

Summary

Monument Fire Recovery Project

Final Environmental Impact Statement

Introduction

On July 12, 2002, a series of large thunderstorms passed through the Blue Mountains of Eastern Oregon and ignited numerous fires on the Malheur National Forest, including the Monument Fire in the Little Malheur River basin. There were several days of high daytime temperatures with strong northerly winds, increased fire activity and expansion of the fire into the Little Malheur River basin. By July 14th, the fire had grown and spread onto the Unity Ranger District on the Wallowa-Whitman National Forest.

The Monument Fire was declared contained on September 9, 2002, and controlled on December 31, 2002. Approximately 24,525 total acres burned in the Monument Fire, 20,186 acres (82%) on the Prairie City Ranger District, Malheur National Forest, 3,711 acres (15%) on the Unity Ranger District, Wallowa-Whitman National Forest, and 628 acres (3%) on private land (figures 1 and 2, Map Section).

The Monument Fire Recovery Project Area refers to approximately 8,588 acres of the Monument Fire that burned on the Prairie City Ranger District outside the Monument Rock Wilderness, Malheur National Forest

A Draft Environmental Impact Statement (DEIS) was released for public review in July 2003. The DEIS was mailed to over 95 individuals, organizations, and agencies for a 45-day public review and comment period. The Malheur National Forest received 11 timely comments on the DEIS. Following review of the comments, the Forest prepared a Final Environmental Impact Statement (FEIS). The following is a summary of the FEIS.

Purpose and Need for Action

The six purposes and needs for action in the Monument Fire Recovery Project area are:

- **Fuels: Reduce levels of dead and dying standing and down fuel**, to reduce the potential for future high-severity fires and restore a low-intensity/ frequent-fire regime.
- **Forest Vegetation Structure: Improve forest vegetation resilience** to insects, disease, wildfire, and other disturbances; restore ecologically appropriate structural and compositional characteristics of upland and riparian vegetation.
- **Forest Vegetation: Restore tree vegetation** for wildlife habitat, stream shade, and for future timber products.
- **Old Growth: Replace dedicated old-growth (DOG) and replacement old-growth (ROG) areas** that burned and are no longer in suitable old-growth condition. Re-delineate an additional dedicated old-growth area and replacement old-growth area impacted by the fire, to bring them in compliance and direction with the Malheur Forest Plan.
- **Water Quality: Improve watershed condition and reduce road-related impacts.** Recommendations from the Monument Roads Analysis report include (1) decommissioning specific roads and old skid trails that are contributing

sediment and concentrating flows, resulting in adverse impacts to water quality and native fish habitat, and (2) reducing road densities where deer and elk security habitat has been affected by the fire.

- **Economics: Capture the economic value** of those trees that are surplus to other resource needs, and to provide raw materials and jobs to aid in community stability.

This action is needed in order to comply with the goals and objectives outlined in the 1990 Malheur National Forest Land and Resource Management Plan (Forest Plan), which guides natural resource management activities and establishes management standards for lands administered by the Malheur National Forest.

Needs for the proposed action are derived from the differences between current conditions and desired conditions. Desired conditions are based on Forest Plan direction and management objectives. The proposed action is designed to move resource conditions closer to desired conditions and address management direction provided by the Malheur Forest Plan as amended.

The two broad categories of purpose for the project are: the acceleration of ecosystem restoration and timely commodity extraction. Each of the existing and desired conditions relevant to providing improved conditions and accomplishing commodity extraction for jobs and income can be linked to the purpose for the proposed action.

Proposed Action (Alternative 2)

The proposed action is an alternative developed early in the NEPA planning process to accomplish the six purposes and needs, and goals described above based on the best information available at the time. It is the first alternative offered and is used to identify issues and develop other alternatives for further study.

The following treatments were developed to meet the six purposes and needs identified by the interdisciplinary team.

Fuel Loads/Economics

Salvage Treatment

The Salvage Treatment addresses the need to reduce future fuel levels and capture economic value of a portion of trees killed in the Monument Fire.

Approximately 3,451 acres are proposed for salvage harvest. These areas generally burned with higher severities (high end of the moderate, to severe burn-severities). The fire in these areas is described as stand-replacement, with a limited number of trees expected to survive the fire. Only dead and dying trees would be removed. Treatment boundaries incorporate non-forest areas such as grassland and shrubland. These non-forest areas have scattered dead and dying trees, and would be excluded from harvest.

