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Record of Decision

Westside Fire Recovery Project

Happy Camp/Oak Knoll and Salmon/Scott River Ranger Districts, Klamath National Forest

Siskiyou County, California

Abstract: This Record of Decision (ROD) documents the Deciding Officer's decision pertaining to the alternatives identified in the final EIS.

Lead Agency: USDA Forest Service

Cooperating Agencies: None

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1. INTRODUCTION

This Record of Decision documents my decision for the Westside Fire Recovery Project (Project). Since October 2014 when Project scoping began, my staff and I have worked to design a project that helps restore National Forest System Lands on the Klamath National Forest impacted by the 2014 wildfire season. We've done this by embarking on the most robust public engagement process the Klamath National Forest has ever undertaken; by consulting closely with local American Indian tribes to consider cultural concerns; and by applying the best, most relevant and site-specific science available.

The National Forest Management Act (NFMA) states in part that it is "the policy of the Congress that all forested lands in the National Forest System be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans." Consistent with the Klamath National Forest Land and Resources Management Plan (Forest Plan, as amended), the Westside Fire Recovery Project was designed to accomplish this objective of NFMA by restoring fire-resilient, forested ecosystems while providing for public safety and access, community protection, and economic benefit.

The path to reaching this decision has not been an easy one. I found no simple solution that fully achieves all the goals that I, the Forest Service, tribes, interest groups, other agencies, communities and members of the public have for the Project area. The Selected Alternative is intended to strike a balance between providing for the safety of the public and firefighters and reducing the risk of future stand replacement fire while limiting potential impacts of Project implementation on northern spotted owls (NSO), watersheds, cultural values, and other resources. Recognizing that no simple solution exists, I did my best to balance all these important but sometimes conflicting goals, with the intent of providing a decision that best serves the overall public interest.

As discussed in more detail in this Record of Decision (ROD) and in the comprehensive final environmental impact statement (EIS) and the Project record that supports my decision, the Project was developed to address the following needs:

- A need for worker and public safety and access.
- A need for safe conditions for firefighters performing fire suppression for community protection.
- A need for restored and fire-resilient forested ecosystems
- A need for a project that is economically viable, meeting project objectives and benefiting our local communities.

Developing the comprehensive final EIS that disclosed the effects of this project was a huge undertaking. Carefully considering and analyzing the large volume of public comments alone

took several months. Other challenges remained such as addressing the complex public natural resource and social conditions resulting from the 2014 fire season and understanding and incorporating best available science into the Project design and analysis. Aware of the need to act quickly, my staff and I put forth extraordinary effort to meet condensed timelines, publishing a draft EIS in March 2015 and a final EIS in August 2015. It also required the continued engagement of our many publics who have provided comments and observations that have helped shape this Project.

Unlike most project decisions I make, time is of the essence for the Westside Fire Recovery Project since the 2014 fire season ended almost a year and a half ago. In order to accomplish the Project objectives in a timely manner, I requested and received an Emergency Situation Determination (ESD) under the provisions of 36 CFR 218 on May 13, 2015. The ESD allows the project to be implemented immediately. Further delays would prevent the recovery of commodity value from fire-killed trees and prevent accomplishment of project goals of hazard reduction, fuel reduction, site preparation, habitat and watershed improvement and forest restoration that would otherwise be accomplished with timber sale receipts. On February 25, 2016, the Forest received verbal concurrence from the Chief's office that the conditions upon which the ESD was granted are valid and the ESD remains in effect. My original intent was to begin operations in the late summer and early fall of 2015 to capture as much commodity value as possible from fire-killed trees. However, due to the time and effort that was needed to complete consultation for northern spotted owls and Coho salmon under Section 7 of the Endangered Species Act, final Biological Opinions for the Project were not available until January 2016 for Coho salmon and February 2016 for northern spotted owls. Some of the trees killed by the fires have lost substantial economic and commodity value. While deterioration has occurred, I believe the salvage and hazard tree removal components of the Project still have commodity value and are economically viable. I base this opinion on three factors:

- Published literature of fire-killed trees predict that value remains so long as we are able to implement the Project in the next few months (final EIS p. 15, Table 1-6).
- The Forest offered and sold an emergency roadside hazard sale on the Sawyers Bar Road in December 2015, just two months before this Record of Decision was prepared. The sale sold for more than the appraised price indicating that fire-killed trees are still merchantable.
- The Forest conducted an objective "fall, buck and scale" evaluation on February 23, 2016 (See Project Record). That evaluation showed that although deterioration has occurred

[1] Economic value is the dollar value of trees sold in a timber sale offering. Commodity value is the value of products manufactured from a fire-killed timber. As the value of products that can be manufactured from fire killed trees goes down, so does the economic value. Fire killed trees may have a very low economic value, but still have commodity value because they are capable of being manufactured into lower value products. When the commodity value falls below the costs of logging and manufacturing, the material is no longer merchantable.

significant merchantable volume remains. That evaluation noted however that wood borer activity and rate of deterioration were likely to increase significantly with the arrival of warm summer weather.

With every passing day, the deterioration process will continue. At some point the commercial salvage timber sale component of the Westside Fire Recovery Project will become economically infeasible to implement. This will reduce the revenue that would otherwise be recovered from the commercial timber sales for reforestation and other restoration actions. It would also mean that actions that would otherwise be accomplished by salvage logging such as roadside hazard removal would now need to be accomplished by service contracts using appropriated funds at taxpayer expense. In the upcoming months it is imperative to begin implementing the portions of the Project not restricted by limited operating periods to maximize the amount of work that can be achieved before further deterioration of fire-killed trees occurs. Prospective purchasers have expressed interest in commercial timber sale offerings provided work can begin before additional deterioration occurs. With the onset of warmer weather in late spring to early summer, destructive insect activity and the rate of loss to deterioration will increase significantly. Further delay jeopardizes the agency's ability to use commercial timber sale contracts as a tool to implement the Project. While we expect that the revenue generated through commercial sale contracts will be lower than originally anticipated, it will still help cover the costs of implementing reforestation and other restoration actions. With the accelerated deterioration that is expected this summer, it is likely that additional delay will mean that few or even no bids will be received on the sales, and many parts of the Westside Fire Recovery Project (including critical environmental restoration work) are unlikely to be implemented without significant use of appropriated funds. These funds are limited and must be appropriated by Congress; they are not guaranteed. Therefore, I believe it is in the public interest to recover as much value as possible from fire-killed trees within the Project area. Without action, many burned areas within the Project will be at heightened risk for future high severity fire as fire-killed trees fall and become surface fuels. These snags and down trees will also impede public access and pose a threat to the safety of the public, firefighters, and other workers for years to come.

I realize that my decision will not please every person that has been engaged in this process. I believe my decision does strike a reasonable balance that is responsive to the concerns and opinions expressed in public input I received, and is the best solution to achieve the multiple benefits for which this Project was designed.

1.1 Location of the Project Area

Forest-wide, the 2014 fire season ultimately burned about 215,000 acres in four separate fire areas. The Westside Fire Recovery Project is composed of three of these large fires (or portions of fires) that burned during 2014 - the Beaver Fire, Happy Camp Complex Fire and the Whites Fire of the July Complex. Collectively, the fires are referred to as the 2014

Westside Fires since they occurred on the west side of the Forest. The fourth large fire, the Little Deer Fire, occurred on the east side of the Forest and was addressed in a stand-alone, separate environmental assessment. See Table 1 for an estimate of acres within the 2014 Westside Fire perimeters.

The locations of the fires that comprise the Westside Fire Recovery Project are as follows:

- The Beaver Fire lies on the north side of the Klamath River and is adjacent to the community of Klamath River. Much of the Beaver Fire area is in checkerboard ownership where alternating sections are either privately owned or part of the Klamath National Forest. Most of fire-killed or damaged trees on private land were salvaged in the spring and early summer of 2015.
- The Happy Camp Complex Fire is the largest and most diverse portion of the Westside Fire Recovery Project. The Happy Camp Complex Fire lies on the south side of the Klamath River adjacent to the communities of Seiad Valley and Happy Camp and extends from the Klamath River south into the headwaters of Grider Creek and Walker Creek and east to the Scott River
- The Whites Fire is the southernmost of the three large fire areas that comprise the Westside Fire Recovery Project. It lies on both sides of the North Fork of the Salmon River adjacent to the community of Sawyers Bar.

Table 1: General Fire Information

Fire	Fire Start Date	Containment Date	Acres Burned: Forest Service	Acres Burned: Private	Total Acres Burned
Beaver Fire	July 30, 2014	August 30, 2014	14,630	17,870	32,500
Happy Camp Complex Fire	August 12, 2014	October 29, 2014	115,050	2,150	117,200
Whites Fire	July 31, 2014	September 25, 2014	32,900	890	33,790
Total of All Fires (acres)			162,580	20,910	183,500

The Project area boundary includes the burn areas shown in Table 1 plus one-quarter mile around each fire to incorporate hazardous fuel reduction treatments and fuel breaks (also identified as “fuel management zones” in the final EIS) near structures on private property. The Project area comprises 218,600 total acres, including 187,100 acres of National Forest System land. It is divided into three subparts: Beaver Fire, Happy Camp Complex Fire, and Whites Fire of the July Complex. See Tables 2 and 3 (below) and the vicinity map (ROD, Appendix D).

Table 2: Acres within the Project area on private and National Forest System lands by fire area

Project Area / Fire	Forest Service Project Area (acres)	Private Lands within Project Area (acres)	Total Acres within Project Area
Beaver Fire	19,000	24,800	43,800
Happy Camp Complex Fire	127,000	5,400	132,400
Whites Fire	41,100	1,300	42,400
Total Project Area (acres)	**187,100**	**31,500**	**218,600**

The 2014 Westside fires burned extensive portions of the Grider Creek-Kamath River, Scott River, and Salmon River fifth field watersheds on the western half of the Forest. Dozens of

tributary drainages in these watersheds were affected. See Table 3 for a complete listing of affected watersheds.

Table 3: Legal Description and Watersheds within the Westside Fire Recovery Project

Fire	Legal Location Township (T), Range (R), and Section (S)	Elevation Range (Feet)	Watershed (5th Field)
Beaver Fire	Mt. Diablo: T46N R8W S 2-7, 9-11; T46N R9W S1-13,18; T46N R10W S1-3,10-15; T47N R8W S4-10,15-22, 27-35; T47N R9W S1, 9-17, 20-36; T47N R10W S 25, 34-36	1,700-6,300	Beaver Creek, Horse Creek-Klamath River, Humbug Creek-Klamath River
Happy Camp Complex Fire	Humboldt: T14N R8E S 5, 8,17, 20; T15N R7E S 1, 2,12,13, 24; T15N R8E S3-10,15-22, 27-28, 34; T16N R7E S1, 2,10-15, 23-25, 35, 36; T16N R8E S6-10,15-22, 27-34 Mt. Diablo: T43N R12W S2-11,14-20; T44N R10W S6; T44N R11W S1-11, 15-22, 28-30; T44N R12W S1-35; T45N R10W S5-9,16-21, 28-32; T45N R11W S1-36; T45N R12W S1-36; T46N R10W S31-32; T46N R11W S 16-22, 26-36; T46N R12W S 10-11,13-16, 20-36	1,100-7,400	Elk Creek[2], Horse Creek-Klamath River, Indian Creek, Lower Scott River, Seiad Creek-Klamath River3, Thompson Creek-Klamath River, Ukonom Creek-Klamath River
Whites Fire	Mt. Diablo: T39N R10W S 1-11,17-18; T39N R11W S 1-3,10-15; T40N R8W S 6-7,18-19,30; T40N R10W S 2-36; T40N R11W S 1-4, 9-16, 21-28, 33-36; T41N R10W S 8-22, 27-35; T41N R11W S 24-25,33-36	2,200-8,000	French Creek-Scott River, North Fork Salmon River4, South Fork Salmon River[5]

2. DECISION

2.1 The Selected Alternative

Prior to making this decision, I considered public comments on the draft EIS and comments received during the final EIS review period. I also considered extensive discussions with agency staff, other agencies, tribes, interest groups and members of the public. After a careful review of the final EIS (final EIS) and supporting documentation, I chose Alternative 3 Modified as described in the final EIS as the Selected Alternative. See the treatment maps in Appendix D and treatment tables in Appendix C of this document for a complete description of this alternative.

I chose the Selected Alternative because it meets all the elements of the Project's purpose and need (final EIS, Chapter 1, pp. 14-18), while also responding to the relevant issues identified from public scoping, tribal consultation, and consultation with regulatory agencies. Relevant issues identified during scoping (Final EIS Chapter 1, p. 28) included concerns about Project effects on wildlife habitat, watershed health, Late Successional Reserves, Riparian Reserves and fuels conditions adjacent to private land. The Selected Alternative is

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

also responsive to issues related to Project impacts on species federally-listed under the Endangered Species Act (e.g. northern spotted owls and Coho salmon) and their habitat.

The Selected Alternative, Alternative 3 Modified, was developed from Alternative 3 of the draft EIS but also includes component elements from the other action alternatives in response to ideas from other agencies, tribes, and the public. Although many of the actions proposed in the draft EIS benefited multiple resources, during the comment period members of the public stated that Alternatives 3 and 4 divided wildlife and watershed concerns when they could have been addressed in the same alternative. The Selected Alternative responds to these comments. It emphasizes concepts of Alternative 3 such as development of future late-successional habitat, habitat connectivity, northern spotted owl habitat, additional snag retention areas, and wildlife legacy components, while minimizing potential negative effects of treatment to northern spotted owl habitat, watershed conditions and Coho salmon. The Selected Alternative also incorporates fuel breaks adjacent to private timberlands from Alternative 5. Additionally, several elements of the Karuk Alternative were incorporated into Selected Alternative through tribal consultation (final EIS pp. 120, 212, 213).

The Selected Alternative is intended to strike a balance between reducing the risk of future stand replacement fire, and possible short term impacts of implementation on northern spotted owls and watershed condition.

Actions in the Selected Alternative include salvage harvest, roadside hazard removal, fuels reduction, site preparation, planting, and release, riparian hand fuel reduction treatments, and connected actions, including road access (final EIS pp. 66-71). See Tables 4 and 5 for the acres of treatments and miles of road access to be implemented under the Selected Alternative. See also applicable Project design features and best management practices in Appendix D of the final EIS.

2.1.1 Actions that are part of the Selected Alternative

Salvage Harvest (about 5,570 treatment acres within 6,890 acres of units)

The Selected Alternative proposes salvage harvest on approximately 5,570 net acres[6], within about 6,890 gross acres of salvage units on Forest lands. All salvage harvest in this Project is considered to reduce the risk of future high severity fire (final EIS pp. 196-198), and / or to reduce risks to health and safety of adjacent communities, users of the forest, and people who work in the forest. The term “risk reduction” is implicit with the term “salvage harvest” throughout this decision.

Salvage harvest treatments will be accomplished by a combination of ground-based, skyline, and helicopter logging systems. All salvage units will be reforested (see reforestation section

[6] Terms and Conditions #4 and # 5 on page 141 of the Biological Opinion for northern spotted owls require approximately 190 acres of additional snag retention, reducing the net salvage by about three percent from an estimated 5,760 acres to about 5,570 acres. See also Appendix C of this document for the full text of Terms and Conditions from the Biological Opinion.

below) with the need for site preparation evaluated per criteria outlined in site-preparation section below.

No salvage harvest units are proposed within the Beaver Fire project area; however, roadside hazard trees would be removed as described in the following section on roadside hazards. No salvage harvest units are located within wilderness, backcountry, research natural areas, designated or recommended wild rivers, or high or moderate ranked northern spotted owl core areas. Although no salvage harvest units are located in inventoried roadless areas[7]or riparian reserves associated with stream channels (hydrologic riparian reserves)[8], salvage removal of merchantable trees may occur where necessary to remove roadside hazards in these areas. Table 4 describes acres of salvage treatment by logging system.

Table 4: Acres of Salvage Harvest by Logging System

Logging System	Beaver Fire	Happy Camp Complex Fire	Whites Fire	Grand Total
	Acres of Treatment a/ within Unit b/			
Ground-based	0 (0)	480 (490)	40 (40)	520 (530)
Skyline	0 (0)	2,800 (3,200)	170 (210)	2,970 (3,410)
Helicopter	0 (0)	1,930 (2,520)	340 (440)	2,270 (2,960)
Total Treatment Acres (Unit)	0 (0)	5,010 (6,210)	550 (680)	~5,570 (6,890)

a/ Treatments are estimated acres within units where more than 50 percent mortality occurred and where salvage activity is proposed. Salvage logging is not proposed in hydrologic riparian reserves except where hazard tree removal is necessary, or in areas where less than 50 percent mortality occurred even though these areas may be within unit boundaries.

b/ Units are larger than treatment areas because units include areas where harvest will not occur such as hydrologic riparian reserves and areas with less than 50 percent mortality that are within unit boundaries. Both acres of treatment and acres within units are estimates based on GIS and field data. Values are rounded to the nearest ten acres. There may be minor differences in sums from rounding.

Roadside Hazard Treatment (about 320 miles of roadways being evaluated; 4,200 acres of estimated treatment)

Cutting dead and fire-damaged roadside hazard trees provides for both public and forest worker safety and maintains access for future fire management efforts (final EIS p. 198). The Forest initially evaluated over 600 miles of roads within the Westside Fires' perimeters for hazard trees. In Alternative 3 Modified, about 320 miles of forest system roads, county roads, and state highways have dead or fire-damaged hazard trees along them, or the road is contiguous with these areas. Roadside hazard removal on 11.2 miles of the Sawyers Bar Road is moving ahead under a separate Record of Decision.[9] In some areas, these hazard

[7] Prior to the 2014 Westside Fires numerous roads existed within Inventoried Roadless Areas. Roadside hazard removal which includes salvage removal of merchantable trees is proposed along existing roads within Inventoried Roadless Areas.

[8] This refers to hydrologic not geologic riparian reserves. Salvage harvest is proposed in geologic riparian reserves. Salvage harvest within Hydrologic riparian reserves may occur where necessary to remove roadside hazards.

[9] To maintain safe public access to the residences and communities of Sawyers Bar and Forks of the Salmon, I have elected to move forward with a portion of the roadside hazard reduction on 11.2 miles of Siskiyou County Road SIS-lCOl, also known as the Sawyers Bar Road. This includes approximately 1.9 miles (95 acres) of

trees are highly concentrated, and in other areas, they are widely scattered with gaps where no dead or fire damaged trees occur. Within the 320 miles and 14,300 acres of roadways evaluated for dead or fire-damaged hazard trees, roadside hazard reduction would occur on an estimated 3,700 acres that are not in salvage units or the County Roadside Hazard Removal project on the Sawyers Bar Road. This includes an estimated 1,200 acres of concentrated hazard tree removal in higher severity burn areas and 2,500 acres of scattered hazard tree removal in lower severity burn areas (final EIS p. 69). Definitions used for hazard trees may be found in Chapter 2 of the final EIS.

Green hazard trees that were not fire damaged that may provide habitat for northern spotted owls or other wildlife are not proposed for treatment unless they create an imminent hazard that precludes safe use of the road in question.

Merchantable trees will be removed when consistent with applicable project design features (final EIS pp. 101-119). Non-merchantable trees will be piled and burned where the treatment is along a strategic road where hazardous fuels reduction is important. Non-merchantable trees will be cut and left when they are not along a road defined as strategic for fire suppression / management and needing fuels reduction. Per agency policy already in place, the public may obtain a permit to remove felled trees for firewood in accordance with permit requirements. The agency anticipates the local public will remove firewood along roadways, especially near communities. Table 5 shows the total miles of road considered for roadside hazard removal.

Table 5: Miles of road by maintenance level along which roadside hazard will be treated a/

Road Type by Maintenance Level	Beaver Fire	Happy Camp Complex Fire	Whites Fire	Grand Total
Level 1 (basic custodial care, closed to public)	8	24	2	34
Level 2 (high clearance vehicles)	33	124	24	181
Level 3 (suitable for passenger cars)	4	61	17	82
Level 4 (moderate degree of user comfort)	0.1	0	0	0.1
Level 5 (high degree of user comfort)	1	0	0	1
County Roads and State Highways	3	5	0	8
Grand Total (miles)	49	214	43	310

a/ This table does not include 11.2 miles of the Sawyers Bar Road which is being treated under a separate Record of Decision. The Grand Total is rounded to the nearest 10 miles.

Hazardous Fuels Reduction (about 24,450 acres)

Hazardous fuel reduction actions will further diminish the risk of future high severity fire, especially within the wildland urban interface (WUI) (final EIS pp. 198-199). Actions include: lopping and scattering of slash, chipping of slash, mastication of slash, broadcast burning, underburning, jackpot burning, and pile burning. Hazardous fuels reduction would

concentrated hazard trees and approximately 9.3 miles (441 acres) of scattered hazard trees. I signed a separate Record of Decision for the County Roadside Hazard Removal on the Sawyers Bar Road on December 23, 2015. I am moving forward on this phase of roadside hazard reduction using Emergency Consultation provisions (50 CFR 402.05 - Emergencies) under the Endangered Species Act.

occur within the wildland urban interface, fuel management zones along strategic ridgetops, roadside hazard reduction areas, and prescribed fire areas. Table 6 shows fuel treatment acres. Values are rounded to the nearest 10 acres.

Table 6: Fuels treatment acres by treatment type

Fuels Treatment Type	Beaver Fire	Happy Camp Complex Fire	Whites Fire	Grand Total
Wildland Urban Interface	630	1,460	550	2,630
Fuel Breaks (Fuels Management Zones	1,530	2,620	780	4,930
Roadside Fuels Treatments	700	4,120	890	5,710
Prescribed Burn	450	1,540	9,190	11,180
Grand Total (acres)	**3,310**	**9,740**	**11,410**	**24,450**

Site Preparation, Reforestation, and Release (about 12,700 acres)

Site-preparation, reforestation, and release actions are designed to increase the likelihood and speed by which burned forested areas are reforested following fires (final EIS p. 168). Compared to no action, more rapid and successful reforestation is accomplished by reducing fuel loading and creating openings for safe planting. Careful evaluations were made to prioritize treatment units likely to support successful reforestation. Reforestation prescriptions expressly avoid creation of densely stocked plantations that would prevent the reintroduction of low intensity prescribed fire.

Planting prescriptions are based on historic unit conditions, projected unit composition, and the likelihood of long-term survivability of project units within a fire ecosystem (final EIS p. 159). Only species adapted to and occurring within the Klamath Province will be used for reforestation. Conifers will be planted to avoid crowding of existing green hardwood trees. Seedling survival rates and competition from brush species will create a natural mosaic of species and stocking densities. In order to effectively reforest these units, an average of 130 to 300 trees per acre will be planted to achieve a target stocking level of 75 to 225 variably spaced trees per acre five years after planting, depending on the site conditions (final EIS p. 167).[10] Hardwoods will be considered when determining whether desired stocking objectives have been met. Table 7 displays acres of site preparation and planting units.

Table 7: Acres of proposed site preparation and planting by treatment type

Site Preparation and Planting Unit Type	Beaver Fire	Happy Camp Complex Fire	Whites Fire	Grand Total
Plantations	1,130	4,610	560	6,290
Natural Units (Non-salvage Harvested)	530	310	0	840
Salvage Harvest Units	0	5,010	550	5,570
Total Acres	**1,660**	**9,930**	**1,110**	**12,700**

[10] Stocking levels on any single acre are highly variable and depend on the physical attributes of the planting unit that include aspect, soils, competing vegetation, slope position etc. The number of trees planted initially is based on providing the number of trees desired at year 5. Additional trees are planted initially due to expected mortality.

Hand Treatment in Riparian Reserves

In hydrologic Riparian Reserves within the plantation site-preparation and planting units, dead trees less than 10 inches in diameter at breast height may be cut and felled if necessary for long-term fuels reduction or reestablishment of riparian vegetation (final EIS p. 440). This action would occur on about 60 acres. [11] Treatments are proposed to achieve ground cover and allow for natural regeneration of vegetation. Treatments are proposed only in areas of high and moderate vegetation mortality and where the overhead hazards created by dead trees can be mitigated without equipment entry into the Riparian Reserves. Follow-up slash treatment will include hand-work only and would be implemented only if fuel load is above seven tons per acre. Fuels may be hand-piled, lopped and scattered, broadcast burned, or windrowed and burned.

2.1.2 Connected Actions

Connected actions are those actions that are an interdependent part of the Westside Fire Recovery Project, and would not occur unless the Westside Recovery Project is implemented.

Road Access

Project access will require the use of National Forest System, State, and County roads. Forest System roads will be maintained as needed for implementation as part of the regular Forest Road Maintenance program. There will be no roads added to the Forest System as a result of this Project. About three miles of new temporary roads will be constructed. Less than five miles of temporary roads on existing roadbeds will be used for Project access. All temporary roads associated with salvage in the Beaver Fire project area were dropped because the associated salvage units were dropped. The decommissioned section of Forest Road 46N62 (also referred to as the "Caroline Creek Road") will remain closed. Table 8 displays road access for the Westside Fire Recovery Project.

Table 8: Miles of National Forest System and Temporary Road access

Type of Road Access	Beaver Fire	Happy Camp Complex Fire	Whites Fire	Grand Total
Forest System, County, and State	48	210	55	317
New Temporary	0	3.3	0	3.3
Temporary Road on Existing Roadbed	0	3.9	0.7	4.6
Temporary Road on Re-opened Decommissioned Road	0	4.8	0	4.8
Grand Total	**48**	**222**	**56**	**330**

Landings

Existing landings from previous timber harvests will be used where possible. Landing size will be commensurate with operational safety. Helicopter landings will be two acres in size

[11] Estimated acres were calculated using GIS and omitted RAVG class 1 and 2 (or areas with less than 50% mortality).

or less. Skyline landings will use roads wherever possible. New skyline landings off the road system and ground-based landings will average one acre in size but will not exceed 1.5 acres in size. Both new and existing landings will be hydrologically stabilized after use (final EIS pp. 111-112).

2.2 Regulatory Agency Requirements

2.2.1 Requirements of the North Coast Regional Water Quality Control Board

In response to preexisting watershed conditions, listing of certain streams as "water quality impaired" under Section 303(d) of the Clean Water Act and the subsequent establishment of Total Maximum Daily Loads (TMDLs) for pollutants (sediment), the North Coast Regional Water Quality Control Board (Water Board) may require treatment of a number of existing "legacy sites" as conditions for enrolling the Westside Recovery Project under the Waiver of Waste Discharge Requirements for Nonpoint Source Discharges Related to Certain Federal Land Management Activities on National Forest System Lands in the North Coast Region (Order No. R1-2015-0021; hereinafter "Waiver").[12] Project areas for legacy site treatments include Elk Creek which is listed in the Middle Klamath TMDL. Legacy site treatments proposed in Elk Creek were analyzed in the final EIS and are part of this decision. The Water Board may have additional requirements in their final waiver or permit approval.

The portion of Elk Creek watershed within the Happy Camp Complex Fire project area contains about 150 sites within 33 miles of road. Most of the legacy sites are located on or adjacent to the Forest System roads. The other legacy sites are located on existing landings or roadbeds (historic routes, abandoned temporary roads, or decommissioned roads).

Road storm-proofing treatments between individual sites will occur on about 33 miles of Forest System roads (15N02, 15N75, 16N05, 16N39 and 45N19). Treatments between legacy sites may include the following: where possible, reconstruct road prism to an out-sloped configuration, otherwise reduce inboard ditch length by adding additional relief culverts or dips; reduce road prism width; remove berms; place rip-rap below outlets of ditch relief culverts; recondition road subgrade and travel surface by applying crushed aggregate; add rolling dips where needed to control road surface runoff; or stabilize road prism slumps with retaining walls or rock buttresses. Table 9 displays legacy site treatments associated with the Westside Fire Recovery Project.

[12] These actions were identified in the final EIS as "Connected Actions". They are more appropriately considered requirements by the Water Board and are so described here as they do not depend on the Westside Fire Recovery Project for their justification, and could proceed independently of that action. The Forest Service will apply for enrollment of the Westside Project under the Waiver at the time this Record of Decision is signed.

