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The Dalles Watershed Hazardous Fuels Reduction Project

Environmental Assessment

Barlow Ranger District Mt. Hood National Forest

Hood River and Wasco Counties, Oregon

Legal Description: T1S and T2S, R10E and R11E, Willamette Meridian

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SUMMARY

The Dalles Watershed Fuelbreak project was initiated to reduce the fire hazard on National Forest System lands adjacent and within the Mill Creek Watershed, and to recommend treatments to create an area of managed vegetation around the watershed that could be used to reduce the threat of an uncharacteristically severe (stand replacement) event in the watershed.

The City of The Dalles requested that the Barlow Ranger District take action to improve and protect forest health on public lands within and adjacent to The Dalles Municipal Watershed, a municipal watershed serving 12,000 residents. In response to their request, and under the authorities of the Healthy Forest Restoration Act (HFRA), the District convened a collaborative work group to assist with developing recommended actions for protecting the watershed.

The collaborative representatives recommended developing and maintaining a defensible space around the perimeter of the watershed and along designated interior roads, with an emphasis on continued maintenance.

After receiving the recommendations, District personnel began the interdisciplinary process of developing a detailed fuelbreak proposal that would meet the need to protect water quality in the watershed. The fuelbreak would be created by thinning or removal of trees to increase space between individual crowns, pruning or removal of lower branches, mistletoe brooms, shrubs, and small trees; removal of ground accumulation of limbs, branches and downed logs; and the removal of tree needles, cones, or other surface duff around the base of large trees.

Based on the interdisciplinary analysis presented in the environmental assessment and the project record, the Forest Supervisor will decide whether or not to authorize the implementation of a fuelbreak along identified interior and exterior roads and other hazardous fuels reduction treatments within The Dalles Municipal Watershed; and what, if any, mitigation and monitoring measures are needed.

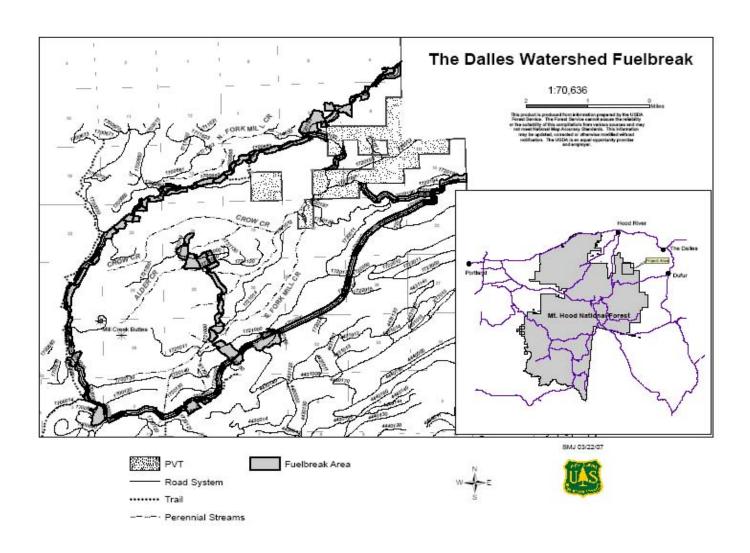


Figure 1-1. Vicinity Map. Location of the Dalles Watershed in relation to the entire Mt. Hood National Forest (right).



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CHAPTER 1 – INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA), the Healthy Forest Restoration Act (HRFA), and other relevant Federal and State laws and regulations. HFRA may be applied to projects concerning municipal watershed that are at risk from wildland fire. This Environmental Assessment discloses the direct, indirect, and cumulative environmental effects that would result from the proposed action and a no action baseline. The document is organized into four parts:

- *Introduction:* The section includes information on the history of the project proposal, the purpose and need for action, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- Comparison of Alternatives, including the Proposed Action: This section provides a more detailed description of the agency's proposed action as well as the no-action alternative. This discussion also includes possible mitigation measures and design features that were added as a result of environmental analysis. Finally, this section provides a summary table of the environmental consequences associated with selecting the action versus the no-action alternative in terms of meeting objectives and addressing issues.
- Environmental Consequences: This section describes the environmental effects of inaction as well as the trade-offs and effects of implementing the proposed action. This analysis is organized by resource area. Within each section, the existing environment is described first, followed by the estimated effects of no action that provides a baseline for evaluation, and finally the estimated effects of the proposed action.
- Agencies and Persons Consulted: This section provides a list of preparers and agencies consulted during the development of the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Hood River Ranger District Office in Mt. Hood, Oregon.

