# ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

**Project Title: Quartzville Late Successional Reserve (LSR) Habitat Enhancement**

**EA Number:** DOI-BLM-OR-S040-2011-0005-EA

**Type of Project: Wildlife and Forest Restoration Project**

**Date: May 20, 2011**

**Location of Proposed Action:** T. 11 S., R. 3 E.; T. 11 S., R. 4 E. W.M. Linn County, Oregon. Within the Quartzville Late Successional Reserve, Quartzville Creek and Crabtree Creek Watersheds

**Name and Location of Preparing Office:** USDI - Bureau of Land Management
Cascades Resource Area, Salem District, 1717 Fabry Road SE
Salem, OR 97306

**Responsible Official:** Cindy Enstrom, Field Manager at (503) 315-5969

**For further information, contact**: Corbin Murphy at the Salem District address or at (503) 315-5907

BLM
Salem District

As the Nation's principal conservation agency, the Department of Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering economic use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

**BLM/OR/WA/AE-11/041+1793**

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# ENVIRONMENTAL ASSESSMENT

# 1.0 INTRODUCTION

This EA will analyze the impacts of the proposed project and connected actions on the human environment. The EA will provide the decision-maker, the Cascades Resource Area Field Manager, with current information to aid in the decision-making process. Section 1 of this EA provides a context for what will be analyzed in the EA, describes the kinds of actions we will be considering, defines the project area, describes what the proposed action needs to accomplish, and identifies the criteria that we will use for choosing the alternative that will best meet the purpose and need for this proposal.

## 1.1 Purpose of and Need for Action

### 1.1.1 Need for Action

#### Late-Successional Habitat Restoration

Data analysis and field examinations by BLM staff have identified over 5,000 acres young stands in the Quartzville Late Successional Reserve(LSR) that provide little to no habitat for late successional species. These early-seral forest stands, including upslope and riparian areas, currently lack species diversity and structure.

High stocking densities have reduced stand vigor and resiliency, prolonging development of late-successional forest characteristics. High stocking levels have also reduced early seral open habitat needed for big game forage, small mammals, migratory birds and raptors.

There is a need to reduce the number of trees per acre to levels that would optimize growth rates, increase forest stand diversity, and accelerate late-successional forest development. Previously managed stands with simplified canopy structures need multi-canopy layer development. There is also a need to provide habitat connectivity throughout the LSR block and between adjacent drainages.

#### Riparian Habitat Restoration

Previously harvested young stands, as described above, also occur within the Riparian Reserve land use allocation (LUA). These stands provide poor instream large wood recruitment potential. Additionally, the existing low structural and species diversity offers low quality habitat for wildlife using the riparian corridors. Therefore, there is a need to promote instream large wood recruitment within the drainage as well as to provide a diversity of species and canopy levels to facilitate development of wildlife corridors.

#### Socio-Economic

Forest harvest volumes in Western Oregon have greatly decreased, reducing forest related jobs in the region. There is a need to provide contract opportunities to local and regional businesses and to offer forest products (fire wood, poles) to the market. Thinning would promote development of late-successional forest characteristics and would also provide an opportunity for forest commodity by-products.

### 1.1.2 Purpose of Action

The Bureau of Land Management designed the Quartzville LSR Habitat Enhancement project to: 1) accelerate the development of late-successional forest conditions within younger (<50 years) stands; 2) protect and maintain current late-successional stands in the Quartzville Late Successional Reserve; 3) create early seral habitat; and 4) provide economic opportunities through contracts to local business and offering forest products.

