

DECISION NOTICE  
And  
FINDING OF NO SIGNIFICANT IMPACT  
  
HUNTER INTEGRATED RESOURCE PROJECT

USDA FOREST SERVICE  
MT. HOOD NATIONAL FOREST  
CLACKAMAS RIVER RANGER DISTRICT  
CLACKAMAS and MARION COUNTIES, OREGON

This Decision Notice is made available with the Environmental Assessment for the Hunter Integrated Resource Project pursuant to 36 CFR 218.7(b). The Hunter Integrated Resource Project Environmental Assessment (EA) contains an in-depth discussion of the setting, ecological processes, resource conditions, the purpose and need for action, the proposed action designed to achieve the purpose and need, project design criteria, alternatives considered, the effects and benefits of those alternatives and appendices which include detailed maps and a discussion of comments received.

This project is located in T.6 S., R.6 E.; T.6 S., R.7 E.; T.6 S., R.8 E.; T.7 S., R.7 E.; T.7 S., R.8 E.; T.8 S., R.7 E.; T.8 S., R.8 E.; T.9 S., R.7 E.; T.9 S., R.8 E.; Willamette Meridian. All section (s.) number references are to sections of the EA unless specified otherwise. The EA is incorporated by reference and can be found at the [Forest's web site](#). There are also numerous specialist reports and data for silviculture, hydrology, geology, fisheries, soils, wildlife, botany, recreation, heritage resources, transportation and fuels which are incorporated by reference. Acres and miles are approximate since they are derived from GIS. The Mt. Hood National Forest is referred to as 'the Forest' in this document. The Mt. Hood National Forest Land and Resource Management Plan (1990) and Standards and Guidelines, as amended, are referred to as the Forest Plan in this document.

This Decision Notice documents my decision and rationale for the selection of Alternative B, the proposed action for the Hunter Integrated Resource Project Environmental Assessment. The Forest proposes a suite of projects including vegetation management, transportation management and aquatic/riparian management actions.

The following background section is a brief summary to help with understanding the context of the Hunter Integrated Resource Project.

### **Purpose and Need (s. 1.3)**

Since this proposal contains a suite of projects that have different purposes and address various needs, this section is organized by project type.

**Thinning** is proposed to improve the health and increase diversity of densely stocked forested areas. The desired condition is to have stands that are relatively healthy with growth rates commensurate with site capability. Another primary purpose is to keep forests productive to sustainably provide forest products now and in the future (s. 1.3.1).

**Lodgepole pine plantations** would be treated to convert them to other conifer species more appropriate to the site. The desired condition is to have stands with growth rates commensurate with site capability. Another primary purpose is to move stands toward conditions of dispersal and suitable habitat in spotted owl critical habitat (s. 1.3.2).

**Diseased stands** would be treated to minimize the impact of dwarf mistletoe and blister rust. The desired condition is to have stands that are relatively healthy with growth rates commensurate with the site's capability (s. 1.3.3&4).

**Forage** for deer and elk would be enhanced. The desired condition is to have forest stands across the landscape with a mix of ages and densities sufficient to provide all of the habitat needs for deer and elk including adequate forage. At this time, the primary lacking element is forage (s. 1.3.5).

A **utility corridor** would have safety enhancements. The desired condition is to have a power transmission facility that is safe and unencumbered by encroaching vegetation. The goal is to remove trees before the hazard becomes imminent (s. 1.3.6).

**Roadside danger trees** would be removed. The desired condition is to have a landscape accessed by a network of roads that provide for safe access (s. 1.3.7).

**Roads** would be maintained and repaired. Some roads would be closed or decommissioned. The desired condition is to have a landscape accessed by an appropriate network of roads that provide for management access and visitor safety while minimizing risk to aquatic resources (s. 1.3.8).

**Streams and riparian** areas would be managed to restore and enhance aquatic resources. The desired condition is to have streams with complex structure, unimpeded species mobility, and functional riparian habitat (s. 1.3.9).

## **Decision**

I have reviewed the EA and the information contained in the project file. I have also reviewed and considered the public comments submitted on this project (see Appendix B of the EA for response to comments). I have determined that there is adequate information to make a reasoned choice among alternatives. **I have decided to select Alternative B, the Proposed Action.** The proposed action is described at Section 2.2 of the EA.

Forest Service Handbook 1909.15, Chapter 10, provides a process for making incremental changes to alternatives. Ongoing collaboration and interdisciplinary analysis has resulted in slight modifications of the proposed action compared to what was described at the time of scoping. I believe these changes result in a better proposal and a better decision. I find that the changes will result in relatively minor differences in resource benefits and impacts. Most of the changes relate to proposals for individual roads and the size of one unit. These are addressed in the Response to Comments section of Appendix B.

Alternative B includes the following activities.

**Table 1. Summary of Vegetation Management Actions**

<b>Purpose &amp; Need</b>	<b>Proposed Action</b>	<b>Acres</b>	<b>Notes</b>
Improve Forest Health and Diversity in Plantations (s. 2.2.1)	Variable-density thinning with Skips and Gaps	1,880	<ul style="list-style-type: none"> <li>• 1,480 acres in Matrix</li> <li>• 400 acres in Late-Successional and Riparian Reserves</li> </ul>
Improve Forest Health and Diversity in Fire-Originated Stands (s. 2.2.1)	Variable-density thinning with Skips and Gaps	260	<ul style="list-style-type: none"> <li>• 240 acres in Matrix</li> <li>• 20 acres in Riparian Reserves</li> <li>• 16 stands ranging from 3 to 62 acres in size</li> </ul>
Improve Forest Health and Diversity in Lodgepole Pine Plantations (s. 2.2.2)	<ul style="list-style-type: none"> <li>• Shelterwood Harvest</li> <li>• Planting</li> </ul>	116	<ul style="list-style-type: none"> <li>• Matrix</li> </ul>
Improve Forest Health and Diversity in Hemlock Stands Affected by Dwarf Mistletoe (s. 2.2.3)	<ul style="list-style-type: none"> <li>• Site Preparation</li> <li>• Planting</li> </ul>	81	<ul style="list-style-type: none"> <li>• Matrix. Masticator machine would mulch shrubs and young hemlock trees.</li> </ul>
Protect Western White Pine Stands from White Pine Blister Rust (s. 2.2.4)	Pruning	250	<ul style="list-style-type: none"> <li>• Occurs on a variety of land allocations</li> </ul>
Create Early-Seral Habitat for Deer and Elk (s. 2.2.5.1)	<ul style="list-style-type: none"> <li>• Regeneration Harvest with Reserves</li> <li>• Seeding with Forage Species</li> <li>• Guzzler Installation</li> </ul>	60	<ul style="list-style-type: none"> <li>• Matrix</li> </ul>
Maintain Forage Openings for Deer and Elk (s. 2.2.5.2)	<ul style="list-style-type: none"> <li>• Control Invasive Plants</li> <li>• Seed with Native Forage Species</li> <li>• Prune/Cut Shrubs</li> <li>• Remove Encroaching Small Conifers</li> </ul>	115	<ul style="list-style-type: none"> <li>• 18 openings ranging from 2 to 16 acres in size</li> </ul>
Enhance Forage for Deer and Elk (s. 2.2.5.3)	Prescribed Burning	11	<ul style="list-style-type: none"> <li>• All within A9-Key Site Riparian land allocation</li> </ul>
Utility Corridor Management (s. 2.2.6)	Tree Removal Under & Adjacent to Power Lines	66	<ul style="list-style-type: none"> <li>• Linear corridors crossing a variety of land allocations</li> <li>• 23 separate areas to be managed ranging in size from less than half an acre to 12 acres in size</li> </ul>
Roadside Hazard Management (s. 2.2.7.1)	Danger Tree Removal Along Forest Service Roads	296	<ul style="list-style-type: none"> <li>• Occurs on a variety of land allocations</li> </ul>