Table 9: Description of treatment, number of sites, and actions needed for legacy site treatment

Treatment	Number of Sites	Description of Action Needed:
Culvert Upgrades	About 45	Replace culverts to accommodate the 100-year peak flow.
Diversion Prevention	About 51 sites (17 included in culvert upgrade)	Construct armored rolling dips to prevent streams from diverting down roadways should the culvert plug or fail.
Aquatic Organism Passage	3 sites	Replace existing stream crossing with bottomless arch culvert to improve or restore aquatic organism passage.
Retaining Wall	About 7 sites	Construct retaining wall, rock buttress, reinforced embankment, or equivalent. Where road prism has slumped or failed.
Fill Reduction	About 16 sites	Remove excess fill materials from the top of stream crossings to reduce the amount of fill available for discharge should the culvert plug or fail; add riprap to armor fill slopes.
Fill Removal	About 27 sites	Remove all fill materials from stream channels, swales, road shoulders and sliver fills; these treatments would occur on closed Forest roads and existing roadbeds.
Repair/Maintain Existing Infrastructure	About 16 sites	Clean culvert inlets, ditches, etc., repair damaged culvert inlets, shorten “shotgun” culvert outlets, place riprap below culvert outlets to reduce hill slope erosion, remove cut slope slide materials

2.2.2 Requirements of the Biological Opinion for the Northern Spotted Owl

The Forest Service received a final Biological Opinion for northern spotted owls from the U.S. Fish and Wildlife Service (FWS) on February 19, 2016. The FWS concluded that implementation of the proposed action would adversely affect northern spotted owls and their critical habitat but not to such an extent that it would jeopardize the species or adversely modify its designated critical habitat (FWS BO p. 4). Many of the terms and conditions stated in the Biological Opinion are already incorporated into the Best Management Practices (BMPs) and project design features (PDFs) of the final EIS for the Westside Fire Recovery Project. The Forest Service will comply with all of the stated terms and conditions of the Biological Opinion listed in Appendix C of this document, as incorporated from the Biological Opinion (pp. 141-143). See section 6 of this document under “Endangered Species Act” compliance for more details.

2.2.3 Requirements of the Biological Opinion for the Coho Salmon

The Forest Service received a final Biological Opinion for Coho salmon from the National Marine Fisheries Service (NMFS) on January 15, 2016. Many of the terms and conditions stated in the Biological Opinion are already incorporated into the BMPs and PDFs of the final EIS for the Westside Fire Recovery Project. Others require close coordination with NMFS and monitoring. The Forest Service will comply with all of the stated terms and conditions of the Biological Opinion listed in Appendix C of this document, as incorporated from the Biological Opinion (pp. 78-79). See section 6 of this document under “Endangered Species Act” compliance for more details.

2.2.4 Monitoring

As Project actions are implemented, they will be monitored by Forest Service personnel as part of normal operating procedures (final EIS pp. 71-72). Additional heritage monitoring is required per project design features in the final EIS (pp. 104-105); where tribal cultural resources are present and at-risk, tribal monitoring will occur in accordance with the monitoring plan developed under the Westside Fire Recovery Programmatic Agreement, a project-specific programmatic agreement developed to meet National Historic Preservation Act compliance.

2.3 Implementation of Approved Actions

Salvage harvest and roadside hazard treatments will begin immediately following the decision and will be completed as soon as possible, likely within a year or less. Site preparation, planting, and the majority of fuels treatments will also begin immediately where possible (with some following salvage harvest and roadside hazard treatments, as needed). The majority of site preparation, planting, and fuels treatments will be completed within three years of the decision. Five to eight years after the fire, conditions will be ripe for underburning (i.e. use of prescribed fire) in selected areas to reduce surface fuels and dead understory fuels created by the 2014 fires. Our target for completion of all Project treatments is within seven to eight years of this decision.

Given the role salvage harvest plays in this Project, I want to stress the importance of quickly moving forward with project implementation. It is well known that burned timber loses economic and commodity value rapidly. Even before a fire is completely extinguished, wood-boring insects, various fungi, and the weather all begin to decay the wood of dead trees. The 2014 fires started more than a year and a half ago, and reports from the field indicate that deterioration of wood quality has begun. By the end of this coming summer (2016), I expect to see significant loss of wood quality, quantity and commodity value because of deterioration. With each passing month, more acres of the Westside Fire Recovery Project will become economically infeasible to treat. Due to the current condition of the timber and the progressive deterioration process, beginning operations as soon as possible is critical to ensuring the cost-effective implementation of this Project. If project implementation is delayed, the timber sale contracts designed to implement this project may lose their economic viability and not receive any bidders. If that happens, significant parts of this Project, and the public benefits those parts were designed to provide, may be lost.

2.4 Evolution of the Selected Alternative

Compared to Alternative 2(the preferred alternative in the draft EIS), the Selected Alternative was modified as follows:

- A number of units were dropped from the Project. Units were dropped if they:

- Were within northern spotted owl core areas classified as having moderate potential for owls to remain on site, reproduce, and contribute to the demographics of the population of the area.
- Provided necessary post-fire foraging habitat for northern spotted owls or provided necessary northern spotted owl habitat connectivity.
- Were no longer economically viable.
- No longer contributed to the overall fuels strategy after considering the other units dropped.
- Were smaller units adjacent to habitat for northern spotted owls. At the recommendation of the U.S. Fish and Wildlife Service, units less than 20 acres in size were also deleted in order to maintain the complex mosaic of smaller openings created by the fires unless the unit was part of a fuel break. There are nine units less than 20 acres that are part of a ridgetop fuel break that were not deleted.
- Were in the Beaver Fire area. All salvage was dropped in the Beaver Fire area because of potential cumulative impacts on habitat connectivity and remaining northern spotted owl habitat from salvage harvest on checkerboard private land holdings.

- Site preparation and planting units (P199, P200, P201, P341, P342, and P343) were removed from the Selected Alternative to address public comments, economic feasibility, tribal concerns and wildlife concerns identified during consultation with the U.S. Fish and Wildlife Service. Units P087 and P091 will have hand cutting and piling of dead trees to address fuels issues. Mastication and mechanical units will exclude equipment on granitic and schist soil types on slopes greater than 35 percent.
- To address concerns identified by the Karuk tribe, reforestation prescriptions were clarified to ensure that reforestation efforts would not prevent the future reintroduction of low intensity natural or prescribed fire. Retention of existing hardwood trees was also incorporated into reforestation prescriptions at the request of the Karuk Tribe.
- Approximately 320 miles of roads were removed from consideration for roadside hazard. This included roads that were no longer accessing units, roads with few or no fire-damaged hazard trees, and roads that would have required heavy reconstruction for the road to be serviceable.
- Hazard tree marking guidelines were modified to require that trees greater than 45 inches in diameter would have to have a 90 percent chance of mortality before being included in hazard tree removal (final EIS p. 2).
- Hazardous fuels treatments for wildland urban interface and roadside fuels treatments were modified to vary by slope and aspect (final EIS p. 69). Prescribed burns adjacent to private timberlands were proposed (final EIS p. 69). Fuels treatments were added on the south and west sides of section 32 in T47N R2W in the Beaver Fire area. Since salvage harvest units 1129 and 1140 were dropped, fuels treatments were added in this section of the Beaver Fire along private property boundaries. The Selected Alternative incorporates additional ridgetop fuel breaks in the Happy Camp Complex Fire and Whites Fire areas, and in wildland urban interface and roadside fuels treatments, based on fuel break recommendations in the Karuk Alternative.

- Hand thinning within Riparian Reserve was modified from dead trees less than 16 inches diameter at breast height to less than 10 inches diameter at breast height because larger fuels are not practical to treat by hand.
- Temporary roads dropped from 21.9 miles (final EIS p. 45, Table 2-5) to 12.7 miles (final EIS p. 71, Table 2-26) to reduce sediment impacts or because the associated salvage units accessed by the roads have been dropped. An additional 95 landings have also been dropped from system roads (Coho BA Addendum Table 7, Coho BA Table 8).

3. REASONS FOR MY DECISION

3.1 Resource Impacts of the 2014 Westside Fires

Historically, the Mediterranean climate and frequent lightning occurrence found on the west side of the Klamath National Forest combined to create a frequent fire, low to moderate severity fire environment. Fires occurred as often as every four to seven years and tended to consume any concentrations of dead wood and flammable brush (final EIS p. 143). This created, and maintained, an open forest multi-age stand structure with very little continuous live or dead vegetation that was readily flammable. Although the amount of high severity fire that occurred historically cannot be precisely known, we do know that high severity fires, where most of the trees over large areas were killed such as happened in the 2014 Westside Fires, were uncommon (final EIS pp.142, 180). With the advent of effective fire suppression in the early 1900s, this cycle of frequent, low intensity fire was interrupted or stopped almost entirely. For example, out of 1,908 recorded fires in the Forest's fire history database from 1911 to 2012, 1,874 or 98 percent were less than 100 acres, primarily due to fire suppression (final EIS p. 181). As a result, density of the forest (trees per acre) and dead wood on the forest floor increased substantially resulting in nearly continuous fuels both on the forest floor and vertically with ladder fuels that reached into the forest canopy. Where large, high severity fires occurred in the past 20-30 years (notably 1987) in the Project area, fire-killed trees that had broken or fallen to the ground combined with dense brush to create fuel conditions that fostered high severity fire in 2014, particularly in the Grider Creek drainage (final EIS p. 182, Figure 3-2; Appendix E, Figure 2, p. E-6). Large high severity fires such as the 2014 Westside fires tend to create conditions that foster future large, high severity fires and change the historic vegetation patterns where they occur (final EIS pp. 188, 191). Skinner et al. (Fire in California, 2006 p. 189) described the effects of large high severity fire:

> *Large wildfires with large proportions of stand-replacing or near-stand-replacing fire have burned in the Klamath Mountains in the last three decades (1977, 1987, 1995, 1996, and 2002). These fires have reduced the extent, in some places dramatically, of multi-aged, old-growth stands. Areas burned by these fires are now occupied by plantations, even-aged hardwood stands, or brushfields and, in some watersheds (e.g., north and south forks of the Salmon River, Chetco River), these vegetation types are now the landscape matrix. Moreover, some areas that burned intensely in 1977 (e.g., Hog fire) burned intensely again in 1987 (e.g., Yellow fire). The 1987 fires also burned large areas of multi-aged, old-growth forest at high intensity.*

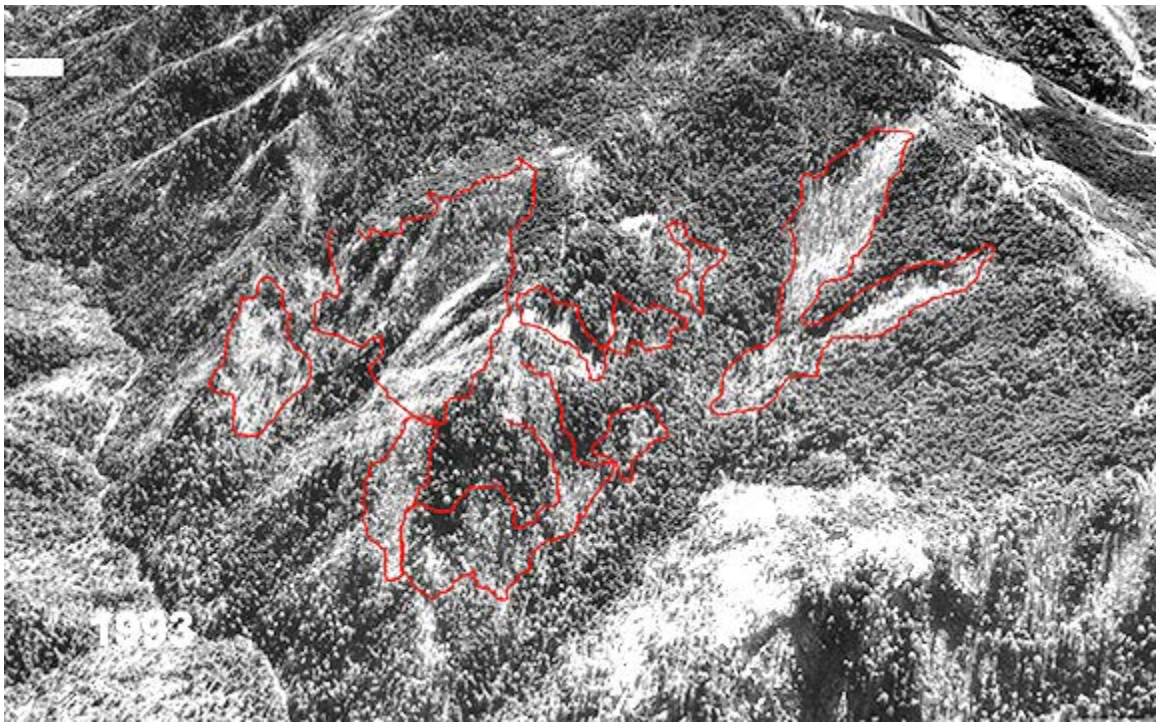

Figure 1: A portion of Grider Creek in 1993, six years after the 1987 Lake Fire. Areas of high and moderate severity fire are outlined in red in the photo above. In 1993 these areas still had standing snags and live trees. No post-fire fuel reduction followed the 1987 Lake Fire in this area.

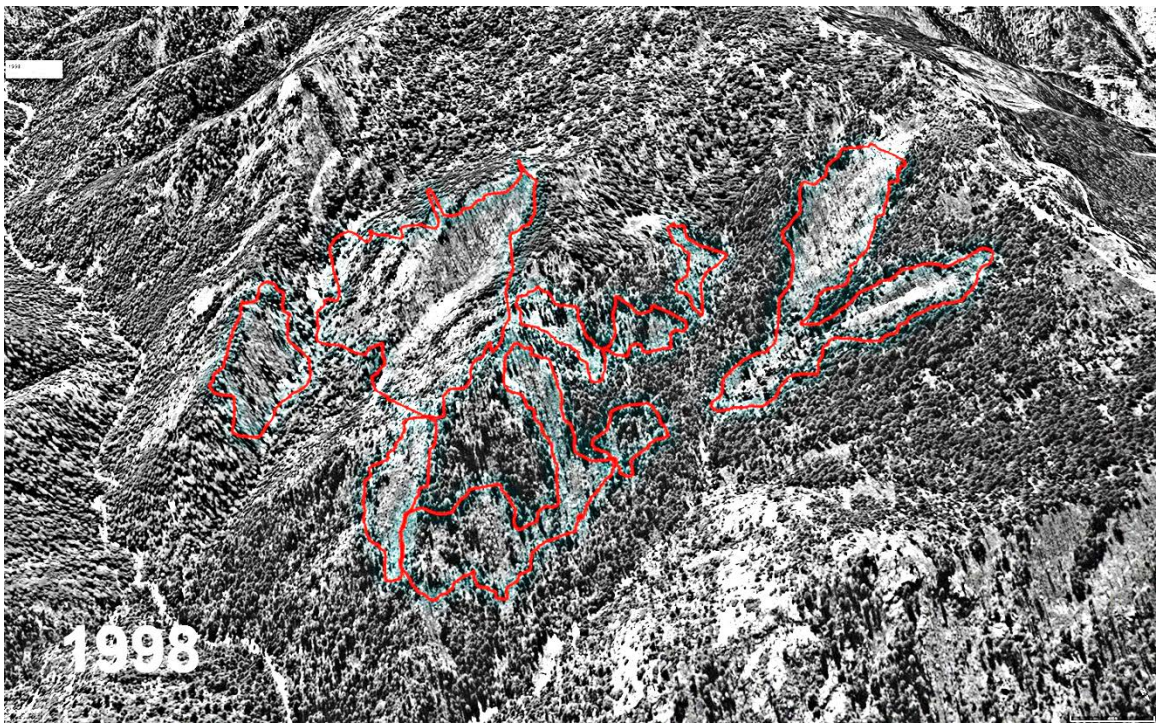

Figure 2: 1998, eleven years after the 1987 Lake Fire. Snags have begun to fall in areas of high and moderate severity fire. Ongoing fire-related mortality has continued in trees that originally survived the 1987 fire.

Figure 3: Twenty-six years (2013), after the1987 Lake Fire. Most of the snags have fallen and become ground fuels and sites are occupied by heavy brush. Without intervention, areas of moderate and high severity fire from the 2014 Westside Fires are expected to look like these outlined areas after 25 years. The patch sizes and extent of high severity fire in the 2014 Westside Fires are significantly larger as shown in the following image.

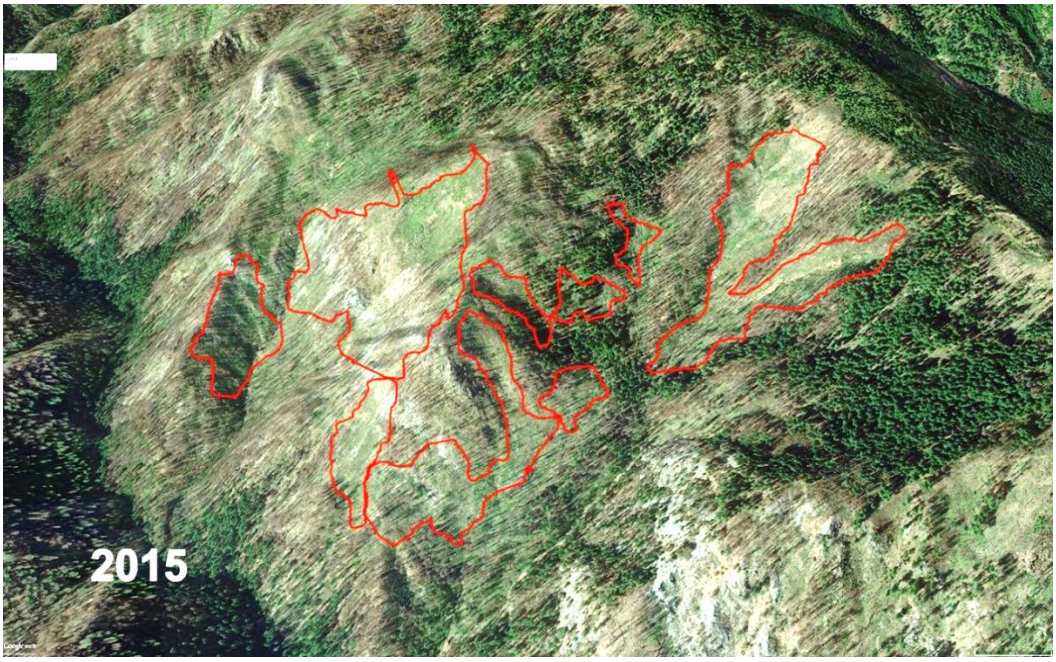

Figure 4: 2015, one year after the Happy Camp Complex Fire. Moderate and high severity fires tend to reburn with high severity, but with larger patch sizes in the reburn. The areas that burned with moderate and high severity in 1987 reburned with high severity in 2014 likely affecting mortality in adjacent stands. Untreated heavy fuels from the 1987 Lake Fire in combination with severe fire weather likely contributed to the severity and resistance to control in the Happy Camp Complex Fire in 2014.

Severe drought and exceptionally dry fuel conditions made the 2014 fire season one of the most impacting in the history of the Klamath National Forest. It is against this backdrop of unnaturally dense and continuous fuels and extreme weather that the 2014 fire season played out. The combination of fuel accumulation, severe drought and hot, dry weather created a "perfect storm" of conditions for geographically large, high severity fires. Nearly all of the moderate to high severity fire (more than 50% of the trees killed) occurred either in areas that had not burned in the past 100 years or in areas that burned in the 1987 fire event at high severity that were left untreated (final EIS pp. 142-143; Appendix E, pp. E-7-8). Grider Creek and Walker Creek watersheds were particularly impacted by large continuous areas of high severity stand replacement fire in the 2014 Westside fires.

The large areas of high severity fire experienced in the 2014 Westside fires are not typical of the Klamath Province of northern California. About 27 percent of the Westside fire area had high severity fire where more than 75 percent of the trees were killed (final EIS p. 7, Table 1-2). Historically, the Klamath Province more typically had less than 15 percent high severity fire (final EIS p. 144; Appendix E, p. E-4). Patch size within high severity fire areas ranged from less than 1 acre to 3,890 acres in size; over 37,000 acres of high severity burn are in patches larger than 100 acres (final EIS p. 183). Prior to the advent of the fire suppression era, a fire event with the amount, large patch size and geographic extent of high severity fire that occurred in the Westside fires would have been highly unlikely to occur because there would have been substantially less surface fuel, less fuel continuity and lower stand density compared to contemporary conditions (final EIS pp. 142-144, 180).

Table 10 describes fire severity, which is a measure of fire impacts on vegetation expressed as a percentage of the canopy killed by the 2014 fires. See the Rapid Assessment of Vegetation Condition maps in Appendix A of the final EIS for a graphic display of this information.

Table 10: Percentage of vegetative canopy killed (basal area)

Fire Severity	Percentage (%) of Vegetative Canopy Killed (basal area)	Beaver %	Happy Camp Complex Fire %	Whites %	Total %
Very Low	0-25	43	62	63	59
Low	25-50	10	8	6	8
Moderate	50-75	7	6	5	6
High	75-100	40	23	26	27

The final EIS provides a complete description of the affected environment and conditions created by the Westside fires. The following conditions caused by the 2014 Westside fires are central to concerns for restoration and future use of the Klamath National Forest.

The 2014 Westside fires killed or damaged trees on several thousand acres immediately adjacent to approximately 310 miles[13] of roadways.

[13] There were originally 320 miles evaluated for roadside hazard removal. Approximately 10 of those miles are being treated under the Emergency County Roadside Hazard removal project along the Sawyers Bar Road.

Figure 5: Fire-killed road hazard trees in Walker Creek

Dead and fire damaged trees adjacent to roads create both short- and long-term safety issues. Some snags have already fallen across roads, while those that remain present an immediate hazard to any user of these roads. As these trees fall, they block roads necessary for administrative and public use. Fire-killed and damaged trees also compromise future use of road systems for fire suppression. These conditions will rapidly worsen in the three to five years as more snags deteriorate and fall. Access along approximately 310 miles of roads and more than 100,000 acres of NFS lands is adversely affected by dead or fire damaged trees.

Large patches of fire-killed trees will cause safety issues that compromise wildland fire suppression efforts and will create future fuels accumulations that contribute to high severity fire.

Future fires in the areas impacted by the 2014 Westside fires are inevitable given the Mediterranean climate and frequency of dry summer lightning storms on the Klamath National Forest. As the fire-killed trees from the 2014 fires break and fall to the forest floor, they become surface fuels. Large, continuous areas of snags and down logs are likely to reburn and to create high severity fires that are not desirable and are nearly impossible to contain at small or moderate scales. The final EIS (p. 189 Table 3-11) projects that without treatment over 30,000 acres of the 2014 Westside Project area would have fuel conditions where control efforts at the head of the fire would probably be ineffective for the next 20-40 years. Burning snags, weakened standing snags, rolling logs and jackstrawed fuels in areas that reburn present a difficult and high risk suppression environment for firefighters.

Watershed resources have been impacted by high severity fire and loss of vegetation.

Over 50,000 acres of the Westside fires burned with moderate to high severity (final EIS p. 162). Because of the extreme fire conditions, ground vegetation, down woody debris and tree crowns were completely consumed in large areas of the fire. Large, high severity burn areas on steep granitic soils in Walker and Grider Creeks are especially likely to have debris flow or landslide activity as a result of the fires (final EIS p. 383 Table 3-40, 3-41 and 3-42; pp. 386-387). As root mass from fire-killed trees decays, there will, for several decades, be an

Figure 6: Debris flow sediment deposits in Grider Creek.

elevated risk of landslides in high severity burn areas on steep slopes (final EIS pp. 393, 482). Larger debris flows and landslides have the potential to adversely impact public safety, private property and infrastructure. A number of large debris flows occurred in July 2015 as a result of summer thunderstorms (final EIS p. 385). Winter rains are likely to cause similar or larger events that will impact high severity burn areas.

A substantial amount of northern spotted owl nesting habitat was lost in the 2014 Westside fires.

Using fire history and fire environment variables, Davis et al. (2012 pp. 63-67) mapped areas prone to future large stand-replacing fires, noting the Klamath Province as one of the geographic areas most likely to experience large (>1,000 acres) stand-replacing fires in the future (final EIS Appendix E; see also final EIS p. 180). Verifying this trend, in the wildfires that occurred in the 2014 Westside Fire Recovery Project area, over 7,000 acres of functioning nesting-roosting habitat and 9,600 acres of foraging habitat were lost to stand-replacement fire (final EIS Appendix G Biological Assessment, p. G-121). Thus, it is well established that stand-replacing, high intensity wildfire negatively affects northern spotted owl habitat within the Klamath Province and that the potential for future habitat losses in the Klamath Province is high. Given probable climate change scenarios, the rate of habitat loss from stand-replacement fire is likely to increase (final EIS p. 600; Appendix G, Biological Assessment, p. G-21). It is unknown how the population of northern spotted owls in the 2014 Westside fire footprint will respond to the habitat impacts created by the large area of high-severity fire. Although the relationship between wildfire frequency and severity on owl demography is not fully understood, habitat loss is the primary reason for the owl's decline and subsequent listing as "threatened" under the Endangered Species Act (USDI 1990; final EIS Appendix E, p. E-4).

Large areas of late-successional forest habitat were lost in Late Successional Reserves.

The Late Successional Reserve (LSR) land allocation was established in the Forest Plan of the Klamath National Forest to provide habitat for late-successional and old growth dependent species. In the 2014 Westside fires, approximately 81,200 acres burned within the LSR land allocation of which over 20,000 acres were high severity fire where mortality exceeded 75 percent of the stand (final EIS Appendix E, pp. 6-9 Table 2). In many parts of the high-severity burns, patch sizes with nearly total stand mortality are in the multiple hundreds of acres to over one thousand acres. These severely burned areas no longer provide the late-successional forest habitat for which the LSR land allocation was established.

Large patch size and residual fuels will delay reestablishment of coniferous forests.

The large patch size and amount of high-severity fire experienced in the 2014 Westside fires are not characteristic of the Klamath Province (final EIS pp. 142-147, 180). Left untreated, high severity fires create large brushfields with heavy fuel loading from fire-killed trees. Repeated fire is more likely in areas that have flammable brush and heavy ground fuels (final EIS pp. 188-193). Given the fire frequency in the Klamath, these areas may reburn before young trees have grown large enough to survive high-intensity fire (final EIS pp. 162, 176). As reburns occur, patch sizes of high-severity fire tend to increase as occurred in Grider Creek when areas that burned in 1987 reburned in the

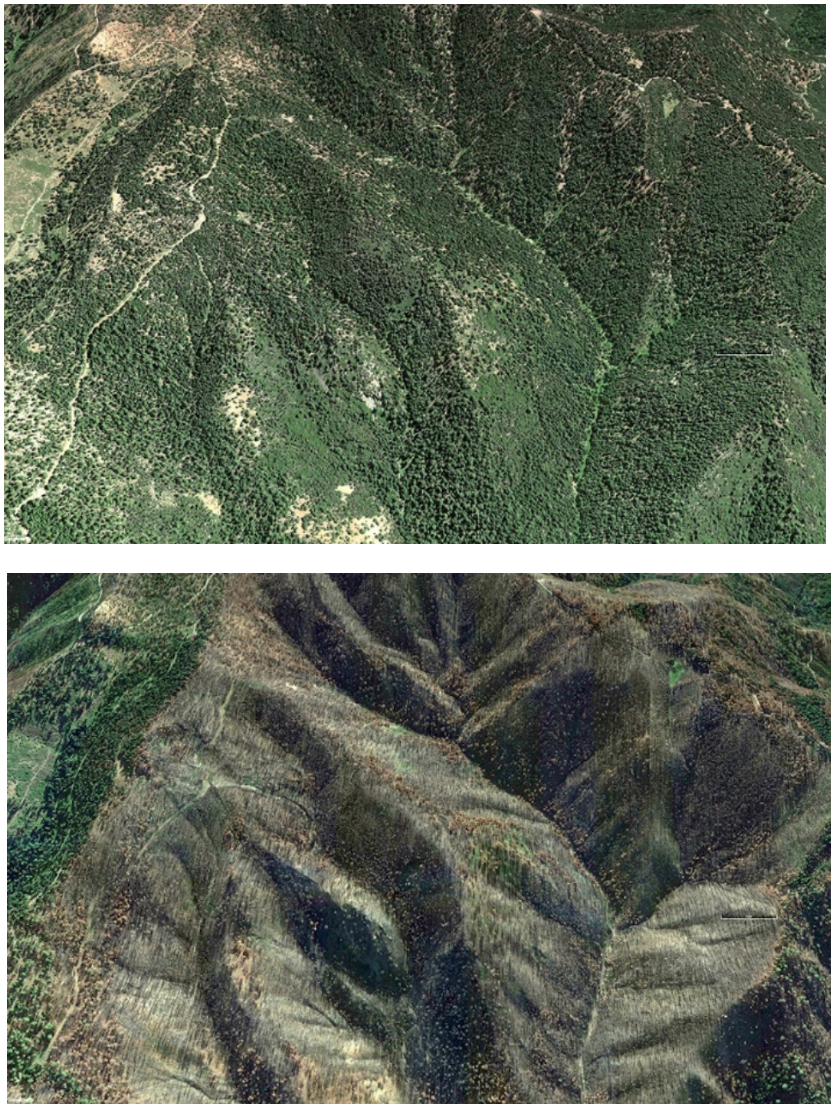

Figure 7: Grider Creek before (7-2013) and after (7-2015) the 2014 Fire. These images are approximately 1.7 miles across. This shows the large patch size, loss of late successional forest and loss spotted owl habitat that occurred in the 2014 Westside Fires.