The proposed actions are designed to meet the objectives of the Northwest Forest Plan (NWFP) and the Salem District Resource Management Plan (RMP). The Salem RMP describes Management Actions/Direction that may be applied to developing timber stands to attain Late Successional Reserve resource objectives. Specifically, this project would implement the following RMP objectives and directions to achieve the stated purpose:

**Late Successional Reserve Land Use Allocation (LUA) (RMP p. 15-19):**

- Apply silvicultural treatments in LSRs that are beneficial to the creation of late-successional habitat (RMP p.16)
- If needed to create and maintain late successional conditions, conduct thinning operations in forest stands up to 80 years old (RMP p. 16);
- Design projects to improve conditions for wildlife and recovery of threatened or endangered species (RMP p.18)

The specific objectives of this project are to:

- Expand the existing late-successional core area by speeding the trajectory of adjacent previously managed younger stands towards late-successional habitat;
- Enhance the growth of the stand by providing more growing space for the selected leave trees;
- Enhance late-successional habitat characteristics by developing of multiple canopy layers and increasing species diversity by variable canopy pre-commercial thinning.

**Socioeconomic (RMP p. 41, 49):**

- Develop and implement alternative economic strategies as a partial substitute for declining timber-based economies. Support and assistance include increased emphasis on management of special forest products (RMP p. 41)
- Manage for the production and sale of special forest products when demand is present, complying with management actions/direction for Late-Successional Reserves (RMP p. 49)

### 1.1.3 Decisions to be Made / Decision Factors

The following decisions will be made through this analysis:

- To determine at what level, where, and method to manage plantation stands in the LSR.
- To implement or not implement the proposed actions.

In choosing the alternative that best meets the purpose and need, the Cascades Resource Area Field Manager will consider the extent to which each alternative would:

1. Reduce competition-related mortality and increase tree vigor and growth.
2. Increase structural and species diversity.
3. Create contract opportunities for local businesses.

| Element of the Environment /Authority | Remarks/Effects |
|---|---|
| Wetlands (E.O. 11990 Protection of Wetlands 5/24/77) [40 CFR 1508.27(b)(3)] | This project is in compliance with this direction because no wetlands are within the project area and adjacent wetlands would be protected by buffers. |
| Wild and Scenic Rivers (Wild and Scenic Rivers Act, as amended (16 USC 1271) [40 CFR 1508.27(b)(3)] | This project is in compliance with this direction because only one area is within the designation and project design features would protect values. |
| Wilderness (Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.); Wilderness Act of 1964 (16 USC 1131 et seq.) | This project is in compliance with this direction because there are no Wilderness Areas or areas being considered for Wilderness Area status in or adjacent to the project area. |

## 3.6 Compliance with the Aquatic Conservation Strategy

Based on the environmental analysis described in the previous sections of the EA, Cascades Resource Area Staff have determined that the project complies with the ACS on the project (site) scale. The project complies with the four components of the Aquatic Conservation Strategy, as follows:

- **ACS Component 1 - Riparian Reserves:** The project would comply with Component 1 **because** treatments riparian reserves are expected to improve LWD and shade function, and travel corridors.
- **ACS Component 2 - Key Watershed:** The project would comply with Component 2 by establishing that the Quartzville LSR Habitat Enhancement project is not within a Key watershed. (RMP p. 7).
- **ACS Component 3 - Watershed Analysis:** The project would comply with Component 3 because watershed analyses were completed and recommendations are incorporated into the project actions. Recommendations from the watershed analysis include Implement density management prescriptions to develop and maintain late seral forest stand characteristics.( Quartzville WA 2002 pp. S-6; S-10, S-12; Crabtree Creek WA 2001, Chapter. 7 pp.4-8).
- **ACS Component 4 - Watershed Restoration:** The project would comply with Component 4 by improving riparian conditions intended to improve long term aquatic conditions. The project identified young stands with little habitat diversity and intends to improve terrestrial and riparian habitat conditions through thinning. Thinning would accelerate large tree development, increase species diversity, and lead to multiple canopy structure. These improvements in diversity and growth rates comply with Component 4 by improving riparian conditions intended to improve long term aquatic conditions.