**Table 2. Summary of Transportation System Management Actions**

<b>Purpose &amp; Need</b>	<b>Proposed Action</b>	<b>Miles</b>	<b>Notes</b>
Manage the Road System to Allow for Safe Timber Hauling (s. 2.2.8.1)	Maintain and Repair Forest Service System Roads	148	<ul style="list-style-type: none"> <li>• The intensity of work varies based on location and the work recently accomplished by the Forest and other operators.</li> </ul>
Provide Temporary Access for Vegetation Management (s. 2.2.8.2)	Construct and Reconstruct Temporary Roads and Existing Road Alignments. Rehabilitate and Close Following Use	13.9	<ul style="list-style-type: none"> <li>• 2.5 miles of temporary road construction in locations where no road alignment previously existed.</li> <li>• 2.7 miles of existing road alignment reconstruction on road alignments that were once temporary roads.</li> <li>• 6.9 miles of existing road alignment reconstruction on road alignments that were once system roads.</li> <li>• 1.8 miles of existing road alignment reconstruction on road alignments that were once system roads. After use, return roads to the condition they are now with entrance management.(4200390, 4650170, 4660140, 4670130)</li> </ul>
Reduce Resource Risks and Maintenance Costs Associated with Forest Service System Roads (s. 2.2.8.6)	Decommission and Close Forest Service System Roads	25.6	<ul style="list-style-type: none"> <li>• 1.6 miles of active and passive decommissioning of roads no longer needed.</li> <li>• 24 miles of closure of roads that remain on the System.</li> </ul>
Ensure Important Access Needs are Met (s. 2.2.8.6)	Return Former Forest Service System Road to the Road System	0.3	<ul style="list-style-type: none"> <li>• Road 5731015 accesses powerlines managed by the Bonneville Power Administration. This access need was inadvertently overlooked during previous planning that authorized decommissioning.</li> </ul>

**Table 3. Summary of Aquatic/Riparian Management Actions**

<b>Purpose &amp; Need</b>	<b>Proposed Action</b>	<b>Notes</b>
Restore and enhance streams and aquatic resources. (s. 2.2.7)	Culvert Replacement, Woody Debris, Dispersed Recreation Rehabilitation	<ul style="list-style-type: none"> <li>• Replace/Repair culverts that impede fish passage.</li> <li>• Add woody debris in two streams.</li> <li>• Restore riparian areas impacted by user created routes related to dispersed camping.</li> </ul>

Project Design Criteria (PDC) in section 2.2.9 are part of the proposed action and provide important resource protections. No significant impacts were found that would require further mitigation.

**Special Road Work**

The EA identifies specific road related actions to minimize log haul impacts to listed fish species at stream crossings (E8 on page 51). These actions were developed in cooperation with the National Marine Fisheries Service. Since these practices are somewhat new, I would like to elaborate on them here.

1. Road 4672 at Berry Creek - Biobags will be placed on the bridge scuppers to prevent sediment from washing into the stream. Wattles will be placed on the road edges to direct any runoff to the well-vegetated forest floor that will drain away from the stream.
2. Road 4680140 at Pinhead Creek – After cleaning the ditch prior to hauling, two check dams will be installed in the ditch to trap sediment. Wattles will be installed on both sides of the road to direct any runoff to the well-vegetated forest floor away from the stream.
3. Road 4680140 at West Fork Pinhead Creek - Cross drain pipes will be installed under the road 40 feet on both the north and south approaches to shorten the connection from the road ditch to the stream. The ditches will drain to a riprap pad before diffusing onto the well-vegetated forest floor away from the stream. Wattles will be installed on the fill slopes adjacent to the stream crossing that will direct any runoff to the well-vegetated forest floor away from the stream.
4. Road 4660 at Lost Creek – A 36-inch drop inlet culvert will be installed to capture the entire runoff from the ditch. The drop culvert will capture the high flow runoff, and will act as a sediment trap. The sediment trap will be cleaned at least every 2 years. Wattles will be installed in the ditch to help trap sediment prior to reaching the drop inlet culvert. This area will be monitored during the first wet season.
5. Road 4660 at Pot Creek - A check dam will be installed in the upstream ditch approach that will trap sediment in the ditch. Wattles will be installed along the downstream side fill slope. The slopes are well-vegetated, and the wattles will direct any runoff to the forest floor away from the stream.

## **Decision Rationale**

I believe that the proposed action addresses the Purpose and Need and opportunities discussed in the EA at section 1.3.

**Tree Health and Growth** – The thinning treatments associated with the proposed action will increase the health and vigor, as well as enhance diameter and height growth (s. 1.3.1.2 & s. 3.1).

The stands included in this project have been examined and those proposed for thinning have been found to be overstocked. When trees are too closely spaced, they experience a slowing of growth due to competition for sunlight, moisture and nutrients. Suppressed, slow-growing trees have begun to die and have become susceptible to diseases and wind damage.

Based upon computer model simulation, the average diameter in thinned stands, after 50 years of growth would be 21.2 inches diameter in plantations and 18.2 inches diameter in fire-origin stands, compared to no action, which would result in diameters of 18.1 and 13.9 inches respectively. Currently, the average diameters are 12.4 and 10.3 inches respectively. Having larger, healthy trees on the matrix lands suitable for timber production is an important management goal associated with the Northwest Forest Plan's implementation; and, it is also key for land allocations where the objective is to accelerate the development of late-successional stand attributes. As forested stands reach an average

diameter of 20 inches or larger, they begin to develop some of the characteristics (e.g., larger tree boles) necessary for late-successional dependent wildlife species.

The silvicultural activities associated with my decision will reduce the competition for nutrients, moisture, and sunlight, and discriminate against the smaller, overtopped, and/or less vigorously growing trees. As a result, the anticipated growth and developmental rate of the larger trees will increase in comparison to no action. I believe that thinning in both plantations and fire-origin stands is prudent to maintain health and growth and to achieve many important goals of the Forest Plan.

**Diversity** – Diversity is the distribution and abundance of different native plant and animal communities and species. At the landscape scale, a mix of forest types and ages can provide habitat for a wide range of plants and animals. At the stand scale other elements become more relevant such as species composition, snag abundance or the number of canopy layers. While all stands are different based on their history and local conditions, many of the targeted stands now have minimal variability of vertical and horizontal stand structure. (s. 1.3.1.3, s. 3.2 & s. 3.8.7).

The silvicultural prescriptions associated with my decision consider the need to modify stands to enhance diversity while achieving other important goals of the Forest Plan. Projects will change horizontal and vertical structure, emphasize retention of minor species, and introduce variability. Snags will occur over time, at levels sufficient to provide for snag dependent species. I believe the proposed action is appropriate to move these stands toward enhanced diversity.

**Wood Products** – My decision will provide forest products consistent with the Northwest Forest Plan's goal of maintaining the stability of local and regional economies now and in the future (s. 1.3.1.4, s. 3.1 & s. 3.16).