Background

The City of The Dalles Municipal Watershed hazardous fuels reduction project is located primarily in the South Fork Mill Creek Watershed on the Mt. Hood National Forest in Hood River and Wasco Counties. Vegetation includes mixed conifer forests, meadows, and open grassy slopes. Average annual precipitation ranges from 50 inches on the west side to 30 inches on the east side, occurring mostly during the winter months. Elevation in areas proposed for treatment ranges from 2,500 to approximately 5,000 feet. The primary aquatic feature in the project area is The Dalles Municipal Watershed, the primary water supply for the City of The Dalles, Oregon. The water supply serves over 12,000 residents and is closed to public access. The Dalles Municipal Watershed Management Unit actually encompasses portions of two separate watersheds: Dog River, a tributary to the East Fork Hood River; and South Fork Mill Creek, the major tributary in the Mill Creek Watershed. Water is diverted from Dog River and transported over to the South Fork Mill Creek system where it is stored in the Crow Creek

Reservoir along with flow from Crow Creek, Alder Creek and South Fork Mill Creek. This water is then used by the City of The Dalles.

In February 2004, the City of The Dalles requested that the Barlow Ranger District take action to improve and protect forest health on public lands within and adjacent to The Dalles Municipal Watershed. In response to their request, and under the authorities of the Healthy Forest Restoration Act (HFRA), the District convened a collaborative work group to assist with developing recommended actions for protecting the watershed.

Collaborative representatives met from November 2004 to August of 2005. The community collaborative group was composed of representatives from: federal and state agencies (US Forest Service, US Fish & Wildlife Service, Oregon Dept. of Forestry, Oregon Dept. of Fish and Wildlife, Oregon Dept. of Environmental Quality), watershed councils and local agencies (Wasco County Soil and Water Conservation District, The City of The Dalles), environmental groups (Bark and ONRC/Oregon Wild), private citizens, neighboring landowners, mountain bike groups and recreational enthusiasts (SDS Lumber, Backcountry Horsemen of Oregon, Columbia Gorge Power Sledders, Columbia Gorge Off-Road Association). The group recommended developing and maintaining a defensible space around the perimeter of the watershed and along designated interior roads, with an emphasis on continued maintenance. It was their recommendation that work along perimeter roads should be planned to minimize potential adverse impacts to wildlife and scenic values.

After receiving the recommendations, District personnel began the interdisciplinary process of developing a detailed fuelbreak proposal that would meet the need to protect water quality in the watershed.



Figure 1-2. The Mill Creek Collaborative representatives at a bi-monthly meeting.

Purpose and Need for Action

Briefly, the purpose and need for the hazardous fuels reduction project is to:

- Reduce the risk of uncharacteristic wildfire on forest ecosystem components, especially the risk of a severe wildfire contributing to the degradation of water quality;
- Provide locations for wildland firefighter forces to quickly suppress a severe wildfire; and.
- Increase firefighter safety during wildland fire suppression efforts.

This purpose and need was developed over time through changing ecosystem conditions, interest from the City of The Dalles, identification by writers of the Wasco County Community Wildfire Protection Plan, and finally a group of community members as part of a collaborative group.

Fire suppression efforts over the past 100 years, favorable climatic conditions, vegetation growth and dead fuels resulting from insects and diseases have altered stand composition and structure and increased tree and brush densities (Harvey et al. 1994). The high density of the stands contributes to mortality of trees because of competition for nutrients, water and sunlight. Insects and diseases are more likely to kill trees that grow in dense, crowded conditions. Dwarf mistletoe-infected trees, diseased trees, insect-killed trees, and down fuel are creating continuous fuel ladders from the ground to the tree crowns. The majority of National Forest System lands in the area have been mapped as Condition Class 3, indicating these lands have missed multiple natural fire events and now contain unnaturally high fuel situations.

Particularly, the eastern portion of the watershed, where frequent fire return intervals of low and moderate intensity would have been expected, vegetation would normally consist of well-spaced fire tolerant species such as ponderosa pine, white oak, and dry-climate Douglas-fir. The shade-tolerant, thin-barked species such as grand fir, lodgepole pine, and juniper would have been thinned out regularly by fire. Historical fire return intervals in the western portion of the watershed are in the 50 years or less (moist Douglas-fir), to the 50-100 year fire return interval of the mixed conifer zone (grand fir, western hemlock, white pine, etc.). These species typically have a low to moderate fire tolerance, as low intensity, high frequency fires do not occur, due to higher moisture amounts and greater fuel loadings.

