

APPENDIX 2 ENVIRONMENTAL ELEMENTS

Environmental Assessment Number OR-086-05-01

In accordance with law, regulation, executive order and policy, the interdisciplinary team reviewed the elements of the human environment to determine if they would be affected by the alternatives described in Chapter 2 of the EA (environmental assessment). The following three tables summarize the results of that review. Those elements that are determined to be “affected” will define the scope of environmental concern, Chapter 3 of the EA.

Table 1. Critical Elements of the Environment. This table lists the critical elements of the human environment (BLM Handbook 1790-1) which are subject to requirements specified in statute, regulation, or executive order and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.		
Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix C of the RMP to reduce or avoid environmental harm
Air Quality (Clean Air Act)	Not Affected	The proposed Density Management Thinning will create slash in the 1 hour (0 – 1/4”), 10 hour (1/4” – 1”), and 100 hour (1” – 3”) fuels across the harvest units and associated landing areas. Hand piling and burning, swamper burning, and landing burning may occur in the harvest units where fuel loads are determined to be a fire hazard, or in <i>Phellinus werii</i> pockets where slash accumulations would hinder tree planting. . Since burning would be conducted in accordance with the Oregon State Implementation Plan and Oregon Smoke Management Plan the impact of smoke on air quality is predicted to be local and of short duration. As such, the proposed action would have no adverse impact on air quality and would comply with the provisions of the Clean Air Act.
Areas of Critical Environmental Concern	Not Present	There are no ACEC’s within the project area, or along any haul routes.

Table 1. Critical Elements of the Environment. This table lists the critical elements of the human environment (BLM Handbook 1790-1) which are subject to requirements specified in statute, regulation, or executive order and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix C of the RMP to reduce or avoid environmental harm
Cultural, Historic, Paleontological	Not Affected	<p>There is one known cultural resource site located within the proposed project area (Site SHS 220, Carlton and Coast Railroad). Although the Elkhorn Creek Density Management Thinning project will utilize portions of the road built over the old railroad grade to haul timber, the action will not adversely affect Site SHS 220. Regarding pre-project surveys, the project area occurs in the Coast Range. Survey techniques for harvest actions are based on those described in Appendix D of the <i>Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Oregon</i>. The Coastal Range Inventory Plan only requires post-harvest surveys based on slope. As such, surveys will not be conducted until the density management harvest activity is completed. If during the implementation of the density management project cultural resources are found, ground disturbing work will be suspended until an archaeologist can assess the significance of the discovery. The project may be redesigned to protect the cultural resource values present, or evaluation and mitigation procedures would be implemented based on recommendations from the District Archaeologist. Surveys will not be conducted for the Fish Habitat Enhancement, Wildlife Habitat Enhancement, and Watershed Restoration projects as these actions will not create new ground disturbance and are considered an exempt undertaking pursuant to the August 1998 protocol. If during the implementation of these actions cultural resources are found, ground disturbing work will be suspended until an archaeologist can assess the significance of the discovery. The project may be redesigned to protect the cultural resource values present, or evaluation and mitigation procedures would be implemented based on recommendations from the District Archaeologist.</p> <p>Specialist Report: Cultural Resource Assessment for the Elkhorn Projects prepared July 19, 2004</p>
Energy (Executive Order 13212)	Not Affected	There currently are no energy developments within the proposed project area that would be affected and at the completion of the proposed project the area would maintain its current suitability for energy development opportunities. The proposed action will have no effect on energy development, production, supply and/or distribution.
Environmental Justice (Executive Order 12898)	Not Affected	The proposed action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.
Prime or Unique Farm Lands	Not Present	There are no Prime or Unique Farm Lands within the proposed project area.
Flood Plains (Executive Order 11988)	Not Affected	The proposed action does not involve occupancy and modification of floodplains, and will not increase the risk of flood loss. As such, the proposed action is consistent with Executive Order 11988.

Table 1. Critical Elements of the Environment. This table lists the critical elements of the human environment (BLM Handbook 1790-1) which are subject to requirements specified in statute, regulation, or executive order and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.

Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix C of the RMP to reduce or avoid environmental harm
T/E (Threatened or Endangered) Wildlife Species, Habitat and/or Designated Critical Habitat	Affected	<p>Bald Eagle – In Section 34 there are trees in and around the density management units that would be suitable for eagle nesting and are within ½ mile of Barney reservoir, which contains fish. After many visits by biologist and foresters, there has not been any eagle activity observed, either in the unit or around the reservoir. Although small, there is a possibility that eagles that could be using the reservoir and that may consider roosting or nesting on BLM land in section 34, could be disturbed by the proposed action. The unit of measure is acres of suitable nesting habitat disturbed.</p> <p>Spotted Owl – temporary degradation of dispersal habitat by thinning. Unit of measure is acres modified. Modification and disturbance of suitable habitat in section 16 and disturbance in suitable habitat in Section 34. Unit of measure is acres modified or disturbed. Protocol surveys of suitable habitat will be conducted in Section 16 prior to harvest.</p> <p>Marbled Murrelet – Individual suitable habitat trees in Secs. 31 and 34. Impacts would be from modification of stands adjacent to suitable habitat trees and potential disturbance. Unit of measure is trees impacted.</p>
Water Quality (Surface and Ground)	<p>Not Affected (Temperature & Chemical/Nutrient Contamination)</p> <p>Affected (Sediment/Turbidity)</p>	<p>ODEQ has assigned TMDL (Total Maximum Daily Load) targets for temperature and for all lands with intermittent or perennial streams that drain into the Trask watershed. There are no water quality limited bodied listed within the Tualatin River sub-basin in the project area.</p> <p>Not Affected: Streams in the project area are generally well shaded. Substantial portions of the riparian canopy would be retained within riparian zones, thereby maintaining riparian microclimate conditions and protecting streams from increases in temperature. The proposed action would not have any affect on chemical or nutrient contamination.</p> <p>Affected: Project activities (e.g., timber harvest, road construction, timber haul) would result in soil disturbance, thereby increase soil erosion and increases in short-term, localized turbidity and sedimentation in local streams. A narrative statement is used to describe these potential affects on water quality.</p>
Wetlands (Executive Order 11990)	Not Affected	There are wetlands in the project planning area but they are mainly small (less than one acre) and not extensive. All wetland areas would be avoided, excluded, or otherwise protected in accordance with guidelines disclosed on page 10 of the RMP.

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix C of the RMP to reduce or avoid environmental harm
Fire Hazard/Risk	Not Affected	The fuel load as measured in tons per/acre would increase to a minor degree in the 1 hour (0 – 1/4”), 10 hour (1/4” – 1”), and 100 hour (1” – 3”) (fine) fuels classifications immediately following harvest but would return to acceptable levels on all Density Management Thinning units within a 5 to 10-year period. This small increase in fuel load would not be expected to result in an increase in fire hazard on the project level scale and the change would not be measurable on the watershed scale. A very small increase in tons per/acre will occur in the Wildlife Enhancement units with the addition of one down log per/acre but would not change the overall fuel loading to a point where it would increase the potential fire hazard.
Forest vegetation associated with Adaptive Management Area and Riparian Reserve	Affected	Implementation of the proposed density management thinning is expected to accelerate the development of some late-successional forest structural features and increase stand resistance to the impacts of Swiss needle cast disease on Douglas-fir. Treatment of pockets of laminated root rot greater than one acre in size though removal of most highly susceptible hosts (Douglas-fir and grand fir, if any), retaining existing hardwoods and less susceptible or resistant conifers, and planting diseased areas with resistant species will add to the species and structural diversity of the area, as well as reduce the impacts from the disease. The recruitment of smaller-sized snags would be largely curtailed for at least 20 years after thinning. The snag and coarse woody debris (CWD) treatment is expected to provide a slight short-term increase in the structural diversity of stands in the vicinity of the proposed density management thinning. The unit of measure is a narrative and acres treated.
Land Uses (right-of-ways, permits, etc)	Not Present	Weyerhaeuser has released their rights to the portion of road 2-5-10 located West of their ownership in section 5 T2S R6W, WM, therefore, there are no known land uses that will be affected by the density management thinning, fish project, watershed restoration project, or snag and CWD creation projects.
Mineral Resources	Not Affected	There currently are no mineral leases within the proposed project area that would be affected and at the completion of the proposed project the area would maintain its current suitability for mineral development opportunities.

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix C of the RMP to reduce or avoid environmental harm
Special Status Species (not including T/E): Plant Species/Habitat	Not Present/ Not Affected	Surveys were conducted throughout the proposed project area and no Special Status Species were found.
Special Status Species (not including T/E): Wildlife Species/Habitat	Affected	<p>Northern Goshawk – Potential disturbance. Now known to be within breeding range, marginal, but suitable habitat with long term improvement as a result of management actions.</p> <p>Columbia Torrent Salamander – potential impacts to suitable habitat resulting from yarding corridors cut through small streams and from fisheries enhancement project.</p> <p>Mollusks – Two slug species that were recently added to the Bureau’s Special Status Species list as Bureau Sensitive have been found within the project area. One specimen of <i>Prophysaon vanattaie pardalis</i> was found in the project area, and many specimens of <i>Hesperarion mariae</i> were found. The Density management would impact mollusk habitat by thinning the canopy, resulting in the potential for a small increase in drying from solar radiation and greater air movement within the stand, and from direct impact to soil and coarse wood resources.</p> <p>Unit of measure for impacts to special status species is a narrative discussion as to whether the impacts associated with the project would contribute to the need to list these species under the Endangered Species Act.</p>
Soil (productivity, erodibility, mass wasting, etc.)	Affected	The project activities will result in soil disturbance (e.g., soil compaction, displacement, mixing) that will alter some soil properties which may reduce long-term soil productivity. The unit of measure is acres of soil disturbance.
Visual Resources	Not Affected	The project area is located in VRM Class IV, and the proposed action is consistent with this designation.