As a result of implementing the silvicultural prescriptions, the proposed action will provide approximately 20 million board feet of timber and will support jobs important to local communities. It will also result in vigorously growing stands that would be capable of providing future forest products. The proposed action will also provide special forest products. The No-action Alternative would not provide wood products and would result in stands with reduced growth and productivity. I believe this action is a prudent step toward sustainable forest management.

**Lodgepole Pine Plantations** – The plantations have off-site lodgepole pine trees growing in areas that originally had other species (s. 1.3.2).

The proposed action involves harvesting some of the lodgepole pine trees while retaining a sufficient number to provide the desired shelter to ameliorate harsh site conditions. Trees would be planted that are more appropriate for the site. Without this action, the lodgepole pine trees would eventually be killed by mountain pine beetles and the stands would not be productive parts of the Matrix land allocation. Without this intervention, it is likely that the stands would not grow to become suitable northern spotted owl habitat, which is the desired condition in critical habitat areas. I believe this action is appropriate to move these stands toward enhanced productivity.

**Diseased Stands** – The proposed action would treat stands with dwarf mistletoe infection in hemlock trees. Because the infection is so severe and hemlock is the primary species present, with no treatment, these stands would continue to deteriorate and transition to brush fields. The proposed treatment would

remove the rhododendron brush and the smaller hemlock trees with a masticator which will prepare the site for planting other conifer species that are not affected by this parasite. This would change the growth trajectory of the stands and they would eventually become a productive component of the Matrix land allocation and would contribute to spotted owl habitat (s. 1.3.3). Young stands with white pine blister rust would be treated by pruning the lower limbs. White pine blister rust is a non-native disease that has caused a dramatic decline in western white pine populations on the Forest. Pruning these trees would result in a greater likelihood of their survival to maturity and would restore their place in high elevation ecosystems (s. 1.3.4). I believe these disease treatments are appropriate to move these stands toward enhanced productivity.

**Forage** – My decision will provide several forage enhancements. In recent years, early-seral habitats have declined across the planning area. Deer and elk are management indicator species that require a mix of habitat types including early-seral habitats that provide forage.

The proposed action includes: 1) a regeneration harvest on 60 acres in a mid-age plantation; 2) enhancement of existing forage openings on 115 acres; and 3) burning 11 acres in a meadow. While other projects such as thinning and the power line treatment also provide some incidental forage as a temporary byproduct, these three project types are specifically designed to enhance forage for deer and elk.

Changes in forest management direction and practices over time have resulted in practices that favor the development of late-successional features over large areas of the forest. In the Hunter project area, for instance, nearly 55,000 acres are designated critical habitat for spotted owl. Additional areas are managed for wilderness characteristics, riparian values, and habitat for species dependent on late-successional forest. With the reduction in regeneration timber harvest on the Forest in the past two decades and continued tree growth, cover habitats are common but early-seral habitats are becoming scarce. Currently less than 3% of the planning area is in early-seral habitat and that figure is declining each year. Once tree canopy closes the stands are considered mid seral, and forage and other early-seral attributes are lost.

One of the purposes of the proposed action is to add some early-seral habitat to the landscape and to enhance some existing forage opportunities. While the project addresses some of the need for early-seral habitat it does not attempt to provide all of the early-seral habitat needed across the landscape. Management direction provided by the Forest Plan as amended, identified the need to create a sustainable level of forage through regeneration harvest in mature stands. While regeneration harvest in mature stands is not proposed in this area at this time, there are opportunities to provide forage in other ways (s. 2.2.5 & 3.8.3).

A regeneration harvest is proposed for a 60-acre plantation in the Matrix within the B11-Deer and Elk Summer Range land allocation (Unit 102). The unit contains palatable brush species that are being shaded out by conifers. The proposed action will also enhance existing forage in several small areas (s. 2.2.5). I believe these actions are appropriate first steps in our attempt to reverse the decline in forage and early-seral habitats in this watershed, and are consistent with the goals of the B11-Deer and Elk Summer Range land allocation.

**Utility Corridor Management** – I feel that it is important to work with the Bonneville Power Administration to reduce the hazards that escalate as trees grow adjacent to high-voltage power lines (s. 1.3.6 & s. 2.2.6).

**Roadside Danger Trees** – It is imperative to remove trees that become hazardous (s. 1.3.7).

**Transportation System Management** – In the past decades, appropriated road maintenance funds have declined dramatically. Given that reality, I feel it is important to use the opportunity afforded by timber removal projects to use the value of the timber to fund road maintenance and repairs. There is also the opportunity to reduce road maintenance costs by closing roads (s. 1.3.8 & s. 2.2.8). The temporary roads constructed and the existing road alignments that are reconstructed will be rehabilitated after use. I have determined that the use and treatments of the roads in the proposed action is prudent and warranted to achieve resource objectives.

**Aquatic and Riparian Habitat Enhancement** – My decision would replace some culverts that are not functioning properly, add some woody debris to streams, and restore some dispersed camping sites adjacent to streams. This is important work to move these habitats toward desired conditions (s. 1.3.9 & s. 2.2.7).

**Management Direction** (s. 1.2.1) – The proposed action has been designed to meet the goals and objectives of the Forest Plan as amended by the Northwest Forest Plan and other amendments. The proposed action would occur on riparian reserves, late-successional reserves and matrix land allocations. While each land allocation has different goals and objectives, I find that the various proposed actions including variable density thinning are appropriate tools to use to move the area toward desired conditions. Further discussion of consistency with standards and guidelines can be found below.

## **Public Involvement (s. 1.6)**

For this project, a collaborative process with the Clackamas Stewardship Partners began in 2014; a process that built on years of collaboration dating back to 2004. Through this collaborative process, the Forest Service participated in several meetings and field trips with the collaborative group on this project.

A scoping process to request public input for this project was conducted. A letter describing the proposed project and requesting comments was sent out on March 18, 2016. The Forest publishes a schedule of proposed actions (SOPA) quarterly. The project first appeared in numerous issues since 2014. Public field trips were conducted on August 12, 2014, June 9, 2015 and August 11, 2015 to visit the project area and discuss the purpose and need and resource concerns. The legal notice for the 30-day comment period for this project was published in The Oregonian on April 5, 2017.

I received a wide range of comments. Responses to comments are included in Appendix B of the EA. The following is a sample of some of the comments that I would like to highlight here and respond to personally.

- Comments received from several public sources raised a concern about the proposal to use the **regeneration harvest method**. (Unit 102) Some objected to the unit size. The proposed action has been modified to change the size of Unit 102 from 98 acres to 60 acres; while this may

satisfy some, others have suggested no regeneration harvest. Commenters state that there is sufficient forage in other areas. Others described the proposal as the “clearcut of the century.” They urged deleting such controversial logging projects. Some say that they have worked over the years to leverage public support in ending the “destructive practice of clearcutting” and interpret this proposed action as a relapse to the type of traditional forestry that has led to the majority of human-caused, long-term impacts on the Forest today. Other commenters offered support for the actions that create or enhance forage including Unit 102.

