# Westside Fire Recovery Proposal

## Background

The Klamath National Forest (Forest) proposes the Westside Fire Recovery Project to (1) reduce safety hazards to the public and forest workers; (2) obtain the maximum economic commodity value from burned timber; and (3) increase the likelihood and speed by which burned forested areas are regenerated.

This project was developed in response to landscape-level changes to forested habitat resulting from the 2014 wildfires on the Klamath National Forest. Severe drought and extremely dry fuel conditions made this fire season one of the worst in the history of the Forest. This year, fires exhibited high to extreme fire behavior with multiple flaming fronts. The Beaver Fire, Happy Camp Complex Fire, and Whites Fire made quick runs in a matter of a few days and burned for the next several weeks. A total of 215,371 acres burned on the west-side of the Forest, including other fires of the July Complex, including the Log Fire and the Man Fire, for which no treatments are proposed. The Beaver Fire, Happy Camp Fire, and Whites Fire burned a total of 183,127 acres including 162,264 acres of National Forest System (NFS) lands and 20,863 acres of private land.

The project area[1] is comprised of 214,848 total acres, including 184,502 acres of NFS land and 30,346 acres of private land. It is divided into three subparts: A (Beaver Fire), project area B (Happy Camp Complex), and project area C (Whites Fire of the July Complex). Even though the project area includes Forest Service and private lands, treatments for this project will be limited to National Forest System lands. See the attached Vicinity Map (figure 1) and tables 1 and 2 below for general information by project area.

**Table 1 – General fire information and project boundary acres.**

| Project Area | Fire | Start Date | Containment Date | Acres Burned | Project Area Acres |
|---|---|---|---|---|---|
| **A** | Beaver Fire | July 30, 2014 | August 30, 2014 | 32,411 total<br>14,589 NFS<br>17,822 private | 41,497 total<br>17,729 NFS<br>23,768 private |
| **B** | Happy Camp Complex Fire | August 12, 2014 | Not yet fully contained | 116,948 total<br>114,800 NFS<br>2,148 private | 131,313 total<br>126,015 NFS<br>5,298 private |
| **C** | Whites Fire | July 31, 2014 | September 25, 2014 | 33,768 total<br>32,875 NFS<br>893 private | 42,038 total<br>40,758 NFS<br>1,280 private |
| **Total** | | | | **183,127 total**<br>**162,264 NFS**<br>**20,863 private** | **214,848 total**<br>**184,502 NFS**<br>**30,346 private** |

[1] The project area is defined by the fire perimeter plus a one-quarter mile buffer to expand the project area beyond the fire perimeter. The boundary was expanded beyond the perimeter to incorporated hazardous fuel reduction treatments within one-quarter mile of private property structures in burned areas or within areas that underwent fire suppression-related activity.

**Table 2 – General location information by project area.**

| Project Area | Fire | Legal Location<br>Township (T), Range (R) and Section (S) | Elevation Range<br>(Feet) | Watershed<br>(5th Field) |
|---|---|---|---|---|
| **A** | Beaver Fire | Mt.Diablo: T46NR8W (S2-7, 9-11); T46N9W (S1-13,18); T46NR10W (S1-3,10-15);T47NR8W (S4-10,15-22,27-35); T47NR9W (S1,9-17,20-36); T47N10W(S25,34-36) | 1,700-6,300 | Beaver Creek, Horse Creek-Klamath River, Humbug Creek-Klamath River |
| **B** | Happy Camp Complex | Humboldt: T14NR8E (S5,8,17,20); T15NR7E (S1,2,12,13,24);T15NR8E (S3-10,15-22,27-28,34); T16NR7E (S1,2,10-15,23-25,35,36); T16NR8E (S6-10,15-22,27-34)<br>Mt. Diablo: T43NR12W(S2-11,14-20); T44NR10W (S6); T44NR11W(S1-11,15-22,28-30);T44NR12W(S1-35); T45NR10W(S5-9,16-21,28-32); T45NR11W(S1-36); T45NR12W(S1-36); T46NR10W (S31,32); T46NR11W(S16-22,26-36); T46NR12W (S10,11,13-16,20-36) | 1,100-7,400 | Elk Creek[2], Horse Creek-Klamath River, Indian Creek,Lower Scott River, Seiad Creek-Klamath River[3], Thompson Creek-Klamath River, Ukonom Creek-Klamath River |
| **C** | Whites Fire | Mt.Diablo: T39NR10W (S1-11,17,18); T39NR11W (S1-1,10-15); T40NR8W (S6,7,18,19,30); T40NR10W (S2-36); T40NR11W (S1-4,9-16,21-28,33-36); T41NR10W (S18-11, 27-35); T41NR11W(S24,25,33-36) | 2,200-8,000 | French Creek-Scott River, North Fork Salmon River[4], South Fork Salmon River[5] |

In order to respond to post-fire conditions and potential threats to human safety, fuel conditions, and forest generation, the Forest has developed a three-tiered approach. The first tier, which has already been implemented, is to mitigate damage caused by fire suppression tactics (for example, by creating hand-constructed waterbars on hand fire lines, creating dozer-constructed waterbars on fire lines, spreading slash on dozer lines, and redistributing piles of debris). Fire suppression rehabilitation was all completed in tandem with fire suppression. The second is the Burned Area Emergency Response (BAER), currently underway, which aims to identify and manage imminent and unacceptable threats to human life, safety, property, and critical natural and cultural resources on National Forest Lands. The third tier is proposed in this document under the description of this proposed action to further improve human safety, fuel conditions, and forest regeneration, as part of the Westside Fire Recovery project.

[2] Key Watershed from the Forest Plan
[3] The Grider Creek 6th field portion of this 5th field watershed is identified as Key Watershed in the Forest Plan
[4] Key Watershed from the Forest Plan
[5] Key Watershed from the Forest Plan

# Management Direction

The 1995 Forest Land and Resource Management Plan (Forest Plan, as amended) includes Standards and Guidelines from the Northwest Forest Plan. The Forest Plan provides forest-wide and management area (MA) direction for project-level projects. The project is designed to be consistent with all applicable law, regulation, policy, and direction. MAs within the project area are described in table 3 below.

**Table 3. MAs found within the project boundary.**

| Management Areas | Acres of Project Area | Approximate Acres Proposed for Treatment[6] | Pages in Forest Plan | Notable Forest Plan Goals and/or Standards and Guidelines |
|---|---|---|---|---|
| MA1-Research Natural Area[7] | 256 | SH[8]=0<br>RH[9]=0<br>F[10]=0 | 4-67 to 4-69 | Not applicable |
| MA2- Wilderness | 28,456 | SH=0<br>RH=0<br>F=0 | 4-70 to 4-75 | Not applicable |
| MA3 – Recommend and Designated Wild River[11] | 6,680 | SH=0<br>RH=0<br>F=0 | 4-78 to 4-79 | Ecological processes shall shape the vegetative patterns within the management area. The salvage of dead trees, or the reforestation of these areas following catastrophes, should not be permitted. Schedule no timber harvest from this management area (pp. 4-78 to 4-79). |

[6] Proposed planting acres are not incorporated into the total treatment acres for purposes of this table. Treatment acres of the other treatments are included but are approximate and subject to change, pending on-the-ground reviews and adjustments as a result of interdisciplinary discussion and public scoping comments.
[7] MA1 overlaps entirely with MA2.
[8] "SH" is proposed salvage harvest treatments.
[9] "RH" is proposed roadside hazard treatments.
[10] "F" is proposed fuel treatments.
[11] All of MA3 overlaps with MA2 with exception of about 40 acres.