2014 Westside fires, creating much larger patches of fire-killed trees (Silviculture Report p. 18; final EIS Appendix E, Figure 2). Patch size affects the rate at which natural reforestation occurs. As burn patch sizes increase, it takes longer for coniferous trees to become established and provide seed sources across the expanse of the burned area. As a result of repeated fire and loss of seed sources, large areas that burn and reburn with high severity may persist as brushfields and even-aged stands of hardwoods as described by Skinner et al. (2006) for decades or longer (final EIS p. 164).

High-severity fire damaged or destroyed existing plantations and stands of young trees.

About 13,000 acres (seven percent of the Project Area) of stands of young trees in plantations and natural stands were moderately or severely burned (more than 50% of the trees killed) by the 2014 Westside Fires (final EIS p. 161). Fuel loading from untreated slash created by previous logging or thinning and high tree density contributed high fire severity. Seventy percent of affected plantations within the fire perimeter remain viable which is a proportion comparable to the overall occurrence of high severity fire (final EIS p. 163). Based on field reviews, previous fuel reduction efforts and lower stand density contributed to the viability of plantations and younger stands that did not burn with high severity (final EIS p. 163).

3.2 Overarching Considerations

The opinions and facts surrounding post-fire needs and actions are as diverse as the resources of the Klamath National Forest and the many publics who commented on this Project. Throughout this process I have listened to the diverse and often conflicting perspectives held by the public, interest groups, agencies, tribes, and local and national elected officials concerning the recovery of the Westside Fire Recovery Project area. Comments on the draft EIS provided additional information and ran the full gamut from “do nothing” to “do more of everything proposed.” One theme that ran through the diversity of opinions is that people care about and are connected to the Klamath National Forest. Crafting an alternative to meet all of these diverse interests and opinions was impossible.

Many comments received said that we should do as much salvage harvest as possible because that would do the most to reduce the risk of future stand replacement fires and make the largest possible contribution to local economies. This approach was constrained by three realities:

- At the time the Project was developed, given the amount of salvage activity on other public lands and on private lands in the region, the local and regional mill capacity could not absorb all of the dead trees in the area of the Westside Fire Recovery Project. I believe that it is highly improbable that timber much in excess of that in the Selected Alternative could be salvaged and processed by local and regional mills given the time available to recover commodity values.
- The Forest Service was constrained by the time available to implement the Project before fire-damaged and killed trees significantly deteriorated. Making the Project larger would

have required more time, and would have compromised accomplishing important parts of the purpose and need for the Project.

- Finally, we were ultimately constrained by the short-term impacts of our proposed actions on northern spotted owls and their habitat. As noted in the final EIS, and in this document, a significant amount of northern spotted owl habitat was lost in the 2014 Westside fires. In consultation with the U.S. Fish and Wildlife Service, we have modified the Project substantially to address the short-term impacts of the Project on northern spotted owls and their habitat.

Many members of the public commented that we should do nothing, arguing that fire is a natural process and, therefore, the Project area should be left to recovery naturally. This path would not have met the goals and objectives of the Forest Plan for the Klamath National Forest or the purpose of the Project. It is also important to note that, as intended by Congress, the Klamath National Forest is managed for multiple uses and the sustained yields of goods and services in addition to sustaining the function of natural processes. Not all of the Project objectives are ecological in nature. I know that not every acre of ground burned by the Westside fires requires, or would even benefit from, human intervention. In making this decision, I note that about 80 percent[14] of the Westside Fire area has no proposed recovery actions of any kind. I do not believe, however, that "no action" is appropriate on all acres for three reasons:

- It does not address safety issues related to roadside hazards and future fire suppression efforts that would be created by standing snags and heavy down fuels. Snags along roads compromise access and pose a direct safety hazard to members of the public and workers. Large areas of continuous snags are impossible to engage safely during firefighting efforts (final EIS pp. 188-193). I am not willing to leave such large areas of standing snags untreated nor am I willing to leave large areas of standing snags adjacent to private property, communities at risk, along roads needed for ingress or egress or adjacent to fuelbreaks. This would be, in effect, leaving a huge problem for future land managers, firefighters and local communities to deal with. I am not willing to do that.
- It does not provide a cohesive strategy for the protection of communities at risk or national forest resources from future high-severity fire. Leaving all of the fire killed trees would create a bed of nearly continuous heavy fuels over large areas (final EIS pp. 142-146, 188). These conditions conflict with the goals of the Forest Plan for fire management (4-8) which state: "Reduce unacceptable fuel buildups and potential acreage of future high intensity wildfires." As noted previously in this document, and in the final EIS Chapter 3, Fire and Fuels section, retention of all of the dead trees now on the landscape would create fuel conditions that would likely contribute to more uncharacteristic, large patch-size high-severity fire in the future (final EIS pp. 188-193).
- It does not address the reestablishment of coniferous forests in the large, severely burned areas of the Westside fires. Based on evidence presented in the final EIS and associated

[14] There are about 185,000 acres in the Westside fires on NFS lands. Subtracting fuels (24,500 acres) salvage, site preparation and planting (12,890 acres) roadside hazard (4,200 acres) and hand-piling in riparian reserves (600 acres) leaves approximately 143,000 acres, or 77% untreated. This is rounded to 80% because of overlap of treatments.

analysis, the expertise of my staff, relevant science and my own experience, I believe the conditions created by the 2014 Westside fires, if left untreated, will prevent for decades achievement of desired on-the-ground objectives for vegetative cover described in the Forest Plan.

3.3 Achievement of the Purpose and Need

This section addresses how my decision addresses the underlying purpose and need for action in response to conditions created by the 2014 Westside Fires. final EIS Table 2-32 (pp. 79-80), Table 2-33 (pp. 80-81) and Table 2-34 (pp. 81-82) provide a comparative evaluation of each alternative related to the Purpose and Need for public safety, fire suppression and fire-resilient ecosystems for the Beaver, Happy Camp Complex and Whites fire areas respectively. final EIS Table 2-31 (final EIS p. 79) compares effects of each alternative related to economics for the entire Westside Fire Recovery area.

3.3.1 A need to provide for worker and public safety and access

My highest priority and greatest concern is always the safety of the public, Forest Service employees, and other forest workers. Removing hazard trees along roads and providing for safe ingress, egress and access to public lands are essential components of the Selected Alternative. Measurement indicators for this element of the purpose and need include:

- Miles and acres of roadside hazard treatment (~320 miles and 14,320 acres were evaluated). Within the areas 250 feet on each side of roadways being evaluated for fire-damaged or killed hazards, it is estimated that roadside hazard removal will actually occur on approximately 3,700 acres, including 1,200 acres of concentrated salvage in higher severity burn areas and 2,500 acres of scattered salvage in lower severity burn areas (final EIS pp. 68-69).[15]
- Acres of fuels reduction in the WUI (2,630 acres – final EIS p. 69).
- Acres where snags are removed by salvage and site preparation (5,750[16] acres of net salvage – final EIS p. 67 and 7,130 acres of site preparation – final EIS p. 70).

Standing dead and fire-damaged trees adjacent to roads create safety and maintenance issues. Some commenters recommended that hazard tree removal be dropped on all low standard Maintenance Level 1 (ML-1) roads. In consideration of this comment and to reduce potential impacts to northern spotted owls, I decided to drop hazard tree removal along ML-1 roads that are not associated with harvest units or that did not provide strategic access for fire suppression. I am not willing to drop all ML-1 road hazard tree reduction because of the access ML-1 roads provide for a wide variety of agency management activities, firefighting not least among them. Leaving hazard trees standing on all ML-1 roads will either put agency

[15] Acres shown have been reduced from those shown in the EIS to reflect the acres already being treated in the County Roadside Hazard Tree Removal Record of Decision dated December 23, 2015.
[16] Acres shown have been reduced from those shown in the EIS to reflect 190 acres of additional snag retention required by Terms and Conditions in the Biological Opinion for northern spotted owls.

employees in harm's way as they try to carry out their duties or will impede their ability to effectively carry out their duties in order to remain safe. This is not a reasonable choice.

Impeded access will also restrict the flexibility the Forest may have in managing naturally ignited fires for beneficial uses. Reliable access helps in the adoption of natural fire as it allows for appropriate on-the-ground monitoring as well as rapid access of firefighting resources should conditions change and fires need to be suppressed.

Fuel reduction in the Wildland Urban Interface provides for public safety because fuel reduction reduces the threat of losses from future high-severity fire. In the 2014 Westside fires, there were multiple evacuations and several outbuildings and two residences were lost. It is my intent to do everything possible to reduce risk of future threatening wildfire on the Klamath National Forest within the Wildland Urban Interface.

If, due to Project delays and timber deterioration, we are unable to remove hazard trees along public roads within the burned area, roads that are now open and provide access to the Forest may be closed until limited appropriated funds are available to fall hazard trees. This would restrict vehicular access to tens of thousands of acres of National Forest until hazard trees are cut, perpetuating all the associated economic and recreational impacts that go with lack of access and preventing ongoing management and administrative actions by the Forest Service.

Standing dead trees are inherently dangerous and, in areas where there are large concentrations of fire-killed trees, there is considerable risk associated with the repeated exposure that comes with working in these areas. Site preparation includes falling snags and would occur in all site preparation and planting units where dangerous snags exist and in all salvage units. I believe falling dangerous snags in site preparation units is necessary to provide a safe working environment for tree planters and Forest Service employees who would be administering reforestation contracts. I am not willing to ask our contract tree planters or employees to expose themselves to the hazard that comes with repeated exposure working in patches of dead trees.

Worker and Public Safety and Access by Fire Area

Beaver Fire Area

In the Beaver Fire Area, providing for worker and public safety and access is important because:

- Most of the Beaver Fire area is "checkerboard" ownership where alternate sections are private lands. This increases access demands and requires that roads that access private lands remain open for access and for safety.
- State Highway 97, the community of Klamath River and numerous residences in lower Beaver Creek and the Klamath River corridor create a need to reduce the risk of future high severity fires. Due to threats to life and property posed by the Beaver Fire, most of these areas were evacuated during the 2014 Westside fires.

- Salvage operations were completely dropped in the Beaver Fire area (final EIS p. 67, Table 2-22). This has increased the relative importance of other actions such as fuel management zones and roadside hazard removal.

In the Beaver Fire area, Alternative 3 Modified provides for worker and public safety and access because:

- Roadside hazard removal (48 miles - final EIS p. 80 Table 2-32) maintains safe ingress and egress for private landowners, Forest Service employees working in the area, contractors and members of the public who are using the Beaver Creek road system for access to other parts of the Forest.
- Hazard reduction in the Wildland Urban Interface with an emphasis on private land boundaries (630 acres – final EIS p. 80 Table 2-32) provides improved protection from future high-intensity fire for private timberlands and scattered ranches in this area.
- Snag removal in site preparation and planting units (1,660 acres – final EIS p. 80 Table 2-32) facilitates safe planting and reduces fuel loading.

Happy Camp Complex Fire Area

In the Happy Camp Complex Fire area worker and public safety and access is important because:

- Large patches of fire-killed trees affect hundreds of miles of roads that provide access to the Klamath National Forest for the public and forest workers. Combined, these roads provide access for the public, the Forest Service and contractors to over 117,000 acres of the Klamath National Forest (final EIS p. 6 Table 1-1).
- There are existing large fuels underburn projects and other ongoing management actions by the Klamath National Forest that require access.
- The road systems affected by the fire are identified as ingress / egress routes for evacuation in community wildfire protection plans.
- Highway 97, the communities of Scott Bar, Seiad Valley, Happy Camp and numerous residences along the Scott River and Klamath River corridor create a need to reduce the risk of future high severity fires. Life and property in these areas were threatened by the 2014 Happy Camp Complex Fire resulting in multiple evacuations. Several outbuildings and two residences were lost during the Happy Camp Complex Fire.

In the Happy Camp Complex Fire area, Alternative 3 Modified provides for worker and public safety and access because:

- Roadside hazard removal reduces risk along 215 miles of roads in the Walker Creek, Grider Creek and Scott River road systems (final EIS p. 80 Table 2-33). The primary arterials of these road systems also provide escape routes for the communities and residences along the Klamath River and Scott River in the event of fires that threaten life and property. These roads are also essential to the Forest Service for ongoing management of the National Forest and for fire suppression and wildland fire use.

- Hazard reduction in the Wildland Urban Interface (1,460 acres) (final EIS p. 81 Table 2-33) removes fuel and reduces the risk of future high-severity fire. This benefits all of the communities and private land along the Klamath and Scott rivers.
- Snag removal by salvage (approximately 5,200 acres) and site preparation (approximately 4,920 acres) (final EIS p. 81 Table 2-33) substantially reduces fuel loads and provides for the safety of the public, Forest Service employees and contractors. The Happy Camp Complex Fire has the largest blocks of salvage and site preparation (approximately 10,120 acres total – final EIS p. 70) in response to the 2014 Westside Fires. The Happy Camp Complex is also the largest of the component Westside fires. See also the following discussion concerning firefighter safety.

Whites Fire Area

In the Whites Fire area, providing for worker and public safety and access is important because:

- There are imbedded communities and numerous private inholdings immediately adjacent to Forest Service roads in the areas of Sawyers Bar, China Gulch and Music Creek
- There are ongoing and future management actions by the Klamath National Forest that require access. Over 33,000 acres (final EIS p. 6 Table 1-1) of the Klamath National Forest are accessed by roads within the Whites fire.

In the Whites Fire Area, Alternative 3 Modified provides for worker and public safety and access because:

- Hazard tree removal (55 miles – final EIS p. 82 Table 2-34) includes the North Fork Salmon, Whites Gulch, Russian Creek and Music Creek road systems. Maintaining these routes provides access to private lands and provides escape / evacuation routes essential for public safety. These roads are also essential to the Forest Service for ongoing management of the National Forest and for fire suppression and wildland fire use.[17]
- Hazard reduction in the Wildland Urban Interface (550 acres – final EIS p. 82 Table 2-34) provides protection for the communities of Sawyers Bar, and multiple private inholdings. Communities and residences in area of the North and South Forks of the Salmon River have been evacuated numerous times in multiple fire events over the years. Reduction of fuels in the Wildland Urban Interface provides increased protection to these communities and private inholdings.
- Snag removal by salvage and site preparation (550 acres of salvage and 560 acres of site preparation – final EIS p. 70) substantially reduces fuel loads and provides for the safety of the public, Forest Service employees and contractors by removing the overhead hazard created by standing snags in areas that will be replanted.

Forest Plan Direction

[17] The North Fork Salmon River Road is of particular significance because it connects the North Fork of the Salmon with the Etna Valley and provides escape routes for the communities in both the North and South Forks of the Salmon River as well as access to those areas for fire suppression and wildland fire use. I signed a separate emergency Record of Decision on December 23, 2015 that authorized hazard tree removal along approximately 10 miles of the Sawyers Bar Road.

This component of the purpose and need implements goals, objectives, and standards and guidelines of the Forest Plan, including:

> Provide an economical, safe, and environmentally sensitive transportation system for the Forest. Emphasize the maintenance and restoration of existing roads over the construction of new roads where appropriate. Provide administrative sites and facilities that effectively and safely serve the public and accommodate the workforce. Provide facilities with barrier-free access (Forest Plan, p. 4-8).
>
> MA10-53: Fall roadside safety hazard trees. Allow the removal of these trees where woody debris requirements have been met (Forest Plan, p. 4-113).
>
> MA17-5: Develop a transportation network that effectively and efficiently allows the transport of commodities to available markets. The system should be economical, safe and environmentally sensitive (Forest Plan, p. 4-132).

3.3.2 A need for safe conditions for firefighters performing fire suppression for community protection

I will never knowingly compromise the safety of firefighters or communities. Fire suppression is a part of the Forest Service mission where community protection, resource protection and protection of infrastructure is concerned. This includes access and initial attack far removed from communities at risk when it is desirable or necessary to suppress fires while they are small during times of high fire danger. Firefighter safety will be compromised by the hazards left in untreated landscapes where risk reduction salvage, roadside hazard tree removal, roadside fuel reduction and fuel reduction in fuel management zones are not accomplished. As abundantly demonstrated in the final EIS and documented in this Record of Decision, areas where snags are not removed will compromise firefighter safety by increasing resistance to control of future fires, increasing the intensity of fireline exposure to heat and fire, and increasing exposure to falling and rolling material (final EIS pp. 188-195).

Measurement indicators for this element of the Purpose and Need include:[18]

- Acres of resistance to control improved (25,810 acres; final EIS pp. 80-82.). This is evaluated by comparing the acres that meet desired conditions for resistance to control under the No Action Alternative (final EIS p. 195) to the acres that meet desired conditions for resistance to control under Alternative 3 Modified (final EIS. pp. 212-213; See also the Amendment to the Fire and Fuels Report, p. 27 Table 26).
- Acres of prescribed fire and other fuel treatments (24,450 acres; final EIS p. 69 Table 2-24). These actions reduce fuel continuity and density, which in turn would contribute to

[18] There is overlap in these measurement indicators. For example, fuel breaks are included in both elements. Conversely salvage units are included in areas where resistance to control is improved but not in the acres of prescribed fire and other fuel reduction actions. Improvement in resistance to control considers that some areas currently meet desired conditions. Acres of prescribed fire and other fuel reduction actions are a tally of the total acres treated by those methods.

the reduction in rate of spread, fire hazard and geographic extent of future fires (final EIS Chapter 3, Fire and Fuels, multiple citations).

The Selected Alternative would meet the need for safe conditions for firefighters by combining about 5,570[19] acres of treated fuels in salvage harvest units (final EIS p. 67 Table 2-22) that are strategically located with about 4,930 acres of ridgetop fuel management zones that are connected to one another by about 5,710 acres of roadside fuel reduction. Approximately 2,630 acres of fuel treatments within the Wildland Urban Interface promote safer firefighting actions and evacuation of the public should future high-intensity large fires occur within the Project area (final EIS p. 69 Table 2-24). Roadside hazard removal (cutting dead or fire-damaged trees) on approximately 310 miles of access roads (final EIS pp. 68-69 Table 2-23) will facilitate safe ingress and egress during fire suppression actions or during implementation of prescribed fire projects.[20]

Some commenters suggested that providing "snag free zones" and fuel breaks close to private property and communities at risk while leaving the remainder of the landscape untreated provides sufficient firefighter safety from snags. This approach does not realistically consider the conditions created by large, continuous snag patches and how they lead to future large, high-severity fires that may threaten private property and communities at risk, nor does it recognize the necessity to take action to suppress fires while they are small enough to control during periods of high fire danger. Breaks in the continuity of fuels provide a means of safe and effective fire suppression (final EIS pp. 194-195).

There is abundant documentation that supports the need to provide areas free of snags to facilitate safe fire suppression (final EIS p. 194). In the 2014 Westside fires, Grider Creek was heavily impacted by high-severity fire in part because the fire reburned within the perimeter of untreated fuels from the 1987 Lake Fire (final EIS p. 182, Figure 3-2; Appendix E, p. E6, Figure 2; Silviculture Report, p. 18). The untreated portions of the 1987 fires created high risk conditions for firefighters such as unpredictable falling and rolling snags and jackstraw conditions from fallen snags making cross-country foot travel difficult. Likewise, fire suppression efforts and firefighter safety during the Happy Camp Complex Fire were compromised by the number and size of untreated snags, especially those left on the ridgetops from the 2002 Stanza Fire which impacted where fire control lines were feasible during critical suppression efforts (see Fire and Fuels Report, pp. 36-37). The 2015 Buckskin Fire burned into the untreated fire scar of the 2002 Biscuit Fire on the Siskiyou National Forest in Oregon in July 2015. Since no salvage harvest or roadside logging were done to address snags while they were standing and still marketable, the fire suppression crews were largely encumbered by inaccessible road systems, jackstraw conditions created by fallen snags, and actively rolling or falling snags during fire suppression efforts. The 2015

[19] This has been reduced from by 190 acres from 5,760 acres as shown in the final EIS to 5,570 acres to reflect additional snag retention required by Terms and Conditions in the Biological Opinion for northern spotted owls.
[20] Mile of roads treated have been adjusted from those shown in the final EIS to account for the County Roadside Hazard Tree Removal Record of Decision dated December 23, 2015.

Collier Fire also burned into the footprint of the 2002 Biscuit Fire. The situation reports noted the difficulty of fire suppression caused by standing snags.

Providing for Firefighter Safety by Fire Area

Beaver Fire Area

The Beaver Fire area is generally south facing, lower elevation slopes and is typically hot and dry in summer months. While salvage harvest would contribute to firefighter safety by reducing fuels, other resource constraints limit this action in the Beaver Fire area. To offset the lack of salvage harvest, additional fuel management zones along private land boundaries and larger patches of fire-killed trees have been added to the project in the Selected Alternative (final EIS pp. 69, 212).

In the Beaver Fire area, providing safe conditions for firefighters is important because:

- This area often experiences rapid rates of spread from hot, dry slopes and flammable brush. The combination of snags and light, flashy fuels on dry south slopes creates a dangerous fire suppression environment. For example, two fire shelter deployments and burn-over incidents occurred during suppression efforts in the Beaver Fire in 2014.
- There is a need to protect interspersed private property from fires on National Forest System lands and vice versa.

In the Beaver Fire area, Alternative 3 Modified provides safe conditions for firefighters performing fire suppression for community protection because:

- Resistance to control will be improved on 2,930 acres (final EIS p. 80, Table 2-32). If no Project treatments occur (Alternative 1), approximately 1,765 acres would meet the desired condition (final EIS p. 195). With implementation of Alternative 3 Modified, approximately 4,695 acres would meet the desired condition for resistance to control (final EIS p. 212; See also Amendment to the Fire and Fuels Report, p. 27, Table 26).
- Fuels Management Zones, prescribed fire and other treatments would reduce fuel continuity and fuel density on approximately 3,300 acres (final EIS p. 80, Table 2-32).
- The combination of reducing heavy fuels and reducing fuel continuity and density with fuel breaks, prescribed fire and other actions reduce both resistance to control and future fire behavior measured by rate of spread, flame length and fire line intensity. By combining these actions in strategic locations, the probability of protecting private lands from fires on the Klamath National Forest and vice versa and containing fires on watershed boundaries are increased. This reduces overall firefighter exposure to high-intensity fire and associated risks inherent with extreme fire behavior and fireline hazards.

Happy Camp Complex Fire Area

The Happy Camp Complex Fire area is generally comprised of steep, dendritic drainages ranging from 1,600 feet in elevation along the Klamath River to nearly 6,000 feet at Tyler Meadows. The largest and most continuous patches of fire-killed trees that resulted from the 2014 Westside fires occurred in the Happy Camp Complex Fire area. In some areas such as

Grider Creek and Walker Creek, these patches of fire-killed trees are nearly continuous over multiple hundreds to thousands of acres, separated only by narrow stringers of lower-severity burn areas in draws. In the Happy Camp Complex Fire area there are large, continuous areas of fire-killed trees that remain untreated in Inventoried Roadless Areas and on lower slopes and in northern spotted owl activity centers to protect potential spotted owl habitat. Leaving these areas of fire-killed trees untreated compromises firefighter safety because it creates large areas of continuous fuels where fires may exhibit high resistance to control and high fire intensity under 90th percentile fire weather and burning conditions (final EIS Chapter 3 – Fire and Fuels multiple citations). This makes the actions that contribute to firefighter safety that are proposed in Alternative 3 Modified more important than they would be in a landscape that did not have large areas of continuous fuels.

The need for safe conditions for firefighters performing fire suppression for community protection is important in the Happy Camp Complex Fire area because:

- The patches of fire-killed trees create large areas where, without active post-fire fuel reduction treatments, no safe, on-the-ground fire suppression could occur because of snags. Large patches of heavy fuels and standing snags create an unsafe fireline environment because of high intensity fire, and falling and rolling snags. Aerial fire suppression with retardant or helicopter bucket drops but both of these methods are expensive and rarely successful without on-the-ground fireline construction.
- Primary access routes go through the large snag patches. Leaving snags compromises access for fire suppression and wildland fire use.
- Large areas of post-fire early seral plant communities (highly flammable brush) will likely increase rates of spread of future fires, compromising firefighter safety.

In the Happy Camp Complex Fire Area, Alternative 3 Modified provides safe conditions for firefighters performing fire suppression for community protection because:

- Resistance to control will be improved on 13,975 acres (final EIS p. 81, Table 2-33). If no treatments are implemented (Alternative 1), approximately 6,895 acres would meet the desired condition (final EIS p. 195). With implementation of Alternative 3 Modified, approximately 20,870 acres would meet the desired condition for resistance to control (final EIS p. 212; See also Amendment to the Fire and Fuels Report, p. 27, Table 26).
- Fuels Management Zones, prescribed fire and other treatments would reduce fuel continuity and fuel density on approximately 9,740 acres (final EIS p. 81, Table 2-33). Fire is historically more severe in the Klamath Province on the upper portions of slopes (final EIS pp. 146, 180) where most of these actions occur. In the Happy Camp Complex Fire Area, these actions – reducing heavy fuels and constructing fuel breaks and other fuel reduction treatments – combine to reduce expected fire behavior over large areas along upper slopes of major ridge systems in Walker Creek, Grider Creek and the Scott River corridor (final EIS pp. 202-204, 212). This has the most beneficial effect on reducing risks to firefighters and the least impact on other resources because it facilitates fire control on ridgetops and watershed boundaries. Fuel breaks and roadside hazard reduction provide continuity with salvage units in treated areas. Roadside hazard removal

provides for safe ingress and egress. Combined, these actions in concert with one another are integral parts of a whole strategy to provide for firefighter safety by providing safe access, reducing fire intensity and reducing exposure to fireline hazards (final EIS pp. 202-204). If any single element is dropped, the remaining elements would be less effective or may not be effective at all.

- Firefighting is inherently more complex and hence dangerous in the WUI because of infrastructure and private property protection objectives. Fuel treatments in the WUI are proposed on 1,460 acres of the Happy Camp Complex Fire Area (final EIS p. 69, Table 2-24). Proposed actions within the WUI will reduce fuel loading (final EIS p. 200) which reduces fire intensity and severity (final EIS p. 199).