In recent years, early-seral habitats have declined across the planning area. Deer and elk are management indicator species that require a mix of habitat types including early-seral habitats that provide forage. The Forest Plan as amended provides direction for the enhancement of forage to provide for deer and elk. The regeneration harvest (Unit 102) is located in the B11-Deer and Elk Summer Range land allocation that has an emphasis on providing appropriate habitats. Ten to 15 percent of this land allocation is supposed to be forage in plantations 0 to 15 years of age (Forest Plan page Four-278). At this time, the only forage with these ages is in a power line corridor, which amounts to 2% of the land allocation.

At the time of the Forest Plan, it was presumed that most of the forage would come from regeneration harvests in mature stands. While some commenters believe that Unit 102 involves clearcutting old growth, it is actually a plantation that was created in 1963. The term regeneration harvest is used because 15% of the stand would be retained; 10.5% in skips and 4.5% as scattered individual trees. The average tree size in this unit is 12.6 inches diameter. Unit 102 is located on both sides of a ridge so that the entire unit would not be seen from one viewpoint.

Commenters have some valid reasons to be concerned about clearcutting old growth. That practice has fragmented mature forests and impacted some species that depend on contiguous stands of mature forest including the northern spotted owl which is now a threatened species. I recognize these situations and the controversy surrounding them, and I have directed my staff to pursue a vegetation management path that focusses on younger stands for forage creation. A regeneration harvest in a plantation is not similar to past practices, but is a carefully chosen location and prescription to address the landscape-wide concern of declining forage and early-seral habitats without impacting old-growth stands. Unit 102 would not result in fragmentation of mature or late-successional habitats.

Even though some commenters stated opposition to regeneration harvest, I believe the analysis shows that the proposal is a prudent action to achieve Forest Plan goals for forage. I have considered these comments and I feel that the impacts and benefits of avoiding regeneration harvest are documented in the No-Action Alternative and are discussed further in section 2.3.1.6, Other Alternatives Considered.

I find that the environmental impact of a 60-acre regeneration harvest in a plantation has been adequately analyzed and disclosed in Chapter 3; and that the effects are not significant. Section 3.8.3 discusses the impacts and benefits to deer and elk.

- Public comments raised concerns about treatments in **fire-origin stands**, sometimes these were referred to as native stands or natural stands. They stated that stands have all the building blocks

necessary for development into desired conditions. They stated that tree species, size and age vary and legacy trees and snags are common. They stated that the stands are already complex and are transitioning towards natural self-thinning. Other commenters offered support for treatment in fire-origin stands.

A few of the fire-origin stands have live legacy trees; the other areas burned so hot that no trees survived. The fire-origin stands have trees that seeded in very densely and while they are about 90 to 100 years of age, they are small in diameter compared to the growth that the site is capable of with less density. The fire-origin stands are not in land allocations that emphasize natural process of self-thinning. The desired condition in the Matrix is to have stands that are relatively healthy with growth rates commensurate with the site's capability. The desired condition for spotted owl critical habitat is to have stands that contribute to dispersal and suitable habitat. The owl recovery plan recommends active management in critical habitat to improve conditions for the long term.

Even though some commenters stated that only ecological process should occur in fire-origin stands, I believe the proposal is a prudent action to achieve Forest Plan goals and the goals of the northern spotted owl recovery plan. During the development of the proposed action, many fire-origin stands were deleted from consideration because they had sufficient legacy trees and structure to be considered suitable northern spotted owl habitat. The fire-origin stands that were retained as part of the proposed action are not suitable spotted owl habitat, and a Forest Service biologist (in consultation with the U.S. Fish and Wildlife Service) believes the proposed treatment will move these stands toward better owl habitat. The impacts and benefits of avoiding fire-origin stands are documented in the No-Action Alternative and are discussed further in section 2.3.1.5, Other Alternatives Considered.

On a related topic, some public commenters made suggestions related to diversity. Since I included "diversity" as a purpose and need element (s. 1.3.1.1), some felt that I should delete portions of the proposed action because they felt the area or unit was sufficiently diverse from their perspective. (See Appendix B - Comments S32, S34, S35, S43, S45, S46, S48, S60, C28, C51, C52, C59, C61, C62, C63, C69, C70, C72, C78 and C82.) Section 3.2 addresses the many elements of diversity. I recognize that while attempting to enhance certain elements of diversity such as vertical and horizontal structure, there may be some elements, such as snags, that may be reduced.

Some suggested that the overviews of diversity in the EA at s. 1.3.1.3 and s. 3.2 focused too much on plantations and did not adequately describe the diversity present in fire-origin stands. I would like to add some clarity here. Some of the fire-origin stands have live legacy trees that survived the fire as described in s. 1.3.1.2, these large live fire-scarred trees would be retained. Some stands also contain large-diameter snags, most of which are crumbling down, since they have been dead for a century. Snags would be retained unless they pose a safety hazard. Most of the fire-origin stands also contain a much larger component of hemlock trees compared to plantations which are typically mostly Douglas-fir. These are important distinctions that make them different than most plantations. However, fire-origin stands are still very dense and growing very slowly compared to the site's capability. Currently the average size of trees in fire-origin stands is 10.3 inches diameter (s. 3.1.3). While there are many factors that affect diversity, the purpose and need (s. 1.3.1.1) describes my desire to enhance vertical and horizontal

stand structure. The proposed thinning action will do this by implementing variable-density thinning with skips and gaps, and by retaining live legacy trees, non-hazardous snags, and a mix of species.

I have considered all of the elements of diversity and I believe the proposed action is the appropriate path to achieve some enhancement of diversity while also achieving the equally important elements of the purpose and need such as stand health, forest product outputs and forage creation.

- Public comments raised concerns about **unroaded and undeveloped areas**. They stated that the project area includes some ecologically significant unroaded areas. They stated that areas as small as 1,000 acres should have the same protections as areas larger than 5,000 acres to maximize the amount of landscape not contributing sedimentation to watersheds. They stated that to protect forest stands, no new roadbuilding should occur to avoid changes in access, forest structure, habitat and character.

Project activities are not proposed in inventoried roadless areas. The impacts to unroaded and undeveloped values are addressed in s. 3.10. The deletion of unroaded and undeveloped areas would eliminate 154 acres of thinning and mistletoe treatment.

The analysis also shows that many of the resource issues normally associated with unroaded and undeveloped areas, such as intact old-growth stands, clean water, and key areas of wildlife refugia are not particularly relevant in the proposed treatment areas. The area was burned approximately 100 years ago and has grown up with very dense trees that are relatively small (the average tree diameter is 8 inches). The proposed treatment areas are relatively dry and have no streams; the analysis shows that sediment is not a concern in these areas. The interdisciplinary team did not find resources that had ecological significance and I concur.

The environmental impact of building and rehabilitating temporary roads and of thinning and treating mistletoe areas has been fully analyzed and disclosed in Chapter 3; the effects were found to be minimal. Section 2.2.8 discusses the details for these roads and sections 3.3 and 3.4 discuss the impacts to aquatic resources. The analysis found the impacts to be sufficiently mitigated by project design criteria (s. 2.2.9). Forest Plan standards and guidelines would be met (s. 3.3.5) and the project would be consistent with the Aquatic Conservation Strategy (s. 3.4.8.1).

Even though some commenters stated that only ecological process should occur in unroaded and undeveloped areas, I believe the proposal is a prudent action to achieve Forest Plan goals and the goals of the northern spotted owl recovery plan. These comments were considered and a detailed analysis and disclosure of impacts to unroaded and undeveloped areas was included in s. 3.10. The impacts and benefits of avoiding unroaded and undeveloped areas are documented in the No-Action Alternative and are discussed further in section 2.3.1.3, Other Alternatives Considered.