Wildlife snag habitat would be retained throughout the landscape. Green trees of all sizes and species (expected to survive the fire), would be retained. Residual fuels such as tops and limbs left on site would be lopped and scattered to place them in contact with the ground. This slash retention would reduce erosion potential and initiate the decomposition process. Harvest landing slash would be piled and burned. Trees of appropriate species (primarily ponderosa pine, Douglas-fir, and western larch) would be planted in areas treated.

Riparian Habitat Conservation Area (RHCA) Salvage Treatment

The objective of the RHCA Salvage Treatment is to remove excess (outside the desired range) standing fuel in the RHCA that may contribute to future high-severity fires. Approximately 601 acres of salvage is proposed in RHCAs in the Little Malheur River and Camp Creek drainages within the Little Malheur watershed. This includes 400 acres of salvage in the Category 1 streams that are fish bearing, 21 acres in RHCA Category 2, and 180 acres in Category 4. The RHCA zones would become more resilient to future fire events as these areas re-vegetate and recover. Other objectives include reforestation of RHCAs that burned with higher severities to enhance recovery of forested vegetation in these zones.

Activities are not proposed for RHCAs in the North Fork Malheur watershed, because these RHCAs did not burn with the same severities as those in the Little Malheur and Camp Creek drainages.

Forest Vegetation Structure

Resiliency Treatment

The Resiliency Treatment meets the need to improve residual timber stand resilience to insects, disease, wildfire, and other disturbances, and restore ecologically appropriate structural and compositional characteristics of the remaining live upland vegetation. Approximately 223 acres of timber harvest and 382 acres of precommercial thinning are proposed for Resiliency Treatment. Due to lack of old-forest structure within the Monument Fire Project Area, Resiliency Treatment activities will focus on accelerating development of large trees and future old-forest structures, and maintaining existing old-forest structures in either old-forest multistory structure or old-forest single-story structure, which will provide for old-growth-dependent species needs.

This treatment would be applied in a portion of the area that burned with light to lower-end moderate intensity. This locale was selected because it has a manageable/desirable overstory that will likely survive the effects of the Monument Fire. A dominant mature/old ponderosa pine component exists in the overstory, sometimes mixed with the presence of mature Douglas-fir, western larch, and the occasional mature grand fir.

The goal of the Resiliency Treatment is to mimic historic vegetation conditions while meeting wildlife habitat needs, and improving resilience to damage from insects and disease.

The Resiliency Treatment would primarily includes salvage of dead and commercial thinning of the residual live trees, by applying a commercial thinning. The treatment would retain live/green trees greater than 21 inches in diameter and would target retaining other desirable live trees in the 12 to 20 inch diameter range. The prescription would thin live trees less than 21 inches in diameter, and salvage most of the dead. A more open structure (similar to old-forest single-story condition) would result in some areas, while in other areas a more open multiple-canopy condition (similar to young-forest multistory or old-forest multistory structure) would result. Snags would be retained to meet wildlife habitat needs across the landscape. Larger diameter snags (greater than 21 inches DBH) are the most desirable to retain, although smaller diameter classes would also be retained. In some of these stands, precommercial thinning would take place to reduce stocking of smaller trees. Trees of appropriate species (primarily

ponderosa pine, Douglas-fir, and western larch) would be planted in treated areas, where needed to meet stocking level and habitat diversity requirements.

Forest Vegetation

Reforestation Treatment

Approximately 5,322 acres of conifer tree planting would be completed throughout the project area to speed reforestation of burned areas. These acres include harvest areas, non-harvest understocked areas, plantations, and young thinning units that were burned in the Monument Fire. Following the planting, protection of seedlings from big-game browsing would be required. Big Game Repellent (BGR) would be applied periodically to seedlings.

Water Quality

Road Restoration and Skid Trail Obliteration

Several miles road closures and road decommissioning are proposed to reduce negative impacts to water quality, fish habitat, and wildlife habitat.

- Road closure (gates) – 7.0 miles
- Road decommissioning – 11.8 miles

The primary emphasis for road closures, and decommissioning is to minimize road-related sediment delivery to water sources. The objective is to minimize road effects on interception and to prevent concentration of runoff or precipitation.

