DECISION NOTICE
And
FINDING OF NO SIGNIFICANT IMPACT

JAZZ THINNING

USDA FOREST SERVICE
MT. HOOD NATIONAL FOREST
CLACKAMAS RIVER RANGER DISTRICT
CLACKAMAS COUNTY, OREGON

The Jazz Thinning 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 Jazz project is located in T.6 S., R.6 E.; T.7 S., R.5 E.; T.7 S., R.6 E.; T.7 S., R.7 E.; T.8 S., R.7 E.; Willamette Meridian. All section (s.) number references are to sections of the EA unless specified otherwise. Acres and miles are approximate. The Mt. Hood National Forest is referred to as 'the Forest' in this document. The Mt. Hood National Forest Land and Resource Management Plan and Standards and Guidelines, as amended, are referred to as the Forest Plan in this document.

In August of 2012 a previous Decision Notice was signed for the Jazz Thinning and three appeals were received. An informal appeal disposition meeting was held with most of the discussion focusing on water quality, but no resolution was reached. However, through those discussions some issues arose that warranted further consideration and that decision was withdrawn. The proposed action remains essentially the same as originally proposed. The refinements to the environmental assessment include greater clarification on monitoring of best management practices.

The Forest proposes a thinning project of approximately 2,053 acres of plantations ranging in age from 30 to 60 years old. The average tree size in plantations is 12 inches diameter. Variable density thinning is proposed to remove the smaller trees while creating skips and gaps. The following background section is a brief summary to help inform understanding of the Jazz project.

Background (s. 1.2, page 4)

The proposed Jazz project area is located in the Collawash Watershed; a tributary of the Clackamas River. The watershed encompasses approximately 97,000 acres. It is on the west slope of the Cascade Mountain Range. The terrain is relatively rugged and steep with elevations ranging from approximately 1,900 to 4,000 feet. It is a wet landscape with high stream density and streams that drain down from the mountains of the Bull of the Woods Wilderness to the Collawash River which flows to the Clackamas River.

A portion of the watershed has a wide spectrum of stability issues ranging from landslides and debris flows to slow-moving dormant earthflows. Additional discussion of this topic can be found in the Geologic Stability section (s. 3.5, page 129). Landslides, some of which are quite large, are very common. These unstable landforms affect the vegetation that grows there, the condition of streams and

fish habitat, as well as roads and the cost of maintaining them. The project avoids landslide prone areas and thinning would only occur in areas that are considered to be stable by a slope stability specialist. Part of the project occurs on dormant earthflows which are large, very slowly moving landforms with relatively gently sloping terrain and are very productive in terms of tree growth (s. 3.5.2, page 129). Movement of dormant earthflows usually occurs during or immediately after major storm events, when the ground water table is high. After the 1996 storm there were new cracks that developed and these cracks gradually became larger over 2-3 years and then stopped. Total movement was about 1-3 inches. Dormant earthflows typically have movement rates of between zero and six inches per century depending on their location and the intensity of storms.

Most of the large conifer stands in the Collawash are between 200 and 350 years old. The stands of smaller trees are early and mid-seral stands ranging in age from 10 to 60 years that originated primarily from clearcut harvesting.

Disturbance Regime (s. 1.2.1.1, page 5) - Fire has been the dominant landscape pattern-forming disturbance agent in the Collawash Watershed. The area in the vicinity of the project is characterized as warm moist western hemlock, Pacific silver fir forest that has a stand-replacement fire regime where most or all trees would be killed with a fire frequency of 50 to 300 years or more. While fire return intervals are relatively long because of moist conditions in most years, fires tend to be large and stand-replacing (killing all or most trees). These fires prepare mineral-soil seedbeds, produce a mosaic of stand structures and age classes across the landscape, and affect species diversity.

Recent wildfires in the Collawash Watershed occurred in a drier, higher forest that has a mixed severity regime with a fire frequency of 25 to 125 years characterized by underburning and some crown fire.

Fire suppression in the past 100 years has not dramatically altered the structure of stands or increased fire hazard in this watershed. Fire-created openings in the area tend to be large, irregularly shaped, and infrequently distributed (both spatially and temporally) across the landscape. Patch or stand sizes in flat to rolling terrain typically range from 100 to 300 acres, while sizes in steep and dissected terrain range from 10 to 50 acres. Fire-created openings generally contain abundant remnant live trees and snags.

While fire has played a role in influencing the macro-scale of forest structure, there are other disturbance factors that have influence at a smaller scale. Micro-scale disturbance agents in the project area affect individual trees, small groups of trees or large areas of susceptible species. Disease, insects and wind have been the secondary disturbance agents in the proposed treatment area. Small (1/4 acre) to large (1-3 acre) isolated pockets of root disease are present throughout the watershed. Root diseases, when present at low to moderate levels do not seriously compromise forest productivity. Trees weakened are usually blown over by the wind and often sustain a secondary attack by bark beetles.

