

ENVIRONMENTAL ASSESSMENT

Shadow Salvage Timber Sale

Willamette National Forest

McKenzie River Ranger District

Lane County, Oregon

May 2003



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CHAPTER I Introduction

Project Area Location

The proposed Shadow Salvage project is on the McKenzie River Ranger District, Willamette National Forest (WNF). The legal description is Township 17 South, Range 3 East, Sections 1 and 12, and Township 17 South, Range 4 East, Sections 7 and 8 of the Willamette Meridian (Figure 1 and 2). Access to the project is via Forest Roads 2618-305, 307 and 317. This area is also described in the Quartz Creek and Minor Tributaries Watershed Analysis completed in 1998.

Proposed Action

The purpose of this project is salvage of windthrown trees on approximately four acres, and the associated felling of approximately 31 hazard trees on Forest Roads 2618-305 and 2618-307. Hazard trees include green and dead trees at risk for falling across roads open to the public. If down wood levels currently exceed the Northwest Forest Plan Standard and Guideline (C-40) of 240 linear feet/acre, the entire length of the felled hazard trees may be removed from the site. If less than 240 linear feet/acre exists, only those portions that lie in the road prism would be removed. There is an exception: all hazard trees felled in riparian reserves would be retained as large down woody material, except those portions which fall in the road prism.

Purpose and Need for Action

The purpose is to commercially salvage the windthrown trees and portions of felled hazard trees in a timely manner while they still have economic value. This would meet needs identified in the Forest Plan, including removal of timber from road locations needed for the harvest of timber or for other management purposes, to remove hazards to human life and health, and to remove significant dispersed dead material or timber killed by catastrophic events, such as fire, windthrow, drought, insects, or disease.

Decision Framework

The McKenzie River District Ranger will decide which of the alternatives, if any, meets the purpose and need for this proposal. The decision maker, in a Decision Notice and Finding of No Significant Impact (DN/FONSI), will document any concurrence with the findings in this Environmental Assessment. The selected alternative needs to be consistent with the amended Willamette Forest Plan.

Management Direction

All actions to satisfy the purpose and need will be consistent with the Willamette National Forest Land and Resource Management Plan as amended by the April 1994 Record of Decision for Amendments to Forest service and BLM Planning Documents within the Range of the Northern Spotted Owl; and the January 2001 Record of Decision for Amendments to the Survey and Manage Buffer, and other Mitigation Measures Standards and Guidelines (NWFP).

The Willamette Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Willamette National Forest. It describes resource management practices and levels of resource production. The Forest Plan also describes the availability and suitability of lands for resource management.

The proposed action is located within the Central Cascade Adaptive Management Area (CCAMA) as described in the NWFP. These areas are expected to produce timber as part of their program of activities consistent with specific direction under ROD standards and guidelines (ROD D-9).

This activity meets the forest objective for salvaging as described in the Willamette Forest Plan as Forest Wide Standard 181 which allows:

- To remove timber from road locations needed for the harvest of timber or for other management purposes.
- To remove hazards to human life and health.
- To remove significant dispersed dead material or timber killed by catastrophic events, such as fire, windthrow, drought, insects, or disease (36 CFR219.27 (c) (1)).

Significant Issues

Scoping occurred both internally and externally (see Chapter 5). No comments were received from the public. The IDT through their internal scoping process identified nine issues. The interdisciplinary team and responsible official considered these pertinent issues and have determined which are significant to the project. Four Significant Issues drove the development of the alternatives. Their description is followed by criteria for measuring each alternative. The Significant Issues are tracked through issue identification (in this Chapter) and environmental consequences in Chapter III.

1. Economic Benefit

Salvaging trees that have commercial value may create economic opportunities for local residents/purchasers as well as produce desired wood products for the public. Use of a timber sale contract for hazard reduction may provide a savings to the government.

*Unit of Measure: Estimated pre-bid minimum sale value.
Cost to government for hazard removal.*

2. Threatened, Endangered, Sensitive (TE&S), and Other Species of Concern

Proposed actions may affect sensitive plant and animal species through disturbance or alteration of habitat.