- Public comments raised a concern that more vegetation management and more **timber outputs** should have been included in such a large watershed. (See Appendix B - Comments S10, S11, S18, S19, S20, S21, C6, C7, C8, C11, C13, C14, C15, C17, C32 and C33.) During the early planning stage, I instructed my Interdisciplinary Team to examine all mid-aged stands in the

project area to determine the appropriateness and feasibility of thinning and other treatments to achieve our stated objectives. In terms of thinning, the stands that were not included were either already thinned recently or were plantations that are too young to make thinning economically viable. It is likely that many of these young stands will eventually be ready for thinning. I chose to focus my Interdisciplinary Team on mid-aged stands and not on older stands. I chose this path for several reasons including: 1/ to respect the years of collaboration with the Clackamas Stewardship Partners; 2/ to manage the workload and time frames associated with consultation with regulatory agencies; and 3/ because the strategy provides sufficient timber outputs to meet the Forest’s goal.

While other opportunities may exist for vegetation management, I am confident that the proposed action is a prudent package of reasonable actions at this time and in this place to move the landscape toward desired conditions consistent with the goals and objectives of the Forest Plan as amended. Because trees grow and landscapes change over time, I fully anticipate a need to reassess conditions in this planning area in eight or ten years.

- Public comments raised a concern about the **minimum road system** that was described as part of the Forest’s Transportation Analysis Report (TAR). (See Appendix B - Comments C38, C39 and C73). While the project does move the area toward a minimum road system, most of that work was accomplished by previous road decommissioning Environmental Assessments. The roads that were retained on the system were found to be needed for forest management. Based on site-specific analysis and public involvement, a few roads that were identified as not likely needed in the TAR were found to be needed, and a few roads that were identified as likely needed were found to not be needed. These are summarized at section 3.11.3.3. I believe my team has conducted a sufficient project-level analysis of the transportation system and that the resulting network of both open and closed system roads is the minimum necessary to manage the land. The following table summarizes the system road situation.

**Table 4. Summary of Forest Roads in the Project Area**

<b>Forest Road Status</b>	<b>Approximate Miles</b>
National Forest System Roads Prior to the 1990s Road Decommissioning Efforts	489
Current National Forest System Roads	300
Decommissioned National Forest System Roads (no longer part of the Forest’s Transportation system)	189
National Forest System Roads Authorized to be Decommissioned (not yet completed)	16
National Forest System Roads Currently Closed	55
Proposed Road Closures	24
Proposed Roads to Decommission	1.6

I have considered this road network in terms of the resource risks that each remaining road poses, the current and future need for road access, and the minimization of road maintenance costs. Detailed road-by-road tables are included in the analysis file. The timber harvest

elements of the proposed action will provide substantial value to pay for road repairs and maintenance conducted by timber operators to supplement appropriated funding levels.

- Several public comments questioned why I didn't add certain actions they felt were needed within the project area. (See Appendix B - Comments S2, S3, S4, S24, S20, S21, C2, C45, C58 and C76.) The Hunter Integrated Resource Project has an Environmental Assessment that discloses the effects and benefits of the listed projects in accordance with the National Environmental Policy Act or NEPA. Other projects or actions in the analysis area, are already covered by, or authorized by other NEPA documents and do not need to be reassessed at this time. I recognize that this can be confusing because it is a complicated process.

For example, several previous NEPA documents authorized the closure of roads with berms, which in some cases have been breached. These breached road closures are on flat ground or ridgetops and pose a relatively low aquatic risk. Because of the flat ground, the roads were primarily closed to reduce road maintenance costs. Since the roads are not being maintained, that objective is being met even though some closures are breached by unauthorized users. Where roads are being reused for the Hunter project, new berms would be installed upon completion of project activities, and even though they will be robust, based on past experience, there is still a chance that an unauthorized user could breach a berm by pioneering a route going around it. While a bigger berm will deter some, it is not likely to deter all unauthorized users. The Forest intends to prohibit access; however, I feel it is also prudent to acknowledge that unauthorized use may occur.

Existing road closures that have been breached are being addressed using the adaptive management process tied to the NEPA documents that authorized the closure. On some, a robust berm will likely be considered adequate and on others more intensive work may occur using techniques such as imported root wads and slash. Since every road has unique circumstances, I am committed to managing this situation and dealing with each as appropriate and as funding is available. I am aware of certain problem roads and I will be working with the Clackamas Stewardship Partners to prioritize the allocation of retained receipts funds to accomplish this work. New NEPA documentation is not needed to deal with closures that were authorized by other decisions.

New road closures authorized by this Hunter decision, have been site-specifically designed to be effective. Where they occur on flat ground, the entrance management technique is proposed for some including roads 4600326 and 4660390, and on others the location of the closure is adjusted to a location with a defensible side slope such as road 4670150 (s. 2.2.8.6).

I considered the comments received and I believe that the proposed action is both appropriate and consistent with relevant management plans (s. 1.2.1) and laws (s. 3.18) and that the environmental assessment clearly explains the effects and benefits. I find that the science used to develop the project and to assess the effects is current and valid. I believe that I have made a decision that balances the need for these actions against impacts to resources, and I have incorporated adequate design features (s. 2.2), and project design criteria (s. 2.2.9) to minimize impacts to resources and that those impacts have been thoroughly disclosed in the EA.

While I respect the opinions and wishes of commenters and appreciate the dialogue that has occurred, I do not consider any of the comments received to warrant the generation of any additional fully-developed alternatives in the environmental assessment. The following section describes alternatives that were considered and the rationale for their elimination from detailed study.

## **Description of Other Alternatives and Reasons for Non Selection (s. 2.1 & s. 2.3)**

**Alternative A** is the no-action alternative (s. 2.1). It was not selected because it would not provide any of the benefits described in the purpose and need. If no action is taken, stands would continue to become overcrowded resulting in trees with reduced vigor and increased mortality (s. 1.3.1.2 & s. 3.1). Trees would stagnate and stay relatively small resulting in a period of low vertical and horizontal diversity (s. 1.3.1.3 & s. 3.2). If no action is taken in late-successional reserves or riparian reserves, stands would be very slow in their acquisition of late-successional characteristics (s. 3.4.4 & s. 3.7.3.1). If no action is taken, the Forest would forgo the opportunity to provide any forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies (s. 1.3.1.4 & s. 3.16). If no action is taken, roads would deteriorate, become unsafe and impact fish and water quality (s. 3.11 & s. 3.3.3.4). If no action is taken, there would be an abundance of snags; far more than needed to meet standards and guidelines (s. 3.8.7). Selection of Alternative A would not address the desired condition as stated in the Forest Plan.

## **Other Alternatives Considered**

The EA discusses comments that were received from the public suggesting the consideration of other alternatives. Details of the suggestions and responses are in the EA at s. 2.3 as well as Appendix B. The following has some further elaboration.

Bark submitted seven suggestions and requested that the agency review these suggestions separately or together. Oregon Wild also requested consideration of alternatives that overlap some of Bark's suggestions. While the suggestions were considered separately, all of them when added together would delete approximately 1/4 of the acres of proposed vegetation management. A detailed analysis and consideration is documented for each alternative in section 2.3. I have already responded to the specific suggestions that form the basis of the alternatives considered in the bulleted subsections of the Public Involvement section above.