Past Management (s. 1.2.1.2, page 7) - Road construction and logging of old-growth forests began in the mid-1950s in the Collawash watershed. Since then approximately 24,600 acres of forest stands (25% of the watershed) have been converted to plantations. The watershed once contained approximately 372 miles of system roads, but 73 miles were decommissioned several years ago. Additionally, 123 miles have recently been approved for decommissioning. A large power line transmission corridor crosses the watershed.

The Collawash watershed once contained large patches of mature Douglas-fir and western redcedar typical of the disturbance regime but now it is fragmented by plantations. The current vegetation pattern contains more edge habitat and less connectivity of mature forest than the pattern created by the natural disturbance regime. Plantations are uniform in size, regularly shaped, and evenly dispersed across the landscape. The plantations in the watershed have a wide range of ages and densities (from age 10 to 60). Some plantations have already been thinned, while many others have not.

Tree growth and health (s. 1.2.1.3, page 7) - The stands included in this project have been examined and have been found to be overstocked. When the plantations were created, trees were planted at relatively close spacing with the understanding that density management practices would occur over time to space the trees out sufficiently to give them adequate room to grow. 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.

Trees that have been uniformly spaced during planting interact differently when developing through inter-tree competition of the stem-exclusion phase compared to stands seeded in after a fire or other stand-replacement disturbance. Trees have less of a chance to express dominance when they have been planted from genetically similar seed sources and maintained at relatively even spacing. Therefore, when these stands reach density levels in which individual trees are competing with each other for growing space it may take longer for individuals to express dominance. If trees are not thinned, competition would increase, stems would continue to grow in height, but diameter growth would drastically slow. These trees would become more dependent on neighboring trees for support. When trees develop in this manner they are more likely to blow down in large groups or be more susceptible to disturbance agents.

Diversity (s. 1.2.1.4, page 9) - Diversity is the distribution and abundance of different native plant and animal communities and species. There are many ways to look at diversity and several scales to consider. 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.

Plantations sometimes lack certain elements of diversity and complexity. They often do not contain the mix of tree species that were present in the original stand and they are relatively uniform in terms of tree species, size and spacing. When the original clearcut harvesting occurred, all of the large trees and snags were removed. The plantations have minimal variability of vertical and horizontal stand structure and little sunlight reaches the forest floor resulting in low levels of diversity of ground vegetation.

In the past, thinning focused primarily on tree growth and productivity and resulted in continued uniformity. There are opportunities however while designing a thinning project to both enhance growth and provide for greater diversity. Diversity can be enhanced by using techniques such as retaining minor species, retaining down wood and non-hazardous snags, and creating snags, skips and gaps. Thinning that incorporates these features can change a uniform plantation into one with greater vertical, horizontal and species diversity. These changes would be beneficial to a wide range of plants and animals. As the stands continue to grow they would acquire the characteristics of old-growth forests sooner than if left untreated. The fragmented nature of the landscape would become less evident as plantations blend in with surrounding mature forest stands. This is particularly important in LSRs and

riparian reserves to restore them to the desired conditions for the key species that rely on unfragmented mature forest conditions.

Forest Products (s. 1.2.1.5, page 11)

The first two goals of the project are to increase health and growth of stands and to provide for greater variability of vertical and horizontal stand structure. The Forest acting alone cannot achieve the thinning designed to meet these goals. The proposal is to auction the rights to remove and utilize the timber to qualified contractors in exchange for accomplishing the variable density thinning and other important work.

One of the goals of the Forest Plan as amended by the Northwest Forest Plan is to provide a sustainable level of forest products for local and regional economies and to provide jobs. Wood is used to make many important products needed by society. The value of wood drives rural economies as logs are removed from the forest and processed into a myriad of eventual products. Much of the wood from this project would be used to make houses. With an estimated 15 million board feet, this project would produce enough wood to build several thousand houses. Other products that would come from the removed trees include chips for paper manufacturing and firewood.

Management Direction (s. 1.2.2, page 12) **-** The proposed action has been designed to meet the goals and objectives of the Forest Plan as amended by the Northwest Forest Plan. The proposed action would occur on various land allocations including riparian reserves, late-successional reserves, wild and scenic rivers, viewsheds, special emphasis watersheds, earthflows and timber emphasis. For each of the land allocations, thinning is an appropriate tool to use to move the area towards the desired conditions.

Purpose and Need

The purpose of this project (s. 1.3, page 18) is to enhance the productive capacity of mid-aged stands in the Collawash watershed in order to provide for the sustainability of resources and forest uses as prescribed by the Forest Plan as amended.

- There is a need to increase health and growth of stands because mid-aged stands within the project area are experiencing a slowing of growth due to overcrowding and some are experiencing suppression caused mortality.

- There is a need for greater variability of vertical and horizontal stand structure because mid-aged stands within the project area do not have a mix of tree species that were present in the original stand and they are relatively uniform in terms of tree size and spacing. Also, there is a need for more sunlight on the forest floor to create greater diversity of ground vegetation.

- There is a need is to keep forests healthy and productive to sustainably provide forest products now and in the future. (Northwest Forest Plan ROD p. 26, Forest Plan p. Four-26).