Unit of Measure: Amount of forest habitat removed or degraded and potential disturbance to TES and other species of concern.

3. Noxious Weeds

Noxious weeds are a threat to the native wildland ecosystem because they out-compete and displace native vegetation. Soil disturbance provides excellent seedbeds for the germination of noxious weeds.

Unit of Measure: Acres for potential establishment of noxious weeds on disturbed soil and in canopy gaps.

4. Coarse Wood Availability to Streams

There is a watershed-wide shortage of coarse wood in streams and riparian areas (Ecosystems Northwest 1998), and removal of hazard trees from riparian reserves could cumulatively add to this shortage.

Unit of Measure: Amount of large woody material added to or removed from riparian areas and streams.

Other Issues

Forest Service regulations (1950, chapter 11(3)) require that issues that are not significant to the project or that have been covered by prior environmental review be identified and eliminated from detailed study. Discussion of these issues should be limited to a brief statement of why they will not have a significant effect on the human environment or a reference to their coverage elsewhere. The following issues were not identified during scoping as being significant issues but are required to be evaluated by regulations (40 CFR 1502-16) or management direction.

5. Soil Erosion

Ground disturbance that frequently occurs during harvest activities may result in an increased risk of soil erosion and transport of sediment to stream channels. This issue is not significant to the proposed action because:

- Ground-disturbing equipment would remain on roads and be prohibited in riparian reserves.
- The geographic extent of the project is small.
- The project area, with the exception of roadside hazard trees, is located on a dry, upland knob that is approximately one-quarter mile from the nearest stream.
- Minimal risk of increased erosion resulting from harvest activities can be acceptably mitigated using standard erosion control practices.

6. Magnitude and Timing of Peak Flows

Timber harvest activities frequently alter the structure of the forest canopy, resulting in the potential to affect annual pattern of snow accumulation and run off, and potentially resulting in alteration of the magnitude and timing of peak stream flows. If this occurs on large portions of a watershed, the potential exists for a cumulative impact on downstream flows. This issue is not significant to the proposed action because:

- The geographic extent of the project is small in relation to the size of the Quartz Creek watershed.
- The action proposes to remove mostly trees that have already been blown down so that forest canopy characteristics would not be substantially altered from the existing condition.

7. Management Indicator Species, Neotropical Migratory Birds, and Survey and Manage Species

- Management Indicator Species (MIS) were addressed in the WNF LRMP (1990). They include the spotted owl, pileated woodpecker, marten, elk, deer, cavity excavators, bald eagles, peregrine falcons, and fish. Through Region-wide coordination, each Forest identified the minimum habitat distribution and habitat characteristics needed to satisfy the life history needs of the MIS. Management recommendations to ensure their viability were incorporated into all WNF Plan Action Alternatives. Both Alternatives A and B

Figure 1: General Location of Shadow Salvage.