Cascades Resource Area Staff have reviewed this project against the ACS objectives at the project or site scale with the following results. The No Action alternative does not retard or prevent the attainment of any of the nine ACS objectives because this alternative would maintain current conditions. The proposed action does not retard or prevent the attainment of any of the nine ACS objectives for the following reasons.

1. **ACSO 1: Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.** Addressed in Text (EA sections 2.3; 3.1; 3.1). In summary:

No Action Alternative: The No Action alternative would maintain the development of the existing vegetation and associated stand structure at its present rate. The current distribution, diversity and complexity of watershed and landscape-scale features would be maintained. Without this project, young stands in the LSR would continue to lack complex structure. Without active management, it would take longer for riparian areas in younger stands to develop late-successional habitat and forest structure.

Proposed Action: Proposed actions are consistent with the RMP and intend to increase landscape habitat diversity via increasing both species and structural diversity. This project would add forest stand structure and complexity by promoting understory development, increase species diversity, and promote multi-canopy layers. Through thinning young stands the project would release slow growing heavily stocked young forest stands. As a result spatial distribution of late successional habitat conditions would increase and would create a mosaic of stand densities with diverse structural and species composition.

2. **ACSO 2: Maintain and restore spatial and temporal connectivity within and between watersheds.** Addressed in Text (EA sections 2.3; 3.1). In summary:

   No Action Alternative: The No Action alternative would have little effect on connectivity except in the long term within the affected watersheds.

   Proposed Action: Through thinning and development of riparian late successional characteristics, the project would improve travel corridors for terrestrial species.

3. **ACSO 3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.** Addressed in Text (EA sections 1.3; 2.3). In summary:

   No Action Alternative: The current condition of physical integrity would be maintained.

   Proposed Action: Streamside protection buffers would maintain current integrity and riparian thinning treatments would release slow growing young stands leading to increased growth rates and long term abundance of large tree structure. Therefore, large wood recruitment to stream channel is expected to increase, improving the physical integrity to aquatic systems.

4. **ACSO 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.** Addressed in Text (EA sections 1.3; 2.3). In summary:

   No Action Alternative: The current condition of the water quality would be maintained.

   Proposed Action: All actions would comply with state of Oregon water quality management plans via streamside protection buffers. Through vegetative buffers, the project would not affect stream temperatures. No road building would occur. There would be no temporary skid trails within 100 feet of streams prevents any mechanisms for sediment to route to stream channels. Retained streamside vegetation furthers buffers stream channels from upslope sediment routing to stream channels. Hence, the project would maintain water quality.

5. **ACSO 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved.** Addressed in Text (EA sections 1.3; 2.3). In summary:

No Action Alternative: It is assumed that the current levels of sediment into streams would be maintained.

Proposed Action: Because of no road development, no temporary skid roads within 100 feet of streams, and riparian protection buffers, the proposed actions would not lead to sediment entering any stream channel. No road building or temporary skid trails within 100 feet of streams prevents any mechanisms for sediment to route to stream channels. Retained streamside vegetation furthers buffers stream channels from upslope sediment routing to stream channels. Therefore the project would maintain the current sediment regime.

6. **ACSO 6: Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.** Addressed in Text (EA sections 1.3; 2.3). In summary:

   No Action Alternative: No change in in-streams flows would be anticipated.

   Proposed Action: Because there would be no road building to capture and route water and retention of canopy to avoid increased snow pack and water availability, there would be no alterations in peak, base or annual streamflow.

7. **ACSO 7: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.**

   No Action Alternative: The current condition of flood plains and their ability to sustain inundation and the water table elevations in meadows and wetlands is expected to be maintained.

   Proposed Action: No actions would occur with a floodplain.

8. **ACSO 8: Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.** Addressed in Text (EA sections 2.3; 3.1). In summary:

   No Action Alternative: The current species composition and structural diversity of plant communities would continue along the current trajectory. Diversification would occur over a longer period of time.