Whites Fire Area

In the Whites Fire Area, large areas of fire-killed trees are left untreated in Wilderness Areas, Inventoried Roadless Areas and in activity centers for northern spotted owls. Steep slopes, narrow canyons and limited access combine to create a high-risk fire suppression environment in the North Fork of the Salmon River where the Whites Fire occurred. Leaving these areas of fire-killed trees untreated compromises firefighter safety because it creates large areas of continuous fuels where fires may exhibit high resistance to control and high fire intensity under 90th percentile conditions (final EIS p. 187). Leaving these areas untreated makes proposed treatments in other areas that much more important.

The need for safe conditions for firefighters performing fire suppression for community protection is important in the Whites Fire area because:

- There are mid-slope imbedded communities and private property that are difficult to defend.
- Patches of heavy fuels and brush adjacent to private property create suppression risk.
- Access is limited in much of the Whites Fire area, making it more important to treat fuels where it is possible to do so.

Alternative 3 Modified provides safe conditions for firefighters performing fire suppression for community protection because:

- Resistance to control will be improved on 8,905 acres (final EIS p. 82, Table 2-34). If no treatment occurs (Alternative 1), approximately 3,740 acres would meet the desired condition (final EIS p. 195). With implementation of Alternative 3 Modified, approximately 12,645 acres would meet the desired condition for resistance to control (final EIS p. 213; see also Amendment to the Fire and Fuels Report, p. 27, Table 26).
- Fuels Management Zones, prescribed fire and other treatments would reduce fuel continuity and fuel density on approximately 11,400 acres (final EIS p. 69 Table 2-24). The combined actions of salvage harvest, site preparation, prescribed fire, roadside fuels reduction, roadside hazard removal and fuels management zones provide for firefighter safety by facilitating fire suppression along ridgetop and watershed boundaries and maintaining safe ingress and egress for fire suppression (final EIS pp. 199, 202-204). Prescribed fire (9,190 acres – final EIS p. 69) that is part of Alternative 3 Modified is

intended to reduce fuels created by the 2014 Whites Fire on the south and west sides of the North Fork of the Salmon River Road where salvage options are limited.

Forest Plan Direction

In the course of considering this decision, I note that when considering all vegetation size classes, about 70 percent [21] of the moderate- and high-severity burn areas from the 2014 Westside fires would not be treated. These areas remained untreated because:

- They provided important wildlife habitat, most notably in burned patches smaller than 20 acres adjacent to areas of nesting and roosting habitat of northern spotted owls or along the margins of unburned areas on lower slopes where they provide post-fire foraging habitat for northern spotted owls;
- They were not in strategic locations, and did not contribute to the risk reduction objectives of the Project;
- They were uneconomic to treat, or had no practical means to access the area, or
- They were in an Inventoried Roadless Area.

I understand that leaving these areas untreated will compromise future fire suppression efforts where standing snags are left and may make safe access impossible in some areas. As noted earlier in this discussion, this is a compromise necessary to balance other Project objectives.

This component (safe conditions for firefighters) of the purpose and need meets goals, objectives, and standards and guidelines of the Forest Plan, including:

> 22-1: Restore fire to its natural role in the ecosystem, to the maximum extent, consistent with the safety of persons, property, and other resources (Forest Plan, p. 4-52).
>
> 22-2: Wildland fires shall receive the appropriate suppression response (see Table 4-8). Timeliness is essential but safety and cost efficiency, while considering the value of the threatened resource, shall guide the fire suppression response strategy. A range of response tactics may be appropriate. Carefully analyze the current and predicted wildland fire situation when determining the appropriate response (Forest Plan, p. 4-52).
>
> 22-3: Apply the minimum impact suppression method to all lands. Control or manage the spread of fire. The suppression method shall be commensurate with the wildland fire's potential to spread or cause undesirable impacts. Firefighter and public safety shall be the highest priority. Select procedures, tools, and equipment that least impact the environment. Use hot spot detection devices whenever possible. These tactics apply to the mop-up of wildland fires also (Forest Plan, p. 4-54).

3.3.3 A Need for Restored and Fire-resilient Forested Ecosystems

After providing for the safety of people and communities, my second priority in the Westside fire area is restoring fire resilient forest ecosystems. The Westside fires showed just how

[21] There are about 50,000 acres of moderate or high severity burn within the project area where most of the trees were killed (final EIS p. 162). Salvage harvest would remove snags on about 5,5,570 acres (final EIS p. 67, as adjusted by the NSO Terms and Conditions). Concentrated roadside hazard would remove snags on an additional 1,330 acres not in salvage units (final EIS p. 69) for a total of about 7,130 acres where snags would be removed in moderate and high severity burn areas. Fuel breaks, roadside fuels treatments etc. in moderate and high severity burn areas are largely contained within roadside hazard and salvage units in moderate and high severity burn areas. An additional 7,130 acres of natural stands and plantations may also have snags cut for safety. Combined, these areas total 14,260 acres or 29% of the moderately or severely burned areas in treatment units.

damaging an extreme fire can be, and I intend to do everything I can to reduce the chances of another such fire in this area.

As noted previously, without active post-fire fuel reduction treatments, fuel succession processes create high potential for subsequent high-severity wildfire for 20-40 years in dry coniferous forests (final EIS p. 199). Restoring fire-resilient ecosystems has two components: reducing the continuity and density of fuels to reduce the intensity and severity of future fires (Forest Plan 4-8) and restoring coniferous forest habitats described in the Forest Plan (Forest Plan pp. 4-83, 4-131). Measurement indicators (final EIS pp. 79-82, Tables 2-32, 2-33 and 2-34; p. 176, Tables 3-2, 3-3 and 3-4) for this element of the Purpose and Need include: [22]

- Acres treated to promote regeneration though salvage harvest and site preparation and planting.
- Years to reach a mature stand in areas of salvage harvest and site preparation and planting.
- Type of vegetation regenerated in salvage harvest areas and site preparation and planting units.
- Total acres where fuels are reduced by salvage, site preparation and fuels treatments.

In the dry-summer, frequent-fire environment of the Klamath Province, I believe the first step to restoring a fire-resilient ecosystem is reducing the amount and continuity of heavy fuels. As noted in peer-reviewed literature and cited in the final EIS (pp. 163-164), "*reducing connectivity of surface fuels at landscape scales is likely the only way to decrease the size and severity of reburns (Thompson et al. 2007).*" Reducing fuels is consistent with Forest-wide goals in the Forest Plan of the Klamath National Forest (which includes LSRs) for fire management (4-8) which state: "*Reduce unacceptable fuel buildups and potential acreage of future high intensity wildfires.*" Based on project–specific modeling and analysis (final EIS Chapter 3, Fire and Fuels, multiple citations), the experience of my staff and Forest Service experience on the Klamath National Forest with serious reburns, I am convinced that the proposed fuel reduction treatments which include salvage harvest and site preparation will be effective at reducing heavy fuels and the continuity of surface fuels. While there may be disagreement around this topic, the negative consequences of taking no action are not consistent with the objectives of the Forest Plan of the Klamath National Forest.

The intended purpose of salvage of fire-killed trees is to reduce the amount and continuity of fuels that would otherwise be created when those trees break or fall to the ground and become surface fuel (final EIS pp. 34; 196-197). I acknowledge that, in some circles, there is debate regarding the efficacy of salvage logging to reduce future fire hazard. I have fully considered those arguments and, based on information presented in the final EIS, I conclude that salvage logging is an effective means to reduce fuel loading and future fire severity

[22] Site preparation and planting was included as a measurement indicator for this element of the Purpose and Need in Chapter 1 of the final EIS (p. 16), but was inadvertently left out of Chapter 2, Tables 2-32, 2-33 and 2-34.

(final EIS pp. 141-150, 196, 199-204). Salvage units have been proposed because of their location relative to private lands, communities at risk, important access / ingress / egress roads, large continuous areas of fire-killed trees and proposed ridgetop fuel breaks. These actions complement proposed fuel reduction and strategic fuel management zones as part of a landscape-scale strategy to reduce the size and severity of future fires (final EIS pp. 196-204, 212-213). Creating large blocks where fuel loads and fuel continuity have been reduced in concert with ridgetop fuel breaks provides control points for fire suppression, increases opportunities to use naturally occurring fires for fuel reduction (wildland fire use), and increases the likelihood that large fires could be contained along watershed boundaries. Reducing the size and severity of future fires serves to reduce risk to wildlife habitat and improves the likelihood of firefighting success (final EIS pp. 34, 196-204, 212-213).

Although the acreage of fuel reduction accomplished under the Selected Alternative is less than that of Alternative 2 because of additional protections for the northern spotted owl, the Selected Alternative retains most of the important fuel reduction actions proposed by Alternative 2. More strategic areas such as roads and ridgetops would still be effective because areas where salvage harvest was dropped for other reasons are largely outside of these areas (final EIS pp. 212-213). The connectivity of salvage units with strategic fuel breaks has been largely retained while areas of fire-killed trees that were deleted to provide habitat for northern spotted owls were primarily on lower slopes. These are areas that historically burned with lower intensity than upper slopes.

Some members of the public expressed concern about the effect of fuel reduction treatments on important ecosystem components, such as large downed logs and snags. I believe that the Selected Alternative will provide sufficient quantities of large downed logs and snags to meet ecosystem needs as required by the Forest Plan of the Klamath National Forest (final EIS pp. 144-147, 239-241). I am concerned that if we were to retain significantly more downed large logs and snags, our fuel reduction goals would be unduly compromised (final EIS p. 145). Furthermore, because the Selected Alternative only treats a fraction of the area burned by the Westside fires, tens-of-thousands of acres with extremely high levels of large downed logs and snags will be retained, providing the benefits for those particular species that thrive in burned forests.

There were many public comments and dissenting opinions from responsible scientists objecting to salvage harvest in Late Successional Reserves (LSRs). As noted throughout the EIS (pp. 16, 34-5, 141-153, 196-197; see also final EIS Appendix E) and this Record of Decision, the intended purpose of salvage harvest is a long-term reduction in fuel loading and attendant risk of stand replacement fire that would frustrate reestablishment and maintenance of late-successional stand conditions. The objective of LSRs is to protect and enhance conditions of late-successional and old growth forest ecosystems which serve as habitat for late-successional and old growth-related species including the northern spotted owl (Forest Plan p. 4-83). About 28,700 acres of the Eddy Gulch and Seiad LSRs burned with moderate

to high intensity and are now post-fire early seral plant communities. To reestablish late successional stand conditions, a new forest must be established and future large, high-severity, stand replacement fires must be minimized so that the time-dependent ecological relationships that define a late-successional forest can evolve. As previously noted, this decision protects and enhances the affected LSRs by reducing the long-term risk of stand replacement fire and accelerating the speed at which late-successional stand conditions are reestablished (final EIS pp. 168, 196-204, 212-213; see also final EIS Appendix E). In considering this action, I note that the Forest Plan of the Klamath National Forest clearly anticipated that risk reduction salvage may be necessary and provided project guidelines for both risk reductions in LSRs (Forest Plan p. 4-86; MA5-27 to 29) and for salvage (Forest Plan p. 4-87, MA 30-1 to MA 30-11) to ensure that the objectives of the Forest Plan were achieved. If the Forest Plan had not anticipated the need for salvage to occur or intended to prohibit salvage within the LSRs, there would have been no provisions for this type of action. The Westside Fire Recovery Project is consistent with those standards and guidelines (final EIS Appendix E, p. E-22 to E-26).

In the Selected Alternative (Alternative 3 Modified), site preparation and planting is proposed in 5,570 acres of salvage harvest units, 840 acres of natural stands of small trees that burned and 6,290 acres of plantations that burned. Prior to the 2014 Westside fires, the sites where salvage, site preparation and planting are proposed were occupied primarily by coniferous forests (final EIS p. 160). The management objective for the Late Successional Reserve land allocation is "…to protect and enhance conditions of late successional and old-growth forest ecosystems" (Forest Plan p. 4-83). Within the General Forest land allocation, the Forest Plan (p. 4-131) states: "Although openings with hardwoods, shrubs, grasses and forbs are apparent, forest stands consist primarily of conifers." I believe that reducing fuels by salvage harvest and/or site preparation, followed by planting appropriate fire-adapted coniferous species and favoring culturally important hardwoods is the most reliable approach to restore the vegetative conditions described by the Forest Plan in these land allocations (final EIS pp. 150-153,166, 196-204, 212-213; see also FVS simulation in final EIS Appendix E). Reforestation efforts will have better chances of survival due to anticipated surface fuel load reductions within planted areas (final EIS pp. 164, 200). Planting seedlings, produced from seeds selected for their adaptability to local conditions and future climate changes, after a wildfire may restore a large-conifer dominated forest ecosystem in 40-60 years, compared to the alternative of not planting which could take more than 100 years to even establish conifer forests (final EIS pp. 162, 167; see also FVS modeling in final EIS Appendix E). I believe site preparation and planting is necessary because it is the surest way to reestablish coniferous forests described as the desired condition in the Forest Plan.

Restoring fire-resilient forests will also provide protection for communities at risk and help provide for firefighter safety because the intensity and severity of future fires would be reduced. In other words, accomplishing this objective accomplishes all of the other Project objectives in most locations.

Provision for Restored and Fire Resilient Ecosystem by Fire Area

Beaver Fire Area

The dry, low-elevation, south aspects of the Beaver Fire would historically have been a frequent fire, low fire-severity environment where stands were open with a significant oak hardwood component. Little dead wood accumulated on the landscape because of fire frequency (final EIS pp. 141-143). No salvage harvest is proposed in the Beaver Fire area other than roadside hazard removal because of a need to maintain habitat connectivity and provide potential habitat for northern spotted owls in an area where little habitat or no habitat connectivity exists. Additional fuel reduction projects were added in the Beaver Fire area to help offset the lack of salvage harvest that would have otherwise reduced the risk of future high-severity fire.

Restoring a fire-resilient ecosystem in Beaver Fire area is important because:

- Large brushfields and snag patches created by the 2014 fires create high potential for future high-severity fire that would threaten remaining coniferous forest (final EIS p. 199). Areas where fuels have been reduced and fire-resilient species have been reestablished would be more likely to survive future fire events (final EIS pp. 163-164).
- Very little habitat connectivity for northern spotted owls and Pacific fishers remains in the Beaver Fire area because of high-severity fire on the Klamath National Forest lands and salvage operations on private lands. Restoring a fire-resilient coniferous forest would help restore a measure of habitat connectivity in this area (final EIS Appendix G Biological Assessment, p. G 44).
- At the lower elevations, the hot, dry south-facing slopes will be brushfields for decades without intervention, and may become essentially a fire-driven site conversion to brush (final EIS p. 165).

In the Beaver Fire area, the Selected Alternative (Alternative 3 Modified) provides for a restored and fire-resilient ecosystem because:

Acres treated to promote regeneration: Site preparation and planting will accelerate development of a coniferous forest on 1,660 acres (24 percent) of the moderate to severely burned landscape (final EIS p. 176 Table 3-2).

Years to reach a mature stand: With site preparation and planting the time period to establish a mature coniferous forest is reduced from a century or more to 40-60 years (final EIS pp. 162, 176 - Table 3-2; final EIS Appendix E, FVS Simulation).

Type of vegetation regenerated: The type of vegetation reestablished by the Selected Alternative (Alternative 3 Modified) (conifers, naturally-regenerating/sprouting hardwoods and some shrubs; final EIS pp. 167, 174) would be more typical of the frequent fire, low fire-severity environment that historically existed in the Klamath Province than the large brushfields and hardwood stands with isolated conifers that are likely to result if no treatment occurs (Alternative 1) (final EIS pp.152, 167, 176 Table 3-2). Approximately 1,660 acres of coniferous forests would be

reestablished by a combination of fuel reduction, site preparation and planting. Stands of trees would be reestablished rather than isolated patches of conifers in a sea of brush.

Total Acres where fuels are reduced: Approximately 3,300 acres of fuel reduction would occur in 1,530 acres of fuel management zones, 450 acres of prescribed fire areas, 700 acres of roadside fuels treatment and 630 acres of WUI fuels treatments (final EIS pp. 69, 80 - Table 2-32). These projects are designed to reduce the continuity of fuels and thus reduce the probability of stand replacement fire. These breaks in fuel continuity also provide a means to reintroduce prescribed fire on larger areas in the Beaver Fire area in the future by providing ridgetop and property boundary control points. On the dry south-facing slopes of the Beaver Fire area, future fires are inevitable. Reducing fuels increases the probability that any young trees present would survive. Planting increases the probability that conifers would occupy the sites as they have historically rather than brush (final EIS pp. 151, 162). Additionally, approximately 1,660 acres of burned plantations and natural stands of small trees are proposed for site preparation that reduces fuels and planting that accelerates reestablishment of coniferous forests (final EIS p. 176 Table 3-2).

Happy Camp Complex Fire Area

The Happy Camp Complex Fire is characterized by very large patches of stand replacement fire where mortality often approaches 100%. There are multiple patches of fire-killed trees in Grider Creek and Walker Creek that are several hundred acres to over 1,000 acres in size. As noted by Skinner et al. (2006), these areas tend to reburn with high severity and may convert to semi-permanent stands of brush and hardwood without intervention (final EIS pp. 151, 162, 176). I believe reducing fuels and replanting fire-adapted conifers is the best way to restore this ecosystem.

Restoring a fire-resilient ecosystem in Happy Camp Complex Fire area is important because:

- Large brushfields and snag patches created by the 2014 fires create high potential for future high-severity fire that would threaten remaining coniferous forest (final EIS p. 199). Areas where fuels have been reduced and fire-resilient species have been reestablished would be more likely to survive future fire events (final EIS pp. 163-164).
- The large patch sizes of fire-killed trees are not typical of the Klamath Province (final EIS pp. 142-144, 165). Without intervention, these areas may remain as brushfields for decades (final EIS p. 165). This is not consistent with management direction in the Forest Plan of the Klamath National Forest (Forest Plan pp. 4-83, 4-131).
- The large patches of fire-killed trees will be vulnerable to future high severity fire without intervention. These areas will likely reburn and create larger patches of early-seral plant communities at the expense of coniferous forests (final EIS p. 167).
- Reducing fuels to create a resilient forest also provides protection for communities at risk.

In the Happy Camp Complex Fire Area, the Selected Alternative (Alternative 3 Modified) provides for a restored and fire-resilient ecosystem because:

Acres treated to promote regeneration. Site preparation and planting will accelerate development of a coniferous forest on approximately 10,120 acres (30%) of the moderately and severely

burned landscape. Approximately 5,010 acres are treated by salvage harvest, and 4,920 acres are burned plantations or natural stands of young trees (final EIS pp. 70, 176 - Table 3-3).

Years to reach a mature stand: Site preparation and planting shortens the time required to reestablish a mature forest, particularly in large patches such as those found in the Happy Camp Complex Fire where seed-trees may not be readily available. With site preparation and planting, the time period to establish a mature coniferous forest is reduced from a century or more to 40-60 years (final EIS pp. 162, 176 - Table 3-2; final EIS Appendix E, FVS Simulation). By reducing fuels and planting trees, we substantially increase the probability that a mature forest can be reestablished, and decrease the time that it takes to accomplish that condition (final EIS Appendix E, FVS analysis).

Type of vegetation regenerated: The forest reestablished by the Selected Alternative - conifers, naturally-regenerating/sprouting hardwoods and some shrubs (final EIS pp. 167, 174-175) - would be more typical of the frequent fire, low fire-severity environment that historically existed in the Klamath Province than the large brushfields and hardwood stands with isolated conifers described Skinner et al (2006) that are likely to result if no treatments occur (Alternative 1). Approximately 10,120 acres of coniferous forests would be reestablished by a combination of fuel reduction by salvage harvest, site preparation and planting (final EIS p. 177 - Table 3-3). Stands of trees would be reestablished rather than isolated patches of conifers in a sea of brush.

Total Acres where fuels are reduced by salvage, site preparation and fuels treatments: Salvage harvest would reduce heavy fuels on approximately 5,010 acres (final EIS p. 67, Table 2-22, adjusted for additional snag retention required by Terms and Conditions in the NSO BO). Site preparation and planting would reduce fuels on an additional 4,920 acres (final EIS p. 70, Table 2-25; p. 175) for a total of 9,930 acres where fuels would be reduced by salvage harvest and site preparation. Site-specific fuels analysis (final EIS p. 186, Figure 3-4; see also Fuels Report) shows that salvage harvest followed by site treatment will effectively reduce fuel levels for 20-40 years. This significantly increases the probability that stands of planted trees would survive future fires (final EIS pp. 162, 176). An additional 9,740 acres of fuels treatments from 1,460 acres of WUI fuels reduction, 2,620 acres of Fuels Management Zones, 4,120 acres of Roadside Fuels Treatments, and 1,540 acres of prescribed burns would occur (final EIS p. 69, Table 2-24; p. 81, Table 2-34). Combined, fuels treatments and salvage harvest followed by site preparation would reduce fuels on 19,860 acres. Reducing fuel levels would help provide for the reintroduction of landscape-scale fire. This is key to restoring and maintaining a fire-resilient ecosystem.

Whites Fire Area

A large proportion of the Whites Fire area is in Inventoried Roadless Areas (IRA), brush and hardwood stands from previous burns or is mixed-severity burn associated with functional northern spotted owl activity centers. The Whites Fire area has two unincorporated communities at Forks of the Salmon and Sawyers Bar. There are also numerous private inholdings. While the proportion of moderate- and high-severity burn in the Whites Fire area is nearly identical to the Happy Camp Complex Fire area, the patch sizes of fire-killed trees outside of inventoried roadless areas are generally smaller than the Happy Camp Complex or

Beaver fires (see Fire Severity Mapping, final EIS Appendix A). Also, fewer acres of plantations were severely burned in the Whites Fire. As a result of these factors, there are relatively fewer salvage harvest units or site preparation and planting units in the Whites Fire. Restoring fire-resilient forest ecosystems in the Whites Fire area would be accomplished by managing fuels over time so as to reduce the probability of future high-severity fire. Approximately 80 percent of the fuel reduction work anticipated in the Whites Fire area would be accomplished by prescribed fire (final EIS p. 69 - Table 2-25).

Restoring a fire-resilient ecosystem in the Whites Fire Area is important because:

- Since management options are limited by IRAs, Wilderness and northern spotted owl core areas, it is important to treat as many acres outside of these areas as possible so that the overall landscape risk of future high-severity fire is reduced.
- High-severity fire puts remaining northern spotted owl habitat at risk.
- The southwest corner of the Whites Fire was difficult to control during the 2014 fires because of continuous fuels and topography that created difficult firefighting conditions. Without fuel reduction it is unlikely that controlled burns or wildfires could be contained along this strategically important watershed boundary. Restoring a fire-resilient ecosystem in the southwest corner of the Whites Fire would allow the reintroduction of high frequency, low severity controlled burns that could be used to reduce fuels and future fire intensity at this important watershed boundary.

In the Whites Fire Area, the Selected Alternative (Alternative 3 Modified) provides for a restored and resilient ecosystem because:

Acres treated to promote regeneration: Site preparation and planting will accelerate development of a coniferous forest and culturally significant hardwoods on approximately 1,110 acres (11%) of the moderately and severely burned landscape. Approximately 550 acres are salvage harvest units and 560 acres are burned plantations or natural stands of young trees (final EIS p. 70 Table 2-25; p. 176 Table 3-4).

Years to reach a mature stand: With site preparation and planting, the time period to establish a mixed conifer/hardwood forest is reduced from a century or more to 40-60 years (final EIS pp. 162, 176 - Table 3-4; final EIS Appendix E, FVS Simulation). By reducing fuels and planting trees, we substantially increase the probability that a mature forest can be reestablished and decrease the time that it takes to accomplish that condition (final EIS Appendix E, FVS analysis).

Type of vegetation regenerated: The mixed conifer and hardwood stands reestablished by the Selected Alternative (Alternative 3 Modified) (conifers, naturally-regenerating/sprouting hardwoods and some shrubs: final EIS pp. 167, 175) would be more typical of the frequent fire, low fire-severity environment that historically existed in the Klamath Province than the large brushfields and hardwood stands with isolated conifers described Skinner et al (2006) that are likely to result with no Project treatments (Alternative 1). Approximately 1,110 acres of coniferous forests would be reestablished by a combination of fuel reduction by salvage harvest, site preparation and planting (final EIS p. 178 - Table 3-4). Stands of trees would be reestablished rather than isolated patches of conifers in a sea of brush.

Total Acres where fuels are reduced by salvage, site preparation and fuels treatments: Salvage harvest would reduce heavy fuels on approximately 550 acres (final EIS p. 67, Table 2-22). Site preparation and planting would reduce fuels on an additional 560 acres (final EIS p. 70, Table 2-25; p. 175) for a total of 1,110 acres where fuels would be reduced by salvage harvest and site preparation. Site-specific fuels analysis (final EIS p. 187, Figure 3-5; see also Fuels Report) shows that salvage harvest followed by site treatment will effectively reduce fuel levels for 20-40 years. This significantly increases the probability that stands of planted trees would survive future fires (final EIS pp. 162, 176). An additional 11,410 acres of fuels treatments from 550 acres of WUI fuels reduction, 780 acres of Fuels Management Zones, 890 acres of Roadside Fuels Treatments, and 9,190 acres of prescribed burns would occur (final EIS p. 69, Table 2-24; p. 81, Table 2-34). Combined, fuels treatments and salvage harvest followed by site preparation would reduce fuels on 12,520 acres. Reducing fuel levels would help provide for the reintroduction of landscape-scale fire. This is key to restoring and maintaining a fire-resilient ecosystem.

Forest Plan Direction

Ultimately, the goal for the Westside Fire Recovery Project is not to eliminate fire from the ecosystem, since these forests evolved with fire as a major influence. Rather, the goal is to modify fuel accumulation so as to reduce future fire severity to bring these areas back to a more natural fire regime. My hope is that this Project will be the first step in a many-decade process of helping restore a heterogeneous, fire-resilient forest that supports a broad array of wildlife and where fire is an integral part of maintaining a healthy, diverse and resilient ecosystem, not a landscape altering force.

I understand in making this decision that much of the area of the Westside fires will remain untreated and that these areas will have high accumulations of heavy fuel in the future as snags break and fall to the ground. These areas are likely to go through several cycles of reburns before the excess fuel is consumed and a frequent-fire, low-severity fire regime typical of the Klamath Province is reestablished. If fuel reduction and restoring coniferous forests were my only objectives, and there were no constraints, it would be my choice to treat these areas. As noted earlier, mill capacity, available time and other resource constraints limit my actions to those areas that are most important to treat.

In total, these combined recovery actions of salvage harvest, site preparation and planting, fuels reduction projects and fuel management zones would fulfill the direction in the Forest Plan to “maintain healthy, resilient, functioning ecosystems” (Forest Plan p. 4-4) and to “reduce unacceptable fuel buildups and potential acreage of future high intensity wildfires” (Forest Plan p. 4-8). These actions would also reestablish coniferous forests described as the desired vegetative condition in the Forest Plan (Forest Plan pp. 4-83, 4-131) fulfilling the direction in the National Forest Management Act (NFMA) to maintain forested lands in the national forest system “in appropriate forest cover with species of trees, degree of stocking, rate of growth and conditions of stand … in accordance with land management plans.”

This component of the purpose and need meets goals, objectives, and standards and guidelines of the Forest Plan, including:

Prepare and offer the Allowable Sale Quantity (ASQ). Utilize dead or dying trees to produce wood products when consistent with the Forest goals. Implement post-sale treatments commensurate with resource program needs. Manage the spread and occurrence of forest insects and diseases, where necessary, to maintain a functioning ecosystem (Forest Wide Management Direction for Timber Management Forest Plan, p. 4-8).

Reintroduce fire into the environment through wildland fire managed for resource benefits and prescribed fire, where Forest ecosystems evolved under the influence of wildfires. Reduce unacceptable fuel buildups and potential acreage of future high intensity wildfires. Develop management and protection strategies for inter-mixed State and private forest lands (Forest Wide Management Direction for Fire Management, Forest Plan, p. 4-8).

Implement silvicultural prescriptions consistent with desired ecological processes and management objectives. Reforest lands allocated to sustained timber production within 5 years of harvest. Actively reforest areas damaged by extreme events, such as floods, wind, fires, or insect infestations. (Forest Wide Management Direction for Timber Management, Forest Plan 4-8)

21-28: In cases of extreme natural events, reforestation of the area will be a high priority and may violate other management goals for short periods of time (Forest Wide Standards and Guidelines for Timber Management, Silviculture, Forest Plan, p. 4-47).

