-2). Erosion control devices, such as certified weed free straw waddles or bales, slash filter windrows, and biodegradable erosion cloth, should be maintained during all road management activities adjacent to streams to minimize delivery of sediment, and natural materials would be allowed to deteriorate in place.

SW-7—Slash filter windrows shall be constructed at all new construction and reconstruction of temporary and Forest system roads within RCAs to minimize sediment delivery. These slash filter windrow will be constructed at the toe of the fill slope between the road and the waterbody. Gaps approximately 10 feet wide will be constructed every 100 feet of slash filter windrow to provide wildlife passage.

SW-8—Store no fuel in RCAs. Refueling or servicing of vehicles or equipment should not occur within RCAs unless no other alternative exists. In the event there is no acceptable alternative site for these activities, refueling or servicing sites must be approved by the Engineering Representative/Timber Sale Contract Administrator in consultation with District Hydrologist and/or Fish Biologist. All equipment shall be in good repair and free of leakage of lubricants, fuels, coolants, and hydraulic fluid. An approved spill containment plan commensurate with the amount of fuel will be developed.

SW-9—Transport hazardous materials, including fuel and hydraulic oil, on the Forest in accordance with 49 CFR 171 in order to reduce the risk of spills of toxic materials and fuels during transport through RCAs.

SW10—Locate all log landings outside of RCAs. Consult the District Hydrologist or Fish Biologist and the Forest Archeologist if site-specific circumstances necessitate a log landing to be located within the RCA. For log landings located within the RCA, erosion control devices, such as erosion cloth, biologs, and/or certified weed-seed-free straw bales, should be installed between the landing and the stream to prevent delivery of sediment (Burroughs and King 1989). The District Hydrologist or Fish Biologist will assist the Timber Sale Contract Administrator in determining the most effective sediment control method. Soil erosion control measures will be allowed to deteriorate in place.

SW-11—Upon completion of harvest activities, reshape constructed landings used in association with this Project to provide adequate drainage. Landings should be ripped to a depth of 12–18 inches, slash should be spread over at least 30% of the landing area, and the area will be planted with a Forest Service–approved seed mixture (Design Feature NX-2). All landings shall be closed to public use.

SW-12—Use the SINMAP analysis results in addition to guidelines developed by Chatwin et al. (1994) during project implementation to field-verify or identify moderate- and high-hazard landslide prone areas where commercial timber harvest and road construction is proposed. Site-specific management measures or mitigations shall be required where the proposed activities might initiate landslides.

Vegetation Management

VM-1—Retain all existing forested stands that meet the definition of large tree size class (Forest Service 2010a, Appendix A) or old forest habitat (Forest Service 2010a, Appendix E). Management actions may
occur within these stands as long as they continue to meet the definitions of large tree size class and old forest habitat.

VM-2—Designate for retention during sale preparation, all ponderosa pine and western larch trees meeting the definition of a legacy tree consistent with the Forest’s Legacy Tree Guide (Forest Service 2012). In addition, designate for retention trees of other late seral-to-climax conifer species (e.g., Douglas-fir and grand fir) that exhibit legacy-like characteristics (generally are the very large trees; Van Pelt 2008).

VM-3—Make provisions to include cull logs to also be hauled back into the units with commercial product removal if during the layout process, the large size class of coarse woody debris is determined to be lacking and is consistent with fire hazard reduction objectives within the wildland-urban interface.

VM-4—Ensure that appropriate contract provision(s) are used to limit the potential buildup or spread of Ips in stands containing ponderosa pine.

VM-5—Prohibit log haul on weekends (all day Saturday and Sunday); all major holidays (New Years, Memorial Day, Independence Day, Labor Day, Thanksgiving and the day after, Christmas eve and Christmas day); and the opening day of deer, elk, and turkey general hunting seasons.

VM-6—Post warning and/or closure signs on authorized haul routes and adjacent to active logging operations to inform the public of logging operations and truck traffic hazards.

VM-7—Timber Sale Administrator shall approve skid trails prior to development and use to limit impacts to plantations and/or other resources.

VM-8—Yard trees whole to the landing and manufacture them at the landing from tractor/jammer units to reduce compaction and aid in soil amelioration. After manufacturing, the tops/lims/branches will be hauled back and utilized as slash material on skid trails. Upon completion of Project activities, all newly constructed skid trails and existing unauthorized routes used to implement Project activities will be reclaimed by blocking access at all access points; utilizing re-contouring of slope, earthen barriers, and/or placement of barriers such as rock or coarse woody debris; scarifying or ripping to a depth of 12 inches; scattering slash over scarified/ripped surface to achieve at least 30% coverage of the surface; and revegetating with certified weed free grasses, shrubs, and/or trees. Any material used for revegetation activities will meet requirements of Design Feature NX-2.