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix C of the RMP to reduce or avoid environmental harm
Water Resources (not including water quality)	<p style="text-align: center;">Affected (watershed hydrology, channel morphology)</p> <p style="text-align: center;">Not Affected (municipal & domestic water use)</p>	<p>The proposal is unlikely to alter the current condition of the aquatic system by effecting its in-stream flows or physical integrity. The unit of measure is a narrative discussion.</p> <p>Water use present downstream from the project: Municipal use approx. 800 feet to Barney Reservoir (City of Hillsboro and the Tualatin Valley) and approx. 0.7 mile to Turner Creek water intake (City of Yamhill); Domestic use over 10 miles downstream of the project.</p> <p>The proposal is unlikely to affect municipal & domestic water use with retention of canopy cover and very limited ground disturbing activities in Riparian Reserves.</p>

Table 3. Aquatic Conservation Strategy Summary. This table lists the four components of the Aquatic Conservation Strategy (RMP pp. 5-7), and the interdisciplinary teams predicted environmental impact per component if the alternatives described in Chapter 2 of the Environmental Assessment were implemented.		
Components	Consistency with ACS	Remarks /References
Riparian Reserves	Consistent	The proposed action is consistent for the following reasons: a watershed analysis has been completed; road and landing locations have been minimized in Riparian Reserves; wetlands have been avoided when constructing new roads; sediment delivery has been minimized to streams from roads.
Key Watershed	Consistent	The project area contains a Teir 1, Key watershed. The net road mileage would be reduced by 2.5 miles in the key watershed as a result of the proposed action. (1/2 mile with fish enhancement project and 2 miles with the density management thinning). The proposed action includes 2 miles of fish habitat restoration which will improve fish access to approximately 2 miles of habitat, increase LWD, pool area and quality, improve substrate storage and routing processes. Removing portions of road 2-5-10, will provide for more refuge and alcove habitat.
Watershed Analysis	Consistent	A large number of the recommendations in the WA have been incorporated into the proposed action. These include but are not limited to: *When conducting forest density management projects inside Riparian Reserves, leave a no-harvest vegetation buffer along all intermittent and perennial stream channels. *Cooperate with private and state landowners to implement riparian and in-stream restoration projects and to retain and enhance riparian overstory. *Minimize or mitigate for road-building activities within Riparian Reserves that have the potential to impact water quality standards, including temperature and sediment, or fail to meet ACS objectives. *Road construction, upgrading, maintenance, and closure should be performed in accordance with Best Management Practices, as listed in Appendix C of the Salem District's RMP and the Salem District's Transportation Management Plan. * Maintain active participation in the Tillamook Bay Watershed Council. * Work on the long-term development of a more complex riparian zone. Strategies would include: developing multi-storied canopy layers, felling or placing larger diameter trees in strategic locations along the stream, underplanting small openings with conifers, and releasing existing conifers.* Plan and implement riparian silvicultural projects which are designed to accelerate the growth of riparian conifers and enhance species diversity and vertical stand structure. *Identify BLM roads that pose a present or future threat of blocking fish passage, contributing sediment, or otherwise degrading water quality. *Reduce road segments that alter flow by decommissioning roads that would not be required for access by BLM or neighboring landowners. *For future density management thinning projects, upgrade existing roads and use legacy roads, rather than constructing new roads, to reduce potential negative impacts. *Minimize disruption of natural hydrologic flow paths by installing drivable waterbars on roads that are expected to receive minimal or no maintenance.
Watershed Restoration	Consistent	<u>Control and prevention of road related run-off and sediment</u> – Road related run-off will be reduced by spot rocking on haul routes where the subgrade is soft, ruts are developing, and near stream crossings. This spot rocking would occur prior to and during periods of haul. The road mileage in the watershed will be reduced by 3.2 miles, and road improvement will occur on 7.8 miles. These actions will control and prevent road related run-off and sediment. <u>Restoration of the condition of Riparian vegetation</u> – 764 acres of Riparian reserve will be treated with density management, to promote the development of late-successional forest characteristics on an accelerated timeframe. This will occur with negligible new road construction, or ground-based equipment off of existing roads and trails. <u>Restoration of instream habitat complexity</u> – The proposed action includes 2 miles of fish habitat restoration which will improve fish access to approximately 2 miles of habitat, increase LWD, pool area and quality, improve substrate storage and routing processes. Removing portions of road 2-5-10, will provide for more refuge and alcove habitat.