MA5-29: In some LSRs in these provinces, management that goes beyond these guidelines may be considered. Levels of risk in those LSRs are particularly high and may require additional measures. Consequently, management activities designed to reduce risk levels are encouraged in those LSRs even if a portion of the activities must take place in currently late-successional habitat. While risk-reduction efforts should generally be focused on young stands, activities in older stands may be appropriate if: (1) the proposed management activities will clearly result in greater assurance of long-term maintenance of habitat, (2) the activities are clearly needed to reduce risks and (3) the activities will not prevent the LSRs from playing an effective role in the objectives for which they were established. Such activities in older stands may also be undertaken in LSRs in other provinces if levels of fire risk are particularly high (LSR Guidelines to Reduce Risk of Large Scale Disturbance, Forest Plan p. 4-86),

3.3.4 A need for a project that is economically viable, meeting project objectives and benefiting our local communities.

Economic viability is, on one hand, the most measureable of criteria and, on the other, the most fluid and ambiguous because of changing operational costs and fluctuating markets for lumber and other products manufactured from fire-killed trees.

Measurement indicators for this element of the Purpose and Need include:

- Timber sale income
- Labor Income
- Jobs

It is imperative that the projects that are part of the Westside Fire Recovery Project are both in compliance with the requirements of the Forest Plan and economically viable so that they can be implemented. “Economically viable” means that a project must be reasonable to implement from a cost standpoint. If the project is a timber sale, “economically viable” means that a prudent operator would be able to purchase the offered timber and execute the

contract as written. It is a reality that there is limited ability to implement projects that cannot generate revenue or that have high costs that must be covered by appropriated funds. I believe it is in the public interest and the best interest of the agency to capture as much of the economic value as possible from fire-killed trees before further deterioration occurs. "Economic viability" does not mean that economic value takes precedence over resource values or that resource decisions would be made solely to generate revenue. I think most reasonable members of the public would agree that economic viability is a prudent objective.

Like most national forests, revenue is collected from timber sales to pay for reforestation and other forest management activities. Selling the fire-killed timber from the proposed salvage units and roadside hazard areas, so that maximum value for the timber is recovered and can be leveraged for critical fuels risk reduction and reforestation activities, is important for the long-term success of the Project. This means striving to award contracts and begin operations immediately following my decision to minimize further loss of value from deterioration.

Once salvage logging and roadside hazard work are completed, activity fuels (slash) will be treated and then salvage units will be planted. I consider treatment of activity fuels and reforestation actions as mandatory parts of the Project. Timber sale receipts and collections can be used to fund all or part of this work depending on the amount of money received from the sale of fire-killed trees. The exact amount of those dollars available will not be known until the timber sales are completed. The values shown in the economic analysis (EIS pp. 531-542) were the best estimates at the time the final EIS was written; however, the longer the time period between analysis and implementation, the more those assumptions may be affected by deterioration of fire-killed trees and changing markets. Even if the revenues projected in the analysis are not fully realized, I believe it is in the best interests of the agency to capture as much value as possible from the fire-killed trees, and to use those funds instead of limited appropriated dollars to accomplish Project objectives wherever possible. Because so much of the proposed salvage is in large, contiguous blocks, we anticipate that work can be efficiently completed with lower unit costs. Completion of these activities is a priority for the Forest.

Any of the fuels reduction and reforestation work that cannot be accomplished with timber sale receipts must be accomplished with appropriated or other funds. For damaging wildfires, such as the 2014 fires in the Project area, National Forests usually require additional funding based on Congressional appropriations to fund fire recovery activities. Grant monies for fuels reduction in the wildland urban interface are also a possible source of funding. The fuels reduction work outlined in this decision would cost more than the Forest's average base budget for this type of work; however, the Klamath National Forest has been successfully competing for additional funding to help cover the cost of fuel reduction. For example on February 22, 2016 the Klamath National Forest received notification that the Forest has been awarded four million dollars for fuels reduction as part of the Joint Chief's Landscape

Restoration initiative. These funds can be used to accomplish fuel reduction projects in the Wildland Urban Interface Areas in the Happy Camp Complex and Whites Fire areas

In addition, capturing the maximum economic value of the salvaged timber would benefit the local counties and local and regional economies, including the creation of an estimated 900 jobs if the Selected Alternative is fully implemented (final EIS pp. 535-537).

Many commenters stated that economics cannot be a consideration in proposed activities in LSRs. This is not a correct interpretation of the Forest Plan for the Klamath National Forest. It is a Forest Plan requirement that actions in LSRs must protect and enhance conditions of late successional and old growth forests for which the LSRs were established and cannot be undertaken solely to generate revenue. The Forest Plan does not say, however, that projects in LSRs cannot generate revenue. In that context, economics can be considered so long as the objectives of protecting and enhancing the late-successional and old-growth conditions of the LSR are met. The Westside Fire Recovery Project protects and enhances late-successional forest values by reducing the probability of future stand replacement fire and accelerating the development of late-successional stand conditions (final EIS p. 150, Appendix E).

Actions that are part of the Westside Fire Recovery Project were also proposed to reduce risk of future high-severity fire and to provide for public and forest worker safety, not just to generate revenue.

The Selected Alternative (Alternative 3 Modified) meets the need for economic viability because salvage units that were not economically viable have been dropped from the Project and actions that remain have been reviewed extensively by my staff and me with an eye towards economic viability. The Project that can be implemented on the ground is the one that would provide the most economic benefit to the local communities. The Selected Alternative meets this criterion.

Parts of the Project could proceed, depending on the availability of appropriated funds without timber sale contracts. Fuel treatments in the Wildland Urban Interface, construction of fuel breaks outside of salvage units and controlled burns to reduce fuels do not require commercial timber sale contracts and are typically accomplished with appropriated funds (Appendix B, Comment #18878-16).

I sign this decision cognizant of the fact that the revenue generated through commercial sale contracts will be lower than originally anticipated. Even if reduced, timber sale contract receipts will still help cover the costs of accomplishing fuels treatments in salvage units, construction of fuel breaks, reforestation, hazard abatement along roads, and reforestation in site preparation and planting units. If the cost of doing necessary work without timber sale receipts is considered, the real cost of taking no action becomes apparent. The Forest estimates that it would take nine million dollars to accomplish roadside hazard abatement and cleanup alone if that work cannot be accomplished through timber sale contracts (Appendix B, Comment #18878-16). Without timely timber sales, the entire burden of this cost is put on

the shoulders of the taxpayer. This is why my staff and I have been working diligently for this decision. I cannot stress enough the critical nature of selling the timber as soon as possible to capture the marketability of the fire-damaged trees, so we can accomplish the valuable work outlined in my decision. Without timber sale receipts:

- The majority of roadside hazard treatments would be delayed until hazard trees could be felled using appropriated dollars that are not currently available or that would come from other projects. Once hazard trees are on the ground, the slash and heavy fuels would need to be piled and burned or otherwise removed. The cost of doing this work without a timber sale contract would be approximately nine million dollars (Appendix B, Comment Response #18878-16). Delayed hazardous fuels treatments along roadways and nearby infrastructure would increase safety risks to forest workers and the public. Falling snags will also damage infrastructure such as roads. To mitigate safety risks to the public, Forest Orders may be temporarily needed to close road access to portions of the Forest, substantially decreasing public access to public land.
- Fuels reduction in proposed salvage units would likely not be accomplished since there is no feasible way to remove heavy fuels other than commercial timber sales. Without salvage harvest, snags would continue to decay, break, and fall; this would increase surface fuel loading and the severity and intensity of future fires. In turn, this will impact effective suppression control of future fires and/or put fire suppression crews at increased risk. It will also limit the reintroduction of fire as a landscape management tool. At some future time, it may be possible to reintroduce fire in these areas in an attempt to reduce fuels created by falling snags, but as noted in the EIS (final EIS Chapter 3 Fire and Fuels) this is difficult, dangerous and expensive, and may result in a destructive wildfire rather than the controlled reintroduction of fire as a management tool. In some ridgetop locations, it may be possible to fall dead trees and pile them by hand or mechanical means, but this work is expensive to accomplish.
- Without salvage harvest, reforestation in 5,570 acres of proposed salvage units would be dependent on natural post-fire succession and may take decades or longer (final EIS pp. 164-165). Planting crews cannot safely operate in areas of dead and decaying standing trees. It is a violation of Occupational Safety and Health Administration codes to plant or treat hazardous fuels under, or adjacent to, snags. Since there would also be fewer funds available from timber contract receipts, the opportunity to restore forested habitat through site preparation and reforestation work would be severely limited. Reforestation in site preparation and planting units (burned plantations and natural stands of small trees) could proceed without timber sales, but the cost of reforestation will need to be covered by appropriated funds.
- Economic opportunity and job creation as well as public safety for the local communities will be impacted.

This component of the purpose and need meets the goals, objectives, and standards and guidelines of the Forest Plan, including:

> Environmental Health and Community Stability: Manage for a diverse and productive environment. Provide an even flow of renewable resources and thus assure their availability to enhance community stability. Within the limits of competitive forces that shape the

economy, provide a stable resource base upon which management may proceed (Forestwide Goals, Forest Plan, p. 4-4).

Active Stewardship: Manage with the highest standards of stewardship by working to meet the needs of the Nation for wood, water, forage, wildlife, recreation, and other resources. Seek the best combination of land uses to achieve the greatest public benefit in the long-term. Actively manage the land and resources in an environmentally sound manner to achieve the intent of the Forest Service mission: sustainable production of forest products and appropriate human uses of the land and resources. Swiftly incorporate new information and technology into management actions (Forestwide Goals Forest Plan, p. 4-4).

Promote the economic stability of local communities (Forest Program Emphasis, Forest Plan p. 4-8)

Local communities will have a broadened economic base to support quality of life. New forest-based products will contribute to the economic base (Desired Condition of the Forest, Forest Plan p. 4-16)

27-3: The Forest shall work with local community leaders and individuals to provide opportunities for the development of natural resource-based enterprises. Within the scope of existing laws and direction, the Forest may contribute current technology, equipment, technical skills, work force, natural resources or financial resources to work with and support efforts of the local communities to maintain economic and social viability (Forestwide Standards and Guidelines, Forest Plan, p. 4-65).

4. OTHER ALTERNATIVES CONSIDERED

The following sections present the other alternatives considered in detail but not selected; the alternatives considered but eliminated from detailed study; and the environmentally preferred alternative.

4.1 Alternatives Considered in Detail but Not Selected

4.1.1 Alternative 1

Alternative 1, the alternative to take no action, was not selected because it failed to address the purpose and need of the Project, including fuel accumulation and safety hazards caused by the 2014 Westside fires. For this reason, in my opinion this option is unacceptable. See section 3.3 of this decision for a detailed discussion of the importance of meeting the Project's purpose and need. Also see section 3.2 of this decision for more considerations related to this alternative.

4.1.2 Alternative 2

Alternative 2 was the original proposed action, and treated the most acres of any of the action alternatives. Alternative 2 was not selected primarily because of the potential impacts on northern spotted owls and their habitat. Alternative 2 would have also required timber sale contracts and roadside hazard reduction actions that were less economically viable.

4.1.3 Alternative 3

Even though Alternative 3 was originally intended to protect wildlife habitat, in consultation with the U.S. Fish and Wildlife Service it became apparent that the alternative as proposed would have had unacceptable consequences on northern spotted owls and their habitat. Alternative 3 provided the basis for Alternative 3 Modified.

4.1.4 Alternative 4

Like Alternative 3, Alternative 4 was not selected because it would have had unacceptable impacts on northern spotted owls and their habitat. Alternative 4 also dropped several units from treatment that I considered as necessary to meet Project objectives. Several elements of Alternative 4 were incorporated in Alternative 3 Modified.

4.1.5 Alternative 5

Alternative 5 was not selected because of cumulative impacts on northern spotted owl habitat in the Beaver Fire area of adding salvage harvest on Forest lands to the salvage harvest on private lands. Alternative 5 also failed to address the fuel accumulation and safety risks that would be created by the large blocks of fire-killed trees that occur in LSRs.

4.1.6 Alternative 2 Modified

Alternative 2 Modified was not selected primarily because of adverse impacts on northern spotted owls and their habitat. Alternative 2 Modified would have also included salvage harvest units and roadside hazard reduction actions that may not have been economically viable.

4.2 Alternatives Considered through Tribal Consultation

As a result of government-to-government consultation between the Karuk Tribe and the Forest, the Karuk Tribe provided an additional alternative that is responsive to the Tribe's management vision of restoring fire to its rightful place on the landscape where it will serve to protect river communities and cultural resources. In response to recommendations in the Karuk Alternative, the Forest incorporated a number of treatments into the Happy Camp Complex Fire and Whites Fire areas in the Selected Alternative as displayed in the final EIS (p. 122, Table 2-46), reproduced here as Table 12. As shown in Table 12, there is considerable overlap between the Karuk Alternative and the Selected Alternative; all of the core actions except site preparation and planting are in both the Karuk Alternative and the Selected Alternative. As a result of tribal consultation, planting prescriptions were significantly modified to consider tribal concerns such as:

- Species mix
- Planting at lower densities (trees per acre)
- Varying planting density by slope position
- Favoring culturally important hardwoods during reforestation.

A central theme in the Karuk Alternative is wildland fire use and controlled burning within the Project area. The Forest Plan of the Klamath National Forest already allows for those actions and I agree, as noted elsewhere in this decision, that wildland fire use and reintroduction of controlled fire at the landscape scale are critical actions for the long-term health and fire resiliency of the Forest. Much of the area recommended for wildland fire use in the Karuk Alternative is severely burned and will not be ready to have fire reintroduced for 10-15 years. That timeframe is outside the temporal bounds of this decision so reintroduction of fire as proposed in the Karuk Alternative is not ripe for decision at this time. The fact that those actions are not included in this decision does not mean that they are not supported or that they would not be undertaken in the future. See pages 120-124 of the final EIS for a more detailed discussion. Table 11 provides a comparison of the Karuk Alternative to the Selected Alternative.

Table 11: Karuk Alternative Comparison to Selected Alternative

Happy Camp Complex Fire and Whites Fire Project Areas (acres of treatment)	Karuk Alternative	Selected Alternative	Acres of Karuk Alternative in the Selected Alternative	Percent of Karuk Actions in the Selected Alternative
Risk Reduction Salvage Harvest Units (gross)	3,410	6,890	2,310	68
Risk Reduction Salvage Proposed (net) 1/	2,930	5,750	1,995	68
Roadside Hazard Evaluated	11,680	12,130	8,759	75
Estimated Roadside Hazard Treatments 2/	781	974	539	69
Fuels				
Fuels Management Zone (Ridgetop Fuel Breaks)	5,165	3,300	3470	67
Roadside Fuels Treatments	5,509	4,010	3,986	72
Understory Prescribed Fire3/	29,221	10,730	10,738	37
WUI Fuel Reduction	1,768	2,010	1,682	95
Total Fuels Acres	**41,662**	**21,140**	**19,876**	**48**
Wildland Fire Use 4/	165,704	165,704	165,704	100
Site Preparation and Planting (Plantations and Natural Stands)	0	5,480	0	0

1/ Net acreage reduction is due to excluding riparian reserves and snag retention areas from the gross acreage.
2/ Estimated roadside hazard treatments include areas which burned at moderate and high severity where trees greater than ten inches in diameter occur, outside of salvage units.
3/ Some areas of the Karuk Alternative understory prescribed fire treatments not in Alternative 3 Modified include 398 acres already approved for implementation as part of the Thom-Seider project. Approximately 2,750 acres that will be evaluated in the Elk Creek project. Approximately 11,000 acres in the north Grider and Tanner Peak areas that, due to the high proportion of high severity burn area, will not "carry" fire for the next approximately ten years. These areas are not "ripe" for a NEPA decision at this time.
4/ The Klamath National Forest Land and Resource Management Plan already allows for wildland fire use as proposed in the Karuk Alternative on the entire Forest.

4.3 Alternatives Considered but Eliminated from Detailed Study

NEPA requires that federal agencies rigorously explore and objectively evaluate all reasonable alternatives and briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). In response to public comments during scoping, we developed and considered 10 alternatives that were eliminated from detailed

study. Public comments received in response to the proposed action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the need for the proposal, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered but eliminated from detailed consideration for reasons summarized in Chapter 2 of the final EIS (pp. 124-139).

4.4 Environmentally Preferable Alternative

The environmentally preferable alternative is often interpreted as the alternative that causes the least damage to the biological and physical environment or the alternative which best protects and preserves historic, cultural and natural resources. But other factors relevant to this determination are provided in Section 101 of NEPA (42 USC 4321) which states that it is the continuing responsibility of the Federal Government to:

- Fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations;
- Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradations, risk to health of safety, or other undesirable and unintended consequences;
- Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and,
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Based on my consideration of the factors listed above and the effects disclosed in the final EIS, I believe that the Selected Alternative is the Environmentally Preferred Alternative because it:

- Best provides for the long-term management of the project area in a manner consistent with the Forest Plan of the Klamath National Forest.
- Removes hazard trees to provide for public safety and Forest Service employee safety which includes firefighters accessing the area in possible future fires.
- Reduces the size and continuity of future fuels conditions, providing for more resilient forested conditions and reduced high-severity wildfire fire risk for the benefit of community protection and wildlife and watershed habitat.
- Improves the Forest transportation system through road maintenance and improvements. No new permanent roads will be built as part of this decision, but the existing road network will be repaired to keep the current level of public and administrative access.

- Includes salvage harvest treatments that complement proposed fuel reduction and strategic fuel management zones as part of a landscape scale strategy to reduce the size and severity of future fires. Creates large blocks where fuel loads have been reduced; in concert with ridgetop fuel breaks it provides control points for fire suppression and increases the likelihood that large fires could be contained along watershed boundaries. Reduces the size and severity of future fires, serves to reduce risk to wildlife habitat and improves the likelihood of firefighting success. Salvage harvest would also promote ecosystem sustainability by increasing the likelihood and speed by which burned forested areas are reforested by opening areas for safe planting.
- Provides an excellent means of capturing economic value through salvage logging in a cost-effective way while simultaneously providing for other important project objectives. The actions implemented by this decision will generate revenues through the sale of salvaged timber to offset the need for public expenditures through Congressional appropriation to create a safe environment for current and future public use.
- Includes additional protective measures beyond the minimum required by the Forest Plan and agency policy for the protection of watershed conditions and federally-listed species. This alternative is designed to strike a reasonable balance between minimizing short-term impacts on some species and long-term conservation of the same and other species, including the northern spotted owl and Coho salmon.

5. PUBLIC INVOLVEMENT

Public involvement has been key to helping craft this decision. More than 80 formal public engagement events (presentation meetings, open houses and field trips) have been held over the last approximately 18 months to share information on the 2014 Westside fires, potential post-fire recovery actions, and this project. This has been the most expansive public engagement effort ever undertaken on the Klamath National Forest. I am confident that everyone wishing to be heard during this process has had ample opportunity to share their views. Below is a summary of the public involvement over the course of the past 18 months.

5.1 Before scoping

The Forest Service conducted robust public engagement throughout the summer of 2014 while the fires were active and during suppression repair and burned area emergency response (BAER) activities. Prior to scoping the Project, the Forest Service conducted 34 public meetings, delivered 200 news releases to local and internet media, and regularly posted information to social media, reaching about 50,000 unique users at the height of activity. Following the fires, the Forest Service conducted eight BAER meetings in affected communities. In mid-November, the Forest Service conducted eight community-based after-action reviews to gather public feedback on the fire suppression efforts.

5.2 Scoping

The Project was first published to the Schedule of Proposed Actions (SOPA) and the Forest website on October 1, 2014. On October 8, 2014, scoping letters were sent to interested and affected parties including other public agencies, tribes, adjacent property owners, and interested groups and individuals. A Notice of Intent to prepare an EIS for the Westside Fire Recovery Project was published in the Federal Register on October 15, 2014. On October 14, 2014 a legal notice of scoping was published in the Siskiyou Daily News, beginning the formal scoping process that guided the development of the draft EIS. Comments received by November 14, 2014, were considered in identifying issues and project development. The Forest used news releases and social media to inform broader audiences. Field trips and public open house meetings were held in the local communities of Yreka, Fort Jones, Scott Bar, Sawyers Bar, Happy Camp, Klamath River, and Seiad Valley to inform and involve interested parties in an interactive, in-person manner.

5.3 Draft EIS Comment Period

On March 6, 2015, the draft EIS and supporting documents were posted to the project's webpage. Email notifications and letters of the draft EIS comment period were sent to interested and affected parties, including other public agencies, tribes, adjacent property owners, and interested groups and individuals. On March 6, 2015, the Council on Environmental Quality granted the Forest Service alternative arrangements, shortening the required comment period on the draft EIS by 15 days or from 45 to 30 days. On March 13, 2015, a Notice of Availability was published in the Federal Register and a legal notice was published in the Siskiyou Daily News, beginning the 30-day comment period. On April 3, 2015, a notice of extension of the draft EIS comment period was published in the Federal Register and the Siskiyou Daily News. The comment period was extended an additional 15 days in response to public requests for additional review and comment time. Comments received by April 27, 2015, were considered timely and addressed in response to comments. A summary of comments and responses can be found in Appendix A of this ROD.

Prior to the release of the draft EIS, the Forest Service offered six open houses in Yreka, Fort Jones, Klamath River, Happy Camp, Sawyers Bar, and Seiad Valley, California (final EIS Appendix B). The Forest Service also presented preliminary information to interested parties or local governmental entities prior to the release of the draft EIS, as requested. Meetings with local interest groups such as the Siskiyou County Fire Chiefs Association were scheduled at their request. The Forest Service hosted field trips open houses after the release of the draft EIS and prior to the release of the final EIS in Yreka, Fort Jones, Scott Bar, Happy Camp, Klamath River, Eureka, Seiad Valley, and Redding, California and Medford, Oregon. The Forest Service also presented preliminary information to interested parties, local governmental entities, and news media after the release of the draft EIS and prior to the release of the final EIS.

After the release of the draft EIS, the Forest also co-hosted a field trip with a representative of the Council on Environmental Quality to review the project in the field. The field review

was attended by representatives of local tribes, timber industry and environmental interest groups, local governments, congressional field offices and other state and federal agencies.

A total of 13,413 comment letters were received during the Westside Fire Recovery draft EIS comment period. The agency received 265 unique letters, 21 master form letters, and 263 form plus letters (with slight modifications of the master form letters; the remainder of the letters were form letters identical to one of the 21 master form letters). A large portion of these letters were hand-delivered to the Forest Service at the Medford, Oregon open house on April 21, 2015. Other form letters were emailed to the Forest Service and included a mixture of opposition and support for the Project. A large portion of the comments also expressed opinions or preferences for or against different alternatives. A summary of responses to the draft EIS can be found in Appendix A of this document. The full text of responses to individual comments appears in Appendix B of the final EIS.

5.4 Final EIS Review Period

A 30-day review period was provided on the final EIS commencing August 7, 2015 and ending on September 8, 2015. Notices of the review period were published in the Federal Register (Vol. 80, No. 152, Friday, August 7, 2015) and in the legal notices section of the Siskiyou Daily news. The final EIS was posted to the Forest website on that date and has remained available. During the review period, the Forest received six comment letters. After the review period, the Forest received 13 letters, including two unique letters. Comments received during the review period were considered in the preparation of this Record of Decision. A summary of comments and responses can be found in Appendix A of this ROD.

6. LEGAL AND REGULATORY REQUIREMENTS

My decision complies with the laws, policies and executive orders listed below and described in final EIS. The Westside Fire Recovery Project was prepared in accordance with the following laws and regulations.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) requires that all major federal actions significantly affecting the human environment be analyzed to determine the magnitude and intensity of those impacts and that the results be shared with the public and the public given opportunity to comment. The regulations implementing NEPA further require that, to the fullest extent possible, agencies shall prepare EISs concurrently with and integrated with environmental analyses and related surveys and studies required by the Endangered Species Act of 1973, the National Historic Preservation Act of 1966, and other environmental review laws and executive orders. Other laws and regulations that apply to this Project are described below.

National Forest Management Act

The National Forest Management Act (NFMA) of 1976 amends the Forest and Rangeland Renewable Resources Planning Act of 1974 and sets forth the requirements for Land and Resource Management Plans for the National Forest System.

The Forest Service completed the Klamath National Forest Land and Resource Management Plan (Forest Plan) in 1995. The "Forest Plan Direction" (USDA 2010a) presents the current Forest Plan management direction, based on the original Forest Plan, as amended. The Forest Plan identifies land allocations and management areas within the Project area including: MA 1- Research Natural Areas[23], MA 2- Wilderness[24], MA 3- Recommend and Designated Wild Rivers[25], MA12- Recommended and Designated Scenic Rivers, MA 13- Recommended and Designated Recreational Rivers, MA 5- Special Habitat, MA 7-Special Interest Areas, MA 10-Riparian Reserves, and MA 17- General Forest.

The Forest Plan Consistency Checklist document in the Project Record identifies the Forest Plan Standards and Guidelines applicable to this Project and provides related information about compliance with the Forest Plan.[26] Based on my review of that document and other information in the Project Record, I determined that the Selected Alternative is consistent with the Forest Plan and all other requirements of the National Forest Management Act.

The Forest Plan requires that projects meet, or not prevent attainment of, the objectives of the Aquatic Conservation Strategy (Forest Plan pp. 4-6, 4-106). To address this requirement in the Westside Fire Recovery Project, an Aquatic Conservation Strategy Report (see Project Record) was prepared (final EIS pp. 601-622). Based on this review, I find that the Westside Fire Recovery Project would not retard or prevent attainment of Aquatic Conservation Strategy Objectives found in the Forest Plan of the Klamath National Forest.

Endangered Species Act

Section 7 of the Endangered Species Act (ESA) [16 U.S.C. 1531 et seq.] outlines the procedures for Federal interagency cooperation to conserve federally listed species and designated critical habitats. Consistent with the requirements of the Act, and it's enabling regulations (50 CFR 402), the Forest Service has been actively engaged with the appropriate federal regulatory agencies responsible for implementation of the Act throughout development of the Westside Fire Recovery Project. The Project is compliant with Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 et. Seq. 50 CFR 402).

[23] Not applicable; no activities are planned for this management area.
[24] Not applicable; no activities are planned for this management area.
[25] Not applicable; no activities are planned for this management area.
[26] See the Forest Plan consistency checklist in the project record for detailed information about project consistency by applicable standard and guideline.

Wildlife

Northern Spotted Owl

In November 2014, the Forest began streamlined, formal consultation with the US Fish and Wildlife Service (FWS) anticipating a "Likely to Adversely Affect" determination for Project impacts on northern spotted owls. On April 22, 2015, the FWS adopted traditional consultation timelines. Concerns of regarding project impacts from the FWS led to substantial reductions of salvage harvest and the development of the Selected Alternative. On July 27, 2015, the Forest submitted a biological assessment (BA) to the FWS which was acknowledged as complete by the FWS on August 7, 2015. An administrative draft biological opinion (BO) for the Westside Fire Recovery Project was received on January 22, 2016. After consideration of Forest Service comments on the draft BO, the FWS signed a final BO on February 19, 2016. The BO concluded that the Westside Fire Recovery Project was Likely to Adversely Affect northern spotted owls or their habitat, but was not likely to jeopardize the continued existence of the species or adversely modify designated critical habitat. See Appendix C in this document for Terms and Conditions of the Biological Opinion.

Terms and Conditions #4 and # 5 on page 141 of the BO for northern spotted owls require approximately 190 acres of additional snag retention in proposed salvage units, reducing the net salvage in the Selected Alternative by about three percent to an estimated 5,570 acres. Terms and Conditions also required limitations on removal of hazard trees and understory vegetation in fuel management zones in functional Nesting, Roosting and Foraging (NRF) habitat, required surveys in certain core areas, required activity center searches in certain core areas and required ongoing monitoring, post-fire surveys and regular reporting of findings to the FWS. See also Appendix C of this document for the full text of Terms and Conditions from the Biological Opinion.