| Management Areas | Acres of Project Area | Approximate Acres Proposed for Treatment[6] | Pages in Forest Plan | Notable Forest Plan Goals and/or Standards and Guidelines |
|---|---|---|---|---|
| MA12 - Recommended and Designated Scenic River | 2,278 | SH=0<br>RH=65<br>F=136 | 4-117 to 4-119 | A wide range of silvicultural treatments may be used to meet Scenic River objectives. Salvage of trees killed by wildland fire, pest infestations or other natural processes is permitted consistent with area resource management goals. Salvage and reforestation efforts are a moderate priority. Minimize the loss of timber value where possible (pg. 4-119). |
| MA13 – Recommended and Designated Recreational River | 3,579 | SH=65<br>RH=270<br>F=843 | 4-120 to 4-122 | Lands may be managed for a full range of silvicultural uses, to the extent currently practiced. Timber harvesting would be allowed under standard restrictions to protect the immediate river environment, water quality, scenic, fish and wildlife and other values. Schedule moderate timber yields, compatible with area goals (pg. 4-122) |
| MA 5- Special Habitat<br><br>Late Successional Reserves (LSR)<br><br>Falcon and Eagle | 81,407<br><br>1,745 (Falcon=283; Eagle=1,462) | SH=6,431<br>RH=11,219<br>F=2,595<br><br>SH=0<br>RH=144<br>F=158 | 4-82 to 4-89; 4-92 to 4-93; 4-90 to 4-92 | Conditions of late-successional forest ecosystems are enhanced to serve as habitat for late-successional species. Continuous areas of multi-layered forests with high quality habitat characteristics and attributes are common (pg. 4-83). Vegetation removal to eliminate public hazards and salvage are permitted if it benefits habitat (pp. 41 and 4-93). |
| MA7-Special Interest Area | 1,217 | SH=0<br>RH=0<br>F=0 | 4-97 to 4-100 | Salvage of burned or pest-killed trees may be allowed to promote the management goals and objectives of the SIA. Reforestation of these areas to meet SIA objectives shall be a high priority (pg. 4-99). |

| Management Areas | Acres of Project Area | Approximate Acres Proposed for Treatment[6] | Pages in Forest Plan | Notable Forest Plan Goals and/or Standards and Guidelines |
|---|---|---|---|---|
| MA10-Riparian Reserves (RRs)[12] | 58,700 | SH=0<br>RH=3,557<br>F=4,430 | 4-106 to 4-114 | Fall roadside safety hazard trees. Allow the removal of these trees where woody debris requirements are met (pg. 4-113). |
| MA 11 –Retention Visual Quality Objective (VQO) | 16,142 (overlaps with MA2) | SH=24<br>RH=269<br>F=1,692 | 4-115 to 4-116 | Salvage of trees killed by wildland fire, pest infestation or other natural processes is permitted consistent with area goals (pg. 4-116) |
| MA 15- Partial Retention VQO | 122,970 | SH=2,320<br>RH=3,992<br>F=1,466 | 4-126 to 4-127 | An attractive, forested landscape is provided and is maintained for a sustained yield of wood products in areas capable, available, and suitable for timber production. Forested stands are resilient to wildland fire, insect, disease, and other damage (pg. 4-126). |
| MA 17- General Forest | 13,046 | SH=1,760<br>RH=2,357<br>F=90 | 4-131 to 4-132 | A programmed flow of timber is provided, which is sustainable through time. Conifer stocking levels and high growth rates are maintained commensurate with the capability of the site to produce wood fiber. Forested stands are resilient to wildland fire, insect, disease, and other damage (pg. 4-131). |

[12] Riparian Reserves overlap with most other management areas. No treatment is proposed within Riparian Reserves, except roadside hazard treatment and within one-quarter mile of private property structures.

Table 4 below lists the information regarding Inventories Roadless Areas found within the project area. Treatments being considered in Inventoried Roadless Areas include planting within LSR portions of Inventoried Roadless Areas, roadside hazard treatments, and salvage harvest and hazardous fuel treatments within 500 feet of infrastructure and within one-quarter mile of private property structures within areas that burned or had fire-suppression activities.

**Table 4 - Treatment proposed within Inventoried Roadless Areas by fire and type of treatment**

| Inventoried Roadless Areas (Acres) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **IRA** | **Beaver Fire** | | **Happy Camp Complex** | | **Whites Fire** | | |
| | **Roadside Hazard** | **Fuels** | **Roadside Hazard** | **Fuels (near private)** | **Roadside Hazard** | **Fuels** | **Total by IRA** |
| **Grider** | - | - | 39 | - | - | - | **39** |
| **Johnson** | - | - | 185 | - | - | - | **185** |
| **Kelsey** | - | - | 257 | 3 | - | - | **260** |
| **Russian** | - | - | - | - | 333 | 609 | **942** |
| **Snoozer** | - | - | - | - | 4 | 681 | **685** |
| **Tom Martin** | - | - | 490 | 18 | - | - | **508** |
| **Total IRA by Fire** | **0** | **0** | **971** | **21** | **337** | **1,289** | **2,618** |

Table 5 below discloses the acres of Wildland Urban Interface by project area and community. A total of 90,126 acres (or 49 percent) of the 184,502-acre project area are located within the Wildland Urban Interface. Treatments, including salvage harvest, roadside hazard treatments, hazardous fuels reduction, and site preparation for planting, serve to reduce fuel loadings and potential flame lengths within the Wildland Urban Interface (should fires burn again).

**Table 5 - Wildland Urban Interface acres within the project area by fire and community**

| Wildland Urban Interface | | | | |
|---|---|---|---|---|
| **Community** | **Westside Fire Recovery A: Beaver Fire** | **Westside Fire Recovery B: Happy Camp Complex** | **Westside Fire Recovery C: Whites Fire** | **Grand Total** |
| Happy Camp | - | 10,651 | - | 10,651 |
| Horse Creek | 3,161 | - | - | 3,161 |
| Klamath River | 21,864 | - | - | 21,864 |
| Sawyers Bar | - | - | 17,137 | 17,137 |
| Scott Bar | - | 18,007 | - | 18,007 |
| Seiad Valley | - | 19,306 | - | 19,306 |
| **Grand Total** | **25,025** | **47,964** | **17,137** | **90,126** |

## Purpose and Need for Action

There is a need to close the gap between the existing and desired condition, while protecting forest resources within the project area. The purpose of this project is to:

1. Reduce safety hazards to adjacent landowners, the public, and Forest workers from falling trees (i.e. "hazard trees," also known as "danger trees") or hazardous fuels conditions. Trees killed or severely burned by wildfire (i.e. snags) are often unstable and at risk for falling or snapping off, especially during high wind events. It is important that safety is maintained and hazardous fuels conditions are abated, where they exist within the Wildland Urban Interface, especially within one-quarter mile of private property in burned areas or within areas that underwent fire suppression-related activity. It is also imperative that infrastructure, especially utility lines, roads, trailheads, campgrounds, fire lookouts, and bridges, are maintained for use by the public and Forest workers. Further, dead and dying trees within proposed salvage harvest areas need to be addressed to minimize safety hazards to the public who recreate in the area, Forest workers (i.e. planting), and firefighters (i.e. to enable future suppression efforts should the area burn again).
2. Obtain the maximum economic commodity and value from burned timber by offering a sale while the wood is still marketable. The Forest Plan directs the Forest to harvest dead or dying trees to produce wood products as consistent with Forest goals. Dead timber loses significant value if left standing beyond two winters and is most profitable if harvested even sooner. Capturing the marketability of the timber provides the agency a viable means of meeting this and other project needs, since the timber sale can be used to fund restoration implementation. If treatment is delayed beyond the marketability period of the timber, the Forest Service will need to pay for the hazard tree abatement and removal of dead and dying trees in order to meet the first need described above. By contrast, if salvage occurs during the marketability period, funds gained from the salvage sale can be used for additional restoration work. Capturing the maximum economic value of the salvaged timber will benefit Siskiyou County and surrounding communities by maintaining and/or creating jobs in forest management by providing timber to the local mills who are major employers of these rural communities.
3. Promote ecosystem sustainability by increasing the likelihood and speed by which burned, forested areas are restored. Although wildfires have some benefits (*e.g.*, snag and downed wood creation), intensely burned forested areas may be slow to recover and heavy fuel loading will result from fallen snags. Following a high severity wildfire, heavy fuel loading predisposes an area to higher intensity and higher severity wildfires in the future. Such fires would inhibit stand regeneration, resulting in stand type changes to brush or other non-forested vegetation types and delaying these lands from reaching the desired conditions of the Forest Plan.

Existing and desired conditions are contrasted in table 6 below, as they relate to the project's statement of purpose and need.

**Table 6- Existing and desired conditions**

| Statement of Need | Existing Condition | Desired condition |
|---|---|---|
| 1. Safety | Infrastructure, including utility lines, roadways, bridges, trailheads, campgrounds, and fire lookouts within the project area, are surrounded by fire-killed and damaged trees and preexisting danger trees that pose a hazard to the public and Forest workers.<br><br>A high probability of future high-intensity wildfires (due to heavy fuel loading from existing fire-killed timber) threatens structures and presents a safety hazard to nearby residents and firefighters (should the area burn again).<br><br>Dead and dying trees within proposed salvage harvest areas present a safety hazard to firefighters (should the area burn again) or others who may recreate or work in the areas.<br><br>Progressively increasing fuel loadings where potential flame lengths will exceed four feet (should the area burn again). Flame lengths over four feet are resistant to suppression tactics. | Public and Forest worker access to public lands along all roadways and trailheads are unimpeded. Hazards from falling danger trees are mitigated to the extent possible nearby infrastructure.<br><br>Probability of future high-intensity wildfires is reduced to improve safety for adjacent community members and fire fighters (should the areas burn again).<br><br>Hazards from falling danger trees are mitigated to the extent possible.<br><br>Fuel loadings commensurate with surface flame lengths of less than four feet (should the area burn again). |
| 2. Timber Commodity and Project Viability | The estimated volume and economic value of the timber is not yet captured. This will be determined after scoping. | Dead or dying trees are harvested to produce wood products as consistent with Forest goals. (Forest Plan, pages 4-131-132 and 4-49)<br><br>Private industry jobs in the forest management sector of the County will be created and/or maintained. |

| Statement of Need | Existing Condition | Desired condition |
|---|---|---|
| 3. Regenerated forested areas | Vegetative burn severity ranges from low to high severity in a mosaic pattern. Approximately 23 percent of the fire acreage burned at medium to high severity (stands where over half the trees were killed) and these acres are not currently resilient conifer stands[13]. The stands that burned at high severity (50-100 percent vegetative canopy killed) ranged in species composition and structure from shrub/oak stands, to single layered conifer plantations, to multi layered, mixed conifer stands and higher elevation stands dominated by true fir. In mixed conifer stands species composition of conifers varies in combinations of Douglas-fir, ponderosa pine, sugar pine and incense cedar. | Fuel loadings commensurate with surface flame lengths less than four feet (should the area burn again).<br><br>The long-term desired future condition for the project area is a healthy forested landscape with diverse ecosystem conditions reflective of historic vegetation and the ecological capability of the landscape. This includes some natural openings and native browse species vegetation within a largely continuous conifer-dominated landscape. To the extent possible, fire will play a natural role in the ecosystem. However, the desired condition will also include reduced risk of high intensity fire within the Wildland Urban Interface.<br><br>In the short term, clumps of leave snags will provide post-fire habitat components for a variety of species. In the long term, a conifer overstory with some understory vegetation components will provide forage and cover for wildlife species. |

These desired conditions are consistent with the Forest Plan. Table 1 displays the page numbers in the Forest Plan for forest-wide goals and standards and guidelines by applicable MA. Forest-wide goals (Forest Plan, pages 4-4 and 4-5) include pursing ecosystem sustainability through integrated resource objectives, managing for a diverse and productive environment, and managing with the highest standards of stewardship by working to meet the needs of the Nation for wood, water, forage, wildlife, recreation and other resources.

[13] This number will change following scoping because the portions of the Happy Camp Fire were still burning, which obscured the RAVG satellite data. New, more accurate data is being collected and will be incorporated into the environmental impact statement after scoping.

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## Proposed Action

The proposed action was designed to meet the purpose and need for action. The proposed action will treat a total of about 63,883 acres within the 214,848-acre project boundary. Acres by treatment type are described below and do not account for the overlap in treatment types. Treatment acreages are approximate at this point and will be adjusted and refined following scoping.

This project includes the following four types of treatments: (1) Salvage; (2) Roadside Hazard Treatments; (3) Hazardous Fuel Treatments; and (4) Site Preparation, Planting, and Release. Access is also described. Map(s) of the proposed treatments are enclosed.

As part of the proposed actions, existing legacy sediment sites will be identified and scheduled for treatment in compliance with the Clean Water Act as a condition of the North Coast Regional Water Quality Control Board waiver of waste discharge requirements (Order No. R1-2010-0029).

### 1. Salvage Harvest (10,600 acres)

Salvage logging on about 10,600 acres of NFS lands will reduce the hazards for the public, Forest workers, and firefighters when future fires occur within the planning area. The proposed snag removal from around communities, key infrastructure, and roads will provide fire managers improved options for effectively managing potential future wildfires. In addition, salvage logging will promote ecosystem sustainability by increasing the likelihood and speed by which burned forested areas are regenerated, while greatly reducing the accumulation of dead/down fuels in the future.

The Forest Service is proposing to salvage burned forested areas. The following criteria were used to establish the areas considered for salvage harvest treatments (treatment maps, appendix A, figures 2-4):

- Priority will be given to areas described within the Hazardous Fuel Treatments section of the proposed action, including areas nearby roads, other infrastructure, and private property structures.
- No salvage harvest is proposed within Wilderness, Backcountry, Research Natural Areas, Recommended Wild Rivers, Inventoried Roadless Areas, or Riparian Reserves.[14]
- Only areas of medium to high severity vegetation mortality (i.e. greater than 50percent canopy cover killed, based on Landsat Thematic Mapper imagery) are proposed for treatment. See figures 2-4 (appendix B).
- Only areas determined to be feasible in terms of logging systems, accessibility, and amount of mortality are proposed for treatment.
- Only areas with more than 10 acres of medium to high severity vegetation mortality are proposed for treatment.

[14] Riparian Reserves will likely need to be crossed to access certain harvest units.

Within treatment units, the Forest Service will develop marking guidelines for salvage units based upon Report #RO-11-01 "*Marking Guidelines for Fire-Injured Trees in California*" (Smith & Cluck, 2011), which used peer reviewed scientific literature for tree species in Northern California. The guidelines provide a sliding scale of the probability for tree mortality based on percent volume or length of crown scorched by fire. The responsible official has chosen to salvage trees with a 0.7 probability of mortality, meaning that the Forest Service will harvest trees with a 70 percent or greater chance of dying. It is anticipated that the majority of trees within salvage units will be harvested, as most burned with high severity and a high probability of mortality.