During public involvement, some commenters questioned the scope of the proposed action in light of the fact that the purpose and need statements above do not contain specific output goals that would indicate when the purpose and need is achieved. They suggest that the purpose and need could be met just as

well with a 100-acre project as it would by a 2,000-acre project (s. 1.6.1.9, p. 49). Commenters also suggest that a project of 2,000 acres is too big and that it should be scaled back. The scope of the proposed action was considered during early planning efforts as data for all plantations in the watershed were examined and compared to desired conditions from the Forest Plan. While the watershed contains many thousands of acres of plantations of various ages, approximately 2,000 acres are currently in a condition where variable density thinning treatments are appropriate to move stands toward desired conditions (s. 1.2.1.2, page 7; s. 1.2.1.3, page 7 & s. 1.2.1.4, page 9). If some of this work is deferred, there would be a backlog of plantations that would begin to develop as described for the No-Action Alternative (s. 3.1.3, page 67 & s. 3.2.3 page 71). An important element of this decision is to avoid this backlog by treating as many plantations as possible within the parameters of the Forest Plan to move them toward desired conditions in an operationally efficient manner.

DECISION and RATIONALE

I have decided to select Alternative B, the Proposed Action (s. 1.4, page 19) as described in the EA. Alternative B includes the following activities:

- Thin and harvest wood fiber on 2,053 acres of plantations to achieve the purposes listed above (the actual acres of thinning would be less after subtractions for skips and riparian protection buffers). Thinning intensity would be variable from unit to unit and within units and would include skips, riparian protection buffers, gaps, heavy thins, forage enhancements, and the creation of snags and down logs. These treatments are described in greater detail in sections 1.4.1 through 1.4.5 on pages 19 to 21.
- Project Design Criteria in section 1.4.9, page 28 of the EA are included. No significant impacts were found that would require further mitigation.
- Repair 67 miles of system roads needed for log haul.
- Construct 0.4 mile of new temporary roads to access thinning units and decommission upon completion.
- Construct 12 miles of temporary roads on existing road alignments to access thinning units and decommission upon completion.

  A change was made between the time of the Preliminary Assessment and the Final Environmental Assessment to fix an error involving a road that was listed as a system road that should have been listed as a temporary road (s. 1.4.6.3, page 23). In the Preliminary Assessment the road was listed as a system road - 6311.130 with a length of 0.73 mile. This road was closed with a guard rail barrier in the 1990s. The interdisciplinary team presumed that the road decommissioning for this road authorized in 2007 had not yet occurred because no action had taken place in the field to effectively block the entrance or scarify the road surface. Because no active decommissioning had occurred, field crews used this road and some minor brushing and whip felling occurred in order to use the road without damaging vehicles. The decision for the 2007 Clackamas Restoration Projects EA indicated that the road could be removed from the Forest's data base with no treatment in the field.

  At the time this error was discovered, I directed a site-specific field review by the relevant interdisciplinary team specialists. After considering their input, I have decided to reuse this route as a temporary road to access thinning units. After completion of thinning, the road will be more effectively decommissioned using active decommissioning techniques such as, decompacting the

roadbed to a depth of 18 inches with mechanical construction equipment for the first 1/8 mile of road, installing waterbars, covering the surface with slash or mulch and installing an earthen berm at the entrance to prevent vehicle use. I find that the environmental effects of this change are similar to what was already assessed. I believe reusing this existing alignment and restoring it afterward is consistent with District Ranger Rykoff's 2007 decision on the Clackamas Restoration project because it minimizes the soil and water impacts as compared to building a new road prism in another location. The reuse of existing alignments is consistent with Forest Service policy as described in Forest Service Manual 7703.22. I understand some members of the public believe that the use of the road by the field crews represents an irreversible and irretrievable commitment of resources that was made prior to a decision. I understand their concern, but I also note that only minor brushing occurred and that with active decommissioning as described above, the road will be returned to a more natural state than if left to passively decommission.

I believe that the proposed action meets the Purpose and Need discussed in the EA (s. 1.3, page 18):

Tree Health and Growth – The thinning treatments associated with Alternative B will increase the health and vigor, as well as enhance diameter and height growth, resulting in larger wind firm trees (s. 1.2.1.3, page 7, s. 1.3, page 18 & s. 3.1, page 65).

Based upon computer model simulation, the average diameter in four (4) decades would be about 23 inches, compared to about 17 inches with no action. Presently, these plantations have an average diameter of about 12 inches. 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.

With Alternative B, simulation modeling estimates that in approximately 40 years, average net growth rates would be 2.1 cubic feet per tree per year compared to 0.9 cubic foot per tree per year with no action. These net growth rates include both growth and mortality. With the No-action Alternative, mortality rates increase dramatically in the next few decades. The thinning treatments would discriminate against the smaller, suppressed trees in these dense stands; the ones that would most likely die from competition-induced mortality.

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 Douglas-fir trees. As a result, the anticipated growth and developmental rate of the larger trees will increase in comparison to no action.

Diversity - Thinning will improve vertical and horizontal diversity by variable spacing and creating small skips and gaps (s. 1.2.1.4, page 9, s. 1.4, page 19, s. 3.2, page 70 & s. 3.8.2, page 167).