   Proposed Action: The proposed thinning, through release of young, dense fir dominated stands, would reduce competition leading to increased growth rates and late seral habitat conditions. Reducing fir densities would improve growing conditions for hardwood species and multiple canopy development. Hence, the project would increase species and structural diversity of plant communities.

9. **ACSO 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species. Addressed in Text** (EA sections 2.3; 3.1). In summary:

   No Action Alternative: Habitats would be maintained over the short-term and continue to develop over the long-term with no known impacts on species currently present.

Proposed Action: The project maintains and protects all late seral habitat conditions. The project also retains hardwoods and minor species found in the stands. The proposed thinning in young dense fir stands with little hardwood component and a single canopy would increase growing space leading to development of species diversity, multiple canopy layers and late successional forest characteristics.

### 3.7 Review of Alternatives with Regard to the Decision Factors

1. **Reduce competition-related mortality, and increase tree vigor and growth.**

   No Action: Stands would continue their current trajectory of suppressed growth and competition for resources.

   Proposed Action: Thinning suppressed stands would increase growth rates of residual stands and reducing competition would reduce competition-related mortality.

2. **Increase structural and species diversity.**

   No Action: No action would prolong development of structural diversity due to competition for sun light resources.

   Proposed Action: Reducing canopy cover in dense stands would increase light resources, facilitating multiple canopy layers including development of brush and grasses currently absent in stands.

3. **Create contract opportunities for local businesses.**

   No Action: There would be no contract or special forest products opportunities.

   Proposed Action: Each unit would be treated using contract crews. Opportunities for special forest products would be available in all units to contractors and small businesses.

## 4.0 LIST OF PREPARERS

**Table 7: List of Preparers**

| Resource | Name | Initial and Date |
|---|---|---|
| NRSA/Writer/Editor | Mike Mathews | ***MM*** 05/19/2011 |
| NEPA Review | Carolyn Sands | ***CDS*** 05/20/2011 |
| Botany | Terry Fennell | ***TGF*** 05/18/2011 |
| Cultural Resources | Heather Ulrich | ***HAU*** 05/19/2011 |
| Fisheries | Bruce Zoellick | ***BWZ*** 05/19/2011 |
| Hydrology/ Water Quality/Soils | Patrick Hawe | ***WPH*** 05/18/2011 |
| Recreation, Visual Resources Management and Rural Interface | Adam Milnor | ***AM*** 05/19/2011 |
| Wildlife | Corbin Murphy | ***CJM*** 05/18/2011 |

# 5.0 CONTACTS AND CONSULTATION

## 5.1 ESA Consultation

### 5.1.1 US Fish and Wildlife Service (USFWS)

The BLM submitted the Quartzville Habitat Enhancement Project in March 2011 for informal consultation with U.S. Fish and Wildlife Service (USFWS) as provided in Section 7 of the Endangered Species Act (ESA) of 1973 (16U.S.C. 1536 (a)(2) and (a)(4) as amended). The Biological Assessment of NLAA Projects with the Potential to Modify the Habitat of Northern Spotted Owls Willamette Planning Province - CY 2011/2012 (BA) was submitted by to Fish and Wildlife Service in April 2011.

Using effect determination guidelines, the BA concluded that the Quartzville Habitat Enhancement Project, may affect, but is not likely to adversely affect the northern spotted owl due to the modification of dispersal habitat (BA, p. 30-31). The project would comply with the General Standards described in the BA, including seasonal restrictions during the critical nesting season within disruption distance of known spotted owl sites (BA, pp. 9-11). The Letter of Concurrence (LOC) associated with the Quartzville Habitat Enhancement Project is expected in June 2011.

### 5.1.2 National Marine Fisheries Service (NMFS)

Most of the project areas are greater than one mile from upper Willamette steelhead trout habitat. Restoration actions in the Quartville watershed and most of the Crabtree watershed would have no effect on steelhead trout, both because of the distance of restoration areas to steelhead trout habitat and because of project design criteria that prevent changes to stream temperature and minimize soil disturbance.