Pacific Fisher

Pacific fisher is a candidate species for listing as "threatened" under the Endangered Species Act. The Forest Service would conference with the FWS if it is determined that the Westside Fire Recovery project would threaten the continued existence of Pacific fisher. If Pacific fisher is listed under the Endangered Species Act, the Forest Service would initiate formal consultation under Section 7 of the Endangered Species Act. The final EIS (Chapter 3 p. 158; Wildlife, multiple citations) provides abundant evidence that the Project would not jeopardize the Pacific fisher. At this time, the Forest Service is not conferencing with the FWS on Pacific fisher.

Fish

Coho Salmon

In September 2014 the Forest began streamlined informal consultation with NMFS on a "May Affect Not Likely to Adversely Affect" determination, submitting a Biological Assessment (BA) on April 13, 2015. On June 22, 2015, the Forest submitted a revised BA,

analyzing the new preferred alternative. On July 17, 2015, NMFS informed the Forest that the Project may have a "Likely to Adversely Affect" determination based on possible Project-induced landslides. Formal consultation processes were initiated at that time. A biological opinion for the Westside Fire Recovery Project was received from the National Marine Fisheries Service on January 15, 2016, with a determination that the Westside Fire Recovery Project was "Likely to Adversely Affect" coho salmon or their habitat

A primary concern for Project-related impacts to coho habitat is fine sediment. After NFMS reached their determination, I compared the findings of the final EIS with respect to sediment with those described in the BO. NMFS described the proposed action as occurring in a setting where fish habitat has already experienced significant changes from the 2014 Westside fires, and these fires will continue to affect fish habitat for years to come due to the large areas of damaged soil and vegetation leading to high erosion potential and increased water yield (BO p. 74). The Forest Service reached similar conclusions in our evaluation (final EIS Chapter 3 Hydrology, Aquatics ACS assessment, multiple citations).

The Forest Service did not attempt to quantify the absolute amounts of Project-related sediments in a post-fire environment because the large amounts of fire-related sediment made any measure of Project-related sediment imprecise at best. NMFS also noted this difficulty, stating that "*Estimating the quantities of fine sediment increases is difficult given the large range of variability in the ERA to streambed fine sediment levels relationship (BO Figure 6) and the lack of further analysis"* (BO p. 52). The Forest Service, in our analysis, relied on relative differences between alternatives measured against the post-fire landscape using standard models (final EIS Chapter 3 Hydrology). The Forest Service analysis of potential sediment impacts from Project implementation qualitatively predicted that site-scale sediment effects were likely but that those would be undetectable to minor at larger watershed scales (final EIS p. 392). NMFS, in their independent analysis in the Coho salmon BO extrapolated fine sediment amounts using Equivalent Roaded Acre (ERA)-based sediment yield models (BO p. 49) and reached a similar conclusion finding that "*Because of the small increase in fine sediment projected (max of 3.8% in one watershed with the remaining increases lower), and the likely overestimations of the ERA analysis, NMFS believes that the magnitude of increased sediment delivery will have a negligible effect on key elements of juvenile coho salmon rearing habitat, including volume of pools, habitat complexity and abundance of prey resources"* (BO p. 57). However, NMFS concluded that fine sediments may affect interstitial spaces in gravels and thus affect egg-fry survival by a small amount (BO p. 57). NMFS also concluded that several streams have an estimated decrease in fine sediment delivery as a result of legacy site treatments (Cougar Creek – Elk Creek, Lower East Fork Elk Creek, and Upper East Fork Elk Creek). The average change in sediment delivery as a result of the Proposed Action (Alternative 3 Modified on which consultation is based) is about 0.5%, indicating that the magnitude of the adverse effects to critical habitat is small (BO p. 75). Based on this review, I find that the final EIS description of site-scale sediment effects that are undetectable to minor at larger watershed scales (final

EIS p. 392) was consistent with the findings of the NMFS findings related to fine sediments in their BO.

I also note that in their final BO, NMFS concluded that "*soil disturbance from the two years of Project salvage harvest, will be managed to minimize the risk of slope failures that are larger or more numerous than would occur naturally*" (BO p. 75). In other words, the landslide risk noted in the letter of NMFS letter of July 17, 2015, was no longer considered by NMFS to increase as a result of Project implementation. Because Project activities such as tree planting (beginning in 2016) and treatment of legacy sediment sites (beginning in 2019) are proposed, NMFS expects that the baseline conditions will improve in the long term. Specifically, the long-term risk of landsliding from wildfires and other means of sediment delivery will be reduced as a result of the proposed Project (BO p. 74). This is also consistent with the findings of the final EIS (Chapter 3 Hydrology, Geology).

Based on the best available scientific and commercial information, NMFS concluded that the action, as proposed, is not likely to jeopardize the continued existence of the Southern Oregon Northern California Coast (SONCC) coho salmon Evolutionarily Significant Unit (ESU), and is not likely to result in the destruction or adverse modification of critical habitat for the SONCC coho salmon ESU. However, NMFS expects incidental take of SONCC coho salmon, as well as adverse effects to designated critical habitat for SONCC coho salmon, as a result of implementation of the proposed action. An incidental take statement with non-discretionary terms and conditions was provided with the biological opinion. These terms and conditions focus on monitoring and reporting potential Project impacts and possible additional mitigation measures if necessary. See Appendix C in this document for Terms and Conditions of the Biological Opinion.

Plants

The Project complies with the Endangered Species Act of 1973, as amended, in the preparation of a Biological Assessment; Forest Service Policy (FSM 2670), and Forest Plan Standards and Guidelines for Sensitive plant species have been met by managing populations for continued viability (final EIS p. 367). Effects to botanical Threatened, Endangered, Proposed, or Candidate species were disclosed in the final EIS (final EIS pp. 338-367). There are no known populations of any Threatened, Endangered, Proposed, or Candidate species present in the Project area. Any populations of Threatened, Endangered, and Proposed or Candidate species that are located will be protected through the implementation of project design features (final EIS p. 101).

Clean Air Act

The Clean Air Act of 1970 provides for the protection and enhancement of the nation's air resources. No exceeding of the federal and state ambient air quality standards is expected to result from any of the alternatives. The Clean Air Act makes it the primary responsibility of States and local governments to prevent air pollution and control air pollution at its source.

The Selected Alternative is compliant with the Clean Air Act and the Conformity Rule (final EIS pp. 497-509).

Clean Water Act

The Clean Water Act of 1948 (as amended in 1972 and 1987) establishes federal policy for the control of point and non-point pollution, and assigns the states the primary responsibility for control of water pollution. The Clean Water Act regulates the dredging and filling of freshwater and coastal wetlands. Section 404 (33 USC 1344) prohibits the discharge of dredged or fill material into waters (including wetlands) of the United States without first obtaining a permit from the U.S. Army Corps of Engineers. Wetlands are regulated in accordance with federal Non-Tidal Wetlands Regulations (Sections 401 and 404). No dredging or filling is part of this Project and no permits are required.

Hydrology effects are disclosed in the final EIS (pp. 379-401). The Selected Alternative complies with the Clean Water Act through use of BMPs, which were designed to minimize or prevent the discharge of both point and non-point source pollutants from Forest roads, developments, and activities. The Project is also consistent with the California Porter Cologne Water Quality Act, the North Coast Regional Water Quality Control Board Basin Plan and the mid-Klamath total maximum daily load (TMDL). Following this decision, the Water Board to secure the appropriate regulatory approval for this Project prior to implementation. See also Section 2.2.1 – Requirements of the North Coast Regional Water Quality Control Board in this document.

Magnuson-Stevens Fishery Conservation Management Act

This Project complies with the Magnuson-Stevens Fishery Conservation Management Act (MSA). Section 305(b) of the MSA directs Federal agencies to consult with National Marine Fisheries Service on all actions or proposed actions that may adversely affect essential fish habitat (EFH). The MSA (section 3) defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. The final EIS discloses the effects on essential fish habitat for the SONCC Coho Salmon and the Upper Klamath-Trinity River Chinook Salmon as required by the Magnuson-Stevens Fishery Conservation and Management Act (final EIS pp. 401-446). The January 15, 2016, Biological Opinion from National Marine Fisheries reviewed compliance with this act and concluded the proposed Project would adversely affect Essential Fish Habitat (EFH) for Pacific Coast salmon. However, the proposed Project contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH. Therefore, NMFS did not recommend additional conservation measures. See Section 2.2.3 (Biological Opinion for the Coho Salmon).

Floodplain Management

Executive Order 11988 requires Agencies to evaluate any activities that may occur in floodplain and to avoid adverse impacts. Activities that could directly influence floodplain inundation are dam installation and removal, large water diversions, and modification of streams channels and floodplains by dredging, infilling, and channel relocation. None of these activities are being proposed in this Project; the Westside Fire Recovery Project, therefore, has no influence on floodplain inundation. To the degree disturbance of upland soils and vegetation such that rainfall-runoff relationships are altered and peak flows are increased could potentially influence floodplains. Assessment of Project effects to peak flow is discussed in detail in the Aquatic Conservation Strategy Assessment (final EIS p. 618) is anticipated to be indistinguishable from increases due to the 2014 wildfires. Landslides and debris flows may also affect floodplains although these events are a natural part of floodplain processes. The conditions created by the 2014 Westside Fires are likely to increase landslides and debris flows for several decades (EIS p. 615). There is no evidence, however, that the Selected Alternative would increase the risk or rate of landslides or debris flows (final EIS p. 616). No adverse effects to floodplains are anticipated as a result of the Westside Fire Recovery Project.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment. In addition, Federal agencies are required to consult on the effects of their undertakings on historic properties with State Historic Preservation Officers (SHPOs), Tribal Historic Preservation Officers (THPOs), and Indian tribes.

In parallel with the extraordinary measures to ensure robust public engagement, the Forest also took unprecedented actions to provide meaningful consultation opportunities to local Indian tribes. Since late 2014, my staff and I have met 18 times and four field trips with local tribes regarding the Westside Fire Recovery Project. At the request of the Karuk tribe, I also instituted and participated in weekly conference calls with their representatives to exchange information and work to resolve concerns from the Westside Project. There have been 47 conference calls to date.

Due to the anticipated unusually rapid timeline for completing the Westside Fire Recovery Project, the Forest developed a project-specific Programmatic Agreement to address requirements of the National Historic Preservation Act. This Programmatic Agreement was developed concurrently with local tribes, the California State Office of Historic Preservation and the federal Advisory Council on Historic Preservation (ACHP) (final EIS pp. 26, 510). This Programmatic Agreement was executed on October 5, 2015.

Environmental Justice

Executive Order 12898 relating to Environmental Justice requires an assessment of whether implementation of this decision would disproportionately affect minority or low income populations. The socio-economic analysis evaluated economic impacts on local communities (final EIS pp. 531, 535-537; see also Forest Plan compliance checklist in the Project Record). There is no reason to suspect that any impacts would have disproportionately high adverse effects on minority or low-income populations.

Prime Farmland, Rangeland and Forest Land

The Selected Alternative is in accordance with the Secretary of Agriculture Memorandum 1827 for prime farmland, rangeland, and forest land. The Project area does not contain any prime farmland or rangeland. Prime forest land is a term used only for non-Federal land which will not be affected by proposed activities under any alternative.

Migratory Bird Treaty Act

The Selected Alternative will not adversely impact migratory species or their associated habitats. The habitat affected by the Project will still provide habitat for many migratory bird species. Potential impacts to migratory species will be minimized through the adherence to Forest Plan standards and guidelines for snags and downed woody debris, riparian reserve buffers, limited ground disturbance, and maintenance of canopy closure. Specific project design features will be used to minimize negative impacts include retaining snags within treatment units which include riparian reserves, and retaining legacy components and snags mixed in with green trees. Any soft (snags existing prior to the fires) snags greater than14 inches in diameter that are felled for safety reasons will be left on site as downed woody debris. Additional cull logs will be left on site from the operation as well. The Project complies with the Migratory Bird Treaty Act Memorandum of Understanding (final EIS p. 273).

Invasive Species

The Selected Alternative complies with Executive Order 13112, which directs federal agencies to prevent the introduction of invasive species; detect and respond rapidly to and control such species; not authorize, fund, or carry out actions that the agency believes are likely to cause or promote the introduction or spread of invasive species unless the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and take all feasible and prudent measures to minimize the risk of harm in conjunction with the actions. The requirements of this executive order are met through project design features that minimize or eliminate negative environmental effects as disclosed in the Non-native Invasive Species section of the final EIS.

Findings Related to Special Areas

Inventoried Roadless Areas

Analysis of the Project's effects on Inventoried Roadless Areas is found in the final EIS (pp. 585-589). There are four IRAs totally or partially within the Happy Camp Complex Fire area: Grider; Johnson; Kelsey; and Tom Martin. Two IRAs are partially within the Whites Fire area: Russian; and Snoozer. Activities or treatments that may potentially affect roadless character include site preparation and planting, fuels treatments and roadside hazard treatments. Since no roads will be built in IRAs and no salvage harvest units are within IRAs, there will not be substantial effects. The Selected Alternative will comply with the Roadless Area Conservation Rule and applicable Forest Plan standards.

Special Interest Areas

Lake Mountain Special Interest Area within the Project area is composed of 100 acres and is the northern most known location of Foxtail pine. Project design feature (Botany-6) has been incorporated to maintain foxtail pine snags within this Special Interest Area (final EIS pp. 101, 344). There are no treatments proposed within the boundary of the Marble Caves Research Natural Area. There is roadside treatment and underburning within the North Russian Landslide Dam Special Interest Area but no treatments on the landslide for which the special interest area was designated. There will be no effect to the character of the Geologic Research Natural Areas or the Geologic Special Interest Areas (final EIS p. 481).

Wild, Scenic, and Recreation Rivers

The Selected Alternative complies with the Wild and Scenic Rivers Act as disclosed in the final EIS. The final EIS disclosed effects to areas designated or recommended as wild, scenic, or recreational rivers (final EIS pp. 571-585). There are six designated or recommended Wild and Scenic Rivers within the project area. The Klamath, Scott, and North Fork Salmon Rivers, which were designated by the Secretary of Interior in 1981 for their outstandingly remarkable anadromous fisheries values, are components of the National Wild and Scenic River System. Elk, Grider, and South Russian Creeks are recommended for inclusion in the National Wild and Scenic Rivers system in the 1995 Forest Plan. Free flowing conditions, water quality, and identified outstandingly remarkable value(s) will be protected (final EIS p. 584). River classifications will be maintained. The desired future conditions for both scenic and recreational rivers will be met; scenic river areas and shorelines will remain largely primitive and undeveloped, and recreational river waterways will remain generally natural and riverine in appearance (final EIS p. 586).

6.2 Implementation Date

Implementation of this decision may begin immediately after publication of a legal notice in the newspaper of record for the Klamath National Forest.

6.3 Emergency Situation Determination

In order to facilitate implementation of this Project, the Forest Service Chief granted an Emergency Situation Determination (ESD) pursuant to 36 CFR 218.21 (78 Federal Register 59, March 27, 2013; pp. 18481-18504) on May 13, 2015. An emergency situation is a situation on NFS lands for which immediate implementation of a decision is necessary to achieve one or more of the following: relief from hazards threatening human health and safety; mitigation of threats to natural resources on NFS or adjacent lands; avoiding a loss of commodity value sufficient to jeopardize the agency's ability to accomplish Project objectives directly related to resource protection or restoration (36 CFR 218.21(b)). The determination that an emergency situation exists is not subject to administrative review (36 CFR 218.21(c)). With an ESD granted, the Project is not subject to the pre-decisional objection process (36 CFR 218.21(d)).

7. CONTACT INFORMATION

For additional information, please contact: Wendy Coats, Environmental Coordinator, 1711 South Main Street, Yreka, California 96097; phone: 530-841-4470; email: wcoats@fs.fed.us.

Patricia A. Grantham

2.29.2016

Date

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Forest Supervisor,
Klamath National Forest

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APPENDIX A: SUMMARY OF PUBLIC COMMENTS AND AGENCY RESPONSES ON THE DRAFT AND FINAL EIS

Draft EIS Comment/Response Summary

Below is a summary of responses to the Draft EIS that addresses some of the major concerns raised by the public and provides brief responses to each with citations to the final EIS. Where appropriate, information from Section 7 consultation with the National Marine Fisheries Service and U.S. Fish and Wildlife Service has been included. The full text of responses to individual comments appears in Appendix B of the final EIS.

Concern: Whether proposed salvage logging would have an adverse impact on wildlife habitat (e.g. northern spotted owl, Pacific fisher, and snag-associated species) and general wildlife habitat fragmentation and connectivity.

Response: By far the greatest impacts on wildlife habitat, including habitat of northern spotted owls, within the fire perimeters are from the fires themselves. Over 7,000 acres of northern spotted owl nesting and roosting habitat burned with moderate or high severity (final EIS Appendix G Table G-7, p. G 70) and are now post-fire early seral plant communities with different plant associations, hiding cover, microclimates etc. from those that were in the Project area before the fires. These acres no longer provide nesting or roosting habitat for northern spotted owls. Proposed salvage harvest units remove no functioning nesting or roosting habitat (final EIS Appendix G Table G-16, p. G-93). Proposed salvage harvest affects about 5,570 acres or about four percent of the fire area (final EIS p. 67) and about 11 percent of the estimated 50,000 acres that burned with moderate or high severity. Within the Late Successional Reserves, over 90 percent of the stands with a quadratic mean diameter[27] (QMD) greater than 24 inches (all burn severities) would be retained (final EIS p. 150).

Standards and guidelines in the Forest Plan of the Klamath National Forest are designed to provide essential protections for wildlife habitat. The Project as designed is consistent with standards and guidelines in the Forest Plan (final EIS Chapter 3 by resource; Forest Plan consistency checklist; see Project Record). Where salvage is proposed, additional snag retention areas within units have been designated to ensure that the Project meets or exceeds the snag requirements of the Forest Plan (final EIS Appendix E, pp. 240, 324, 330, 334, 337; final EIS Appendix B, pp. B-75, B-76, Comment 5873-72). Designated snag retention areas are intended to complement the connectivity provided by riparian reserves which are not included in harvest plans in any alternatives. Numerous other project design features have been incorporated to provide protections for wildlife and wildlife habitat (final EIS p. 116). We believe the Project design, compliance with standards and guidelines in the Forest Plan

[27] Quadratic Mean Diameter or QMD is the diameter of a tree of average basal area. QMD is generally considered to be a more descriptive measure of stand diameter than a simple arithmetic average.

and limited scope of operations relative to the fire impacts have provided for wildlife habitat needs and ensure that sufficient connectivity has been maintained.

Protection of northern spotted owls and their habitat is a requirement of the federal Endangered Species Act. This is accomplished through formal and informal consultation with the U. S. Fish and Wildlife Service under Section 7 of the Endangered Species Act. In consultation with the U. S. Fish and Wildlife Service, several thousand acres of Project modifications have been made to protect habitat of northern spotted owls and individuals of the species. Salvage operations have been dropped in any activity center that had a moderate to high probability of nesting success. Roadside hazard tree removal has also been dropped on several ML-1 roads that are not open to the public, do not access a harvest unit, and do not provide important access for future fire suppression.[28] Several hundred acres of standing snags that would otherwise be salvaged have been deleted from units, particularly on lower slopes to provide post-fire foraging habitat. Units have also been deleted from harvest where they provided strategic habitat connectivity between the fire areas and other potential spotted owl habitats. Where active nests or activity centers are known to exist, limited operating periods have been established to minimize disturbance. Protocol surveys have been on-going and will be performed again each spring prior to the beginning of operations to ensure that active sites are protected. The draft Biological Opinion from the U. S. Fish and Wildlife Service concluded the Project was likely to adversely affect northern spotted owls and their designated critical habitat but is not likely to result in adverse modification of critical habitat or jeopardize the continued existence of the species. Table G-16 of the Biological Assessment shows how Project actions affect NSO habitat. As noted previously, no functioning nesting / roosting / foraging habitat is removed by the proposed salvage operations.

Concern: Whether salvage logging and hazard tree removal would have an adverse effect on watershed condition, Riparian Reserves, and aquatic habitat.

Response: As with terrestrial wildlife habitat, by far the greatest impacts on watershed condition and aquatic habitat have been from the fires themselves rather than from potential Project activities. High sediment yields from surface runoff, and increased debris flows and landslides, are common in these circumstances (final EIS p. 384). Salvage harvest and associated hazard tree removal on roads may have limited site-scale effects but are not expected to adversely impact watershed condition or beneficial uses because Project impacts are very small and localized when compared to the extent and severity of the 2014 Westside fires (final EIS pp. 399-400; see also ACS evaluation, final EIS pp. 614-616). Application of Best Management Practices (final EIS Appendix D) and watershed Project Design Features (final EIS p. 108) are intended to ensure that beneficial uses are protected.

[28] Public safety is not an issue on ML-1 roads because they are blocked to public access.

Hydrologic Riparian Reserves are left unharvested in any proposed salvage unit even if all the trees were killed by the fires, so it is unlikely that the Selected Alternative would adversely affect hydrologic Riparian Reserves. Any impacts to hydrologic Riparian Reserves are expected to be limited to minor amounts of sediment at the site scale, and to be well within the range of natural variation and completely masked by the fire effects at larger watershed scales (final EIS pp. 399-400; see also ACS evaluation, final EIS pp. 614-616). Project design features for watersheds (final EIS pp. 107-115) would contribute to minimizing watershed impacts of the Selected Alternative. The Westside Fire Recovery Project is consistent with all Forest Plan requirements for protection of Riparian Reserves, including the requirements of the Aquatic Conservation Strategy. The National Marine Fisheries Service concluded that with the application of riparian buffers, soil cover protection, and revegetation activities, the proposed action may accelerate watershed recovery, or at least not cause significant delays in recovery of processes that affect streams (NMFS Biological Opinion p. 61)

Potential impacts of the Selected Alternative on Coho Salmon were evaluated in a Biological Assessment by the Forest Service (final EIS Appendix H). A Biological Opinion provided by the National Marine Fisheries Service provided monitoring requirements to evaluate changes in Coho salmon habitat conditions. The National Marine Fisheries Service concluded that although the Project was Likely to Adversely Affect coho salmon or their habitat in the short term from minor amounts of fine sediment deposition, the Project in the long run would reduce sediment delivery from wildfire effects (BO p. 57). NMFS expects that the baseline conditions will improve in the long term. Specifically, the long-term risk of landsliding from wildfires and other means of sediment delivery will be reduced as a result of the proposed Project (BO p. 74). This is also consistent with the findings of the final EIS (Chapter 3 Hydrology, Geology).

Concern: Whether landslide risk would be increased by the Selected Alternative.

Response: The draft and final EIS noted an increased likelihood of debris flows and landslides because of conditions created by the 2014 Westside Fires, particularly in the steep granitic soils of Walker Creek and Grider Creek (final EIS pp. 383, 386-388). Salvaging dead trees is not expected to result in an increase in landslide activity because this action does not hasten root decay or otherwise affect landslide processes (final EIS p. 496, pp. 485-488; NMFS Biological Opinion p. 60: see also Geology Report and Amendment in the Project Record). Loss of surface vegetation, increased water repellency on burned soils (hydrophobicity), and loss of root strength as roots of dead trees begin to decompose are conditions created by the fires that would increase the probability of debris flows and landslides (final EIS pp. 363, 393, 481). The best mitigation for wildfire effects to landslide processes on this scale is reforestation (final EIS p. 481). Reforestation actually reduces the probability of landslides and debris flows over time by reestablishing root strength provided by trees (EIS pp. 481, 616; NFMS Biological Opinion p. 59). The National Marine Fisheries

Service, in their Biological Opinion (pp. 58-61) for coho salmon, concluded that temporary road use and construction and certain landings may cause a minor increase in landslide risk if coupled with major precipitation events. In the case of a large precipitation event, Project activities would likely only contribute a minor amount to the overall landslide risk and not rise to the level of adverse effects to SONCC coho salmon or their critical habitat. NMFS expects that the baseline conditions will improve in the long term. Specifically, the long-term risk of landsliding from wildfires and other means of sediment delivery will be reduced as a result of the proposed Project (BO p. 74). This is also consistent with the findings of the final EIS (Chapter 3 Hydrology, Geology).

Concern: Whether salvage logging and site preparation would have an adverse impact on Late Successional Reserves.

Response: About 81,200 acres or 50 percent of the 162,580 acres of National Forest lands burned in the Beaver, Happy Camp Complex, and Whites Fire perimeters are within Late Successional Reserves. The largest patches of continuous high severity fire occurred in the Seiad LSR where there are several continuous areas where most of the trees were killed by the fire that exceed 1,000 acres. About 28,700 acres (35 percent) of the Seiad and Eddy Gulch LSRs burned with moderate to high severity where most of the trees were killed (final EIS p.150).

Of the 28,700 acres of LSR that burned at moderate to high intensity (all diameter classes, more than 50 percent of the trees killed) about 3,900 acres (or less than 15 percent) is proposed for salvage in LSRs (final EIS Appendix E, p. 150, Figure 10). An additional 800 acres of concentrated roadside hazard removal or about three percent of moderate or severely burned areas within the LSR is proposed (final EIS Appendix E, Table 3). Dead or fire-damaged trees that meet definitions for imminent morality would be harvested on about 4,700 acres (3,900 acres of salvage plus 800 acres of roadside hazard) or about 17 percent of moderate or severely burned areas in the LSR between salvage harvests and concentrated roadside hazard removal. That means more than 80 percent of the stands with moderate or severe fire damage are retained. Concentrated roadside hazard and salvage harvest combined (4,700 acres) would harvest dead trees on about six percent of the 81,200 acres of LSR in all burn severities affected by the Westside Fires (final EIS p. 150).

Comments also state that removal of large trees should be limited. When the Eddy Gulch and Seiad LSRs are stratified by stand size using the California Wildlife Habitat Relationship data, there are 29,600 acres of stands with a quadratic mean diameter (QMD) greater than 24 inches in all burn severities in the Eddy Gulch and Seiad LSRs (final EIS Appendix E). Of the stands where the QMD is greater than 24 inches that are in moderate to high severity burn patches, an estimated 77 percent would be retained. Overall, in all burn severities, over 90 percent of the stands with a QMD greater than 24 inches in the Seiad and Eddy Gulch LSRs would be retained (final EIS p. 150). From this information, I conclude that harvest of large trees in these LSRs would be limited.

Management direction for LSRs requires that the projects protect and enhance late successional forest ecosystems (Forest plan 4-83). The Westside Fire Recovery Project protects late-successional forest ecosystems by reducing the risk of future high severity stand replacement fire that would delay the development of late-successional stand conditions and threaten remaining late successional forest habitat within the general areas of the fire (final EIS pp. 168, 196-204, 212-213; Appendix E). The Project enhances late-successional forest ecosystems by accelerating the development of late-successional stand conditions through fuels reduction and replanting coniferous forests (final EIS pp. 142-152). The Selected Alternative was reviewed by the Regional Ecosystem Office[29] and found consistent with guidelines for LSR management in the Forest Plan of the Klamath National Forest and the recommendations for LSR management found in the Forestwide LSR Assessment (see Project Record).

Concern: Whether or not the proposed action sufficiently reduces fuels adjacent to private timber lands in the Beaver Fire area.

Response: The Selected Alternative adds fuel breaks and underburning along property boundaries adjacent to private lands.

Concern: Whether the salvage harvest within LSRs proposed in the Westside Fire Recovery Project, is allowed by the Northwest Forest Plan (NWFP) and the Forest Ecosystem Management Assessment (FEMAT) Report.