The silvicultural prescriptions associated with my decision will selectively retain some of the minor species within the treated stands, such as western hemlock, noble fir, Pacific silver fir, western

redcedar, and alder, rather than exclusively favoring the planted Douglas-fir stock. As a result, the overall species composition within the stand will become (over time) more characteristic of the compositional diversity representative of this stage of stand development under the natural disturbance regime. With no action the stands would continue to be dominated by Douglas-fir.

Under Alternative B, I am cognizant that there would be no change to the species composition within the stream protection buffers or within the skips. These are important to protect riparian-dependent species, as well as contribute to the overall structural variability within these plantations.

The prescriptions will also create gaps allowing more sunlight to reach the forest floor. The resulting open canopy conditions will release the herbaceous understory (e.g. shrubs, forbs) to grow more vigorously. The gaps as well as the areas with heavy thinning are also anticipated to gradually regenerate to young trees, resulting in the establishment of a second age class within the stand. The stream protection buffers and skips would still be comprised of a single-storied canopy. Alternative B would set in motion the establishment of stands with multiple distinct age classes, either intimately mixed or in small groups, greatly improving overall horizontal and vertical (structural) diversity as compared to the current, relatively single-storied Douglas-fir. The determination of whether or not other intermediate treatments may be needed in future years or decades in order to maintain and/or enhance the development of desired conditions within the treated stands would be evaluated at a future date based upon field monitoring.

A number of respondents to the Preliminary Assessment stated how snags and downed wood are vitally important components of diverse landscapes. I agree that these features are important. However, within the plantations proposed for treatment, almost all of the legacy trees, snags, and decayed trees that existed prior to the regeneration harvest were felled; and, in some instances, the large downed logs were either removed or burned along with the activity fuels. (The analysis of snags and down wood is at section 3.8.2 on pages 167 to 176.) Currently, there are some small dead trees from the planted stock that succumbed to insect, disease, and/or competition-induced mortality. The quantities and sizes vary based on site conditions, but approximately 100 trees per acre averaging 4 inches diameter have died; some of these have fallen. This is an expected phase of plantation development. Snags this small do not persist for very long, nor are they suitable in size for cavity-nesting for birds such as pileated woodpeckers.

Alternative B would alter the number of existing small snags per acre, as well as their distribution. Some small snags get knocked down during logging and some may have to be felled for safety reasons, but in general, all other snags would be retained. Snags in skips and riparian protection buffers would be retained. With Alternative B, some snags and down logs will be created immediately after thinning as described in section 1.4.9.2&3 on page 29 and 30. In the LSR units, five trees per acre would be girdled, two per acre would be felled and three per acre would be topped. Elsewhere three trees per acre would be girdled, felled or topped. These trees would be the size of the retained trees after thinning and would average over 12 inches diameter. Trees that are felled provide a relatively quick input of down wood: at first they would provide foraging habitat for a number of wildlife species such as woodpeckers and as the logs decay they would provide habitats for a broad range of species that live in and under them. Trees that are girdled would become snags that would provide foraging habitat for woodpeckers but since girdled trees of this size do not stand very long, they would become down wood after a decade or two. Trees that are topped would continue to live and grow but decay would be

introduced: these trees have the potential to provide habitat for species that require larger trees such as pileated woodpeckers for a much longer time period.

Alternative B would thin and remove some of the smaller trees that would eventually die with no action. The snag analysis (s. 3.8.2.3, pages 170 to 176), summarized below, shows the projection for large snags over the next decades.

	No Action	LSR & Riparian Prescription	Matrix Prescriptions
Snags/ac. > 20 inches diameter in 100 years	22	22	17-20
Snags/ac. > 30 inches diameter in 100 years	7	8	7-8
Years to achieve 10 snags/acre > 30 inches diameter	160	130	130-140

The thinning treatments would result in the development of larger trees; and, depending upon the disturbance agent, decadence would likely occur at a later stage of stand development when the trees on the treated areas are larger. If necessary in future decades, trees could be killed or felled to achieve the desired levels of snags and down logs.

Because a number of respondents to the Preliminary Assessment indicated a concern about the levels of snags and downed wood, I have carefully considered this analysis. I have determined that Alternative B would provide snags, trees with decadence and down logs (considering both quantity and size) at levels sufficient to meet the Forest Plan standards and guidelines (s. 3.8.2.5, page 174) and to provide for the species that depend on these structures both at the stand scale and the landscape scale (s. 3.8.2.4, page 173).

Wood Products – My decision will provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future (s. 1.2.1.5, page 11, s. 3.1, page 65 & s. 3.16, page 210).

As a result of implementing the silvicultural prescriptions, Alternative B will provide approximately 15 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 No-action Alternative would not provide wood products and would result in stands with reduced growth and productivity.

Consideration of Science - Recently there has been an ongoing discussion within the scientific community about evolving scientific discourse, particularly on the topics of wood input to streams, streamside shade and how wide stream buffers should be for thinning projects. After considering the literature, I have come to the conclusion that there is little-to-no scientific consensus for "one size fits all" buffers for all streams, given the enormous heterogeneity of physical and biological conditions across the Pacific Northwest.