The environmental impact and benefits of the projects suggested for deletion, have been fully analyzed and disclosed in Chapter 3; the effects were found to be minimal. Section 2.2.8 discusses the details for roads and impacts and benefits of these actions are discussed in several sections in chapter 3 such as, s. 3.1, s. 3.3.3 s. 3.4, s. 3.7.3, s. 3.8.3, s. 3.8.5. The analysis found the impacts to be sufficiently mitigated by project design criteria (s. 2.2.9). Forest Plan standards and guidelines would be met and the project would be consistent with the Aquatic Conservation Strategy (s. 3.4.8.1).

The Forest Plan as amended directs where it is appropriate and desired to manage vegetation to meet the multiple objectives of resource management. The areas affected by this request are on land allocations considered suitable for vegetation management as well as road construction.

The suggested alternatives of removing units and adding more intensive road closures were considered but not fully developed because of the following factors.

- The suggestions would provide a similar level of resource protection when compared to the proposed action and therefore is not substantially different from the proposed action in that respect.
- It would not provide the benefits described in the purpose and need for approximately 700 acres, which represents 23% of the total acres where vegetation management is proposed.
  - 260 acres of forest land would continue on a trajectory of declining health as overcrowded, uniform conditions would continue to persist.
  - 81 acres would continue declining due to dwarf mistletoe infestation. They would not be providing future forest products in the Matrix land allocation, and they would not develop into suitable or dispersal habitat for northern spotted owls.
  - 296 acres would continue to have danger trees which would be a hazard to the public. Roads may need to be closed.
  - 60 acres in the B11-Deer and Elk Summer Range land allocation would have declining forage value.
  - Approximately five million board feet of lumber would not be processed by local mills.
  - If these units were deleted, there would be a reduction in value of approximately \$600,000 that would not be available to help pay for road repairs or other important restoration work including road decommissioning, road stormproofing, culvert replacement, white pine pruning, forage enhancement and riparian restoration.
- Bark submitted scoping comments, and comments at the 30-day comment period, and they made requests at the time of objection. Each time they made different suggestions about how they felt the project should be changed to meet the goals of their organization. This inconsistency is one reason why I directed my team to consider these requests but not fully develop them as stand-alone alternatives.

While Bark and Oregon Wild suggest that the project elements recommended for deletion are controversial, I don't agree.

- After years of discussion and field trips, and after a thorough review of the Environmental Assessment, these project elements are supported by all but one member of the collaborative group, Clackamas Stewardship Partners (Response to Comments, Appendix B).
- Both Bark and Oregon Wild initiated an email campaign on their web sites to garner support from their members to send electronic comments on the proposed action. Many duplicate emails were received based on information provided by Bark and Oregon Wild. However, when the Preliminary Assessment was available for a 30-day comment period and all of these commenters were sent links to the document to seek further input, only one replied.
- The projects are consistent with the Forest Plan as amended by the Northwest Forest Plan. These plans were the subject of public participation efforts that found a balance between the various

resources and uses of public lands. While some hold different views, these plans remain the collective public direction for land management.

I considered the suggested alternatives. While I respect the opinions and wishes of commenters and appreciate the dialogue that has occurred, I do not consider any of the suggestions received to warrant the generation of additional fully-developed alternatives in the environmental assessment.

## **FINDING OF NO SIGNIFICANT IMPACT (40 CFR 1508.27)**

### **Context**

Based on the documentation in the EA and project file, I have determined the following with regard to the context of this project:

The EA implements direction set forth in the Forest Plan, as amended. The Forest is comprised of about 1.1 million acres; the Clackamas River Ranger District encompasses about 414,700 acres of the Forest. The proposed action authorizes about 3,173 acres of vegetation management. This equates to approximately 0.3% of the Forest and 0.8% of the Ranger District. Given the area affected by the project at both the District and Forest scale, I find that the effects of the project are not significant as disclosed throughout Chapter 3 of the EA and will have a negligible effect at the District and Forest scale.

### **Intensity**

Based on the site-specific environmental analysis documented in the EA and the comments received from the public, I have determined that this is not a major Federal action that would significantly affect the quality of the human environment; therefore, an Environmental Impact Statement is not needed. This determination is based on the design of the proposed action and the following intensity factors:

1. My finding of no significant environmental effect is not biased by the beneficial effects of the action. Impacts can be both beneficial and adverse. For this project, there are no known long-term adverse effects or cumulative effects to resources such as water quality, riparian areas, wildlife or heritage resources. These are documented in Chapter 3 of the EA.
2. The project contains design features to protect public health and safety during project implementation including the removal of danger trees (s. 1.3.7).
3. There will be no significant effects on unique characteristics of the area. The project is not located in prime farmland or wetlands, and historic and cultural resources will be protected (s. 3.18). The outstandingly remarkable values associated with scenic and recreational rivers would be protected (s. 3.9.11).
4. The effects on the quality of the human environment are not likely to be highly controversial. While there is some opposition to forest management, I have concluded that the science behind thinning and other vegetation management techniques is not highly controversial based on a review of the record that shows a thorough review of relevant scientific information (s. 1.3.1.2, s.

1.3.1.3 & s. 3.1). I have also taken into account that opposition to vegetation management has been fully considered through documentation of the No-action Alternative.

5. The possible effects on the human environment are not highly uncertain, nor do they involve unique or unknown risks. The effects analyses discussed in Chapter 3 of the EA are based on sound scientific research and previous experience implementing vegetation management projects across the Forest.
6. The action is not likely to establish a precedent for future actions with significant effects because this action is not unusual in and of itself, nor does it lead to any further actions that are unique.
7. The analysis found no significant cumulative effects. Cumulative effects were assessed in each section of the EA including growth and productivity (s. 3.1.4), diversity (s. 3.2.4), water quantity and quality (s. 3.3.4), fisheries (s. 3.4.5), geologic stability (s. 3.5.4.3), soils (s. 3.6.6.4), owls (s. 3.7.3.3), deer and elk (s. 3.8.3.4), snags and down logs (s. 3.8.7.4), and air quality (s. 3.15.4.3). The analysis considered not only the direct and indirect effects of the project, but also its contribution to cumulative effects. Past, present and foreseeable future projects have been included in the analysis (s. 3.0.1 & s. 3.0.2). The analysis considered the proposed actions with project design criteria.
8. The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places and will not cause loss or destruction of significant scientific, cultural, or historical resources (s. 3.18.1).
9. My decision is consistent with the Endangered Species Act. Formal consultation with U.S. Fish and Wildlife Service concerning the **northern spotted owl** has been completed for this project. The Letter of Concurrence from the U.S. Fish and Wildlife Service found that the project may affect but is not likely to adversely affect the spotted owl or its critical habitat.

Formal consultation with the National Marine Fisheries Service (NMFS) concerning **listed fish** has been completed for this project. The Letter of Concurrence from the NMFS found that the project may affect but is not likely to adversely affect listed fish or their critical habitat (s. 3.4.6). It also found that the project would not adversely affect Essential Fish Habitat as defined by the Magnuson-Stevens Fishery Conservation Management Act.

There will be no significant adverse effects to sensitive species or survey and manage species (s. 3.4.6, s. 3.8.1 & s. 3.12). The project will not jeopardize the continued existence of any listed species nor will it cause a trend to federal listing or loss of viability for these species.