Roads proposed for decommissioning have structural damage and are unsafe for travel or are not drivable. Many of the roads are located adjacent to or near the channel, are sloughing into the channel, or have major erosion problems due to steep grades. On these roads some of the culverts have been removed, rocks partially block access, and trees have blocked access. These roads will not be used for salvage or regeneration activities identified in the proposed action. Roads identified in the Roads Analysis (Monument Recovery Roads Analysis, July 2003) would remain open and allow for alternate access.

Road closures would be year-long and will be gated to restrict motorized vehicles. Gated roads will restrict access and limit disturbance to wildlife.

Approximately 2.2 miles of old skid trail obliteration activities are proposed. Low ground pressure equipment and handwork would be used to return these affected areas to as natural a condition as possible. Returning the skid trail surface to the original contour or out-sloping would return the water to the channel, slow runoff, and increase infiltration. Wood placements would filter additional sediment, and mulching and seeding would be applied as needed.

Old Growth Habitat (Forest Plan Management Area 13)

Dedicated Old-Growth(DOG) and Replacement Old-Growth Areas(ROG)

- The re-delineation or designation of suitable late-and-old-structure (LOS) habitats to replace DOG and ROG 04334PP that no longer meet forest old growth structure condition.
- Re-delineation of replacement old-growth areas to incorporate suitable LOS or older structure stands, to provide suitable replacement areas for associated DOGs 04334PP and 04345PP and bring them into compliance with the Forest Plan.

Pileated Woodpecker Feeding Areas

- Identification and delineation of Pileated woodpecker feeding areas, as appropriate, to provide suitable foraging habitat to meet Forest Plan direction.

Forest Plan Amendments

A non-significant Forest Plan amendment would be required to implement Alternative 2 (see Forest Plan Amendments below and in Chapter 2) to re-delineate and replace the DOG and ROGs. This would change Management Area 13 (Old Growth) to either Management Area 1 (General Forest) or Management Area 4A (Big Game Winter Range). See also Chapter 2, Alternative 2 for a description of this alternative.

Key Issues

Comments received from the public generated issues are discussed in this document. The interdisciplinary team (IDT) reviewed and evaluated comments received from the scoping process and are incorporated as key issues. In the NEPA process, key issues are defined as resource or other values that drive the development of an alternative, may be adversely affected by the proposed action, or involve unresolved conflicts regarding alternative uses of available resources. Key issues provide focus for the analysis and are used directly in formulation of the alternatives. Listed with each key issue are indicators to show a measurement of how each key issue is affected by proposed activities for each alternative.

1. **Snag habitat:** The standard for snags in the Malheur Forest Plan is based on species dependent on old structure, green stands. Retaining Forest Plan snag levels may not provide adequate snag habitat for dead-forest-dependent species and primary cavity excavators.
2. **Water quality and Sedimentation:** There is concern that salvage harvest should not occur in areas that are severely burned or are located on erosive sites, riparian areas, or steep slopes (see Beschta report recommendations). Harvest on these areas could increase erosion potential in the fire area. The proposed action includes salvage harvest and tractor logging within both RHCAs and severely burned areas.
Salvage harvest would occur within the RHCAs of the Little Malheur River. The Little Malheur River is proposed as critical habitat for bull trout. The river has also been identified on the Oregon Department of Environmental Quality 303 (d) list for exceeding water temperature standards. There is concern that harvest activities in the project area could further degrade water quality, and prolong recovery of stream habitat in the fire area.
3. **Green tree harvest:** The proposed action includes harvest thinning to promote stand resiliency. There is concern that thinning the few remaining live stands of trees would negatively impact their value for wildlife cover, landbird species habitat, moisture retention, and nutrient recycling.
4. **Economics:** Commercial value of fire-killed trees will deteriorate quickly if salvage does not occur within the next year. The recovery value of the timber will have an effect on the local economy. Any delays in harvest would affect the economic viability of timber sales within the fire project area.
5. **Fuels:** There is a scientific controversy relevant to benefits of using salvage harvest to reduce fuels in order to reduce potential effects of future fire events. Some science advocates a passive approach to fuels management in burned areas, by recommending that natural processes are best for management of fuels. Others suggest that salvage harvest is the best way to reduce the potential for another

cycle of heavy fuel accumulations therefore, limiting future management opportunity to use prescribed fire to restore the landscape to historical conditions.