Salvage harvest will be consistent with Forest Plan direction. Project design features will be incorporated into the project design, as described in appendix A. Project design features for wildlife will largely dictate the number of snags left standing in order to meet forest wide standards and guidelines. Where snags are retained, they will be left in groups to provide structure and cover for wildlife, considering placement of existing snags. Grouping snags will allow for safety during harvest operations and post-harvest treatments. Management direction for salvage in Late Successional Reserves (Forest Plan, pages 4-87 through 4-88) will be followed. Recommendations identified in the Late Successional Reserve Forest-wide Assessment (USDA 1999) follow Forest Plan direction and focus on long range objectives and direct management actions following a stand-replacing event be designed to accelerate or not impede the development of late-successional characteristics. Treatments will:

- Treat areas larger than ten acres;
- Retain standing live trees likely to persist over time;
- Retain snags that are likely to persist (emphasis on the largest snags in the stand); and
- Retain adequate coarse woody debris

Salvage logging treatments will be accomplished by a combination of ground-based, skyline, and helicopter logging systems; acres to be treated by each logging system will be determined after scoping.
Maps showing areas considered for treatment are found in appendix B (figures 5-7). Acres considered for salvage harvest treatments are described in table 7 below. Table 8 below compares vegetation severity by fire, comparing it to proposed treatment acres; also see vegetation severity maps in appendix B (figures 2-4).

Presently, 10,600 acres are being considered for salvage treatments. It is anticipated that this estimated figure will be reduced as areas are evaluated on-the-ground for feasibility, need for treatment, and other resource considerations.

**Table 7 - Acres of salvage harvest treatment**

| Land Allocation | Beaver Fire | Happy Camp Complex | Whites Fire | Grand Total |
|---|---|---|---|---|
| **General Forest** | 810 | 950 | - | **1,760** |
| **Partial Retention VQO** | 340 | 1,930 | 50 | **2,320** |
| **Recreational River** | - | 15 | 50 | **65** |
| **Retention VQO** | - | 24 | - | **24** |
| **Special Habitat, LSR** | - | 5,331 | 1,100 | **6,431** |
| **Grand Total** | **1,150** | **8,250** | **1,200** | **10,600** |

**Table 8 - Vegetation severity and respective proposed salvage harvest treatments by fire.**[15]

| Project Area | Acres Burned | Acres Burned Medium-High Severity | Percent (%) of Acres Burned Medium-High Severity | Proposed Treatment Acres That Meet the Above Criteria | Percent (%) of Burned Acres Proposed for Treatment |
|---|---|---|---|---|---|
| **A: Beaver Fire** | 32,411 | 15,457 | 48% | 1,150 | 3.5% |
| **B: Happy Camp Complex Fire** | 116,948 | 16,250 | 14% | 8,250 | 7.0% |
| **C: Whites Fire** | 33,768 | 10,356 | 31% | 1,200 | 3.3% |

## 2. Roadside Hazard Treatments (678 miles or 21,872 acres)

The Forest Service will identify and remove hazard trees along about 678 miles (or within 21,872 acres) of National Forest Transportation System roads, County Roads, and State Highways. To provide for both public and Forest worker safety and future fire suppression efforts, roads classified in all maintenance levels will be considered for roadside hazard treatments. Both the mileage and acres of treatment proposed are an overestimation and a maximum; the numbers are merely representative of the entire length and area being evaluated for hazard trees. Trees along the roadway and within these areas will only be removed if they are identified as a hazard or overlap with salvage treatment units.

Hazard trees (also known as danger trees) will be identified using the Regional Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region (Angwin et al. 2012). In addition to using the Regional Hazard Tree Guidelines, the Forest Service will develop marking guidelines for salvage units based upon Report #RO-11-01 “Marking Guidelines for Fire-Injured Trees in California” (Smith & Cluck, 2011). Because of safety concerns associated with hazard trees, the responsible official has chosen to salvage trees with a 0.6 probability of mortality, meaning that the Forest Service will mark trees for harvesting with a 60 percent or greater chance of dying.

Roadside Hazard treatments will be accomplished by a combination of ground-based, skyline, and helicopter logging systems; acres to be treated by each logging system will be determined after scoping.
Miles by Maintenance Level (ML) considered for roadside hazard treatments are described in Table 9 below. Acres by MA considered for roadside hazard treatments are described in Table 10 below. Maps showing areas considered for roadside hazard treatment are found in appendix B (figures 5-7).

[15] The figures in this table do not include over 31,000 acres of severity data for the Happy Camp Complex that was not collected due to smoke obscuring the RAVG satellite data collection. These figures will be updated after scoping.

**Table 9 – Roadside Hazard Treatments by NFTS maintenance level**

| Roadside Hazard- Maintenance Level (Miles) | | | | |
|---|---|---|---|---|
| **Maintenance Level (and description)** | **Beaver** | **HCC** | **Whites** | **Grand Total** |
| **1 (basic custodial care, closed to public)** | 20 | 73 | 5 | 98 |
| **2 (high clearance vehicles)** | 69 | 185 | 31 | 285 |
| **3 (suitable for passenger cars)** | 30 | 67 | 15 | 112 |
| **4 (moderate degree of user comfort)** | 2 | 7 | - | 9 |
| **5 (high degree of user comfort)** | 2 | - | - | 2 |
| **County Roads and State Highways** | 49 | 96 | 27 | 172 |
| **Grand Total** | **173** | **426** | **78** | **678** |

**Table 10 – Roadside Hazard Treatments by MA**

| Roadside Hazard- Land Allocation (Acres) | | | | |
|---|---|---|---|---|
| **Management Areas** | **Beaver Fire** | **Happy Camp Complex** | **Whites Fire** | **Grand Total** |
| **General Forest** | 1,155 | 1,202 | - | **2,357** |
| **Partial Retention VQO** | 849 | 3,141 | 3 | **3,992** |
| **Recreational River** | - | 222 | 48 | **270** |
| **Retention VQO** | 29 | 231 | 9 | **269** |
| **Riparian Area** | 1,068 | 2,241 | 248 | **3,557** |
| **Scenic River** | - | 65 | - | **65** |
| **Special Habitat, LSR** | 136 | 8,604 | 2,479 | **11,219** |
| **Special Habitat, T&E Species** | - | 144 | - | **144** |
| **Grand Total** | **3,236** | **15,850** | **2,787** | **21,872** |

### 3. Hazardous Fuel Treatments (11,411 acres)

To further reduce the dangers associated with heavy fuel loading, especially within the Wildland Urban Interface, the Forest Service will treat hazardous on about 11,411 acres of NFS lands. Fuel treatments being considered include: yarding, lop and scattering, chipping, broadcast burning, jackpot burning, and pile burning. Presently, 11,411 acres are being considered for hazardous fuels treatments. It is anticipated that this estimated figure will be reduced as areas are evaluated on-the-ground for feasibility, need for treatment, and other resource considerations.