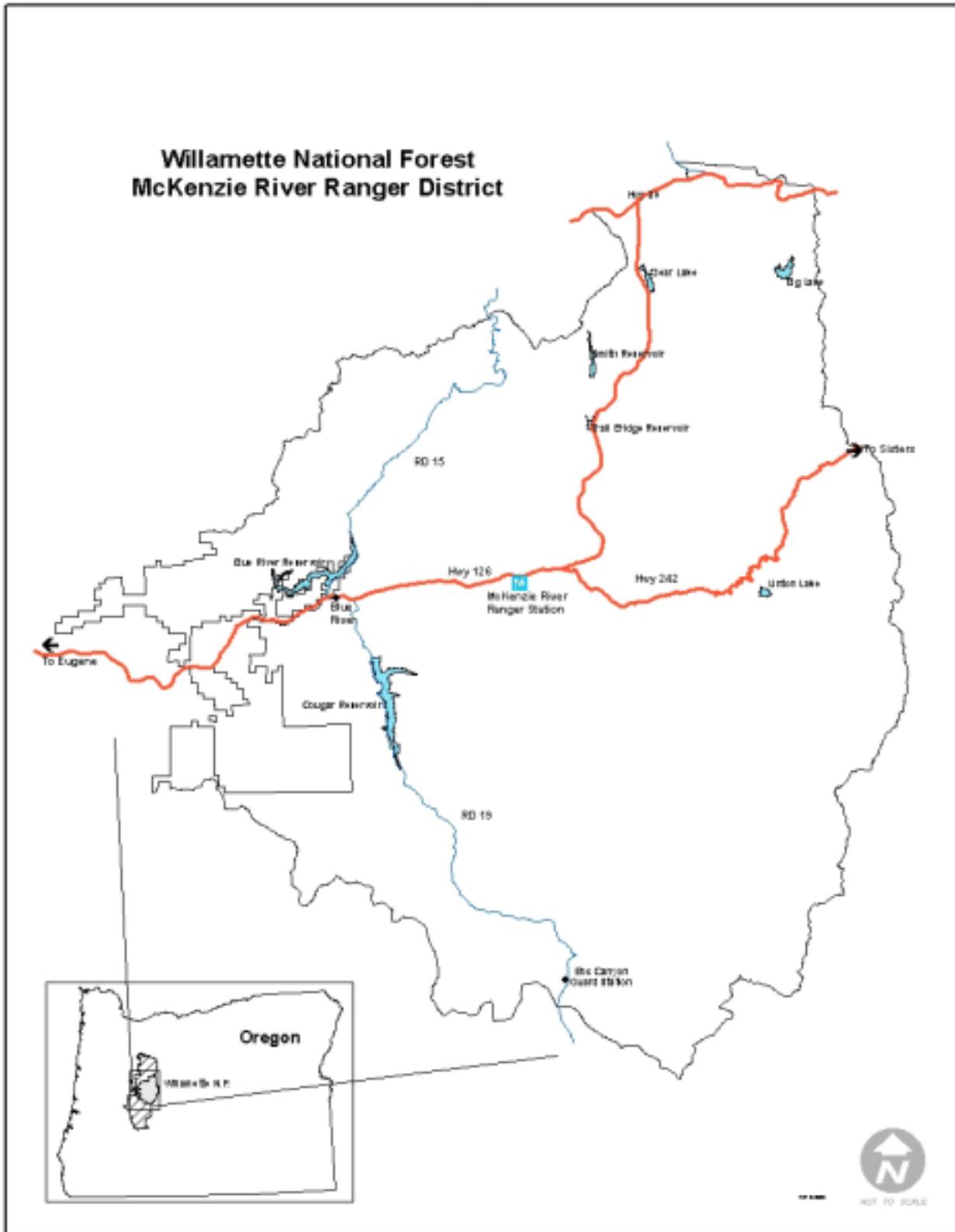
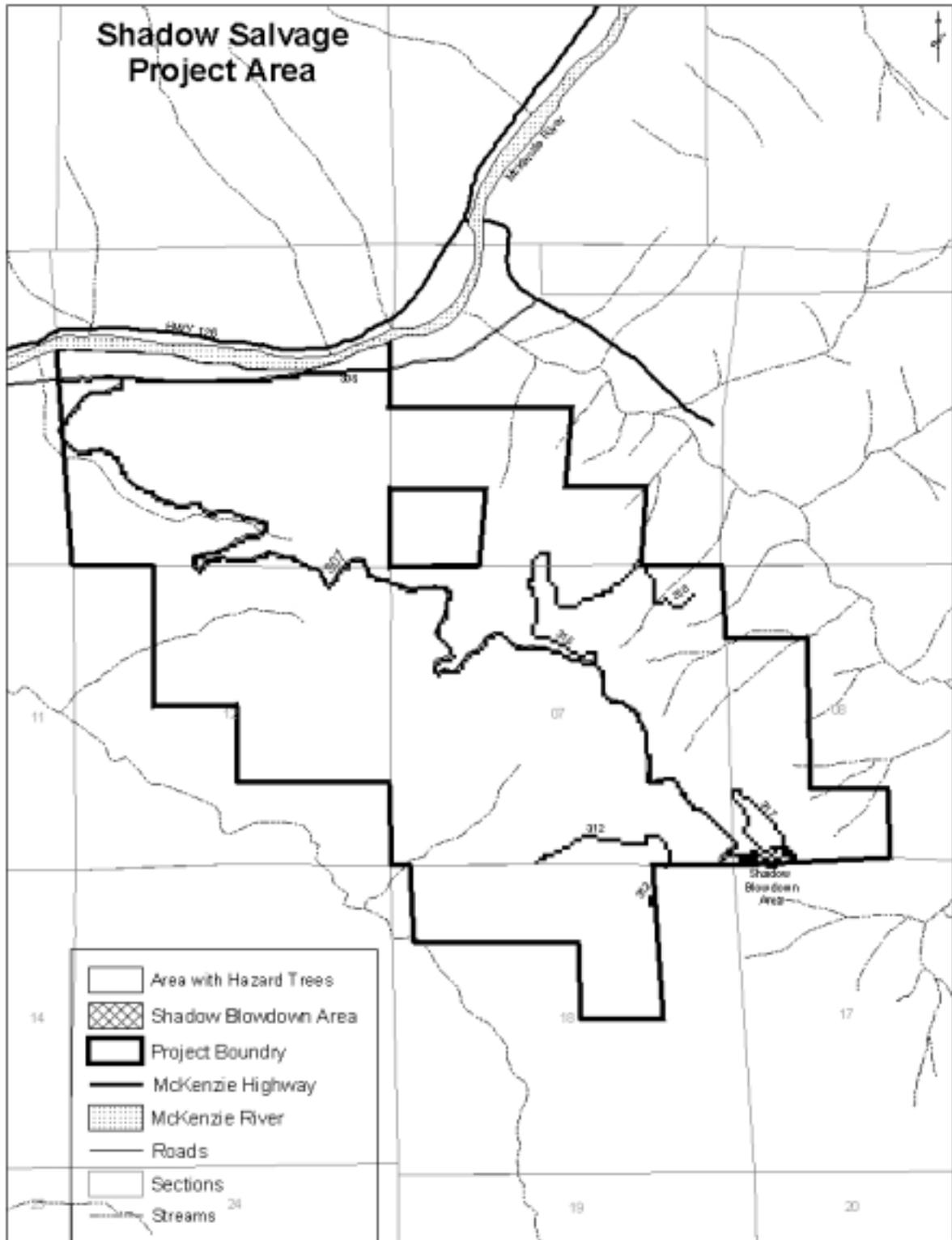