6. **Soils:** Concerns were expressed that using ground based mechanized equipment to harvest timber and reduce fuels would increase soil erosion and decrease soil productivity, especially on severe and moderate severity burned areas.

Alternatives

Alternatives Considered but Eliminated from Detailed Study

1. Use of ground-based skidding systems for salvage harvesting in the Upper Little Malheur River.
2. Winter logging and helicopter yarding was considered as an alternative to tractor skidding within the Upper Little Malheur subwatershed.
3. The relocation of Little Malheur trail and trailhead was considered due fire damage to the access road and forested vegetation.

Alternatives Considered in Detail

An alternative comparison chart is provided at the end of this section.

Alternative 1 (No Action)

The No Action Alternative is defined as no change from management activities as they now exist.

Alternative 2 – Proposed Action

Alternative 2 will meet the project purpose and needs by: 1.) salvage harvesting dead/dying trees, 2.) capturing the economic value of dead and dying trees, 3.) reducing levels of standing dead and down fuel, 4.) commercially and pre-commercially thinning stands of live trees improving resiliency of surviving forest vegetation, 5.) implementing reforestation activities to restore forest vegetation, 6.) replacing and updating habitat for dedicated old growth/associated wildlife species, and 7.) eliminating road and old skid trails responsible sedimentation and reduced water quality.

The description of the activities within Alternative were described in the previous section of this summary under the proposed action.

Alternative 3

Alternative 3 was developed from public concerns relating to timber harvest effects on water quality, sedimentation, and wildlife cover.

Key features in Alternative 3 reduce the risk of sedimentation by eliminating harvest in the RHCAs and not harvesting within 50 feet of the RHCAs for Category 2 and 100 feet for Category 4 streams (perennial and intermittent streams). This would further reduce the risk to water quality and sedimentation inputs from harvest activities. Greater retention of snags would also contribute to greater levels of future down log habitats.

To address snag habitat and retention of live tree concerns, more dead and dying trees than proposed in Alternative 2 are retained for snag habitat, and green/live trees would not be harvested to provide vegetative diversity. Concerns were raised that the strategy for managing snag habitat in the Proposed Action may not meet dead habitat dependent primary cavity excavator (PCE) needs. Recent studies (Knotts, 1998; Saab and Dudley, 1998; Dixon and Saab, 2000; Saab et al., 2002), indicate that the Forest Plan standard of 2.4 snags per acre would not meet minimum wildlife needs for management indicator species/PCE species in these severe burn habitats. Alternative 3 was designed to leave higher levels of snag habitat distributed in a way that accommodates a broader range of

cavity excavator species. A total of 13 snags per acre (see Design Measure section under wildlife for size distribution) would be retained in each harvest unit. In the salvage harvest units, these snags would be distributed in 2-6 acre clumps in size throughout the treatment units. In addition, areas not harvested including patches of high density snag habitat would remain intact throughout the RHCAs and other patches of lower density habitat would also remain. These snag retention levels were established primarily to meet prescribed use levels for Lewis' woodpecker, hairy woodpecker, and northern flicker.

Generally, the non-timber harvest activities proposed for Alternative 3 are the same as Alternative 2. These activities include road closures, road decommissioning, skid trail obliteration, tree planting, and change in DOG and ROG described in Alternative 2. No pre-commercial thinning is proposed in Alternative 3.

Alternative 4

The focus of Alternative 4 is to provide a different snag management strategy for retention of wildlife snag habitat to retain all the dead and dying trees in the RHCAs from what was proposed in Alternative 2. Concerns were raised that the strategy for managing snag habitat in the Proposed Action may not meet snag retention needs for dead habitat dependent primary cavity excavator (PCE) needs. Recent studies (Knotts, 1998; Saab and Dudley, 1998; Dixon and Saab, 2000; Saab et al., 2002,) indicate that the Forest Plan standard of 2.4 snags per acre would not meet minimum wildlife needs for management indicator species/PCE species in these severe burn habitats. Alternative 4 was designed to leave snags in patches ranging in size from 4 to 90 acres in order to better meet the needs of PCE species because cavity nesters as a group prefer patches as opposed to single snags retained in uniform, even spaced distribution (Rose et al, 2001, Saab et al, 2002, Kotliar 2002). Within most of the salvage harvest units, no snags would be retained other than the smaller sub-merchantable trees, trees needed to meet down wood standards, and incidental standing cull trees. This snag strategy would require a non-significant Forest Plan amendment for both the salvage and resiliency harvest treatments.