Response: The National Forest Management Act requires that projects or activities be consistent with the management direction contained in forest plan for the national forest where the project or activity occurs. Management direction in the NWFP has been incorporated into the Forest Plan of the Klamath National Forest. It is the Forest Plan of the Klamath National Forest that provides management direction for the Westside Recovery Project, not the FEMAT report or the Northwest Forest Plan. The Forest Plan of the Klamath National Forest clearly anticipated that risk reduction salvage may be necessary and provided project guidelines for both risk reduction in LSRs (Forest Plan 4-86; MA5-27 to 29) and for salvage (Forest Plan 4-87, MA 30-1 to MA 30-11) to ensure that the objectives of the Forest Plan were achieved. The Forest Plan of the Klamath National Forest also required completion of LSR Assessments to guide LSR management. The Forest-wide LSR Assessment, which covered the LSRs in the Westside Project area, included the guidelines for salvage found in the Forest Plan of the Klamath National Forest (final EIS p. 149). The Selected Alternative is consistent with the management direction in the Forest Plan of the Klamath National Forest.

The Regional Ecosystem Office, a coordinating body established under the auspices of the Northwest Forest Plan reviewed the Westside Fire Recovery Project and found that it

[29] The Regional Ecosystem Office (REO) is a coordinating body established by the Northwest Forest Plan. Part of their duties include review of salvage proposals for consistency with Forest Plans. The REO is not a decision-making entity.

conformed to the requirements of the Forest Plan of the Klamath National Forest and the recommendations of the Forest-wide LSR Assessment (Project Record).

Concern: Whether an adequate number of snags will be retained.

Response: Forest Plan standards and guidelines for snag retention require that within any 100-acre area, an appropriate number of snags (typically 200-500 snags) be retained (Forest Plan, Table 4-4, pp. 4-30). An assessment of snags retained showed that the Selected Alternative meets the Forest Plan requirements for snag retention (final EIS pp. 146-147, 238-241; final EIS Appendix E; final EIS Appendix B, pp. B-75 – B-76, Comment 5873-72). After publication of the final EIS, I elected to retain additional snags in excess of those required in the Forest Plan to maintain habitat continuity and connectedness, particularly on upper slopes. As a practical matter, there are over 50,000 acres of moderate- to high-severity burn within the Project area where more than one half of the trees have been killed. In addition to the snags that will be retained within treatment units, the Project leaves 80 percent of the moderate- and high-severity burn areas, where a large pulse of snags has been created, untreated. I do not believe that there will be any shortage of snags.

Concern: Whether the bald eagle nest in Caroline Creek will be protected.

Response: The Bald and Golden Eagle Protection Act requires that all bald eagles be protected. The Forest Plan incorporated the recommendations of the Bald Eagle Protection Act and the recommendations of the FWS (Forest Plan 4-90). The Westside Fire Recovery Project is consistent with those guidelines (final EIS p. 338). The project design has been reviewed by the U. S. Fish and Wildlife Service who determined that there is no need to consider incidental take under the provisions of the Bald and Golden Eagle Protection Act. In other words, the Caroline Creek eagle nest and birds are adequately protected (see Project Record).

Concern: Whether reestablishment of plantations will prevent the Forest Service from reintroducing low and moderate intensity controlled burns.

Response: The Forest Plan of the Klamath National Forest specifically provides for the use of controlled fire to reduce fuel loads and reestablish the historic high frequency, low to moderate fire severity regime of the Klamath Province. Where controlled burns are part of this proposal, there is no intent to exclude reforested areas or existing plantations from controlled low and moderate intensity fire. For example, the large control burn areas proposed as part of the Whites Fire area projects include several plantations. The best thing we could do to ensure the future survival of plantations is to expose them to low and moderate intensity fire so that surface fuel continuity is reduced under favorable fuel moisture conditions. Anyplace where trees will be planted in the Westside Fire Recovery Project area will have site preparation completed to reduce fuels prior to planting. In the Westside Fire Recovery Project, we propose to treat the activity fuels (slash) from salvage logging, and plant at lower densities and variable spacing to create stands with discontinuous

fuel that would be resilient to fire and could tolerate low to moderate severity fires typical of the Klamath Province (final EIS pp. 152, 167)

Concern: Whether the debris flows that occurred in July 2015 after publication of the draft EIS but before publication of the final EIS constituted changed conditions that would require preparation of a supplemental draft EIS and recirculation of the final EIS.

Response: The draft EIS predicted that landslides and debris flows were likely to occur as a result of conditions created by the 2014 Westside Fires and that they would transport sediment, boulders and coarse woody debris to stream channels (draft EIS Table 2-34 pp. 71, 202, 237). The event that occurred was the event predicted by the draft EIS. As a result, this is not "new information" or "changed conditions." The debris flows were acknowledged and considered in the final EIS (pp. 8, 384). There is no need to recirculate either the draft or the final for events occurring as predicted.

Substantially elevated sediment delivery to streams from surface erosion and debris flows caused by loss of soil cover from the 2014 Westside Fires has been occurring, and is expected to occur for several years whether the Westside Fire Recovery Project is implemented or not (final EIS pp. 379-388). As roots of fire-killed trees decay, landslide risk will also begin to increase and will remain elevated for several decades. None of the action alternatives increase the risk of landslides; planting trees actually reduces that risk over time because planting creates tree root mass more quickly than leaving areas to regenerate naturally (final EIS p. 481). The EIS addresses potential sediment increases from Project implementation in each of the three fire areas. While there are variations within each watershed, as a general condition, sediment delivery to streams from the fire effects far outweighs the effects of Project implementation in any of the fire areas. There are potential sediment impacts at the site scale in any of the fire areas from implementation of the Selected Alternative; however, these are minor and discountable at larger watershed scales (final EIS pp. 399-400; see also ACS evaluation, final EIS pp. 614-616). Project design features for watersheds (final EIS pp. 107-115) would contribute to minimizing watershed impacts of the Selected Alternative.

Concern: Responsible opposing viewpoints were raised by respected scientists or regulatory agencies that conflicted with the design of this Project. Those recommendations should have been followed.

Response: Council on Environmental Quality regulations (40 CFR 1502.9(b) require that we consider responsible opposing points of view. These are addressed with agency responses in the body of the final EIS (pp. 141-159). The No Action alternative was responsive to these comments. The No Action alternative (and hence the recommendations of the responsible opposing comments) was not selected because it did not meet Project objectives.

Final EIS Comment/Response Summary

The Forest Service published the final EIS on August 7, 2015 and offered a 30-day public review period. Comments received during the final EIS review period were considered in the preparation of this Record of Decision. A summary of comments and responses is below.

Concern: A number of form letters expressed opposition to the Project suggesting salvage logging was proposed to reduce landslide risk.

Response: There is no statement in the final EIS that salvage logging is proposed to reduce landslide risk. Salvage logging is proposed to reduce fuel loading and the risk of future stand replacement fire. Reforestation following salvage harvest, and in plantations destroyed by the 2014 fires has a beneficial effect in that over time, trees reduce landslide risk. The most reliable, and quickest way to reestablish a coniferous forest is to reduce the fuels and plant trees (final EIS multiple citations, Appendix E, FVS simulation). See previous comments in the document on landslide risk. Specifically, the long-term risk of landsliding from wildfires and other means of sediment delivery will be reduced as a result of the proposed Project (Coho BO p. 74). This is also consistent with the findings of the final EIS (Chapter 3 Hydrology, Geology).

Concern: Literature citations (Dunn and Bailey, 2015, Donato et al 2009) provided by the Center for Biological Diversity (CBD) suggested that salvage logging could actually increase fine fuels and hence fire risk, and that salvage logging alone will not mitigate reburn hazard from dead fuels.

Response: Donato et al. (2009) and Beschta (2004), (Referenced in CBD's comment letter) were addressed in Response to Comments on the Draft EIS. See final EIS Appendix B. This was addressed in the final EIS in multiple locations (final EIS pp. 142-145; 185-187. Dunn and Bailey (2014) also found that salvage logging significantly reduces coarse woody fuel loadings after approximately 7 years, which likely reduces re-burn hazard for several decades depending on available 1000-hour fuel loadings (Dunn and Bailey, p. 107). This is consistent with site-specific fuel modeling (final EIS pp. 185-187) and with other literature considered in the final EIS, notably Peterson et al. (2015). We agree that logging can increase slash loads and hence fire risk if those activity fuels are not treated. In the Westside Fire Recovery Project, activity generated slash will be burned reducing surface fuels to levels consistent with low fire hazard (final EIS p. 197). See also previous comments in this document concerning reintroduction of fire.

Concern: Comments by the Environmental Protection Information Center suggested the Forest Service was ignoring trees that exhibited new growth (flushing) and that summer thunderstorms had changed the riparian network, necessitating new riparian reserve designations.

Response: Both of these concerns were adequately addressed in the final EIS. "Flushing" is considered in the marking guidelines and is addressed extensively in the Response to

Comments on the Draft EIS (final EIS Appendix B, pp. B-172- B-173). The impact of summer thunderstorms was fully considered in the final EIS (p. 385). Overland flow from a storm event is an erosional feature, not an intermittent channel. Intermittent streams are defined as any non-perennial flowing drainage feature having a definable channel (stream banks) and evidence of annual scour or deposition (final EIS pp. 4-108).

Concern: A literature citation (Chambers and Mast 2005) concludes that having higher basal area of live or dead trees surrounding a snag appeared to protect them by slowing fall rate; most likely these clumps helped block wind.

Response: Standards for snag retention are established in the Forest Plan of the Klamath National Forest (Forest Plan, Table 4-4, pp. 4-30). Analysis in the Westside Fire Recovery Project concluded the snag retention standards in the Forest Plan would be met. An assessment of snags retained showed that the Selected Alternative meets the Forest Plan requirements for snag retention (final EIS pp. 146-147, 238-241; Appendix E Snag Assessment; final EIS Appendix B, pp. B-75- B-76, Comment 5873-72). As a practical matter nearly all of the snags retained are in clumps in sheltered Riparian Reserves or in snag retention areas.

Concern: A concern was expressed by a professional landscape architect with experience in wildland project design and assessment of visual impacts of land management projects that visual quality standards described in the Forest Plan would not be met along the Pacific Crest Trail and selected trailheads.

Response: For Alternative 3 Modified, five viewpoints have been identified that would not meet their assigned VQO of Retention within three years (final EIS p. 559). These include:

- Klamath WSR
- Cold Spring Trailhead
- Grider Creek Road
- Tyler Meadows
- PCT (between MMW & 45N72AX)

After receipt of additional public comments, I have decided to add one scenery PDF and revise two Scenery PDFs to further reduce scenery impacts of the Project. These revisions will now likely allow the Retention VQO to be met at two viewpoints: Cold Spring Trailhead and the PCT (between MMW & Forest road 45N72X). It is unlikely the Retention VQO will be met within three years at the other three viewpoints because of close proximity, high visibility, and Forest visitors being able to look directly either up into or down on Project activities.

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APPENDIX B: ERRATA NOTED SINCE THE RELEASE OF THE FINAL EIS

- The full list and description of the interdisciplinary team contributors can be found in the Project Record. A draft list was provided in the final EIS (pp. 626-630).
- ERA model distribution of 7th field watersheds categorized low and elevated risk in the final EIS and in the Amendment of Hydrology Report (p. 1). In the Hydrology Resource Report, eight watersheds were identified as "Elevated Risk" in the environmental baseline. That is an error. Ten watersheds were at elevated risk in the baseline condition from fire impacts. Music Creek and Buckhorn Gulch watersheds are the two watersheds that are incorrectly identified in the narrative in the final EIS as moving from the "low risk" category because of Project impacts to an "elevated risk". These watersheds are already at an "elevated risk" in the affected environment prior Project impacts. In other words, the watershed condition category is not expected to change as a result of Project implementation. See Table 15 in the Hydrology Report Amendment for the correct indices of these watersheds.
- An updated interdisciplinary team review of cumulative effects considerations can be found in the Project Record. Some fuels treatments units (from Thom Seider EIS and 2006/7 PCT Release DM) were inadvertently missed from the cumulative effects GIS query provided to the team. Despite it not being on the GIS layer itself, the IDT was familiar with the Thom Seider treatment actions during the time of their analysis. Both projects include appropriate project design features to protect resources and meet Forest Plan standards. Overall, the team considers that the effects from these actions are largely beneficial. The IDT all found the actions inadvertently missed from the GIS query to be minor errata and well within the scope of their cumulative effects analysis for the Westside EIS.
- The updated climate change discussion was inadvertently left out of the final EIS. It was added to the Project webpage on July 4, 2015. It can also be found in the Project Record.
- Page 12 of final EIS states, "Riparian Reserves overlap with most other management areas. No treatment is proposed within hydrologic (water-related) riparian reserves, except roadside hazard treatment and fuels treatments within one-quarter mile of private property structures." Note that there are also other hand treatments proposed within Riparian Reserves, as stated in the final EIS (p. 70). There is also site preparation, planting, and release proposed in Riparian Reserves, as stated in the final EIS (p. 43), "[n]o sub-soiling, deep tillage or ripping is proposed in hydrologic Riparian Reserves." (This is unchanged.)
- Final EIS Chapter 1 (p. 2) and Appendix B (pp. B-172, B-174, and B-196 say rules were modified so that trees over 45 inches in diameter were required to have a "95 percent probability of mortality;" this should be 90%, as discussed elsewhere in the final EIS.

- Final EIS (p. 28) Relevant Issue #3 includes only "late successional reserves and riparian reserves;" elsewhere in the document, this issue also includes effects to inventoried roadless areas.
- The final EIS project design features present the fisher LOP as "No roadside treatment between March 1 and June 15 to avoid disturbance of denning fisher" that is applied to "All alternatives ML1 Roads" (final EIS page 117)
- Project Design Features for wildlife (FEIS pp. 116-119) that apply to roadside hazard operations are not constrained by Limited Operating Periods when there is a need to cut dangerous trees that pose an immediate risk health and safety.
- The final EIS project design features present the fisher LOP as "No roadside treatment between March 1 and June 15 to avoid disturbance of denning fisher" that is applied to "All alternatives ML1 Roads" (final EIS page 117)
- The intent of this LOP was to restrict the timing of roadside hazard that occurs in denning habitat, not in severely burned areas that are no longer habitat. The LOP would avoid cutting trees in denning habitat in roadside hazard units that might contain a den site until after the denning period. Denning habitat by definition (summarized in table 7 of the BE (page 22)) describes the habitat characteristics of areas where fishers are most likely to be denning. Therefore, the "Applicable Alternatives and Units" column of the Project Design Feature table should be more specific and the PDF should apply to denning habitat only, as described in Table 7 (BE p. 22) that occurs within roadside hazard units along ML1 roads rather than all ML 1 roads. The intent of this LOP was to restrict the timing of roadside hazard that occurs <u>in denning habitat</u>, not in severely burned areas that are no longer habitat. The LOP would avoid cutting trees in denning habitat in roadside hazard units that might contain a den site until after the denning period. Denning habitat by definition (summarized in table 7 of the BE (page 22)) describes the habitat characteristics of areas where fishers are most likely to be denning. Therefore, the "Applicable Alternatives and Units" column of the Project Design Feature table should be more specific and the PDF should apply <u>to denning habitat only</u>, as described in Table 7 (BE p. 22) that occurs within roadside hazard units along ML1 roads rather than all ML 1 roads.

Table 12: Habitat characteristics for fisher, marten, and wolverine habitat types (BE p. 22).

Habitat type[1]	Habitat Characteristics
Denning/resting	>50% Canopy Cover Large live and dead trees large woody debris
Foraging	≥40 - 50% Canopy Cover May lack denning trees
Movement	≥20% overhead cover regardless of tree size

- Page 82, Table 2-34 shows prescribed fire and other fuel treatments as 11,340 acres. The correct number is 11,400 acres.
- Page 392, paragraph 3 refers to Table 11, which is in the Resource Report. The text should refer to Table 3-43 in the final EIS.

APPENDIX C: TERMS AND CONDITIONS FOR THREATENED AND ENDANGERED SPECIES

Terms and Conditions for Northern Spotted Owls from the US Fish and Wildlife Service

In November 2014, the Forest began streamlined, formal consultation with the US Fish and Wildlife Service (FWS) anticipating a "Likely to Adversely Affect" determination for Project impacts on northern spotted owls. On April 22, 2015, the FWS adopted traditional consultation timelines. On July 27, 2015, the Forest submitted a biological assessment (BA) FWS which was accepted by the FWS On August 7, 2015., An administrative draft biological opinion (BO) for the Westside Fire Recovery Project was received on January 22, 2016. After consideration of Forest Service comments on the Draft BO, the FWS signed a final BO on February 19, 2016. The BO concluded that the Westside Fire Recovery Project was Likely to Adversely Affect northern spotted owls or their habitat, but was not likely to jeopardize the continued existence of the species or adversely modify designated critical habitat. Terms and Conditions (BO p. 141) follow.

Terms and Conditions

1. To maximize retention of suitable habitat, within roadside hazard tree removal units along maintenance level one and two roads not identified as 'ingress/egress routes,' only remove trees that are identified as imminent hazards where they occur in NRF habitat, where they intersect with areas the modeling identifies as "selected for" (RHS >32), and where they occur in contiguous segments (six units, see map). Relates to RPM 1.
2. To reduce the likelihood of direct harm to NSOs and their young by felling trees in potential nesting areas, ensure NSOs are not breeding within the core area during timber harvest. Within NSO core use areas (0.5 mile) of ten NSO sites (0383, 1041 1047, 1109, 1110, 1130, 9991, 9998, New7a, and New7b) conduct three survey visits, according to the NSO survey protocol prior to start of operations (USDI FWS 2011b). If NSOs are found nesting during those survey visits, avoid timber harvest until after the breeding season is over (Sept 15th). This applies to all ingress/egress roadside hazard tree removal in NRF habitat except those trees identified as an imminent hazard. In addition, visually inspect trees >24 inches dbh for characteristics that NSOs use for nesting. Such structures include mistletoe brooms, deformed branches and broken tops. If trees contain these characteristics, postpone falling and removing those trees until September 15 or until six visits per the survey protocol have been completed and it has been determined that NSOs are not nesting. Relates to RPM 4.
3. Modify prescriptions to maintain existing habitat function and avoid removing and downgrading NRF habitat in roadside complete units and FMZs where they occur in NRF habitat and where they occur in contiguous blocks where they intersect with areas the modeling identifies as "selected for" (RHS >32) (eight units, see map). Relates to RPM 2.
4. In the following five commercial salvage units greater than 30 acres in size that have little to no retention, 005-12, 058-1, 212, 262, and 423, add or supplement existing

aggregates of snags within NRF and/or PFF within areas the modeling identifies as "selected for" (RHS >32). Retention areas should be clumped to the extent practical and represent about 20 percent of the commercial salvage unit. See map identifying areas of high probability of use. Relates to RPM 5.

5. In commercial salvage units in NSO home ranges 0383, New 3A/3B, and 4133, modify the units to further incorporate and substantially increase retention in areas identified as "selected for" (RHS >32). Retention will be in the following priority order; NRF, fire affected NR, PFF1 and PFF2. This term and condition does not apply to areas that overlap roadside hazard tree removal units. See map. Relates to RPM 3 and RPM 5.
    a. In NSO site 0383, this includes additional retention in unit 243.
    b. In NSO site 4133, this includes additional retention in units; 005-12*, 022, and 21. These retention areas are to support PFF in the area where the NSOs associated with site 4133 are most likely to shift their core use area post fire. (*Note: Retention measures described for 005-12 will be met by T&C #4).
    c. In NSO site New 3A/3B where one pair of NSOs alternates between use of the two sites, add additional retention acres in unit 23-2 to augment retention areas already established for the core use area at NSO site new 3B.
6. In a sample of commercial salvage units, conduct field review with FWS staff to confirm that on the ground layout of salvage units has excluded areas previously identified in the BA as lower burn severity areas. Ensure that live trees that do not meet the 60 percent probability of mortality standard are clearly marked so they will not be cut, unless they pose a safety hazard. Modification of unit boundaries does not apply to areas that overlap roadside hazard tree removal units (see map). Relates to RPM 3 and RPM 5.
7. Prior to implementation of prescribed fire activity, KNF and FWS representative should discuss timing and location of activities relative to known NSO core and home ranges and suitable habitat in order to avoid direct harm to NSO. Relates to RPM 4.
8. Conduct pre-season survey strategy coordination meetings in years 3-10 to identify areas of remaining treatments and to maximize efficiency of survey efforts in order to avoid direct harm to NSO. Relates to RPM 4.
9. Conduct one activity center search following the NSO survey protocol in NSO sites 9995 and 1214 prior to activities if activities are going to occur between February 1 and September 15 and if NSOs are determined to be nesting (USDI FWS 2011b). If protocol surveys determine NSOs are not nesting or fail to locate NSOs the breeding season operating restriction does not apply. Relates to RPM 4.

Terms and Conditions for Coho Salmon from National Marine Fisheries Services

The Forest Service is in receipt of the January 15, 2016 final Biological Opinion for Coho salmon from the National Marine Fisheries Service. Many of the terms and conditions stated in the Biological Opinion are already incorporated into the BMPs and PDFs of the final EIS for the Westside Fire Recovery Project. Others require close coordination with NMFS and monitoring. The Forest Service will comply with all of the stated terms and conditions of the Biological Opinion listed below:

The terms and conditions described below are non-discretionary, and the KNF or any applicant must comply with them in order to implement the reasonable and prudent measures (50 CFR 402.14). The KNF or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this incidental take statement (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would lapse.

1. The following terms and conditions implement reasonable and prudent measure *minimize hydrologic effects of the action on SONCC coho salmon.*
    a. Design the drainage features associated with temporary roads, landings, and spoils disposal sites in a manner that disperses runoff from these surfaces as much as possible, or which routes the runoff into existing channels that can accommodate the additional discharge while minimizing sediment delivery to downslope streams.
    b. Prior to temporary road construction, submit to NMFS a topographic map of the planned road alignment and locations of road drainage features (water bars, dips, rock aprons, *etc*.), and then ensure that the plans are implemented as intended by placing markers on the ground at the exact locations where drainage features will be constructed.
    c. Maintain stockpiles of fresh crushed rock and certified weed free rice straw at secure and strategic locations within the Project, for immediate use in rocking haul road surfaces sufficiently to preclude conditions that exceed Wet Weather Operations Standards (*i.e.*, Watershed-1).
    d. Inspect all temporary roads and the six landings in RRs, while they are on the landscape, to identify rills or gullies after each rainfall event that are large enough to generate surface runoff from road surfaces, and then ensure completion of necessary improvement or repair of ditches, cross drains, and outsloped surfaces to prevent further development of rills or gullies (*i.e.*, Watershed-5, expanded to include temporary roads).
2. The following terms and conditions implement reasonable and prudent measure 2 - *minimize soil erosion and sediment transport into watersheds used by SONCC coho salmon.*
    a. Immediately, after completing tractor-based salvage harvest, inspect skid trails leading to and within salvage harvest units, to ensure that soil cover standards (Table 4-2, USFS 1994) are met and, if not, provide soil cover (*i.e.* mulch, slash, etc.) where needed to meet these soil cover standards (Watershed-26 and Soils-1, expanded to include skid trails leading to harvest units).
    b. Do not allow skid trails within salvage harvest units to overwinter without completing erosion minimization measures described in 2.a.
    c. Ensure that mulch/slash and water bars that meet soil cover standards remain within cable-yarding corridors and on skid trails in tractor yarded units at Project completion (Watershed-29 that meets soil cover standards (table 4-2, USFS 1994), and Watershed-26).
    d. Avoid using temporary roads for more than one operational season, but if over wintering any temporary road is unavoidable, winterize such road according to relevant Project design features (*i.e.*, Watershed-22, expanded for more than one season of use).
    e. Provide critical/rolling dips with rocked aprons along Project roads wherever stream capture or diversion potential exists.
    f. Make concerted efforts to implement Legacy (sediment) site treatments as soon as possible, to help offset effects from Project implementation;
    g. If KNF determines that Project ERA is being exceeded in any of the four subwatersheds of interest (Table 11) during salvage harvest operations, based on increases to modeled Project

ERA acreage resulting from increased temporary road length, increased salvage harvest unit size, etc., the KNF shall contact NMFS immediately, to reinitiate consultation.

3. The following terms and conditions implement reasonable and prudent measure 3 - *Implement a monitoring and reporting program to further understand the effects of the Project and minimize the likelihood of incidental take of coho salmon.*

   a. During the next few months, the KNF and NMFS will further investigate the relationships between the CWE models (ERA, USLE, and GEO) and the streambed fine sediment parameters (V*, <0.85 mm, and <6.35 mm sediments). We hypothesize that certain disturbances (*e.g.*, roads) likely have a greater explanatory role in predicting streambed fine sediment, and that there may also be a time lag between ground disturbance, storms, and sediment erosion and deposition that may further refine these relationships. For example, the ERA categories cover all disturbances within the watersheds (*e.g.*, roads, fire, and timber harvest) and estimate disturbance based on GIS polygons, USFS disturbance coefficients, and recovery rates. Klein *et al.* (2008) found that with turbidity and ECA, there was a 10-plus year lag in sediment erosion and deposition.

   b. The KNF will institute "storm patrols" during wet weather periods, to identify drainage malfunctions, sediment mobilization, and/or slope failures that occur within salvage harvest units or downslope from temporary roads, landings, or harvest units. The KNF will then provide detailed information, as soon as possible, about the location and amount/extent of sediment mobilized in the action area, and the resulting effects on riparian habitat downslope/downstream. The KNF will propose measures to mitigate or rehabilitate Project-related slope failures or other adverse erosion events. The KNF will monitor streambed fine sediment in SONCC coho salmon critical habitat located downslope/downstream from Project activities, whenever there are two-year or greater storm events.

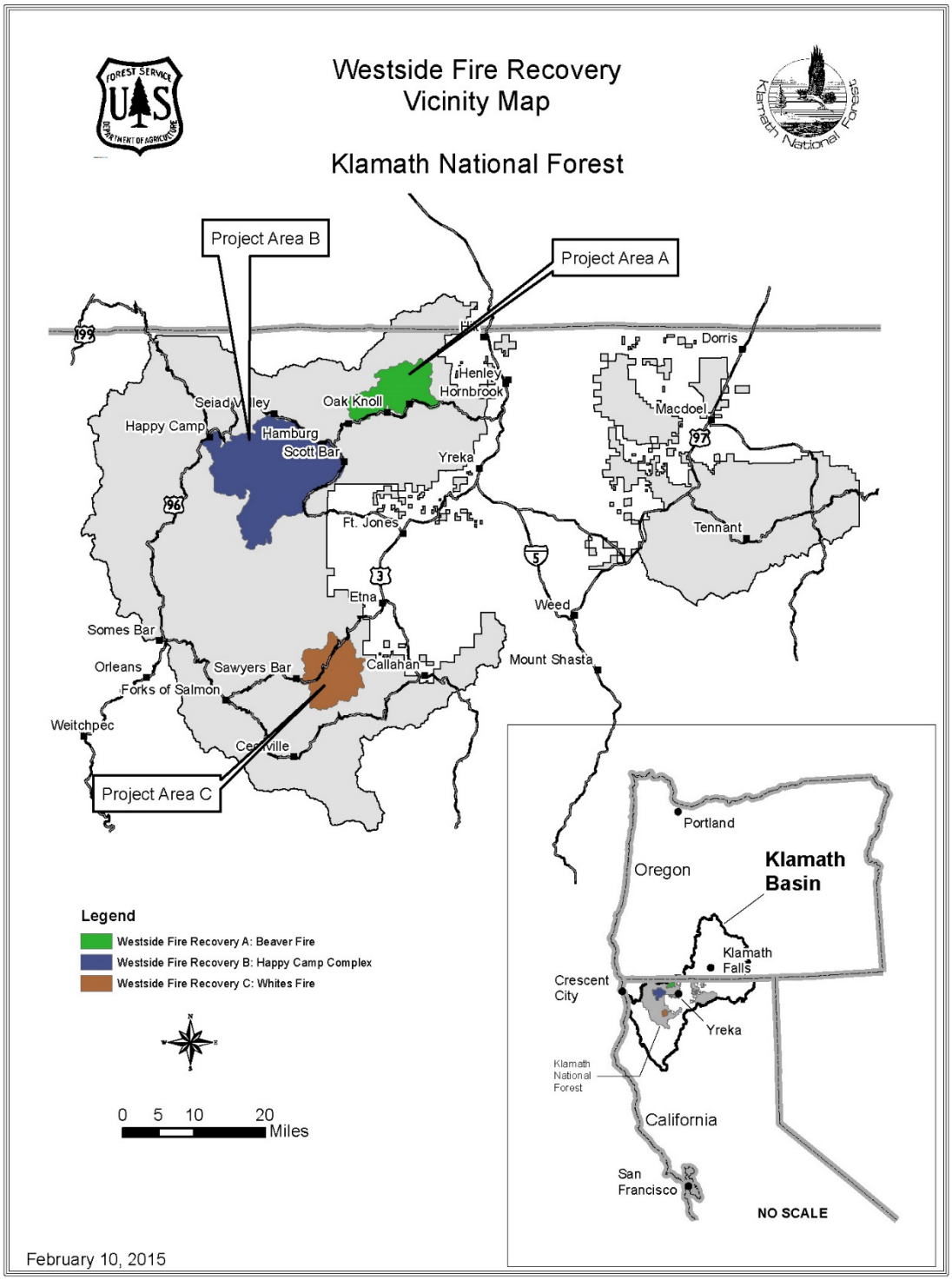
   c. If prior to Project implementation, KNF-monitored stream reaches located downslope/downstream from Project activities contain substrate fines that equal or exceed the water quality attainment value of approximately 14 percent fines (< 0.85 mm fine sediment, RWQCB 2006), corresponding to survival to emergence values of less than 37 percent (Figure 14), the KNF will contact NMFS and propose further mitigations to reduce fine sediment loading where it has been identified.

   d. Maintain a log of any actions taken to mitigate or rehabilitate Project-related slope failures, for at least one year after completion of all Project activities.

   e. Maintain a log of each post-rainfall inspection of temporary roads and landings, and record any remedial actions taken to prevent further development of rills or gullies, for at least one year after completion of all Project activities.

   f. Provide a summary report to NMFS of the above monitoring activities annually by December 31, beginning in the first year that project implementation begins. Reports shall be sent to: Don Flickinger, NMFS, Yreka Office, 1711 South Main Street, Yreka, California 96097.