10. My decision will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA (s. 3.18). The action is consistent with the Forest Plan (each part of section 3). The selected alternative is consistent with the National Forest Management Act regulations for vegetative management. There will be no regulated timber harvest on lands classified as unsuitable for timber production (36 CFR 219.14) and vegetation manipulation is in compliance with 36 CFR 219.27(b). The project complies with Executive Order 12898 regarding environmental justice (s. 3.18.2). No disproportionately high adverse human or environmental effects on minorities and/or low-income populations were identified during the analysis or public scoping process.

## **Other Findings Required by Law or Regulation**

Section 3.18 identifies relevant laws and references to documentation in the EA.

*Clean Air Act:* My decision is consistent with the Clean Air Act. Burning would be scheduled in conjunction with the State of Oregon to comply with the Oregon Smoke Implementation Plan to minimize the adverse effects on air quality (s. 3.15 & s. 3.18.5).

*Clean Water Act:* Implementation of my decision will incorporate Project Design Criteria, as described in the EA (s. 2.2.9), which will protect and maintain water quality conditions. It is anticipated that only minor amounts of sediment would actually enter any stream as a result of implementation (s. 3.3.3.4).

*Endangered Species Act (ESA):* Consultation has been completed for northern spotted owls and for listed fish. Listed species are addressed in sections 3.4.6 and 3.7.

*Magnuson-Stevens Fishery Conservation and Management Act:* The project would not adversely affect essential fish habitat for chinook or coho salmon (s. 3.18.12).

*National Forest Management Act:* The proposed action was developed to be in full compliance with NFMA via compliance with the Forest Plan, as amended. The project area has been found to be suitable for timber management (s. 3.1.6 & s. 3.18.6). Other requirements are discussed in the Mt. Hood Forest Plan section below.

*National Historic Preservation Act:* The Forest operates under a programmatic agreement between the Oregon State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation for consultation on project determination. Consultation with SHPO was completed for this project (s. 3.18.1).

## **Consistency with Mt. Hood Forest Plan**

I find that the selected alternative is consistent with direction found in the Forest Plan as amended. It is consistent with standards and guidelines specific to the relevant land allocations and it is consistent with the applicable Forest-wide standards and guidelines (s. 1.2.1 & s. 3).

- **Aquatic Conservation Strategy** – The project will contribute to maintaining or restoring aquatic conditions and is consistent with the Aquatic Conservation Strategy objectives (s. 3.4.8.1).
  - I have considered the relevant information from the watershed analysis completed for the Upper Clackamas River. This project has adopted the concepts for riparian reserve delineation described in the watershed analyses (s. 1.4.3). The site-potential tree height for this project is 180 feet.
  - I find that the Project Design Criteria (s. 2.2.9), such as stream protection buffers and operating restrictions on ground-based machinery, will minimize impacts and maintain the function of key watershed indicators that make up elements of the Aquatic Conservation Strategy. These key indicators for water quality, habitat, flow, channel condition, and watershed condition, will be maintained or enhanced (s. 3.4.8.1).

- **Management Indicator Species** - I have considered the impacts to Forest Management Indicator Species (MIS) (s. 3.8.2). MIS for this portion of the Forest include northern spotted owl (s. 3.7), pileated woodpecker (s. 3.8.4), American marten (s. 3.8.5), deer, elk (s. 3.8.3), salmonid smolts and legal trout (s. 3.4.1). I find that the selected alternative is consistent with the standards and guidelines pertaining to MIS, and that based on the limited effects to any MIS, the proposed action does not contribute towards a negative trend in viability on the Forest.
- **Invasive Plants** - I find that the selected alternative is consistent with Pacific Northwest Invasive Plant Program Preventing and Managing Invasive Plants Record of Decision issued in 2005 and the Site-Specific Invasive Plant Treatments for Mt. Hood National Forest Record of Decision issued in 2008 (s. 3.13). Design criteria are included to minimize the spread and establishment of invasive plants (s. 2.2.9H&L).
- Compliance with the **2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines** (s. 3.4.3, s. 3.8.6.2 & s. 3.12).

I have reviewed the relevant sections in the Environmental Assessment and I find this decision to be consistent with the 2001 Record of Decision. For most of the stands, no surveys are needed because the Pechman exemption applies for stands since they are thinning stands under 80 years of age. Other stands were surveyed where there was likely habitat and no species were found.

**Exceptions** - The Forest Plan describes the process for documenting exceptions to “should” standards and guidelines (p. Four-45). The Forest Plan does not require a Forest Plan amendment for project level exceptions to these standards and guidelines. The following documents the rationale for exceptions.

I approve exceptions for the **soil productivity** standards and guidelines FW-22, FW-28, B8-036 and B8-040 as documented at section 3.6.8.

The project is consistent with Forest Plan objectives for long-term soil productivity. However, additional soil impact will occur on areas where there is existing soil disturbance. Most units that were logged with ground-based equipment in the original clear cut harvest would remain above 15% detrimental soil condition (s. 3.6.6). Similarly, most units in earthflows remain above 8% detrimental soil condition.

There was no standard and guideline for limiting the extent of detrimental soil impacts when the original clearcuts were logged prior to the Forest Plan. Back then, ground-based logging was less restricted and operators were not required to limit their skid-trail system, landings, and temporary roads to a specified extent. Post-harvest activity such as site preparation for reforestation often added to the extent of detrimental ground disturbance after the initial harvest.

The Forest will continue to manage soil resources with the goal of maintaining or enhancing its productivity. The proposed action has been designed to minimize additional detrimental soil impacts. The following project design criteria and contractual specifications would be employed that aim to contain the extent of detrimental soil conditions.

- All or portions of 22 thinning units that were originally logged with ground-based equipment would be thinned using skyline machines or helicopters, which have lower soil impact.
- Old roads and landings would be reused where appropriate.
- Existing skid trails would be reused where they are not hydrologically connected.
- Where the existing skid trail pattern has far more trails than are needed with today's equipment and logging techniques, only the skid trails that are needed to efficiently operate would be reused and the unused skid trails would be allowed to continue to recover.
- Where new skid trails are needed due to changes in logging system or landing location, they would be spaced 150 feet apart and on appropriate slopes.
- Mechanical harvesters would walk on layers of slash.
- Ground-based operations would occur when weather conditions provide for soil moisture conditions that are sufficiently dry to prevent excessive compaction, rutting or erosion.
- Some trees would be felled to create down woody debris.
- Appropriate erosion control techniques would be used including constructing waterbars on skid trails and placing slash on certain skid trails.
- After operations are completed, new temporary roads, existing road alignments and landings that were used would be decompacted where appropriate.
- After operations are completed, primary skid trails would be decompacted where feasible on unit 102 and on approximately 116 acres of the lodgepole pine shelterwood treatments.
- Some system roads would be decommissioned.
- Some system roads would be stormproofed and closed.
- In areas not disturbed again, natural recovery would continue to occur, as roots and burrowing animals penetrate and break up compacted soils, as organic matter accumulates, and as soil wetting/drying and freezing/thawing cycles occur.