Generally, the non-timber harvest activities proposed for Alternative 3 are the same as Alternative 2. These activities include road closures, road decommissioning, skid trail obliteration, tree planting, precommercial thinning, and change in DOG and ROG described in Alternative 2.

Alternative 5

Detailed consideration is given to an alternative considered but not analyzed in the DEIS (#3 Restoration Only, No Timber Harvest) and developed into Alternative 5. There were numerous public comments on the DEIS requesting that this alternative be fully analyzed in the FEIS and follow recommendations contained in the Beschta Report. This alternative includes many of the restoration activities included in Alternatives 2, 3, and 4. It does not include salvage of dead and dying trees and it does not include commercial/precommercial thinning to improve stand resiliency.

The alternative is based on recommendations contained in a publication known as the Beschta Report. The Beschta Report is a compilation of scientist recommendations for fire recovery projects and post-fire timber salvage. Recommendations in this report favor natural recovery, with little or no salvage, as the best method to maintain a variety of resource values. Alternative 5 considered these recommendations and included some of them as features within the alternative to reduce sedimentation risk and retain live trees.

The Alternative 5 projects include road restoration, old skid trail obliteration, and selective conifer planting. The road restoration includes activities identified in Alternative 2, plus additional road closures to further increase wildlife security, retention of snags from firewood cutting, and reduce threat of noxious weed spread, etc. The skid trail obliteration would be the same as described in Alternative 2.

Conifer planting would occur in those stands with severe fire damage where natural regeneration may be a future problem. The areas not prescribed for planting are expected to seed in naturally and will be monitored after five years for planting needs.

Forest Plan Amendments

Alternatives 2, 3, 4 and 5 would require amendments to the Forest Plan if selected. All action alternatives were designed, in part, to replace Dedicated Old Growth that is now unsuitable due to the fire. In addition, Alternative 4 would also require a Forest Plan amendment to deviate from snag retention standards.

All the action alternatives were designed, in part, to replace Dedicated Old Growth that is now unsuitable due to the fire. A non-significant Forest Plan amendment would be required (see Forest Plan Amendments below and in Chapter 2) to re-delineate and replace the DOG and ROGs.

Alternative 4 was designed specifically to leave higher levels of snag habitat in a distribution pattern designed to increase cavity excavator habitat for species such as the black-backed woodpecker. By distributing snag patches on a unit basis for better utilization by the species, and not a 40-acre block basis, we may not meet Forest Wide Standard and Guideline #39. Alternative 4 would include a site-specific, non-significant amendment to Forest Wide Standard and Guideline #39.

Selection of the action alternatives would be consistent with the Forest Plan, as amended (36 CFR 219.10 (c)).

Comparison of Alternatives

Description of Activities by Alternative (Summary)

Activity	Units	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Treatment Type - Timber Harvest Prescription/Logging Systems						
Salvage - HSV	Acres	0	3451	2825	3121	0
Resiliency - HTH/HSV	Acres	0	223	0	223	0
RHCA Salvage - HSV	Acres	0	601	0	0	0
Helicopter	Acres	0	3785	2520	2885	0
Tractor	Acres	0	490	305	459	0
Total Harvest	Acres	0	4275	2825	3344	0
Reforestation/Pre-Commercial Thinning Activities						
Planting	Acres	0	4723	4723	4723	2845
Natural Regen/Interplanting	Acres	0	229	229	229	0
Pre-commercial Thin/Planting	Acres	0	370	370	370	0
Pre-commercial Thin	Acres	0	22	22	22	0
Road Activities/Landing Construction						
Temporary Road Construction	Miles	0	0.6	0.6	0.4	0
Helicopter Landing or Service Landings	Number	0	23	23	22	0
Maintenance	Miles	0	69.5	69.5	69.5	69.5
Reconstruction	Miles	0	.2	.2	.2	.2
Road Restoration						
Gated Closure	Miles	0	7.0	7.0	7.0	16.2
Road Decommissioning/Old Skid Trail Obliteration						
Decommission	Miles	0	11.8	11.8	11.8	11.8
Un-drivable	Miles	7.0	7.0	7.0	7.0	7.0
Skid Trail Obliteration	Miles	0	2.2	2.2	2.2	2.2