Treatments will occur within:

- One-quarter mile of private property structures in burned areas or within areas that underwent fire suppression-related activity. Treatment priority will be determined by modeled fuel loading and flame lengths for these areas, e.g. heavier fuel loads with higher predicted flame lengths would be prioritized for treatment ahead of other areas. (Although not incorporated into the maps or total treatment acres at this time, treatment within one-quarter mile of private property without structures will also be considered as the proposal is refined.)
- 500 feet of infrastructure (e.g. utility lines, communication sites, campgrounds, lookouts, bridges, etc.). Treatment priority for these areas will also be determined by modeled fuel loadings and flame lengths.
- 300 feet on either side of Forest roads. Treatment priority will be given according to volume of road use and whether or not it's used as an evacuation route. Treatment priority will also be given to ridgetop roads and roads used for suppression efforts, including ML 1 roads.
- No treatment within Wilderness, Research Natural Area, or Wild River is being proposed, but treatment within Inventoried Roadless Areas and all other management areas is being considered at this time.

Maps showing areas considered for hazardous fuels treatment are found in appendix B (figures 8-10). Acres considered for hazardous fuel treatments are described in Table 11 below.

**Table 11 – Hazardous Fuel Treatments by MA**

| Fuels Treatments and Land Allocations | | | | |
|---|---|---|---|---|
| **Management Area** | **Beaver Fire** | **Happy Camp Complex** | **Whites Fire** | **Grand Total** |
| **General Forest (MA17)** | 19 | 70 | 1 | **90** |
| **Partial Retention VQO (MA15)** | 302 | 699 | 464 | **1,466** |
| **Recreational River (MA13)** | - | 592 | 251 | **843** |
| **Retention VQO (MA11)** | 668 | 1,023 | 0 | **1,692** |
| **Riparian Area (MA10)** | 765 | 2,950 | 715 | **4,430** |
| **Scenic River (MA12)** | - | 136 | - | **136** |
| **Special Habitat, LSR (MA5)** | 8 | 405 | 2,182 | **2,595** |
| **Special Habitat, Eagle/Falcon (MA5)** | - | 158 | - | **158** |
| **Grand Total** | **1,763** | **6,034** | **3613** | **11,411** |

### 4. Site Preparation, Planting, and Release (20,000 acres)

Following a high severity wildfire, heavy fuel loading predisposes an area to future higher intensity and higher severity wildfires that inhibit stand regeneration, resulting in stand type changes to brush or other non-forested vegetation types. Site preparation will reduce fuel loading before planting.

Mechanical or hand treatments will be used to prepare the area for planting. Mechanical treatments will include yarding, mastication windthrowing and piling of dead material. Hand treatments will include the cutting and piling of dead fuels. Mechanical and hand-piled material will be burned. Tree planting (or reforestation) will be by hand methods, using either bare root or container stock. Hand planting will increase the likelihood for survival and provide for the desired spatial variability within treatment stands and across the project area. Tree species used for planting will roughly correspond with historical stand composition, varying by forest type. A mosaic distribution would be achieved over time due to differences in survival rates and the spatial variability achieved through hand-planting.

Additional planting survival techniques may be used to increase survival of planted trees. These techniques include, but are not limited to: vexar tubing for browse prevention, shade blocks for improved microsite conditions, and hand

grubbing and mechanical release (to release for survival).

The following criteria will be considered in order to determine priority areas for site preparation, planting, and release:

- Salvage harvest treatment areas
- Pre-existing plantations
- Areas with greater than 10 acres of medium to high severity vegetation mortality
- No planting is proposed within IRA, except in LSR portions of IRA where reforestation for future habitat is proposed and in pre-existing plantations
- No planting in areas historically dominated by hardwoods or non-forested conditions
- No planting is proposed in RNA, Wilderness and Wild River

### 5. Access

Project access will mainly require the use of National Forest Transportation System roads and County Roads. System roads will be maintained as needed for project implementation. There will be no new permanent National Forest Transportation System road construction; however, new temporary roads will be constructed as needed for project access. Temporary roads on existing roadbeds will be used as needed. All temporary roads will be closed and hydrologically stabilized following the implementation of the above proposed actions. Existing landings will be used where possible and then hydrologically stabilized after use.

# Appendix A – Project Design Features

Project Design Features (PDFs) are incorporated into the design of the proposed action in order to mitigate for resources and be consistent with the Forest Plan. PDFs are more general in nature at this stage in the proposed action development. It is anticipated that PDFs will be modified, added, or removed, as necessary to meet the feasibility and mitigation needs of the modified proposed action after scoping and its alternatives.

**Table A-1- Project design features, arranged by resource**

| PDF Title | Description | Location[16] |
|---|---|---|
| Botany - 1 | Forest Service botanist will flag for avoidance appropriate populations of federally Threatened and Endangered and Forest Service Sensitive species. Yellow and black striped flagging will be used to delineate population boundaries. | All units where applicable |
| Botany - 2 | Populations protected under Survey and Manage guidelines will be flagged for avoidance. Yellow and black striped flagging will be used to delineate population boundaries. | All units where applicable |
| Botany - 3 | Hazard trees adjacent to flagged populations of TES and Survey and Manage species will be directionally felled away from the flagged area to avoid disturbing the population. Directionally felled trees may only be removed if it causes no ground disturbance within the flagged area. Yellow and black striped flagging will be used to delineate population boundaries. | All units where applicable |
| Botany - 4 | Hazard trees located within the flagged population boundary for TES or Survey and Manage species may be felled, but must be left on-site to avoid ground disturbance. Yellow and black striped flagging will be used to delineate population boundaries. | All roadside hazard treatment units |
| Fuels – 1 | Treat residual fuels through a variety of methods, including broadcast burning, hand piling, and tractor piling. | All salvage harvest units |
| Fuels – 2 | Treat residual fuels following roadside hazard treatments along Forest Service system roads through a variety of methods, including broadcast burning, piling, tractor piling, burning, or utilization (firewood). | All roadside hazard treatment units |
| Fuels – 3 | Use natural features such as ridgelines, streams and rock outcroppings for control features when prescribed burning. Also use road systems and hand lines to burn harvest units. | All hazardous fuel treatment units |
| Fuels – 4 | To meet the need of reducing potential fire behavior on a landscape scale within the salvage-harvested areas, dead and dying trees will be cut and removed throughout area to create a mosaic of fuel loading that does not exceed ten tons per acre. Removal of trees will occur by one or a combination of the following treatments: scattering, piling, burning, or utilization (firewood). | All units where applicable |
| Fuels – 5 | Retain snags in clumps or groups; orient these areas so as to not be consumed in broadcast burn. | All units where applicable |
| Fuels – 6 | Burn in accordance with an approved burn plan and an approved Smoke Management Plan that includes a Smoke Permit approved by the Siskiyou County Air Pollution Control District. | All units where applicable (burning only) |

[16] Locations will be refined after scoping. “All locations” within the context of this proposal means that all applicable areas will be considered for the PDF. As better data is available, it is expected that the PDFs will be refined to minimize the locations where a given PDF is applied, limiting the PDF to specified units or areas.