Similarly, the project would have no effect on Upper Willamette Chinook salmon. Some units in Section 7 of the Crabtree Creek drainage are < 1 mile from steelhead trout habitat. The NMFS (2008) concluded that restoration projects with design criteria similar to those proposed for Section 7, may affect, but are not likely to jeopardize the continued existence of upper Willamette steelhead trout, nor are they likely to adversely modify their designated critical habitat. Consultation for restoration projects such as this are included in the *National Marine Fisheries Service Section 7 Programmatic Consultation Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Fish Habitat Restoration Activities in Oregon and Washington* (NMFS 2008).

## 5.2 Cultural Resources: Section 106 Consultation with State Historical Preservation Office

Compliance with Section 106 of the National Historic Preservation Act will be completed according to Appendix A of the Protocol for Managing Cultural Resources on Lands Administered by the BLM in Oregon. In agreement with the State Historic Preservation Office cultural resource surveys will precede any ground disturbing activity.
Any cultural resources identified during survey will be recorded and avoided. If the site cannot be avoided then the Salem District will consult with the State Historic Preservation Office on mitigation measures.

### 5.3 EA Public Comment Period

For the results of project scoping, see EA section 1.3. The EA and FONSI will be made available for public review from May 25, 2011 to June 9, 2011 and posted at the Salem District website at http://www.blm.gov/or/districts/salem/plans/index.php. The notice for public comment will be published in a legal notice in the ***Albany Democrat Herald*** newspaper. Written comments should be addressed to Cindy Enstrom, Field Manager, Cascades Resource Area, 1717 Fabry Road S., Salem, Oregon 97306. Emailed comments may be sent to OR_Salem_Mail@blm.gov. Attention: Cindy Enstrom

## 6.0 FINDING OF NO SIGNIFICANT IMPACT

Based upon review of the Quartzville LSR Habitat Enhancement EA and supporting documents, I have determined that the proposed action is not a major federal action and would not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. Therefore, supplemental or additional information to the analysis in the RMP/FEIS in the form of a new environmental impact statement is not needed. This finding is based on the following discussion:

**Context** [40 CFR 1508.27(a)]: Potential effects resulting from the implementation of the proposed action have been analyzed within the context of the project area boundaries, and the following 5th field watersheds: Crabtree and Quartzville watersheds. This project would thin dense forest stands in approximately 0.7 percent of the 195,000 acre combined 5th field watersheds listed above.

**Intensity** refers to severity of impact [40 CFR 1508.27(b)]. The following text shows how that the proposed project would not have significant impacts with regard to ten considerations for evaluating intensity, as described in 40 CFR 1508.27(b).

1. *[40 CFR 1508.27(b) (1)] – Impacts that may be both beneficial and adverse:* The effects of thinning and reducing fuel loads are unlikely to have significant (beneficial and adverse) impacts *(EA section 3.0)* for the following reasons:

    - Project design features described in EA section 2.3.2 would reduce the risk of effects to affected resources to be within RMP standards and guidelines and to be within the effects described in the RMP/EIS.
    - *Wildlife EA section 3.1):* Effects to this resource are not significant because only short term disturbance would occur to wildlife resources during project implementation due to noise and disturbance. Course wood debris and snags would be minimally affected due to design features which retains all existing snags and CWD and because units currently contain very few of these habitat elements. Proposed actions are expected to increase forest stand growth rates and reduce light resource competition. In the long term, these actions would facilitate development of multiple canopy layers leading to vegetation and habitat diversity for a variety of species.
    - In addition actions are expected to decrease time to large snag and course wood debris availability for wildlife species. Grass and forbes development through in the low density thinning patches are expected to increase forage for big game species as well as song/migratory bird species.