Stream management should be based on site-specific factors such as slope, aspect, direction of stream flow, stream width, topographic screening, the current presence or absence of wood or shade, and the cumulative condition of the entire stream reach. Streamside protection buffers that are too narrow could result in compromised shade and increased stream temperatures or a long-term reduction in potential wood recruitment, while buffers that are too wide would reduce the achievement of upland riparian reserve enhancements and restorations. Finding the appropriate balance is the key to successful riparian management.

I have decided to pursue a strategy that would result in varied buffer widths in recognition of the complex interactions of the various components of riparian and aquatic systems.

To minimize impact to water temperature, the following minimum **stream buffers** would be applied to perennial streams (s. 1.4.9.9, page 40):

Average Tree Height	Hill Slope < 30%	Hill Slope 30 to 60%	Hill slope > 60%
60 to 100 feet	50 feet	55 feet	60 feet
100 to 140 feet	70 feet	75 feet	85 feet

Buffers would be wider in some cases where Listed Fish Habitat (LFH) occurs as follows (s. 1.4.9.4A3, page 31):

	Within 1,000 feet of Listed Fish Habitat	1,000 feet to 1 mile from Listed Fish Habitat	Greater than 1 mile upstream from Listed Fish Habitat
Perennial Streams	100 feet	Buffer would vary from 60 to 100 feet wide based on site-specific conditions.*	50 feet
Intermittent Streams	50 feet	50 feet	30 feet

* Buffer widths in most cases would be 100 feet except in units 20, 40, 72 and 74 where they would be 60 feet on the north side of the stream.

As part of the Endangered Species Act consultation for this project, the National Marine Fisheries Services (NMFS) concurred with this strategy. Distances from Listed Fish Habitat (LFH) are slope distance. These buffers may be expanded where recommended by the unit fisheries biologist to include steep slopes up to a slope break, flood prone areas, high water table areas and wetlands.

Public Involvement

For this project, the Forest Service began a process of collaboration with the Clackamas Stewardship Partners in 2009; a process that built on years of collaboration on similar thinning projects dating back to 2004 (s. 1.6, page 42). 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 September 27, 2010. The Forest publishes a schedule of proposed actions (SOPA) quarterly. The project first appeared in April 2010 and in subsequent issues. Several public field trips were conducted to visit the project area and discuss the purpose and need and issues. The legal notice for the 30-day comment period for this project was published in the Oregonian on November 18, 2011. Responses to substantive comments are included in Appendix B of the EA. A discussion of some of those comments are also included in section 1.6.1, page 43.

A wide range of comments was received. Many commenters felt that the effects of certain aspects of the project were too great or that the entire project should be deleted. There were a number of comments that related to roads and temporary road construction and reconstruction. Some were concerned about the quantities of snags and down logs while others question the science. Some commenters suggested that the project was not large enough. I considered the comments received and I believe that the proposed action is both appropriate and consistent with relevant management plans (s. 1.2.2, page 12) and laws (s. 1.2.2.3, page 15) and that the environmental assessment clearly explains the effects and benefits to resources. I find that the science used to develop the project and to assess the effects is current and valid.

After receiving comments, the environmental assessment was finalized and additional clarifications were added. While I respect the opinions and wishes of commenters and appreciate the dialog that has occurred, I do not consider any of the comments received to be sufficiently supported by the science to warrant the generation of other fully developed and evaluated alternatives in the environmental assessment.

Description of Other Alternatives and Reasons for Non Selection:

Alternative A is the no-action alternative (s. 2.1, page 53). It was not selected because it would not provide any of the benefits described in the purpose and need. If no action is taken, plantations would continue to become overcrowded resulting in trees with reduced vigor and increased mortality (s. 1.3, page 18 & 3.1, page 65). Trees would stagnate and stay relatively small resulting in a period of low structural diversity (s. 1.3, page 18 & s. 3.2, page 70). If no action is taken in late-successional reserves or riparian reserves, plantations would be very slow in their acquisition of late-successional characteristics (s. 1.2.2.1, page 13, s. 3.4.4.2, page 90 & 3.7.5, page 157). If no action is taken, we 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, page 18 & s. 3.16, page 210). If no action is taken, roads would deteriorate, become unsafe and impact fish and water quality (s. 3.12, page 190 & s. 3.3.3.4, page 88). Selection of Alternative A would not meet 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. These alternatives derived from public comment were considered (s. 1.6.1, page 43). Details of the suggestions and responses are in the EA at s. 2.3, page 53 as well as Appendix B. The following has some further elaboration:

- One suggestion was to not build new roads or reopen old road alignments to avoid impacts to streams and aquatic resources (s. 1.6.1.1, page 43). Approximately half of the proposed action would be affected.

  This option was considered. During development of the proposed action the potential for reconstructing more roads than are included in Alternative B was considered (s. 3.12, page 190). These were the roads that access units 16, 20, 28, 36, 40, 60, 116, 150 and 152. These roads were considered and eliminated from the proposed action due to aquatic risk and cost issues. Approximately six miles of road were considered but eliminated and logging systems were changed to helicopter. Even though helicopter logging is very expensive, it was thought that when mixed with the remaining lower-cost units, the project would still be viable. Section 2.3.5 (page 57) has additional discussion of helicopter feasibility.