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| Fuels – 7 | Where possible, considering minimal landing size, trees will be yarded with tops attached to minimize residual (post-salvage) fuels within treatment stands. Trees will be limbed at the landings. Slash and tops will be piled at the landing to reduce the amount of slash left in the stand. Slash and top piles will either be removed for chip material (biomass) or burned within landing areas. | Ground based logging system only |
| Heritage-1 | Conduct heritage resource surveys to determine presence of resources within the area of potential effects following the provisions outlined in the Regional and Westside Recovery PAs (PAs). | All units where applicable |
| Heritage-2 | Complete the Section 106 process, consulting with the State Historic Preservation Officer (SHPO) on potential adverse effects to sites from project activities that cannot be mitigated using Standard Resource Protection Measures (SRPM). If adverse effects cannot be avoided, a Historic Properties Treatment Plan will be developed. | All units where applicable |
| Heritage-3 | All sites within the area of potential effects will be clearly delineated prior to implementation. This includes but is not limited to flagging site boundaries. | All units where applicable |
| Heritage-4 | Any project activities within site boundaries will follow approved SRPMs established by PAs and will be approved by the heritage program manager. | All units where applicable |
| Heritage-5 | No skid roads, road improvements, landings or burn pile areas will occur within archeological sites without approval from the district archaeologist and/or heritage program manager. | All units where applicable |
| Heritage-6 | In the event that new heritage resources are discovered during project implementation, the district archaeologist and/or heritage program manager must be notified and all activities in the vicinity (150 feet) of the resource shall cease until consultations are completed. | All units where applicable |
| Heritage-7 | Heritage personnel will conduct implementation and post-implementation monitoring of project activities within site boundaries. | All units where applicable |
| NNIS – 1 | All equipment and vehicles will be cleaned of soil, seeds, vegetative matter, and other debris that could contain noxious weed seeds prior to entering and before leaving the project area. | All units where applicable |
| NNIS - 2 | Equipment, vehicles, and personnel will avoid working within flagged noxious weed sites. Orange/black flagging labeled with *INVASIVE SPECIES* will be used to delineate population boundaries. | All units where applicable |
| NNIS - 3 | If potential landings sites are infested with noxious weed, consult a Botanist about appropriate methods for containing and/or managing the infestation. | All units where applicable |
| NNIS - 4 | Any straw or seed placed within the project area must be documented as California certified weed free | All units where applicable |
| NNIS - 5 | Any facility that provides material such as rock, gravel, or boulders to be used in the project area should be inspected and determined to have limited potential for the spread of noxious weeds to stored material. Material stockpiles must be noxious weed free. | All units where applicable |
| Recreation – 1 | Protect and restore recreational access and recreation settings along roads, trails and trailheads identified as Sensitive (includes the Scenery PDFs below). | All units where applicable |
| Recreation – 2 | Repair or replace recreational signing or other facilities and trail settings if damaged during project implementation. | All units where applicable |
| Recreation – 3 | Provide visitor information about area/road/trail closures, or other recreational setting changes, both on-site, and on the Forest website. | All units where applicable |
| Scenery – 1 | Reduce exceptional fuel concentrations that are very likely to result in future uncharacteristically large or severe burns that would impair the historic, ecologically established scenic character. | All units where applicable |

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| Scenery – 2 | Design treatment units to reinforce and retain the natural appearing wildfire patterns. | All units where applicable |
| Scenery – 3 | Minimize scenery contrasts such as stumps, landings, yarding, skid patterns, temporary roads, landings and burn piles in sensitive trailside and roadside foreground distances to meet assigned VQOs. | All units where applicable |
| Scenery – 5 | Design salvage units to rehabilitate unacceptable modification VQO where applicable. | All units where applicable |
| Watershed - 1 | The project is proposed to take place during the normal operating season (NOS) that is defined as May 1 to November 30, and in dry periods outside the NOS with Line Officer approval. Actions will be restricted during periods of wet weather during the NOS. | All activities and locations |
| Watershed - 2 | Operate according to the Forest's Wet Weather Operation Standards (Klamath National Forest, 2002). | All activities and locations |
| Watershed - 3 | When drafting from waters designated as coho salmon Critical Habitat:<br>*NOAA Fisheries Water Drafting Specifications (2001) apply*<br>1. Intakes will be screened with 3/32" mesh for rounded or square openings, or 1/16" mesh for slotted openings. When in habitat potentially occupied by steelhead trout, intakes will be screened with 1/8" mesh size. Wetted surface area of the screen or fish-exclusion device shall be proportional to the pump rate to ensure that water velocity at the screen surface does not exceed 0.33 feet/second.<br>a. Use of a NOAA approved fish screen will ensure the above specifications are met.<br>2. Fish screen will be placed parallel to flow.<br>3. Pumping rate will not exceed 350 gallons-per-minute or 10percent of the flow of the anadromous stream drafted from.<br>4. Pumping will be terminated when tank is full.<br><br>Additional applicable specifications:<br>• There will be no modification/improvement of drafting sites in CH. Water drafting by more than one truck shall not occur simultaneously.<br><br>When drafting from waters that are not coho salmon CH, but do contain fish:<br>*Forest Service BMP Handbook direction applies (BMP 2.5)*<br>1. For fish-bearing streams, the water drafting rate should not exceed 350 gallons per minute for streamflow greater than or equal to 4.0 cubic feet per second (cfs).<br>2. Below 4.0 cfs, drafting rates should not exceed 20 percent of surface flows.<br>3. Water drafting should cease when bypass surface flows drop below 1.5 cfs.<br>4. Intakes, for trucks and tanks, shall be placed parallel to the flow of water and screened, with opening size consistent with the protection of aquatic species of interest.<br>5. Fish-bearing streams that are temporarily dammed to create a drafting pool shall provide fish passage for all life stages of fish. | Drafting from waters designated as coho salmon Critical Habitat, and other fish-bearing waters |

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| Watershed - 4 | When:<br>*Forest Service BMP Handbook direction applies (BMP 2.5)*• Drafting rate should not exceed 350 gallons per minute for stream flow greater than or equal to 2.0 cubic feet/second.<br>• Drafting rate should not exceed 50 percent of surface flow.<br>• Drafting should cease when bypass surface flow drops below ten gallons per minute.<br>• Drafting by more than one truck shall not occur simultaneously. | Drafting from waters on FS lands |
| Watershed – 5 | Water drafting sites located in non-fish-bearing waters only may include minor instream modification, such as fine sediment removal and building of board/plastic dams. All boards and plastic will be removed after use.<br><br>Water drafting sites located within fish-bearing stream segments may not be modified, except rocking the approach to prevent sedimentation. | Drafting from waters on FS lands |
| Watershed – 6 | Draft water only at designated water drafting sites. | Drafting from waters on FS lands |
| Watershed – 7 | Rock and gravel may be applied to drafting sites if it is needed to prevent stream sedimentation. | Drafting from waters on FS lands |
| Watershed – 8 | Fueling and servicing of vehicles used for proposed activities will be done outside of Riparian Reserves.<br><br>No fueling/refueling of mechanical equipment such as chain saws will occur within 100 feet of any flowing watercourse or intermittent drainage.<br><br>Report spills and initiate appropriate clean-up action in accordance with applicable State and Federal laws, rules and regulations. The forest hazardous materials coordinator's name and phone number shall be available to Forest Service personnel who administer or manage activities utilizing petroleum-powered equipment.<br><br>In the occurrence of a spill which may affect listed aquatic species, NOAA Fisheries will be notified for emergency consultation. | All fueling activities and locations |
| Watershed – 9 | A spill containment kit will be in place where refueling and servicing take place. | All fueling activities and locations |
| Watershed – 10 | Project Riparian Reserves are established in the following manner per the Forest Plan: For fish-bearing streams, it is the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream), whichever is greatest. For permanently flowing nonfish-bearing streams, it is the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream), whichever is greatest. For intermittent streams, it is the extent of unstable and potentially unstable areas, the stream channel and extending to the top of the inner gorge, or extension from the edges of the stream channel to a distance equal to the height of one site potential tree, or 100 feet slope distance, whichever is greatest. | All activities in Riparian Reserves |