Stand structure changes from lack of fire include a much higher stocking level of fire-tolerant species, an increase of shade-tolerant species in the intermediate layer, an increased shrub and reproduction component, and fewer openings associated with the natural stands. This change results in stands that are more likely to experience a higher intensity fire, with stand-replacing consequences.

The Bluegrass Ridge Fire, which occurred in the summer of 2006 on the Hood River District of the Mt. Hood National Forest, brought another concern to the forefront: that a fire started within the Oregon State Highway 35 corridor could reach the watershed. Shortly after the start of the Bluegrass Ridge Fire, a long-term risk assessment was performed and it was determined that there was a 63 percent chance that the fire could either pre-heat the west aspect of the valley or spot across to Surveyor's Ridge and potentially burn into the watershed.

The purpose for the fuelbreak project is to reduce the risk of human-caused fires spreading from public access roads into The Dalles Municipal Watershed and to provide a location for fire suppression personnel to actively engage a fire safely. The watershed has closed access, only allowing minimal public and administrative use. Over the past 20 years, there have been only three ignitions within the watershed. The majority of fires in proximity to the watershed have been human-caused and have occurred near roads outside the protection boundary of the watershed.

Interest from the City of The Dalles

The need for reducing severe fire risk was first identified by the City of The Dalles based on the concern of future fires and their effect on water quality. The Dalles Municipal Watershed is the primary water supply for the City of The Dalles, serving over 12,000 residents. The watershed was identified as a municipal watershed before the establishment of the National Forest and is therefore managed jointly by the Forest Service and the City, according to a Memorandum of Understanding and a subsequent Comprehensive Management Plan (December, 1972).

Past fires have caused damage that has led to the water treatment plant being shut down. In 1967, the School Marm Fire resulted in large impacts to water quality within The Dalles Watershed. The plant had to be shut down and couldn't treat water to make it safe for drinking. There was sediment run-off and turbidity was measured at 25,000 units (which was the highest municipal watershed reading until Mt. St. Helens erupted in 1980). Once turbidity was reduced to 5,000 units after a couple of weeks, the plant was turned back on; however, adverse amounts of soil and mud were present and clogged the system which caused the plant to be shut down again. The Sheldon Ridge Fire (12,000 acres) in 2002, shut down the water treatment system as well. While the fire did not get into the South Fork Mill Creek watershed, the water treatment plant was shut down because it had to be evacuated as it was in front of the rapidly-advancing wind-driven fire. See fire history map in Appendix A.

Community Wildfire Protection Plan for Wasco County

The Community Wildfire Protection Plan (CWPP) for Wasco County was initiated by the Wasco County Board of Commissioners and carried out with a collaborative, interagency team. The planning process was designed to meet the guidance in the National Fire Plan and the Healthy Forest Restoration Act of 2003 (HR 1904). The primary purpose for the plan is to identify and prioritize areas in the county with high levels of wildfire hazards and to develop a strategy to reduce these hazards (CWPP, 4). One of the major concerns identified in the CWPP was heavy fuel loads on National Forest System and private forest lands along the western portion of the county and the risk of large forest fires beginning on these lands and moving to adjacent private lands, especially those with residential developments (CWPP, 6). As part of the CWPP, The Dalles Municipal Watershed was identified as one of the highest priorities for treatment according to a risk rating and recommendations from the Oregon Department of Forestry. The zone which includes The Dalles Watershed was labeled as the highest hazard risk rating of the five zones in the CWPP. The rating is based on severe weather conditions, steep slopes with an east facing aspect, and heavy fuel loads with potential long flame lengths and high crown fire likelihood (CWPP, 50).

Management Direction

The Dalles Watershed Hazardous Fuels Reduction project is proposed at this time to respond to goals and objectives of the National Fire Plan (2000) and the Mt. Hood Land and Resource Management Plan (Forest Plan), as amended. This environmental assessment process and documentation has been done according to direction contained in the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, Clean Water Act (CWA), the Endangered Species Act (ESA) and other applicable laws, policies and direction. This environmental assessment implements and is tiered to the Mt. Hood National Forest Land and Resource Management Plan Final Environmental Impact Statement and Record of Decision (1990), and incorporates by reference the accompanying Forest Plan, as amended.