Figure 2: Specific Project Area Map for Shadow Salvage.



meet all applicable Standards and Guidelines from the WNF Plan. The amount or characteristics of required habitat for these species would not be not significantly changed. With the 1994 and 2001 Amendments to the WNF Plan (i.e. the Northwest Forest Plan, NWFP), persistence of populations would be maintained under the NWFP Standards and Guidelines (Appendix J2). Both Alternatives A and B of this project meet applicable Standards and Guidelines from the NWFP.

- Neotropical Migratory Birds and their required protection are outlined in the January 11, 2001 Executive Order “Responsibilities of Federal Agencies to Protect Migratory Birds.” Habitats vary broadly for this large group of species. The felling of a limited number of trees with this project may unintentionally take individual migratory birds, but is not expected to have a measurable negative effect on bird populations because of the limited extent of the habitat removal. The action would occur outside the nesting season of most neotropical migratory birds (after July 15 through March 1) to further mitigate losses.
- Survey and Manage Species were surveyed for as necessary and none were found in the project area. Appendix A-2 describes this in more detail.

8. Aquatic Species

Listed fish, including bull trout and chinook salmon, occur in this watershed. They may be impacted by the proposed vegetation removal and related ground-disturbing activities. This issue is not significant because implementation of either Alternative:

- Would not transmit effects to stream channel where listed species are present.
- Would not disturb a substantial amount of woody vegetation in riparian reserves.
- Would not decrease stream shade, or bank stability.
- Would not adversely affect Essential Fish Habitat as designated by the Magnuson-Steven Act.

9. Cultural Resources

Surveys within this landscape have documented cultural resource sites. They may be impacted by the proposed vegetation removal and related ground-disturbing activities. This issue is not significant because implementation of either Alternative:

- Would avoid cultural resource sites found near the proposed harvest sites.
- The District Archeologist would evaluate inadvertent discoveries.