VM-9—If, during implementation of vegetation treatments, it is identified that an opportunity exists, augment existing ponderosa pine representation in areas that currently lack potential for natural recruitment (due to lack of existing seed source or late seral species dominance). Openings may benefit from restoration augmentation of ponderosa pine. Augmentation will consist of planting early seral species, such as ponderosa pine and western larch seedlings, most likely with a hoedad or dibble bar and would help ensure the persistence of the preferred species in stands where late seral species, primarily grand fir regeneration would proliferate. No mechanical site preparation would occur.

Wildlife

WL-1—Retain all snags ≥10 inches dbh and >15 feet tall to meet the desired range as identified in Appendix A of the Forest Plan (Forest Service 2010a, p. A-9) unless they pose safety hazards and have to be felled. Where snags have been determined to be a safety hazard (timber sale OSHA requirements, roadside hazard trees) and must be felled, live trees of sufficient diameter shall be left to provide for snag replacement as needed to achieve desired conditions.
**WL-2**—Provide snags, snag replacement trees, and coarse woody debris, including those with broken tops, cavities, lightning scars, and dead portions, in clusters if available rather than uniformly spaced. Priority should be given to large snags and trees for snag recruitment over smaller diameter snags and trees.

**WL-3**—Include protective measures for Threatened, Endangered, and Regional 4 Sensitive (TES) Species against unforeseen events in the timber sale contracts and other project-related contracts (noncommercial thinning). Mandatory provisions of the timber sale contract (currently contract provision B(T) 6.24) provide protective measures for any TES plant or animal species identified in the project area during the entire period that the sale is under contract.

**WL-4**—If new Threatened, Endangered, Regional 4 Sensitive, or Proposed or Candidate species (TEPC/S) denning, nesting, or roosting sites are discovered during implementation, the Wildlife Biologist shall be contacted to specify mitigation measures needed to avoid or minimize impacts. The Wildlife Biologist, contract representative, and other appropriate resource representatives (e.g., silviculture, fuels, timber) should coordinate any needed modifications to prescribed treatments or activities to maintain key features of nesting/denning habitat or to avoid disrupting nesting/denning activities and comply with Forest Plan direction and/or law.

**WL-5**—Restrict vegetation treatment within a 650-foot radius of an active goshawk nest tree to retain vegetative structure around the nest site. In addition, no commercial harvest, noncommercial thinning, or roadwork activities should occur within a 1,500-foot buffer (Jones 1979) around active goshawk nest tree(s) from March 1 to August 15 to avoid disrupting nesting activities. Timing restrictions shall only be required for active nest sites. Timing restrictions shall not restrict planned road use patterns, public access, or log hauling. Because goshawks commonly move to alternate nest sites within a territory, the nest site location must be re-identified annually.

**WL-6**—No commercial harvest, non-commercial thinning, or roadwork activities shall occur within 660 feet of an active bald eagle nest tree (USFWS 2007) for the duration of the nesting period (February 1 through August 31) (Kaltenecker 2000) to minimize or avoid disruption of reproductive activity for active bald eagle nest sites that occur within or adjacent to the project area. In addition, removal of overstory trees should not occur within 330 feet of the nest tree (USFWS 2007) to retain nesting stand characteristics including perch trees. Thinning of trees in the understory should occur outside of the nesting period or when eagles are otherwise not present as determined by the project wildlife biologist. Nest trees shall not be harvested.

**WL-7**—Existing vegetation would be maintained within one site potential tree height of elk wallows and natural licks (WIGU13) identified in RCAs. The Wildlife Biologist would be notified as soon as possible if a wallow is discovered by layout and marking personnel. The wildlife biologist or representative would review the site on the ground and determine whether the silvicultural prescription adequately protects the site and provides cover for wildlife use. Prescriptions may be modified to provide adequate cover if needed. This design feature applies to commercial and non-commercial vegetation treatments. Exceptions include the location of wallows on established road prisms (authorized or otherwise) required for harvest implementation (WIGU13).
Appendix B—Project Maps
Figure B-1. French Hazard Project proposed prescribed fire treatments
Figure B-2. French Hazard Project proposed mastication units
Figure B-3. French Hazard Project proposed thinning units
Figure B-4. French Hazard Project proposed logging system
Figure B-5. French Hazard Project proposed transportation system