Comparison of Alternatives by Issue and Measurement

Resource Issue (Number corresponds to Key Issue)	Unit of Measure	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt 5
#1 Snags Retained within Harvest Units	Numbers Retained	No Harvest	All Harvest Areas - 2.4/Ac; clumpy	All Harvest Areas - 13/ac; clumpy	Salvage Harvest Areas – none except units 3 & 12;* Resiliency - 1.5 – 2.5 /ac; clumpy	No Harvest
#1 Acres and % severely fire affected forested habitat remaining after salvage (Monument Fire Area-Malheur portion)	Acres	16,942 (100%)	13,465 (79%)	14,475 (85%)	14,341 (85%)	16,942 (100%)
#2 Acres of tractor skidding	Acres	0	490	305	459	0
#2 Acres of harvest in RHCAs	Acres	0	601	0	0	0
#2 Stream shading change due to salvage harvest	Average	0	-1 %	0	0	0
#2 Non-harvest ground disturbing activities within RHCAs - mod/severe burned areas.	Acres	0	20.2	20.2	20.2	20.2
#3 Acres of resiliency treatment (green tree harvest)	Acres	0	223	0	223	0
#3 Acres of marginal and satisfactory cover in the project area	Acres	281	281	281	281	281
#4 Commercial Harvest	Volume (MMBF)	0	30.0	14.4	26.5	0
#4 Present Net Value	\$ millions	0	\$1,734,048	-\$1,383,448	\$1,287,270	-\$2,171,750
#4 Timber Jobs Provided	Number	0	271	131	240	0
#5 Fire severity and fire intensity in 20 years as measured by fuel loading within RHCAs of Little Malheur and Camp Cr. **	See Below	**	**	**	**	
#6 Tractor Harvest on Severely and Moderately Burned Soils	Acres	No Harvest	466	264	415	No Harvest

*Alternative 4 retains un-harvested patches of snags dispersed throughout the project area.

** The fuel loadings vary by fire regime and plant association group; see table 2-6.

Average Fuel Loading by Alternative

Project Area	Historical Tons/Acre	Alternative 1 Tons/Acre	Alternative 2 Tons/Acre	Alternative 3 Tons/Acre	Alternative 4 Tons/Acre	Alternative 5 Tons/Acre
Camp Creek RHCA	7-15	87	50	87	87	87
Little Malheur River RHCA	7-15	60	26	60	60	60
Little Malheur River Uplands	5-7	31	7	14	7	31
North Fork Malheur River Uplands	5-7	33	9	14	9	33

Preferred Alternative

Alternative 4 is the preferred alternative. The Malheur Forest Supervisor will select an alternative in the Record of Decision. Any of the alternatives considered in detail will be available for selection at that time.

Affected Environment

The Monument Recovery Project area lies within the Upper North Fork Malheur River and Little Malheur River watersheds, which is part of the Upper Malheur sub-basin, of the Middle Snake/ Boise Basin. The impacted forested vegetative area is a characterized primarily as hot-dry/warm-dry biophysical environment. These forests are characterized by open grown ponderosa pine to multistoried mixed conifer stands dominated by ponderosa pine. The two major soil types include volcanic ash soils and residual loam/clay soils. The clay/loam soils located in the Camp Creek area are shallow and highly erodable. Both watersheds are important to rebuilding and sustaining populations of bull trout. Bull trout are not present in streams in the Upper North Fork Malheur watershed within the project area. Bull trout were historically present in the Little Malheur watershed but currently they are not present. The Little Malheur River is currently on the Oregon DEQ 303(d) list of stream for exceeding the 64 degree water temperature standard. The project area is adjacent the Monument Rock Wilderness.

Environmental Effects

Alternative 1 (No Action)

Reforestation of upland and riparian conifer sites would take several decades, and would likely provide a natural structure once it is established. The risk of secondary mortality from insects and disease would remain very high in many of the overstocked green forested stands. Fuel loading will remain constant through long-term snag attrition. This is important when examining large fire occurrence in the area adjacent to and including the Monument Fire. The continual buildup of woody debris will add future available fuel that will lead to high severity fire and long burning duration in the event of a landscape

scale wildfire. Sediment production from existing road and old skid trail problems would continue. The best achievable conditions for cavity-nesting species would be provided. The alternative would not provide any economic benefits to the local community.