In dense stands, site and soil resources are used by all the trees to stay alive with little left over for root expansion and stem strength. When high tree density is coupled with the existing extent of detrimental soil conditions, productivity could be considered lower than the sites potential. Conversely, thinning to maintain tree spacing and therefore stand health, results in a reallocation of site and soil resources to the remaining trees, therefore offsetting to some degree, the negative effects of detrimental soil condition. The availability of site and soil resources for growth would increase substantially after thinning.

The objective of maintaining long-term site productivity would still be met. Section 3.6.6.4 describes that site productivity has not been substantially impaired. The silviculture report also indicates that stands are growing well and that they would grow even better after thinning. The cumulative effects of the proposed actions would not be substantial and trees and other vegetation are expected to continue growing and developing at appropriate rates.

Even though many units already exceed the levels of detrimental soil condition specified in FW-22 and B8-040, it is not possible or practical to rehabilitate all of the impacts at this time.

Temporary roads, landings and skid trails are key parts of the stand management transportation system and where appropriately located, would likely be reused when stand management is proposed. Stand management techniques have evolved over time, changing the portion of land used

for the stand management transportation system and the portion kept productive and resilient to grow trees and other vegetation at appropriate rates.

Even though there have been advances in the past 50 years in understanding the critical role soil conditions play in forest productivity, it is not always possible to reverse all past impacts so that soils can be returned to the same level of functionality that they once had. For example where severe burning resulted in scorched soils or where duff and the top soil horizon have been moved a great distance, it is not feasible to restore these impacts quickly. Some actions are proposed to restore or minimize impacts to soils including those listed above; they would provide some benefit but they are not likely to fully restore soils.

One technique used in the past to partially restore soils is to use deep soil tillage equipment on skid trails. This has been done before in regeneration harvests where a winged subsoiler pulled by a tractor was used to decompact soils on skid trails. This technique is recommended by another guideline (FW-030) which suggests that all logging skid trails should be considered for rehabilitation through deep soil tillage techniques as a means to achieve the goals of FW-028. This technique is appropriate in some circumstances such as directly after a regeneration harvest but is not appropriate in other circumstances. This guideline was not a requirement at the time of the initial clearcutting.

Deep soil tillage is being proposed for the primary skid trails (and existing road alignments and landings) on several units. Unit 102 is a plantation which would have a regeneration harvest with skips and scattered leave trees for the purpose of creating forage for deer and elk (s. 1.3.5, s. 2.2.5.1). Several lodgepole pine units on approximately 116 acres would have a shelterwood prescription (s. 1.3.2, s. 2.2.2). Even with deep soil tillage on skid trails, road alignments and landings, these units would not likely get below 15% because a portion of the detrimental impact comes from past site preparation which displaced topsoil and duff; tillage would not repair that damage.

Most thinning units have existing skid trails that are still considered to have detrimental soil conditions. However, there are tree roots that have penetrated into the skid trails. Reusing the skid trails again may add some additional compaction around these roots but they would likely remain intact. Deep soil tillage of skid trails in a thinning unit would break the roots that have penetrated into the trails and lead to reduced growth, increased root disease and tree mortality. Using this technique on skid trails that are not reused at this time, (e.g. where there are more skid trails than needed or where units are changed to skyline or helicopter) would require that trees growing in the trails be cut prior to treatment. This would set back the partial recovery that has occurred on these skid trails.

Deep soil tillage was considered for all skid trails but the technique was not selected for thinning units. The project is consistent with FW-030 because serious consideration was given to this technique even though it was not selected in every case. The opportunity to mechanically rehabilitate skid trails by deep soil tillage may come in the future if regeneration harvest occurs in these stands. Most units that were logged with ground-based equipment in the original clearcut harvest would remain above 15% detrimental soil condition.

The Forest's slope stability specialist has determined that exceptions to B8-036 and B8-040 would not result in the risk of accelerating earthflow movement.

I approve exceptions to guidelines related to the **National Forest Management Act**, FW-306 as documented at section 3.1.5.

**FW-306** indicates that timber stands should not be regeneration harvested until they have reached or surpassed 95 percent of culmination of mean annual increment measured in cubic feet. FW-307 explains that exceptions to this may be made where resource management objectives or special resource conditions require earlier harvest.

Mean annual increment is a calculation that measures stand growth. Culmination of mean annual increment is the time in a stand's life when it is considered biologically mature (i.e. when growth slows and when decay and mortality increases).

Unit 102 is a regeneration harvest in a plantation to create early-seral habitat for deer and elk (s. 1.3.5 & s. 2.2.5). The unit is in the B11 Deer & Elk Summer Range land allocation where B11-009 provides for the creation of forage. According to growth and yield modeling, Mean Annual Increment for this stand is 53.7 cubic feet per acre, which is roughly 60% of culmination of Mean Annual Increment. More discussion of the value of forage can be found in the Deer and Elk section at s. 3.8.3. The proposed action was developed to target forage creation in a plantation with the appropriate forage plants instead of targeting old-growth stands. I find that an exception for FW-306 is appropriate to achieve the forage goals for this area.

## **Predecisional Administrative Review Summary**

This project was subject to predecisional administrative review pursuant to 36 CFR 218, Subpart B, also called the "objection process." The full text of the rule can be found at [36 CFR 218](#).

A draft decision notice was made available during a 45-day period for objections to be filed prior to making this final decision. The legal notice of the opportunity to object was published in the Oregonian newspaper on November 3, 2017. Six objections were filed: Lucas Willett #18-06-06-0001-218(B), Cynthia Eckersley #18-06-06-0002-218(B), Wild Earth Guardians #18-06-06-0003-218(B), Bark #18-06-06-0004-218(B), American Forest Resource Council (AFRC) #18-06-06-0005-218(B), and Oregon Wild #18-06-06-0006-218(B). An objection resolution meeting was conducted on January 29, 2018 with the Forest Supervisor, the Objection Reviewing Official. No resolution was made on the issues raised by objectors. One typographical error in the draft Decision Notice related to northern spotted owl effects has been rectified in this final Decision Notice.

In letters dated February 15, 2018, the Objection Reviewing Official, Lisa A. Northrop, Forest Supervisor, documented the following:

- The draft decision clearly described the actions to be taken in sufficient detail that the reader can easily understand what will occur as a result of the draft decision.
- The draft decision considered a range of alternatives that was adequate to respond to the Purpose and Need. The purpose and need and alternatives considered in the EA reflect a reasonable range of alternatives, consistent with law, regulation and policy.
- The draft decision is consistent with Forest Plan standards and guidelines, as amended.

- The draft decision is consistent with all policy, regulation, law, direction, and the EA contains adequate supporting evidence that is reflected in the draft decision. The record contains adequate documentation regarding resource conditions, and the Responsible Official's draft decision document is based on the record and reflects a reasonable conclusion.

The draft decision notice is replaced by this final decision notice.

For further information regarding this project, contact Jim Roden at 503-630-8767 or by email at [jroden@fs.fed.us](mailto:jroden@fs.fed.us). For further information regarding objection procedures, contact Michelle Lombardo at 503-668-1796 or by email at [mlombardo@fs.fed.us](mailto:mlombardo@fs.fed.us).

## Project Implementation

Implementation may occur immediately following the date that this final decision is signed.

The EA, decision notice and maps can be downloaded from the Forest web site at <http://www.fs.usda.gov/projects/mthood/landmanagement/projects>.

/s/ Jackie Groce

Jackie Groce

March 15, 2018

Date

District Ranger  
Clackamas River Ranger District  
Mt. Hood National Forest

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