  With the proposed action, new temporary roads were strategically located on gentle slopes and would not cross any streams. The existing road alignments proposed for reconstruction have some stream crossings; however, they have been designed to minimize impacts to aquatic resources (s. 1.4.6.3, page 23). Road work included in the proposed action includes only those road segments that do not pose an adverse impact on aquatic resources and are needed to efficiently achieve the vegetation health and diversity objectives discussed in section 1.3, page 18.

  During the early planning phase, road alignments to each unit were examined (s. 3.12.7, page 197). Each road proposed for reconstruction and use was strategically assessed for resource impact and economic viability. Fisheries specialists on the interdisciplinary team and with the National Marine Fisheries Service found that the proposed action and project design criteria are sufficient to protect aquatic resources (s. 3.4.6, page 118). The proposed road construction and reconstruction would be consistent with Forest Plan standards and guidelines and the Aquatic Conservation Strategy.

  I considered this option, but decided not to pursue it as a fully developed alternative because it would not meet the purpose and need on more than half of the acres that need treatment and because the effects of road construction and reconstruction were not found to be significant.

  During the appeal resolution discussions for the first decision for this project, an intermediate option was offered for discussion that would eliminate some but not all of the road reconstruction. This option was rejected by the appellants. I considered this intermediate option to eliminate some roads but retain the ones that are short and have little resource concern but did not fully develop it because no one has advocated for it and because the effects of rebuilding and decommissioning these roads were found to be minimal.

- Several suggestions received during public comment involved increasing the levels of decadence (s. 1.6.1.2, s. 1.6.1.6, s. 1.6.1.9 & s. 1.6.1.10, pages 45 to 50). Some advocated for greater skips and some for cutting all the trees needed to achieve the thinning objective and leaving on the ground. I considered these options, but decided not to pursue them as fully developed alternatives because they would not provide the benefits described in the purpose and need for the affected acres and because the effects of thinning were not found to be significant.

- One suggestion was to delete thinning in LSRs, riparian reserves and earthflows to avoid impacts to the associated resources (s. 1.6.1.3, page 46). This would eliminate approximately 3/4 of the project.

  This option would not provide the benefits of improved health and growth or enhanced diversity described in the purpose and need (s. 1.3, page 18; s. 3.1.4, page 68 & s. 3.2.4, page 71) for the affected acres. The effects of thinning in these land allocations to listed fish and aquatic resources, northern spotted owls and earthflow stability were not found to be substantial (s. 3.4, page 110; s. 3.7, page 153 & s. 3.5, page 129). The proposed action meets Forest Plan standards and guidelines for these land allocations (s. 3.3.7, page 108; s. 3.7.6, page 162 & s. 3.5.6.5, page 137), and was determined to not likely adversely affect listed fish or spotted owls (s. 3.4.6, page 118 & s. 3.7.5.2, page 157).

  I considered this option, but decided not to pursue it as a fully developed alternative because it would not provide the benefits described in the purpose and need for the affected acres and because the effects of thinning were not found to be significant.

- One suggestion was to use the LSRs prescription in certain matrix units to enhance long-term connectivity between the Collawash watershed and adjacent watersheds (s. 1.6.1.4, page 46). The watershed analysis identified areas of concern for late-successional connectivity.

  The recommendations of the Collawash/Hot Springs Watershed Analysis for late-successional connectivity are not applicable to this project. It makes recommendations for late-successional habitats and the proposed units are second growth. The project is consistent with the Collawash /Hot Springs Watershed Analysis recommendations. I considered this option, but decided not to pursue it as a fully developed alternative because using the LSR prescription in the matrix would preclude other important goals to enhance diversity and create forage (s. 1.6.1.4, page 46).

- The Forest considered the option of eliminating all helicopter logging due to the high cost of this logging system.

  The economic viability of helicopter logging is marginal given the value of the timber and the high cost of jet fuel. The proposed action involves approximately 209 acres of helicopter logging: the roads that lead to these units were examined for reconstruction but the costs and resource impacts were considered too great to reconstruct the roads to use ground-based or skyline systems. The accomplishment of these marginal helicopter units relies on the fluctuations of the timber market and the cost of jet fuel at the time of bidding.

  The Forest acting alone cannot achieve the thinning to meet the purpose and need. The proposal is to auction the rights to remove and utilize the timber to qualified contractors in exchange for

accomplishing the variable density thinning and other important work as prescribed in this document. For this work to be achieved the value of the timber needs to exceed costs. The Forest has considerable experience packaging high cost portions of a project with lower cost portions to gain operational efficiency and to develop a project that is likely to receive bids. Even though the proposed action identifies these 209 acres for helicopter systems, there is a chance that they may not happen if economic factors change that are difficult to predict. The option of an alternative with no helicopter logging was considered but not fully developed because the impacts were found to be minimal. The volatility of changes to economic factors related to helicopter viability happens much faster than the Forest's ability to respond with new NEPA documentation. One of the aspects of the proposed action is to identify helicopter opportunities to be better positioned to respond when market conditions are favorable.