CHAPTER II Alternatives Including the Proposed Action

Using the Willamette National Forest Plan as amended by the Northwest Forest Plan and the Watershed Analysis as the framework, the interdisciplinary team designed two alternatives: a “No Action” and a “Proposed Action” Alternative. The Action Alternative is designed to meet the Purpose and Need as described in Chapter I and addresses the significant issues. The “No Action” Alternative is required by Federal law (National Environmental Policy Act, 1969). The No Action Alternative provides the baseline from which effects of other alternatives can be compared and measured.

Alternative A No Action

Salvage of root sprung and downed trees would not occur. The felling of hazard trees would still occur to address road maintenance concerns, but it would be done by USFS personnel, not through a timber sale contract.

Alternative B Proposed Action

Alternative B meets the purpose and need by salvaging about 70 thousand board feet (MBF) of windthrown trees (about 15 log truck loads). About 31 hazard tree along the six mile haul route would be felled as part of a timber sale contract. A portion of the hazard trees would be removed with an estimated volume of about 10 MBF. The following measures would be part of the decision to mitigate impacts to TE&S species, soils and riparian resources, and minimize noxious weeds issues. Skyline and ground base equipment would be used to remove the logs.

Mitigation Measures for the Action Alternative

- A seasonal operating restriction would be in place between January 1 and September 15 to protect bald eagles, northern spotted owls, harlequin ducks, and osprey. This restriction may be shortened to March 1-July 15 if non-nesting is verified for all of these species.
- Existing down woody material in the forests along the haul route would be retained. Where less than 240 lineal feet of down woody material currently exists in the forest along the road system, felled hazard trees would be retained on site (except for pieces that land in the road prism). The Analysis File indicates which specific hazard trees should be retained to meet large woody debris requirements.
- Within the four-acre salvage area, 240 lineal feet/acre of large woody material would be retained of decay class 1-2, greater than 20 feet long, and at least 20 inches in diameter (NWFP ROD C-40). Trees left as large down wood should reflect the size and species mix of the stand.

- To eliminate the need to use heavy equipment off-road in riparian reserves and to provide course wood to riparian reserves, portions of hazard trees in riparian reserves that lie outside of the road prism after falling would be retained on site. Portions that fall into the roadway maybe removed.
- To minimize damage to adjacent trees, where possible, hazard trees would be directionally felled into the upland and riparian areas so that they have a greater probability of being used as habitat.
- All logging equipment would be confined to the road surfaces to minimize off-road soil disturbance that would provide noxious weed seed beds.
- To minimize introduction of noxious weeds and the risk of erosion following harvest activities, all areas of disturbed soil would be seeded with a non-persistent, rapidly establishing, cereal grain such as winter wheat. Seed to be used would be certified weed free. This application would be followed up by Forest Service application of native grass seed two years later when the initial application of wheat begins to reduce in vigor. Prior to seeding, landings would be scarified and skid trails would be waterbarred as needed.
- Yarding equipment would be washed to remove all noxious weed material prior to entry on National Forest land.
- Road replacement rock shall use sources free of noxious weed seed and vegetation.
- All landing slash shall be piled and burned. Slash burning would be designed to meet the National Ambient Air quality standards through avoidance of practices that degrade air quality below health and visibility standards. The Oregon State Implementation Plan and the Oregon State Smoke Management Plan shall be followed to maintain air quality.

CHAPTER III Environmental Consequences

Chapter III describes aspects of the environmental that could be affected by the alternatives and the consequences that would result from implementing each alternative. Additional details on the affected environment can be found in the Project File, Appendices, and the Watershed Analysis.

Significant Issues

1. Economic Benefit

Alternative A -- No Action

There would be no economic opportunities made available from the salvage of merchantable timber. The government would incur the cost of felling the hazard trees and associated road cleanup.

Alternative B -- Proposed Action

There would be an economic opportunity made available from the removal of merchantable timber. Approximately 80 MBF may be salvageable from the windthrow area and felled hazard trees that land in the road prism. The pre-bid minimum sale value of material from this project is \$24,000 (Table 1). The timber sale contract would be used to remove the hazard trees, resulting in a savings to the government.