Applicable National Fire Plan goals and objectives include:

- Reduce the number of small fires that become large
- Restore natural ecological systems to minimize uncharacteristically intense fires
- Create new jobs in both the private and public sectors
- Improve capabilities for state and volunteer fire organizations
- Reduce the threat to life and property from catastrophic wildfire

The Forest Plan includes both forest-wide goals and objectives, and management area specific goals, objectives, and desired future conditions. Goals, objectives and desired future conditions of the management areas within the project area are discussed below in the description of land allocations. In addition, management direction for the area is provided in three major Forest Plan amendments:

- The Northwest Forest Plan (NWFP) Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (April, 1994); Riparian Reserves (portions of watersheds where ripariandependent resources receive primary emphasis and where special standards and guidelines apply).
- Survey & Manage Record of Decision and Standards and Guidelines for Amendments to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (January, 2001), and;
- Invasive Plants—Pacific Northwest Invasive Plant Program Preventing and Managing Invasive Plants Record of Decision (October, 2005).

Together, these documents are referred to as the amended Forest Plan.

Additional guidance for the project area is provided by the Mill Creek Watershed Analysis (2000) and the Surveyor's Ridge Late-Successional Reserve Assessment (1997) and The Dalles Municipal Watershed's MOU with the US Forest Service and Comprehensive Management Plan (1972). The watershed analysis and LSR assessment give direction and guidance to limit destructive crown fire, limit insect and disease mortality, reduce stand density and fuel loads, provide for public and firefighter safety, and protect homes and other structures. The MOU, and subsequent management plan, provide that the primary resource to be managed for is the

protection of water quality, as does an agreement between the City and the US Secretary of Agriculture which dates back to 1912. The Plan provides guidance on allowable timber harvests (methods and acreages), road construction and maintenance, and planning and protection measures to be taken to protect water quality. Specific restrictions for operations within the watershed are included in Chapter 2.

Desired Future Condition/ Land Allocation

A key goal of the Forest Plan is to manage the forest resources to protect and maintain the character and quality of water; provide long-term sustained production of water; and provide a favorable flow from the Forest, for both on-Forest and off-Forest uses. Watersheds supplying domestic water for cities, towns, recreation sites and individuals, will be managed so that water quality of the source stream is not degraded below existing or natural levels (Forest Plan, Four-17).

There are several land allocations as designated by the Forest Plan and Northwest Forest Plan within The Dalles Municipal Watershed (see Figure 1-3 in Appendix A). The majority of the planning area is designated as a Special Emphasis Watershed, the goal of which is to maintain or improve watershed, riparian, and aquatic habitat conditions and water quality for municipal uses and/or long-term fish production. A secondary goal is to maintain a healthy forest condition through a variety of timber management practices (Forest Plan, Four-246). The northeast corner of the planning area is designated as the Mill Creek Research Natural Area, which provides opportunities for research and studies of natural processes. The west side of the watershed is inside the Surveyor's Ridge Late Successional Reserve (LSR), as designated by the NWFP. The desired future condition from the Surveyor's Ridge LSR Assessment is to provide the maximum amount of habitat for late successional and old growth associated species. Certain restrictions are placed on activities in the specific land allocations and are addressed throughout the document, referenced as standards and guidelines, mitigation measures, or design features of the proposed action.

Proposed Action

The District Ranger on the Barlow Ranger District proposes to establish a fuelbreak along roads surrounding the perimeter of The Dalles Municipal Watershed within the Mt. Hood National Forest boundary, including two interior roads as an added defensible location for wildland fire suppression operations. Fuelbreaks are constructed in strategic areas along roadsides and ridgetops to provide firefighters with improved access to suppress unwanted wildfires and to manage prescribed burns safely. The fuelbreak would reduce the likelihood that a wildfire ignited along travel routes would spread into the watershed and be a risk to water quality.

The Dalles Municipal Watershed runs from the top of Mill Creek Butte to the mouth of Mill Creek, where it enters the Columbia River in The Dalles, OR. This proposal only addresses that portion of the watershed that is located on National Forest System lands on the Mt. Hood National Forest. The legal land description for the project area is primarily T1S and T2S, R10E and R11E, Willamette Meridian. Perimeter roads are proposed for the fuelbreak treatment and include portions of 1700, 1700150, 1700151, 1700160, 1700161, 1700662, 1720, and 1720193. There are three interior roads included: 1721, 1721013, 1720190, and 1720192.