- *Recreation and visuals (EA section 3.2):* Effects to this resource are not significant because all actions comply with RMP VRM standards. Retention of 50% canopy closure on the one unit within the Quartzville Wild and Scenic River would maintain landscape characteristics and would not attract attention of the public. No actions would occur within any recreation sites or destinations.
- *Fuels (EA section 3.4):* Effects to this resource are not significant because all actions comply with the RMP. Short term fire behavior intensity would increase in the short term but decrease in the long term. Fuel reduction treatments along roads would decrease fire risk over the no action alternative

2. *[40 CFR 1508.27(b) (2)] - The degree to which the proposed action affects public health or safety:* Neither the public nor the project team identified any action that would affect public health or safety.

3. [40 CFR 1508.27(b) (3)] - *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:* The proposed project would not affect historical or cultural resources because all historical and cultural resources would be buffered out of project areas that may cause disturbance. The proposed project would not affect parklands, prime farmlands, wilderness, or ecologically critical areas because no actions would occur within these designations. Only one unit was identified as potentially influencing the view along the Quartzville wild and scenic rivers. Due to project design of retaining canopy cover in this unit visuals would not be affected.

4. *[40 CFR 1508.27(b) (4)] - The degree to which the effects on the quality of the human environment are likely to be highly controversial:* The proposed project is not unique or unusual. The BLM has experience implementing similar actions in similar areas without highly controversial effects.

5. *[40 CFR 1508.27(b) (5)] - The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks:* The effects associated as a result of the project do not have not uncertain, unique or unknown risks because the BLM has experience implementing similar actions in similar areas without these risks and project design features would minimize the risks associated with the project. See # 4, above.

6. *[40 CFR 1508.27(b) (6)] - The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:* The proposed action would not establish a precedent for future actions nor would it represent a decision in principle about a further consideration for the following reasons: 1/ The project is in the scope of proposed activities document in the RMP EIS. 2/ the BLM has experience implementing similar actions in similar areas without setting a precedent for future actions or representing a decision about a further consideration. See # 4, 5, above.

7. *[40 CFR 1508.27(b) (7)] - Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:* The Interdisciplinary Team (IDT) evaluated the project area in context of past, present and reasonably foreseeable actions and determined that there is a potential for beneficial cumulative effects on wildlife.

All proposed actions and foreseeable actions (200 acres of habitat enhance under Crab Race Timber sale) are consistent with management direction for maintaining and enhancing late successional habitat within the Quartzville Later Successional Reserve.

8. *[40 CFR 1508.27(b) (8)] - The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources:* The project would not affect these resources because there are no listed resources present in the project area. Sites that remain unevaluated for eligibility would be avoided during project implementation.

9. *[40 CFR 1508.27(b) (9)] - The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973:* The proposed project is not expected to adversely affect ESA listed species or critical habitat for the following reasons:
   - *ESA Wildlife - Northern spotted owl (EA Section 3.1):* The project maintains all suitable spotted owl habitat. Thinning managed stands would increase both vegetative structural and species diversity, leading to long term improvement in spotted owl habitat conditions. ESA Consultation is described in EA section 5.1.1.
   - *ESA Fish – UWR Chinook salmon, UWR steelhead trout, LCR coho salmon, and LCR steelhead trout (EA Sections 1.3; 5.1.2):* Effects to ESA fish are not significant because there are no expected changes to the sediment regime, water quality, or stream channel habitat. ESA Consultation is described in EA section 5.1.1.