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| Watershed – 11 | When working in Riparian Reserves- When there is a 30 percent chance of rain in the next 24 hours the timber sale administrator will be on site to ensure that winterization or erosion control procedures are implemented in a timely fashion, and to initiate shutdown or resume operations. Operations will not resume until suitable weather, soil, and forecast conditions exist. | All activities in Riparian Reserves |
| Watershed – 12 | To limit slope disturbance, Inner Gorge terrain (> 65percent slope) that extends beyond Riparian Reserves will be buffered by 20-foot slope distance from mechanical equipment activities. In areas where treatments may conflict, a hydrologist will be consulted. | All activities in Riparian Reserves defined by water courses, inner gorges (slopes > 65 percent), and active landslides |
| Watershed – 13 | Tractors and mechanical harvesters will be excluded from active landslides, inner gorges, and toe zones of dormant landslide deposits. | All activities in active landslide, inner gorge (slopes > 65 percent), active landslide, and toe zone of dormant landslide terrains |
| Watershed – 14 | In general, hazard trees that are felled within hydrologic Riparian Reserves will be retained on site where they are located downhill of the road. Due to potential safety concerns, felled trees which are uphill of the road may be removed. This provision applies both to fish-bearing and non-fish-bearing Riparian Reserves. In all cases, Riparian Reserve trees located uphill of roads and crossings will be directionally felled such that subsequent log yarding will not cross channels nor will create gouging that will input sediment into channels. Where possible (where they don't threaten safe access or the forest road drainage system integrity), felled hazard trees in RRs uphill of roads will be retained. | Within Riparian Reserves |
| Watershed – 15 | To provide for water quality, springs identified outside of Riparian Reserves will be flagged and avoided from mechanical equipment activities. | All locations outside of Riparian Reserves |
| Watershed – 16 | Proposed activities will maintain post-fire shade conditions within Riparian Reserves. | Salvage harvest units only. |
| Watershed – 17 | When underburning in Riparian Reserves, maintain large woody debris where possible. | Within Riparian Reserves |
| Watershed – 18 | Directional felling will be used to protect streambanks. | All activities and locations |
| Watershed – 19 | Improvements to existing roads in the project area will not over-steepen road cuts, will minimize sidecasting, and will maintain ditches, cross drains, and any outsloped road segments. | All units where applicable |
| Watershed – 20 | Roads will be watered as appropriate to maintain road fines on site. | All units where applicable |
| Watershed – 21 | Use erosion control methods on access and/or main roads that are treated for dust abatement to prevent any leaking water from causing sedimentation of streams. | All units where applicable |
| Watershed – 22 | Spot rocking will be used as necessary if small and isolated portions of the road system do not adequately dry to allow haul when most of the road is capable of haul, provided haul over the newly rocked areas will not create adverse impacts. | All units where applicable |
| Watershed – 23 | Upgrades or improvements to stream crossings are to be built to Forest Plan standards. | All units where applicable |

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| Watershed – 24 | Activities which require culvert replacement or removal will occur during the least critical periods for water and aquatic resources: when streams are dry or during low-water conditions; and in compliance with spawning and breeding season restrictions. | All units where applicable |
| Watershed - 25 | Temporary road take-offs will be obliterated or effectively blocked to vehicle access. | All units where applicable |
| Watershed – 26 | Temporary roads will be covered with slash if needed and blocked after the harvest season (prior to the first winter after use). Temporary roads will be hydrologically restored at project completion which may include removal of culverts and fills at stream crossings, out-sloping of road surfaces, sub-soiling, and/or obliteration of temporary road segments. | All units where applicable |
| Watershed – 27 | No more than 15percent of a harvest unit will be disturbed by cable corridors, main skid trails, and landings. | All units where applicable |
| Watershed – 28 | Construct new landings outside both stream-course and active landslide and inner gorge Riparian Reserves and away from locations where sediment is likely to enter streams due to hydrologic connection. | All activities and locations outside of Riparian Reserves. |
| Watershed – 29 | Reused landings in Riparian Reserves will have site specific erosion control measures to reduce risk of sediment delivery into streams. | All activities in Riparian Reserves. |
| Watershed – 30 | Existing landings will be used to the extent possible. | All units where applicable |
| Watershed – 31 | At project conclusion, landings will be closed and configured for long-term drainage and stability by reestablishing natural runoff patterns. | All units where applicable |
| Watershed – 32 | During reconstruction of any landings, material will not be sidecast. | All units where applicable |
| Watershed – 33 | To aid soil and vegetative recovery, reused landings in Riparian Reserves and constructed landings that are not needed for future projects will be restored after use as specified by an earth scientist. Restoration may include subsoiling and covering with slash or mulch. | All activities in Riparian Reserves. |
| Watershed – 34 | Skid trails will be located to minimize impacts to Riparian Reserves. | All activities in Riparian Reserves. |
| Watershed – 35 | Skid trail erosion control work will be kept current during implementation. Erosion control and drainage of skid trails will be complete prior to shutting down operations due to wet weather or at project completion. | All units where applicable |
| Watershed – 36 | Use existing skid trails instead of building new skid trails unless using existing skid trails will have greater negative effects. Use no skid trails in areas (1) in which ground-based mechanical equipment is excluded; and (2) unstable areas, wetlands or meadows (excluding small springs and seeps). Designation of new skid trails will be approved by Timber Sale Administrator. | All units where applicable |
| Watershed – 37 | No full bench skid trails will be constructed. Full bench skid trails have the entire skid trail cut into the hill slope. | All units where applicable |
| Watershed – 38 | Limit equipment disturbance within 20 feet on either side of swales by minimizing equipment crossings and avoiding running trails up the axis of swales, except at designated crossings (see Watershed-13). | All units where applicable |
| Watershed – 39 | Locations where skid trails intersect roads will be obliterated or effectively blocked to vehicle access. | All units where applicable |

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| Watershed – 40 | Perennial streams will not be crossed by skid trails. Intermittent channels may be crossed when dry and at locations designated by the Forest Service. | All units where applicable |
| Watershed - 41 | Skid trails that cross intermittent streams or dry swales (*i.e.*, depressions in the landscape that do not meet definition for a designation as a Riparian Reserve) will be restored before any storm that has a reasonable chance of causing offsite sediment movement, or after use is complete. Restoration generally consists of removing excess soil, reshaping and waterbarring former approaches, and spreading slash on the former crossing. | All units where applicable |
| Watershed – 42 | Mechanical site preparation and skidding of equipment will be restricted to slopes less than 35 percent. Skid trails that connect benches in dormant landslide terrain can have minor portions of the skid trails on slopes greater than 35 percent. | All units where applicable |
| Watershed – 43 | Ground-based skidding will require front-end suspension of logs on skid trails. | All units where applicable |
| Watershed – 44 | Maintain existing coarse woody debris (CWD) by having ground-based equipment avoid the pre-existing larger diameter logs as much as practical. | All units where applicable |
| Watershed – 45 | Cable corridors will be placed on the landscape as to minimize disturbance to active landslides, inner gorges and toe zones of dormant landslide deposits. | All units where applicable |
| Watershed – 46 | All skyline yarding will require one end suspension. | All units where applicable |
| Watershed – 47 | Corridors for skyline yarding that are parallel to the stream channel will be placed outside of the Riparian Reserve. The corridor may cross the stream channel with full suspension of logs within ten feet from the stream bank. | All units where applicable |
| Watershed – 48 | Slash or water bars will be applied to skyline yarding corridors where necessary to minimize the concentration of surface runoff and where the ground cover is below 50 percent. | All units where applicable |
| Watershed – 49 | Where necessary, effective soil cover (mulch, woody debris, rock, vegetation, blankets) will be provided on exposed soil surfaces for both short- and long-term recovery; disturbed areas may be revegetated. | All units where applicable |
| Watershed – 50 | If available on site, post-treatment soil cover will range from 50-80 percent depending on slope steepness and soil texture. If post-harvest soil cover is below recommended levels, slash or mulch will be brought on site if needed to prevent soil erosion where practical. | All units where applicable |
| Watershed – 51 | Prescribed fire effects in Riparian Reserves will mimic a low intensity backing fire, except for handpiles where higher intensity may occur to consume pile material. Ignition of underburns will generally not occur in Riparian Reserves. Consult with the District Fish Biologist when planning underburn Riparian Reserve ignitions. | Within Riparian Reserves |
| Watershed – 52 | Restrictions for handpile and windrow construction<br>*Place in a checkerboard pattern whenever possible (not one pile directly above another).<br>*Handpiles must be small in size, 6 feet or less in diameter.<br>*No handpiles within 15 feet of intermittent stream channels.<br>* No handpiles within 30 feet of perennial stream channels. | All units where applicable |