Alternative 2

Reforestation would be accelerated throughout the project area. The risk of secondary mortality from insects and disease would be reduced by thinning of the pockets of overstocked green-forested stands. Long-term, potential fire severity would be reduced with salvage harvesting. Road closures, road decommission, and old skid trail obliterations would reduce long term risks of sedimentation. There would be short-term adverse impacts to cavity nesting species habitat but long-term, habitat suitability of the standing dead trees would rapidly diminish as they rot and fall. The alternative would provide a high level of economic benefits from harvesting timber.

Alternative 3

Reforestation would be accelerated throughout the project area. The risk of secondary mortality from insects and disease would remain very high in many of the overstocked green-forested stands. Long-term, potential fire severity would be reduced due to salvage harvesting. There would also be a reduction in future fuel loading in the RHCA's that improve the future desired condition. Road closures, road decommissioning, road maintenance, and old skid trail obliterations would reduce long-term risks of sedimentation. There would be short-term adverse impacts to cavity nesting species habitat but long-term, habitat suitability of the standing dead trees would rapidly diminish as they rot and fall. The alternative would provide a low level of economic benefits related to harvestable timber.

Alternative 4

Reforestation would be accelerated throughout the project area. The risk of secondary mortality from insects and disease would be reduced in many of the overstocked green-forested stands. Long-term, potential fire severity would be reduced due to salvage harvesting. Road closures, road decommissioning, road maintenance, and old skid trail obliterations would reduce long-term risks of sedimentation. There would be short-term adverse impacts to cavity nesting species habitat but long-term, habitat suitability of the standing dead trees would rapidly diminish as they rot and fall. The alternative would provide a moderate level of economic benefits related to harvestable timber.

Alternative 5

Reforestation would be accelerated in those areas severely burned. The risk of secondary mortality from insects and disease would remain very high in many of the overstocked green-forested stands. Fuel loading will remain constant through long-term snag attrition. This is important when examining large fire occurrence in the area adjacent to and including the Monument Fire. The continual buildup of woody debris will add future available fuel leading to high severity fire and long burning duration in the event of a landscape scale wildfire. Road closures, road decommissioning, road maintenance, and old skid trail obliterations would reduce long term risks of sedimentation. The best achievable conditions for cavity-nesting species would be provided. The alternative would provide minimal economic benefits to the local community by providing reforestation and road projects for employment. There would be no harvestable timber from this alternative.

Changes from Draft to Final Environmental Impact Statement

The following changes were made between the DEIS and FEIS. Minor corrections to grammar, spelling, explanations, and paragraph formatting have also been made.

Chapter 1

The following changes were made between the Draft and Final EIS. This listing does not include corrections, explanations, or edits to grammar and spelling. Some of changes resulted from comments made to the DEIS.

1. The purpose and need rationale for fuel treatment was clarified. The update includes desired fuel loading information and emphasizes the need to meet this desired fuel loading by removing the standing dead trees.
2. The proposed action was modified to reflect field information gathered during the summer. Field information revealed that fire damaged stands in the low to moderate burn damage category contained higher tree mortality than originally estimated. The number of acres of proposed commercial thinning and precommercial thinning in resiliency treatments were reduced (75%). Field observations revealed higher tree mortality in these stands making salvage treatment the reasonable treatment.
The location and size of salvage and resiliency harvest treatments were modified to reflect field conditions. The total harvest acres were reduced approximately 11%. The majority of these changes occurred in areas with low standing dead tree density that would not economically support removal with a helicopter.
3. Salvage harvest in the portion of the RHCA below the confluence of Camp Creek and the Little Malheur River was changed to no harvest. Field data revealed there is a lack of large woody debris in this stream reach of the Little Malheur.