APPENDIX D: MAPS



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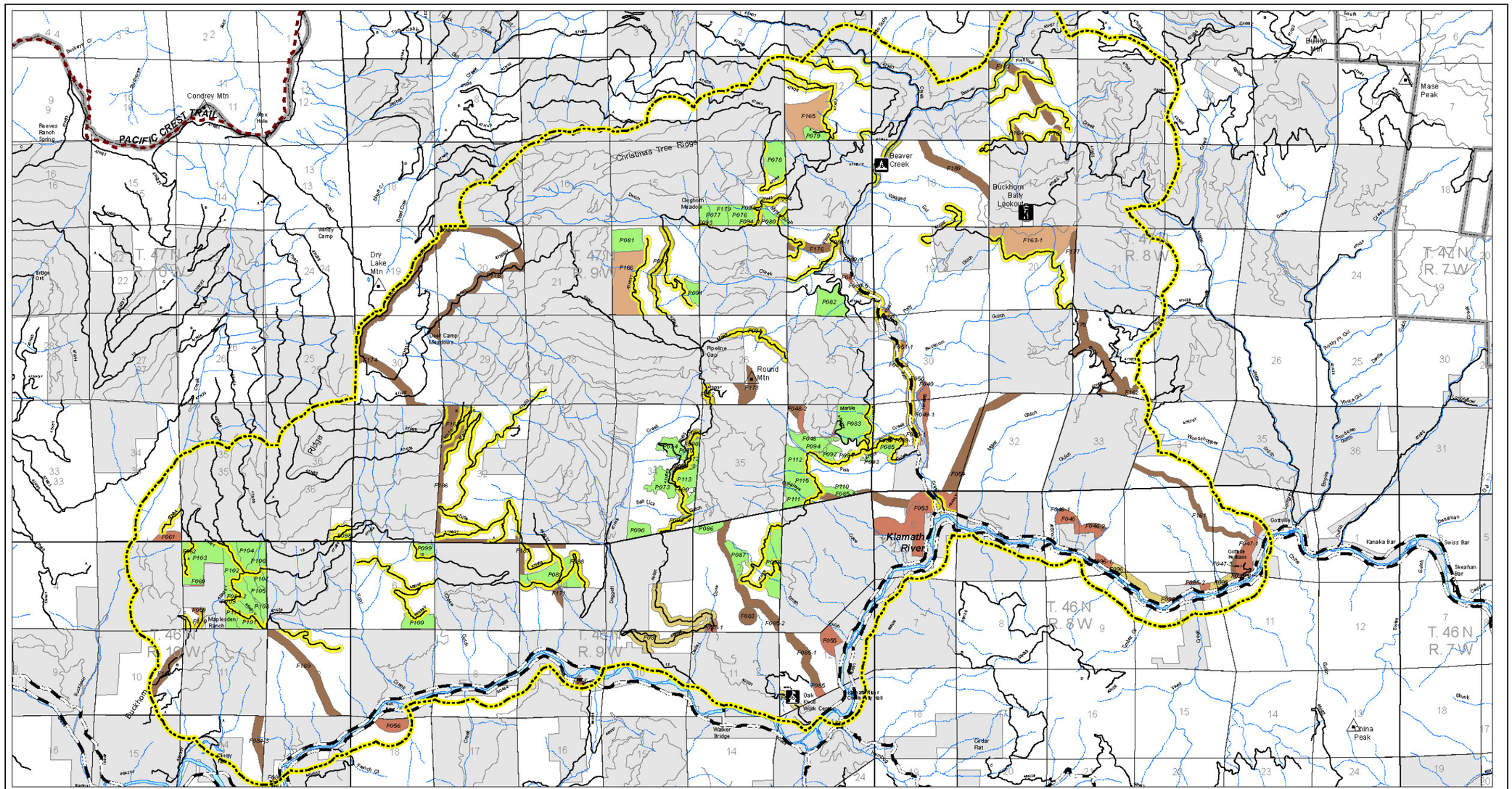

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Westside Fire Recovery
Beaver
Project Boundary
Alternative 3 Modified
Final EIS

Legend

- Westside Fire Recovery Boundary
- NFTS System Road
- Site Preparation, Plant and Release Treatment Only
- Fuels Management Zone Treatment
- Roadside Fuels Complete Treatment
- Roadside Fuels Modified Treatment
- Prescribed Burn Treatment
- Wildland Urban Interface Treatment
- Road Hazard Treatment
- Campground
- Administrative Site
- Lookout
- Pacific Crest Trail
- State or US Highway
- County Road
- Private/Other Road
- Ranger District Boundary
- Private Land Within the Forest Boundary
- Intermittent Stream
- Perennial Stream

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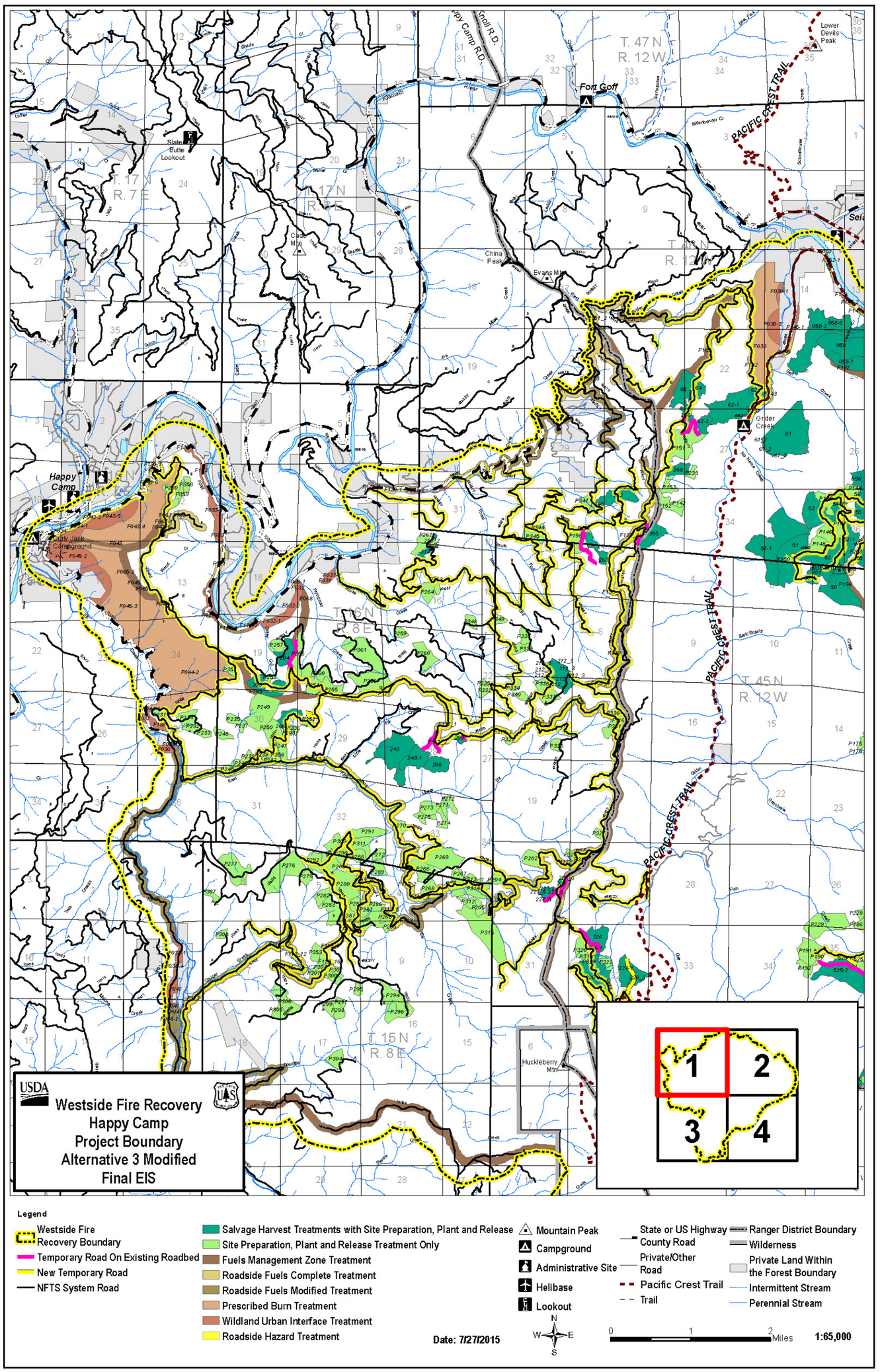
Westside Fire Recovery
Happy Camp
Project Boundary
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Westside Fire Recovery Boundary
Temporary Road On Existing Roadbed
New Temporary Road
NFTS System Road
Salvage Harvest Treatments with Site Preparation, Plant and Release
Site Preparation, Plant and Release Treatment Only
Fuels Management Zone Treatment
Roadside Fuels Complete Treatment
Roadside Fuels Modified Treatment
Prescribed Burn Treatment
Wildland Urban Interface Treatment
Roadside Hazard Treatment
Mountain Peak
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Administrative Site
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Lookout
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Huckleberry Mtn
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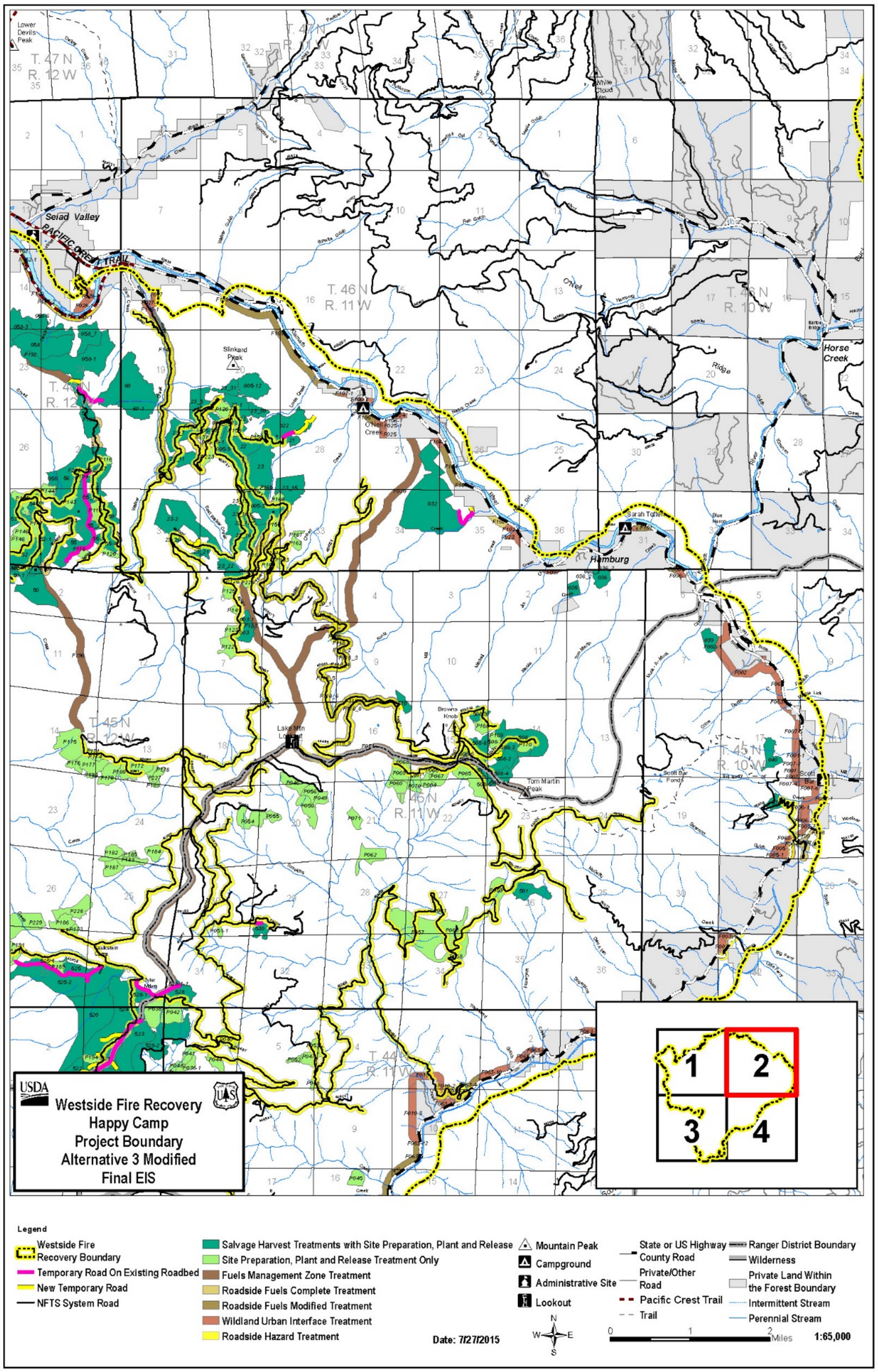
Lower Devils Peak
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White Cloud Mtn
Seiad Valley
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T. 46 N R. 11 W
T. 46 N R. 10 W
Slinkard Peak
Owl Creek
Horse Creek
Ridge
Sarah Totem
Hamburg
T. 45 N R. 12 W
T. 45 N R. 11 W
T. 45 N R. 10 W
Lake Mtn Lookout
Browns Knob
Tom Martin Peak
Scott Bar
Scott Bar Ponds
T. 44 N R. 11 W
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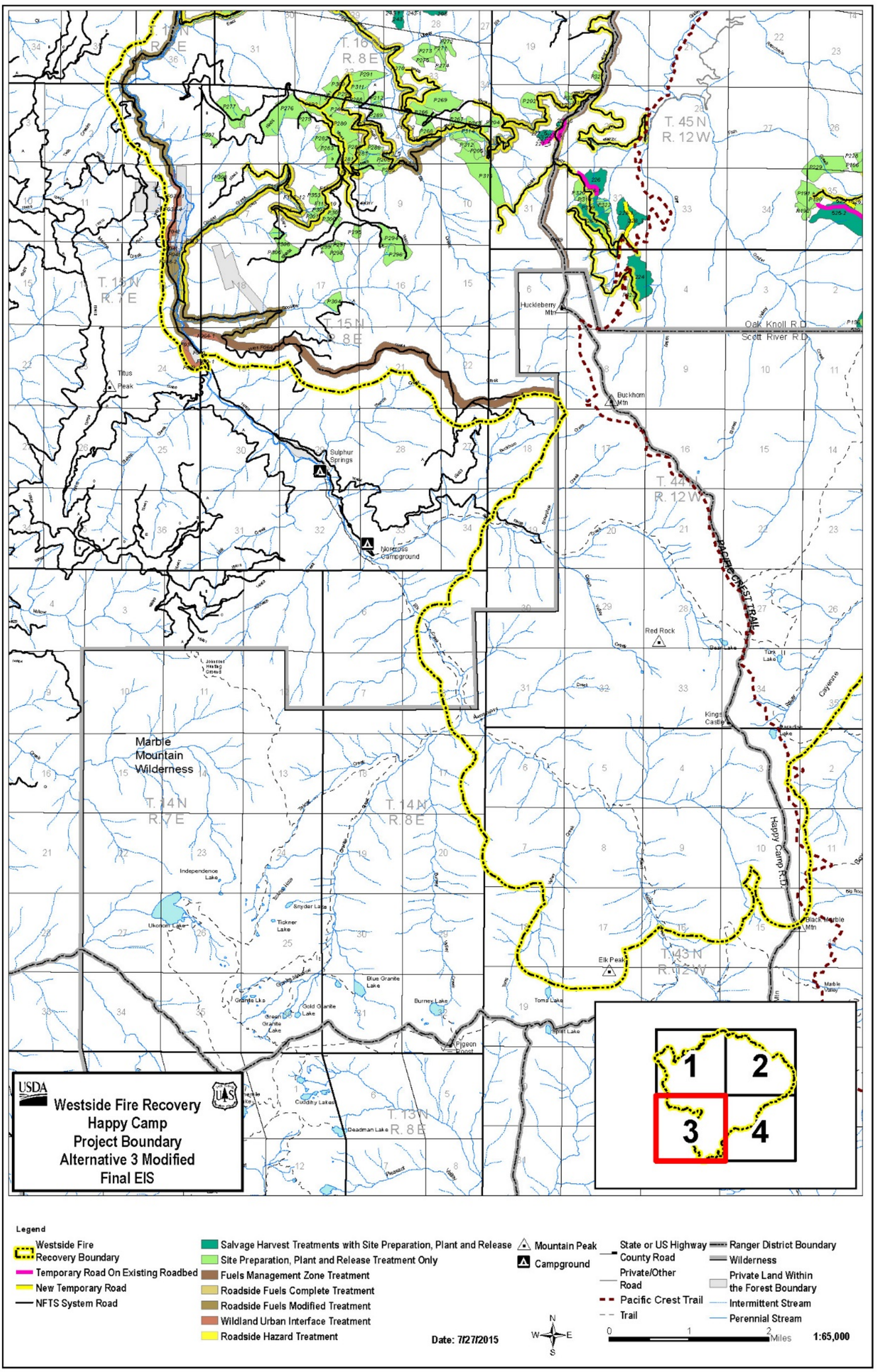
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T. 14 N R. 8 E
T. 43 N R. 12 W
T. 13 N R. 8 E
Titus Peak
Sulphur Springs
Norcross Campground
Huckleberry Mtn
Buckhorn Mtn
Oak Knoll R.D.
Scott River R.D.
PACIFIC CREST TRAIL
Red Rock
Kings Castle
Happy Camp R.D.
Elk Peak
Black Marble Mtn
Marble Valley
Independence Lake
Ukonom Lake
Snyder Lake
Tickner Lake
Blue Granite Lake
Gold Granite Lake
Green Granite Lake
Granite Lake
Burney Lake
Toms Lake
Pigeon Point
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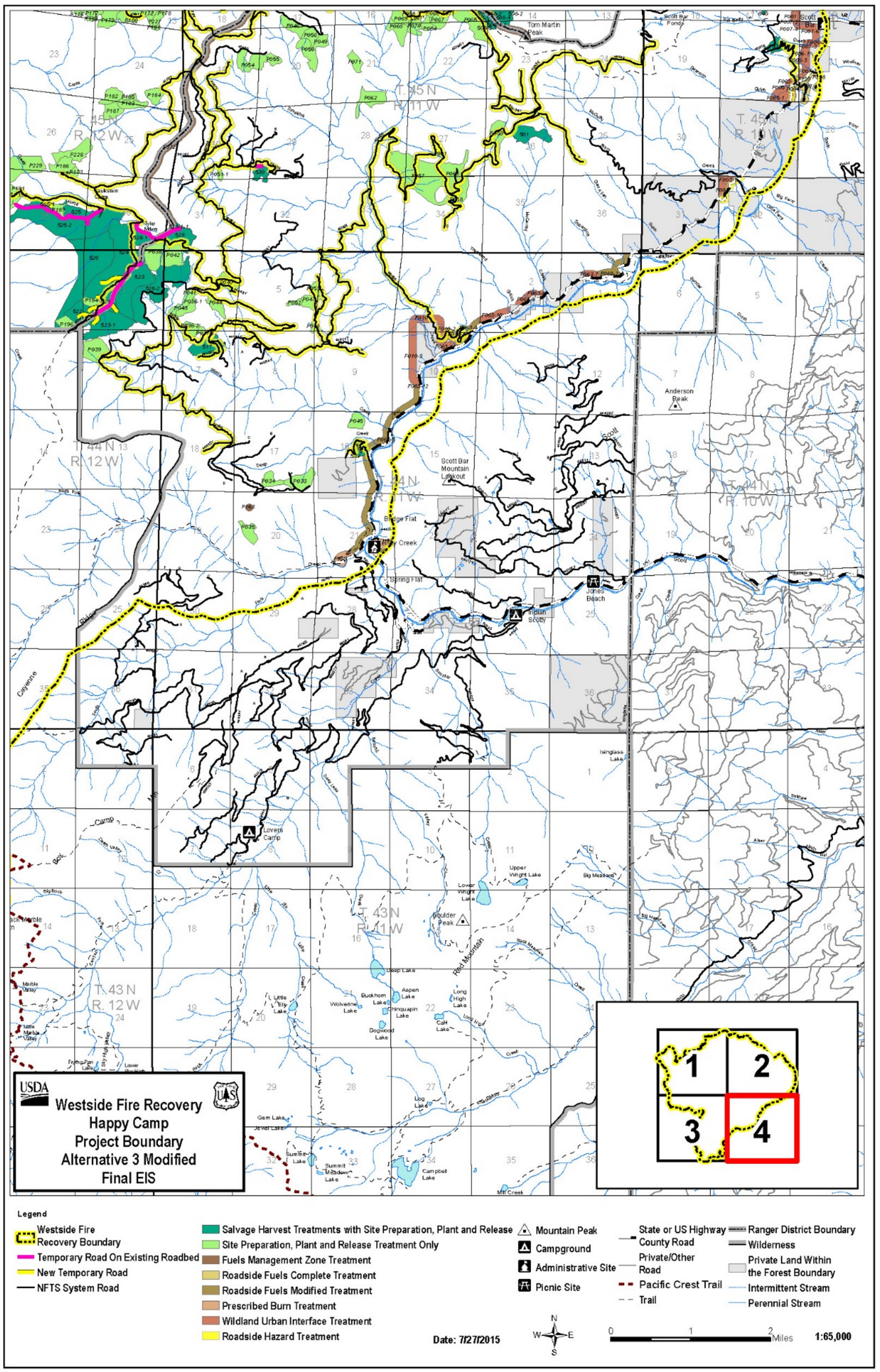
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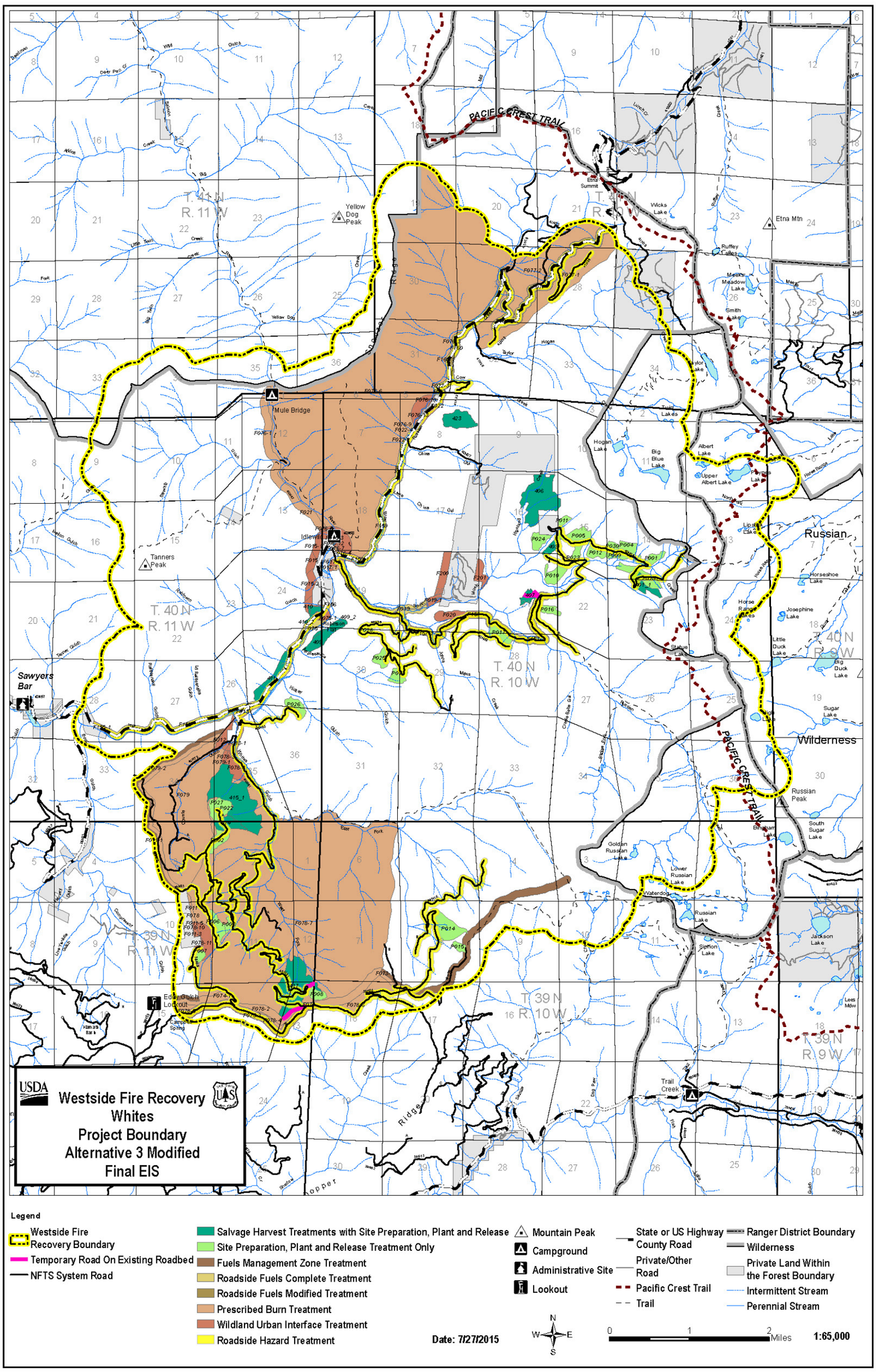
PACIFIC CREST TRAIL
Yellow Dog Peak
Etna Summit
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Mule Bridge
Tanners Peak
Idlewild
Hogan Lake
Big Blue Lake
Albert Lake
Upper Albert Lake
Russian
Horseshoe Lake
Josephine Lake
Horse Range Lake
Little Duck Lake
Big Duck Lake
Sugar Lake
Wilderness
Russian Peak
South Sugar Lake
Golden Russian Lake
Lower Russian Lake
Waterdog Lake
Russian Lake
Siphon Lake
Jackson Lake
Sawyers Bar
Edgewood Lookout
Trail Creek
T. 41 N. R. 11 W.
T. 40 N. R. 11 W.
T. 40 N. R. 10 W.
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T. 39 N. R. 10 W.
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