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| Watershed – 53 | For underburning, construction of handlines in Riparian Reserves closer than 25 feet to a watercourse shall be avoided where practical. Handline construction in riparian vegetation shall be avoided where practical. Handlines will be mitigated (waterbarred and covered with organic material) immediately following prescribed burning, when safe to do so. | Within Riparian Reserves |
| Wild & Scenic - 1 | See applicable resource sections for PDFs related to outstandingly remarkable values i.e. water quality, vegetation, fisheries, etc. | All units where applicable |
| Wildlife – 1 | A seasonal restriction of February 1st to September 15th will apply to all treatments that modify habitat within 0.25 miles of an NSO activity center or within un-surveyed nesting/roosting habitat. This limited operating period may be lifted if protocol surveys determine non-nesting on year of action. Surveys will follow regionally approved protocol or as agreed upon by local Level One Team. | All units where applicable |
| Wildlife – 2 | Noise producing treatments that are above ambient noise levels within 0.25 miles of an occupied NSO activity center or within 0.25 mile of un-surveyed nesting/roosting habitat will have a seasonal restriction of February 1st to July 9th. This limited operating period may be lifted if protocol surveys determine NSOs are not nesting on year of action. Surveys will follow regionally approved protocol or as agreed upon by local Level One Team. | All units where applicable |
| Wildlife – 3 | A season restriction of March 1 – July 9 for burning of piles within a known NSO activity center or 0.25 miles of un-surveyed nesting/roosting habitat. This limited operating period may be lifted if protocol surveys determine NSOs are not nesting on year of action. Surveys will follow regionally approved protocol or as agreed upon by local Level One Team. | All units where applicable |
| Wildlife – 4 | A season restriction of February 1 – July 9 for underburning within a known NSO activity center or 0.25 miles of un-surveyed nesting/roosting habitat. This limited operating period may be lifted if protocol surveys determine NSOs are not nesting on year of action. Surveys will follow regionally approved protocol or as agreed upon by local Level One Team. | All units where applicable |
| Wildlife – 5 | Minimize smoke effects on bald eagles. Prescribed burning will not be implemented within 0.5 mile of a known or suspected nest territory from January 1st to August 31st, or a known or suspected winter roost area from November 1st to March 31st. If a survey determines that a winter roost or nest site is not active, no seasonal restrictions are required. | All units where applicable |
| Wildlife – 6 | Actions that create noise above ambient levels or habitat modification within 0.25 miles of an active or suspected bald eagle roost or nest will be seasonally restricted from January 1st to August 31st. For helicopters, topography and persistence of noise needs to be considered once treatment units are defined. Project biologist will evaluate the 0.25 mile is adequate, but 0.5 mile buffer maybe needed. If surveys determine that a roost or nest is not active, no seasonal restrictions are required. | All units where applicable |
| Wildlife – 7 | Roadside treatments that remove hazard trees along roads to improve human safety can be implemented (without helicopter use) outside a 660 feet buffer of known or suspected bald eagle nest sites. If roadside treatment occurs within this 660 feet buffer, the project biologist will assess the nest site to minimize impacts to the nest site. | All units where applicable |
| Wildlife – 8 | No removal of snags within 660’ radius around a bald eagle nest tree or alternate nest (distance may vary after review of on the ground conditions by district biologist). | All units, except roadside hazard, where applicable |

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| Wildlife – 9 | Avoid helicopter flight paths that would intersect a bald eagle foraging areas from nests or root sites. In addition, helicopter flights should exceed 1,000 feet (vertical distance) above known eagle nest or roost sites. Flight paths will be evaluated by the project biologist after treatment units are defined. | All units where applicable |
| Wildlife – 10 | Survey Goshawk Management Areas (GMAs) and goshawk nesting habitat within 0.25 mile of proposed activities prior to implementation. If a new or known goshawk nest is found to be active, no activities will occur from March 1st to August 31st within 0.25 mile of nesting sites will occur unless surveys confirm nesting status as not active. | All units where applicable |
| Wildlife – 11 | Protect known Survey and Manage sites per species guidance. Buffers of known sites will be identified by the project biologist. | All units where applicable |
| Wildlife – 12 | Snags will be distributed as groupings in the treatment unit, and not retained as individuals when possible. Snag retention will vary throughout the project area, depending on the burn pattern and severity, and on the locations of unburned patches and trees.<br>• Leave groups or clumps of 5 to 8 snags per acre on average of the largest size class along with the snags contained within the dripline of those retained largest size class snags. These clumps will ideally be distributed throughout treated stands and situated with large, live trees where possible. Snags or dying trees that contain cat faces, broken or forked tops, hollows or cavities burned out cavities, or those that are otherwise damaged to the degree that a cavity may form will be favored for retention. | All units where applicable |
| Wildlife – 13 | Retain pre-existing (existing prior to the wildfire) large snags (>14" DBH) in the salvage units. If any pre-existing snags must be felled for safety reasons, these pre-existing snags will be left on landscape in whole as coarse wood. | All units where applicable except roadside hazard units |
| Wildlife – 14 | Incense cedar and snags with broken tops would be selected as a high priority for retention. | All units where applicable |
| Wildlife – 15 | Five (5) to 20 pre-existing downed logs per acre (of the largest logs available) will be retained in salvage units as long as desired fuel condition is met where available. | All units where applicable |
| Wildlife – 16 | Only trees that meet the definition for a hazard tree in the Region 5 Hazard Tree Policy and fire affect tree mortality guidance will be cut as hazard trees and removed from alongside roads in the project area. salvage harvest As long as fuels desired conditions are met, leave cull trees in roadside units where possible in whole as woody debris. | All units where applicable |
| Wildlife – 17 | No management activities will occur in 0.25 mile (up to 1.0 mile) of peregrine falcon nest location from March 1st to August 31st, if the nest is active. The distance for this PDF will be assessed after treatment units are defined. If a survey determines that a nest site is not active, no seasonal restrictions are required. | All units where applicable |
| Wildlife – 18 | Avoid helicopter flight paths within 1 mile from peregrine falcon nest location from March 1st to August 31st. If the nest is active. If a survey determines that a nest site is not active, no seasonal restrictions are required. | All units where applicable |
| Wildlife – 19 | Leave felled cull trees whole (outside of snag retention clumps) in the units as course woody debris. | All units where applicable |