Public comments question the need for the road reconstruction associated with the proposed action (s. 1.6.1.1, page 43 & s. 2.3.1, page 54). Section 3.12.7, page 197 contains an assessment of individual road segments.

The option of not reconstructing any roads would affect approximately half of the project acres. Changing this many units to helicopter would result in a project that is not economically viable. It may also make the units currently planned for helicopter unviable because the mix of traditional harvest methods would not be sufficient to cover the high costs of helicopter logging and the cost of repair along haul routes. This option was considered but not fully developed because the impact of the road work was found to be minimal.

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 2,000 acres of thinning. This equates to approximately 0.2% of the Forest and 0.5% 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 section 3 of the EA.

2. The project contains design features to protect public health and safety during project implementation including the removal of hazard snags (s. 1.4.1, page 19).

3. There will be no significant effects on unique characteristics of the area. The project is not located in prime farmland or wetlands (s. 3.20, page 213), and historic and cultural resources will be protected (s. 3.17, page 211). The outstandingly remarkable values associated with scenic and recreational rivers would be protected (s. 3.11, page 188).

4. The effects on the quality of the human environment are not likely to be highly controversial. While there may be some opposition to thinning in 30-60 year old managed plantations, I have concluded that the science behind plantation thinning is not highly controversial based on a review of the record that shows a thorough review of relevant scientific information (s. 1.3, page 18, s. 3.1, page 65). I have also taken into account that opposition to thinning 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 Section 3 of the EA are based on sound scientific research and previous experience implementing thinning 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. Similar projects have been conducted nearby on the Forest (s. 1.2, page 4).

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, page 65), fisheries (s. 3.4.5, page 117), hydrology (s. 3.3.4.4, page 92), geologic stability (s. 3.5.5, page 133), soils (s. 3.6.4-6, page 143), owls (s. 3.7.5.3, page 160), snags and down logs (s. 3.8.2.4, page 173), deer and elk (s. 3.8.3.4, page 178) and air quality (s. 3.15.6, page 209). 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 and recent wildfires have been included in the analysis (s. 3.0.1, page 63 & 3.0.2, page 64). 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. 3.17, page 211).

9. My decision is consistent with the Endangered Species Act. Formal consultation with U.S. Fish & Wildlife Service concerning the **northern spotted owl** has been completed for this project. The Letter of Concurrence from the U.S. Fish & Wildlife Service found that the project **may affect but is not likely to adversely affect** the spotted owl. The Biological Opinion for critical habitat from the U.S.

Fish & Wildlife Service found that the project **may affect and is likely to adversely affect** critical habitat (s. 3.7.5.2, page 157).

Formal consultation with the National Marine Fisheries Service concerning **listed fish** has been completed for this project. The Letter of Concurrence from the National Marine Fisheries Service found that the project **may affect but is not likely to adversely affect** listed fish or their critical habitat (s. 3.4.6, page 118). Also, there would be **no adverse affect** to Essential Fish Habitat; therefore, this project is consistent with 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, page 118, s. 3.8.1.1, page 165 & s. 3.13.1, page 200). 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. 1.2.2.3, page 15). 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. 3.19, page 213). 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 1.2.2.3, page 15, 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, page 207).

Clean Water Act: No streams in the project area are listed as impaired under the Clean Water Act (303(d)) (s. 3.3.2, page 75). Implementation of my decision will incorporate Project Design Criteria, as described in the EA (s. 1.4.9, page 28), 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. 3.3.3.3, page 82). At this time it is uncertain whether this project will require a National Pollution Discharge Elimination System (NPDES) permit, due to ongoing judicial proceedings. Should it be determined that an NPDES permit is required for this project, the Forest Service will comply with any applicable NPDES permitting requirements (s. 3.3.6.3, page 107).

Endangered Species Act (ESA): Consultation has been completed where required. Listed species are addressed in sections 3.4, page 110 and 3.7, page 153.

Magnuson-Stevens Fishery Conservation and Management Act

The project would have no adverse affect to essential fish habitat for chinook or coho salmon (s. 3.4.6, page 118).

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, page 65).

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. 3.17, page 211).

CONSISTENCY WITH MT. HOOD FOREST PLAN – I find that the selected alternative is consistent with direction found in the Forest Plan. 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. 1.2.2, page 12 & s. 3, page 63).

- **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, page 121).

  - I have considered the relevant information from the Collawash/Hot Springs Watershed Analysis (1995). This project has adopted the concepts for riparian reserve delineation described in the watershed analysis (s. 1.2.2.3, page 15). The site-potential tree height for this project is 180 feet.

  - I find that the Project Design Criteria (s. 1.4.9, page 28), 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, page 121).