Chapter 2

1. Detailed consideration is now given to an Alternative Considered but Eliminated from Detailed Study in the DEIS (#3 Restoration Only). There were numerous public comments on the DEIS requesting that this alternative be developed. This alternative does not include timber harvest activities. Alternative 5 is developed from the restoration only theme in the DEIS and is now fully analyzed in the FEIS.
2. Additional field surveys to better locate and identify the type of damage to the forested vegetation were completed during the summer of 2003. The new survey information leads to modifications of treatment unit boundaries and the type of harvest treatment due increased tree mortality. Also some the treatment map unit numbers were changed to simplify project implementation. The tables in Appendix A indicate a comparison of old and new numbers.
3. The total number of harvest acres decreased in all the action alternatives. Alternative 2 decreased 11%, Alternative 3 decreased 4%, and Alternative 4 decreased 17%. The decreases were made to remove areas with very low densities of salvageable trees. Helicopter yarding these low density areas were not economically viable.
4. Approximately 75% of the resiliency treatments acres (green tree harvest) in Alternatives 2 and 4 are now considered salvage harvest. The burn damage to the residual trees in these treatment areas was greater than originally estimated. The

increase in tree mortality in these stands reduced stocking that made the need for thinning unnecessary. This increase in tree mortality also changed the original big game cover estimates in the project area. There are no longer any stands that provide cover affected by either commercial thinning or precommercial thinning. A non significant Forest Plan is no longer needed to implement either Alternative 2 or 4.

5. Harvest Units 3 and 12 retained 1.5 to 2.5 snags per acre as was prescribed for these units before they were changed from resiliency treatments to salvage treatments. The southern half of Unit 2 was removed from treatment and became a snag retention area. Also the northern half of Unit 6 and the very southern portion of Unit 12 became snag retention areas.
6. Planting and thinning acres also decreased from DEIS estimates. Planting was reduced approximately 23% across Alternatives 2, 3, and 4. Precommercial thinning decreased approximately 4%. The reductions reflect better mapping of non forested areas that decreased both the acres of potential planting and thinning.
7. All the tables and maps at the end of chapter 3 were updated to reflect alternative revisions.
8. Salvage harvest activities proposed in the portion of the RHCA below the confluence of Camp Creek and the Little Malheur River were changed to no harvest. Field data revealed that there is a lack of large woody debris in this stream reach of the Little Malheur.

Chapter 3

1. Noxious weed field surveys were completed during the summer of 2003. A summary of the information is now included in the Affected Environment section for noxious weeds and analysis impact possible impacts of the activities assessed in Chapter 3 of the EIS. A map and data table for each weed site is in the project file.

The effects of Alternative 5 were included in all the resource sections in Chapter 3 of the FEIS. The economic analysis in Chapter 3 of the FEIS was modified to reflect changes in lumber values, reduction of deterioration of dead timber, and correct an error in the analysis.

2. A low densely roaded areas analysis (Roads/Access section) was completed for the project area. A map of the findings is included in the project files and summary in the FEIS, Chapter 3, Roads. The maps can be found in the project file.
3. The soils section of the FEIS in Chapter 3 provides additional analysis of soils impacts of harvest on biotic/nutrients; impacts from harvest; food web, and soil impacts of helicopter yarding.
4. The wildlife affected environment and environmental effects sections include additional analysis and information in Chapter 3 of the FEIS. Included updates are the management indicator species (MIS) primary cavity excavator snag analysis added additional information and effects. Other changes included additional effects discussion on landbirds and neotropicals birds; the effects to goshawks, more lynx information; MIS survey information, effects on pine

martin , bald eagle effects calls were reviewed, and big game winter range road densities were calculated.

5. The sensitive plant section of Chapter 3 of the FEIS was updated to reflect new field survey information gathered in the spring of 2003.
6. The effects to Columbia spotted frogs, Malheur mottled sculpins, and redband trout were reanalyzed and changes were made to the effects determinations.
7. Additional analysis was included relating to the fire threat if harvest does not occur.
8. An analysis of unroaded areas was added in response to a comment on the DEIS from the Oregon Natural Resource Council.
9. The stream temperature information was reviewed and additional information was included in the aquatics section of Chapter 3.

Chapter 4

The distribution list was updated to include new individuals, organizations, and agencies that received the FEIS.

Appendices

Three new appendices were added, Appendix B - Road Listing, Appendix F - Response to Comments and Appendix G - Post Fire Grazing Guidelines.

References

A number of references were reviewed but not used in the analysis. These are listed under "References Reviewed."

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