The fuelbreak would be created by removing excess surface, ladder and canopy fuels through mechanical or hand-treated methods. Fuel in this context is forest material that is flammable and capable of carrying a surface fire. A reduction in fuels can be done through the thinning or removal of trees to increase space between individual crowns (reducing canopy); pruning or removal of lower branches, dwarf mistletoe brooms, shrubs, small trees (ladder fuels); removal of ground accumulation of limbs, branches and downed logs; and/or the removal of tree needles, cones, or other surface duff around the base of large trees (ladder and surface fuels). Reducing these fuels limits the ability of a fire to reach the crowns of the trees. Fires within tree crowns increase fire rate and spread which can be more difficult to suppress. After treatment, the area identified for the fuelbreak would be more open, meaning more space between trees, less brush and understory and minimal downed wood. Residual trees with dwarf mistletoe may be girdled to prevent infection of understory trees and interrupting the cycle of mistletoe-caused brooming (Hawksworth and Shaw 1987).

The fuelbreak would consist of thinning treatments at variable densities, with areas of openings where existing mortality from root disease does not allow for many trees to be retained. Root disease pockets are common in areas around the watershed. Treating the root disease pockets along roads would avoid long-term maintenance of removing dead trees created by the root disease.

Approximately 1,500 acres would be treated for the proposed fuelbreak. Funding for this proposal would be generated from selling merchantable material on approximately 700 acres of this project. The width of the fuelbreak would vary based on the proximity of the road system to trails, streams, topographic breaks, natural features, existing plantations and land allocations including Late Successional Reserves, Research Natural Areas and Proposed National Recreational Areas. The width in most areas is 400 feet (either on one side or 200 feet on each side of the road); other areas of the fuelbreak proposed are 50 feet wide. The proposal includes thinning existing plantations adjacent to these roads as a whole, rather than limiting the treatment to a pre-defined buffer width in those areas. By treating the existing plantations as whole stands, the need for a second entry would be eliminated, thereby reducing future costs. See the foldout map following this chapter.

Treatment of riparian stands within the fuelbreak corridor and within 100 feet of any perennial or intermittent stream, seep or wetland would be limited to hand treatment or left untreated completely. No new permanent road construction would be necessary. There may be a need to build some short temporary roads that would be decommissioned after project completion. All landings and skid roads associated with commercial harvest would be rehabilitated. Long-term maintenance would be critical to this project. It is expected that vegetation would return at varying rates, which would facilitate a staggered maintenance program. Most of the maintenance would include brush removal. Triggers would be established to determine when an area was ready for future treatment (e.g. when grass or trees get to a certain height). Prescribed burning and pile burning would be included as part of the maintenance plan. The Forest Service would work closely with the City of The Dalles on long-term maintenance.

Decision Framework

Based on the interdisciplinary analysis presented in the environmental assessment and the project record, the Forest Supervisor will decide whether or not to authorize the implementation of a fuelbreak along identified interior and exterior roads and other hazardous fuels reduction treatments within The Dalles Municipal Watershed; and what, if any, mitigation and monitoring measures are needed.

Public Involvement and Consultation

Collaboration

This project lies within the zone identified in the Wasco County Community Wildfire Protection Plan (CWPP) as the highest priority for treatment. The CWPP was prepared in a collaborative effort by individuals and agencies in Wasco County.

In addition, the Barlow Ranger District initiated an additional collaborative group made up of individuals and agencies to identify specific projects within The Dalles Municipal watershed. The following project specific collaborative efforts were undertaken on this project:

- On October 18, 2004, the District mailed out an invitation for a collaboration meeting asking people to attend who were interested in helping to design fuels reduction and restoration projects in North Fork and South Fork Mill Creek watersheds.
 - Invitations were mailed to Federal, State, and local agencies, the Confederated Tribes of Warm Springs, environmental advocacy groups, adjacent property owners, recreational groups, and the general public.
 - o The District also issued a press release announcing the meeting.
- 15 people attended the first collaboration meeting held at the Discovery Center in The Dalles, OR, on November 19, 2004 including representatives from federal and state agencies (USFS, USFWS, ODF, ODFW, ODEQ), watershed councils and local agencies (Wasco County Soil and Water, The City of The Dalles), environmental groups (Bark and ONRC/Oregon Wild), private citizens, neighboring landowners, mountain bike groups and recreational enthusiasts (Backcountry Horsemen of Oregon, Columbia Gorge Power Sledders, Columbia Gorge Off-Road Association).
 - O Collaborative representatives met from November 2004 to August of 2005 to identify possible solutions to maintaining water quality standards in relation to future fire. The group recommended developing and maintaining a defensible space around the perimeter of the watershed and along designated interior roads, with an emphasis on continued maintenance. The full text of the collaborative group's recommendations can be found in Appendix C.
- Several other individuals who were unable to attend the collaboration meetings contacted the Forest Service and asked to be included on a mailing list.
- On November 21, 2006, a description and map of the more detailed fuelbreak proposal
 was sent to collaborative representatives requesting their comments. Approximately 5
 collaborative representatives sent in email comments, mostly in support of the fuelbreak.
 Some expressed concern over wildlife cover with reduced canopy, as well as having an
 issue with the use of temporary roads. These issues are addressed in Appendix D and in
 the issues section below.

Scoping/Public Involvement

The hazardous fuels reduction proposal was listed in the Mt. Hood National Forest quarterly, planning newsletter. No comments were received through that effort.

In December 2006, a letter providing information and seeking public comment was mailed to 116 individuals and groups. This included federal and state agencies, the Confederated Tribes of Warm Springs, municipal offices, businesses, interest groups, landowners near the watershed and individuals. A total of four responses to this mailing were received. Comments were received from representatives of OregonWild (formerly ONRC), the Mazamas, and two individuals.

Public Meetings

As required by HFRA, a public meeting was held on January 11, 2007 at the Barlow Ranger Station on Dufur, Oregon. The meeting was announced in the Oregonian as part of a legal notice of the public meeting and news releases were sent to both The Dalles Chronicle and the Hood River News. Only one participant attended the meeting, Holly Grizwald who is also a member of the collaborative group.

A meeting was held with Erik Fernandez from OregonWild and Keith Kohl from Oregon Department of Fish & Wildlife Service on February 14, 2007 to discuss their concerns with potential wildlife poaching as a trade-off for reduced cover along roads in the fuelbreak. Temporary and decommissioned roads were also discussed.

In addition, as part of the public involvement process and the MOU with the City of The Dalles, the agency met with Dave Anderson, former Water Quality Manager, on several occasions to discuss the proposal.

Website Information

As documents and analysis became available, they were posted on the Mt. Hood National Forest website under "Projects and Plans."

Consultation

Separate government-to-government consultation was conducted with the Confederated Tribes of Warm Springs. The District Heritage Resource specialist consulted with Sally Bird, archeologist for the Confederated Tribes to determine if the watershed was an historic huckleberry harvest area. No traditional cultural properties were identified in the area and there were no opportunities identified for huckleberry enhancement.

A Level 1 consultation meeting was held with the U.S. Fish and Wildlife Service. A biological opinion (BO) was issued for this project in conjunction with other projects in the Willamette Province. The BO included projects with "not likely to adversely affect" and "likely to adversely affect" northern spotted owl. This BO was recently litigated. The BO was rescinded and the USFWS is expected to issue a new opinion for the fuelbreak. A Decision on this project is pending receipt of the new biological opinion.

The Forest Heritage Resource Specialist concurred with the finding of no effect relating to this project (Project Record S-3).

EA Publication

This EA was finalized and published in April 2007 and made available to individuals and organizations who had indicated interested in the proposal. It is posted on the Forest website: http://www.fs.fed.us/r6/mthood/.

Issues

Using the comments from the collaborative effort, the general public and other agencies, the interdisciplinary team developed a list of issues to address. Issues identified during scoping are normally addressed by developing alternatives to the proposed action; however, no alternatives are required for this HFRA project (see the alternative formulation section in Chapter 2). Instead, the project team considered all the comments received during collaboration and scoping and refined the proposal presented in Chapter 2 to address the following issues:

- There is a concern that creating and maintaining the fuelbreak by reducing the canopy cover along perimeter roads in the watershed may increase the risk of poaching of deer and elk.
 - Discussion of this issue can be found in Table 2-2 of the Alternatives section, and in the disclosure of the effects to wildlife in Chapter 3.
- There is a concern that creating temporary roads may lead to resource damage, especially if these roads are not successfully obliterated upon completion of the project.
 - Discussion of this issue can be found in Table 2-2 of the Alternatives section, and in the disclosure of the effects of temporary roads in Chapter 3.