10. *[40 CFR 1508.27(b) (10)] - Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment:* The proposed project activities have been designed to follow Federal, State, and local laws (*EA sections 1.2, 3.2*)

Approved by: _____ 5/20/11
Cindy Enstrom, Cascades Resource Area Field Manager Date

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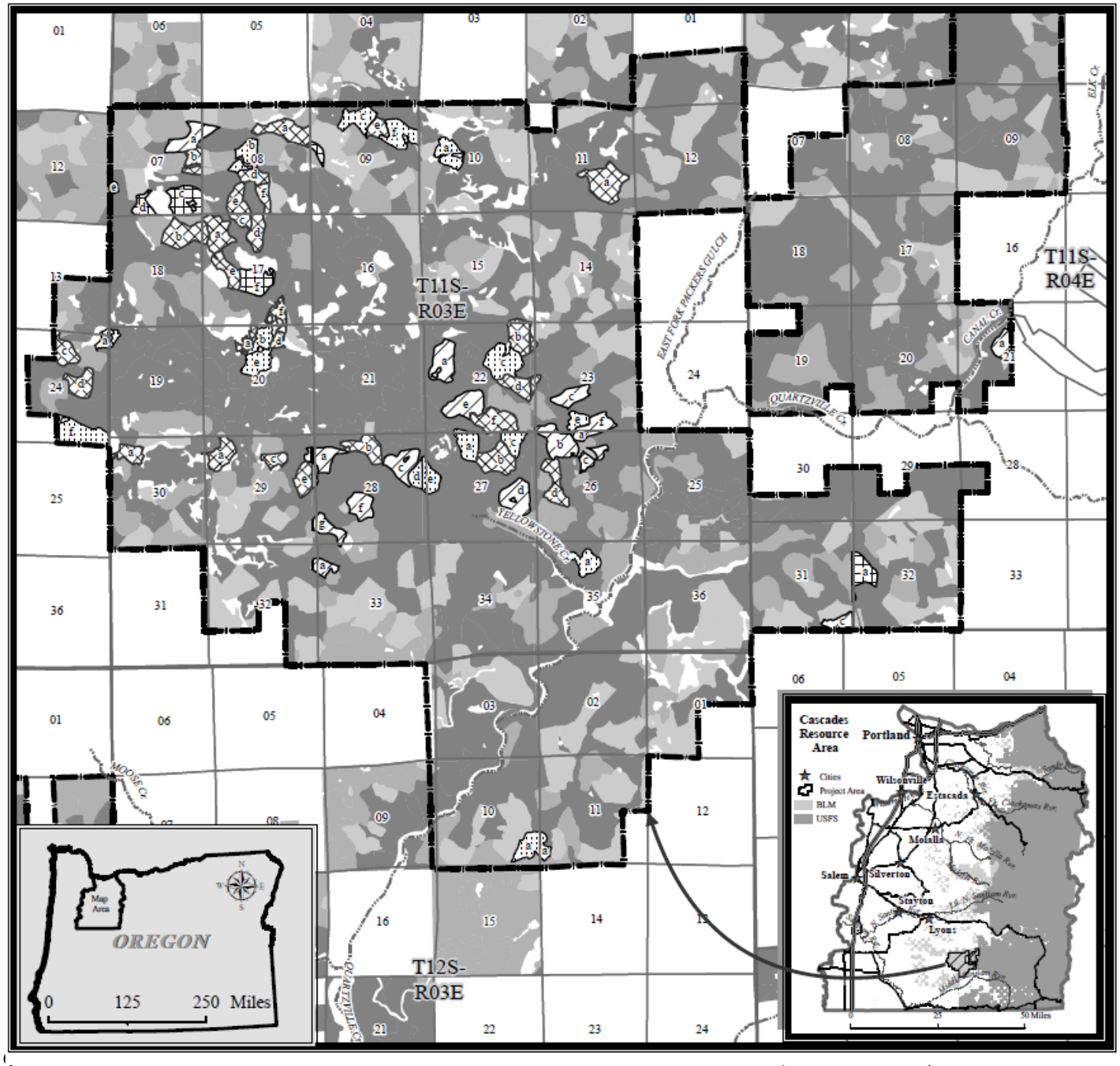
# 8.0 TREATMENT TABLE AND MAPS