- **Management Indicator Species** - I have considered the impacts to Forest Management Indicator Species (s. 3.8.3, page 176). Management Indicator Species (MIS) for this portion of the Forest include northern spotted owl (s. 3.7, page 153), pileated woodpecker (s. 3.8.3.6, page 181), American marten (s. 3.8.3.5, page 180), deer, elk (s. 3.8.3.4, page 178), salmonid smolts and legal trout (s. 3.4.7, page 119). 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. 3.14, page 202). Design criteria are included to prevent the spread and establishment of invasive plants (s. 1.4.9, page 28).

- 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. 3.4.6, page 118, s. 3.8.1, page 163 & s. 3.13, page 200).

  I have reviewed the relevant sections in the Environmental Assessment and I find this decision to be consistent with the 2001 Record of Decision.

  Specifically, I find that no surveys are needed because the Pechman exemption applies to these stands since they are under 80 years of age.

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 the following exceptions:

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. 3.6.7, page 150). I am approving an exception for Forest Plan standards and guidelines FW-22, FW-28 and FW-30. I considered using helicopters to log these units but found the benefits to be insignificant and the additional cost to be unwarranted. Units that are above 15% will have obliteration of temporary roads and landings that are used by the contractor. Rehabilitation has been considered for old skid trails but the soil scientist and silviculturist do not recommend restoration of old skid trails at this time because of the risk of damaging tree roots and because productivity has not been impaired. The No-action Alternative would have areas that remain above 15% with no opportunity for restoration. The objective of maintaining long-term site productivity will still be met. Even though there was no standard for long-term soil productivity when the original clearcuts were logged, the stands continue to grow well and are projected to continue to grow well after the proposed thinning.

The project is consistent with Forest Plan objectives for **earthflow** stability. However, additional soil impact will occur on areas where there is existing soil disturbance. The analysis shows that many units on earthflows already exceed 8% detrimental soil condition and they will remain above 8% after project implementation (s. 3.6.7, page 150). I am approving exceptions for Forest Plan standards and guidelines B8-36, B8-40, FW-18 and FW-20. Ground-based yarding will be used on most earthflow stands where ground-based systems were used in the original logging. I considered using helicopters to log these units but found the benefits to be insignificant and the additional cost to be unwarranted. The no-action alternative would have areas that remain above 8% with no opportunity for restoration. The objective of earthflow stability will still be met because thinning will result in healthy and vigorous stands with strong well-developed roots (s. 3.5, page 129). Temporary roads and landings in

earthflow units that are used by the contractor will be decommissioned. Rehabilitation has been considered for skid trails but the soil scientist and silviculturist do not recommend restoration of skid trails at this time because of the risk of damaging tree roots.

Comments

The legal notice for the 30-day comment period for this project was published in the Oregonian on November 18, 2011. The comments that were received focused on impacts to fish and water quality in a geologically unstable watershed, the potential for impacts to spotted owls, the retention of snags and down wood, the impacts from temporary roads, the adequacy of the range of alternatives, the adequacy of the analysis, and the consideration of best science. I have considered these comments and responded to them in Appendix B of the EA. I have also considered the appeal points received after the 2012 decision. By considering these comments, I believe that I have made a decision that balances the need for thinning against any impacts to resources, and I have incorporated adequate design features (s. 1.4, page 19), and project design criteria (s. 1.4.9, page 28) to minimize impacts to resources and that those impacts have been thoroughly disclosed in the EA.

Appeal Rights

This decision is subject to appeal pursuant to Forest Service regulations at 36 CFR 215. Any individual or organization that submitted comments or expressed interest during the comment period may appeal. Any appeal of this decision must be in writing and fully consistent with the content requirements described in 36 CFR 215.14. The Appeal Deciding Officer is the Regional Forester. An appeal should be addressed to the Regional Forester at any of the following addresses. For postal delivery, mail to: Regional Forester, Appeal Deciding Officer, USDA Forest Service, PO Box 3623, Portland, OR 97208. The street location for those submitting hand-delivered appeals is 333 SW First Ave., Portland, OR, 97204. The office hours are 8-4:30 M-F, excluding holidays. For fax, send to 503-808-2339. Email: appeals-pacificnorthwest-regional-office@fs.fed.us. Electronic appeals must be submitted as part of the actual e-mail message, or as an attachment in Microsoft Word (.doc), rich text format (.rtf), or portable document format (.pdf) only. E-mails submitted to email addresses other than the one listed above, or in formats other than those listed, or containing viruses, will be rejected. It is the responsibility of the appellant to confirm receipt of appeals submitted by electronic mail.

The Appeal, including attachments, must be postmarked or received by the Appeal Deciding Officer within 45 days of the date legal notice of this decision is published in the Oregonian. For further information regarding these appeal procedures, contact Jim Roden at 503-630-8767, Email: jroden@fs.fed.us.

Project Implementation

Implementation of this decision may occur on, but not before, 5 business days from the close of the 45-day appeal filing period described above. If an appeal is filed, implementation may not occur for 15 business days following the date of appeal disposition (36 CFR 215.10).

The EA can be downloaded from the Forest web site at http://www.fs.usda.gov/projects/mthood/landmanagement/projects.

/S/ *Lisa Northrop*

Lisa Northrop
Deputy Forest Supervisor

March 13, 2013
Date Signed

March 15, 2013
Date Published