**Table 8: Acres Identified for Treatment over the next 5 years**

| Township, Range, Section, Unit | Acres | Age | Township, Range, Section, Unit | Acres | Age |
|---|---|---|---|---|---|
| **Crabtree Creek 5th field Watershed** | | | **Quartzville Creek 5th field Watershed** | | |
| 11_2_13_a | 2 | 40 | 11_3_10_a | 59 | 30 |
| 11_2_24_a | 7 | 40 | 11_3_15_a | 3 | 30 |
| 11_2_24_c | 29 | 30 | 11_3_22_a | 42 | 20 |
| 11_3_17_a | 39 | 30 | 11_3_22_b | 34 | 30 |
| 11_3_17_b | 7 | 30 | 11_3_22_c | 50 | 40 |
| 11_3_17_c | 12 | 30 | 11_3_22_d | 26 | 30 |
| 11_3_17_d | 26 | 30 | 11_3_22_e | 44 | 20 |
| 11_3_17_e | 26 | 30 | 11_3_22_f | 44 | 30 |
| 11_3_17_f | 20 | 30 | 11_3_22_g | 3 | 40 |
| 11_3_17_f | 38 | 50 | 11_3_23_a | 4 | 30 |
| 11_3_18_b | 36 | 30 | 11_3_23_b | 7 | 30 |
| 11_3_19_a | 5 | 40 | 11_3_23_c | 27 | 20 |
| 11_3_20_a | 13 | 30 | 11_3_23_d | 8 | 20 |
| 11_3_20_b | 20 | 40 | 11_3_23_e | 16 | 40 |
| 11_3_20_c | 9 | 30 | 11_3_23_f | 24 | 20 |
| 11_3_20_d | 17 | 30 | 11_3_26_a | 9 | 20 |
| 11_3_20_e | 30 | 40 | 11_3_26_b | 38 | 20 |
| 11_3_29_a | 31 | 30 | 11_3_26_c | 18 | 20 |
| 11_3_30_a | 22 | 30 | 11_3_26_d | 36 | 30 |
| 11_3_7_a | 32 | 20 | 11_3_27_a | 27 | 40 |
| 11_3_7_b | 20 | 30 | 11_3_27_b | 44 | 30 |
| 11_3_7_c | 5 | 50 | 11_3_27_c | 21 | 40 |
| 11_3_7_c | 43 | 50 | 11_3_27_c | 21 | 40 |
| 11_3_7_d | 17 | 50 | 11_3_27_d | 43 | 20 |
| 11_3_7_e | 5 | 40 | 11_3_27_e | 24 | 40 |
| 11_3_8_a | 45 | 30 | 11_3_28_a | 27 | 20 |
| 11_3_8_b | 30 | 40 | 11_3_28_c | 38 | 20 |
| 11_3_8_c | 8 | 20 | 11_3_28_d | 15 | 40 |
| 11_3_8_d | 20 | 30 | 11_3_28_e | 7 | 40 |
| 11_3_8_e | 27 | 30 | 11_3_28_f | 29 | 20 |
| 11_3_8_f | 37 | 30 | 11_3_28_g | 24 | 20 |
| 11_3_9_b | 15 | 50 | 11_3_29_b | 4 | 20 |
| 11_3_9_c | 33 | 40 | 11_3_29_c | 15 | 30 |
| 11_3_9_e | 17 | 30 | 11_4_32_a | 35 | 50 |
| 11_3_9_f | 37 | 40 | 11-3_28_b | 33 | 30 |
| 11-2_24_f | 56 | 40 | 12_3_10_a | 28 | 40 |
| | | | 12_3_11_a | 11 | 40 |




# Quartzville LSR Habitat Enhancement Project Vicinity Map

Major Streams

LSR Boundary

**Proposed Treatment Units Age Class**

- 20
- 30
- 40
- 50

**Other Forested Stands Age Class**

- <=39
- 40-79
- Over 80

May 11, 2011
Bureau Of Land Management
Salem District Office
Cascades Resource Area

1 0.5 0 Miles

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.