Table 1. Economic Analysis for the Shadow Salvage.

	Alternative A	Alternative B
Timber Volume proposed for removal	0 MBF	80 MBF
Pre-Bid Minimum Sale Value	0	\$24,000
Cost to Government for Hazard Tree Felling and Cleanup	\$5,000	\$0.00

2. TES and Other Species of Concern

Habitat for bald eagles, spotted owls, harlequin ducks, and osprey could be impacted by this project.

Alternative A -- No Action

There would be no effects on TES wildlife or other species of concern with this alternative. The windthrown trees would stay in place and provide large down woody material for cover and habitat. This may benefit local small mammal populations, and provide a possible indirect benefit to northern spotted owl prey species. There would be no loss of existing snag habitat because hazard trees would not be felled with this decision, however, the trees would still be

felled through road maintenance activities, reducing snag habitat in this area. No noise disturbance from the salvage operation would occur.

Alternative B -- Proposed Action

One of the hazard trees that would be felled contains an osprey nest that is active. Impacts to the birds at this nest site would be mitigated by requiring felling to occur outside of the nesting season (March 1 - September 15). This restriction may be lifted if the nest is inactive or when the young fledge and are independent of the nest tree. Falling of one osprey nest tree would not impact the viability of this species overall because there is a high likelihood that the pair would rebuild in another suitable location the following year. There are numerous potential nest trees in this vicinity. The loss of nest trees is not uncommon in this area due to wind and snow. Ospreys are protected by the Migratory Bird Treaty Act of 1918.

Implementation of Alternative B may affect, but is not likely to adversely affect, the northern spotted owl due to falling of the larger hazard trees which occur in suitable habitat, and due to noise disturbance during the non-critical breeding season. Protocol surveys have not been conducted, but there are two historic activity centers in the project area. A seasonal operating restriction from March 1-July 15 would protect nesting owls which may be present during the critical breeding season. This project is covered under the programmatic formal and informal consultation for fiscal year 2002-2003 projects with the U.S. Fish & Wildlife Service (USDI 2003).

Because the hazard tree removal would occur near bald eagle foraging and nesting habitat in the McKenzie River, a seasonal restriction from January 1-August 30 would be required. This restriction may be lifted non-nesting is verified within the area. Felling and leaving of some hazard trees in riparian areas would benefit this species by supplementing down woody material in their habitat.

Because the hazard tree removal would occur in the riparian area of the McKenzie River that may provide nesting habitat for harlequin ducks, a seasonal restriction from April 1-June 30 would be required. Felling and leaving of some hazard trees in riparian areas would benefit this species by supplementing down woody material in their habitat.

3. Noxious Weeds

Many noxious weeds require direct sunlight to survive. Openings in the canopy can create gaps for which noxious weeds can survive until the canopy closes again. Disturbed soil can stimulate the germination of noxious weed seed present in the seed bank, as well as create a place for introduced weed seed to establish. There is an existing population of tansy ragwort (*Senecio jacobaea*) on private land adjacent to the proposed project area. Scotch broom (*Cytisus scoparius*) is located along the haul route.

Alternative A -- No Action

Noxious weed seeds in the ground would not be stimulated to germinate from ground disturbance associated with this project. Openings created by the windthrown trees may have

opened the canopy enough for the adjacent population of tansy ragwort to invade and survive until the canopy closes.

Alternative B -- Proposed Action

The cutting of root sprung trees combined with gaps left by the windblown trees would create an extension of open canopy in the project area. As in Alternative A, this open habitat may be suitable for tansy ragwort to survive until the canopy grows more closed. As the canopy closes in on the salvage stand and the adjacent clearcut on private land, tansy ragwort plants growing within the salvage stand will decline in abundance and eventually completely die-out. It will take approximately 15 to 20 years for canopy closure to occur and for weed populations to start to decline in abundance.

Soil disturbance from logging may stimulate germination of the seed bank, which most likely contains the wind blown seeds of tansy ragwort. Soil disturbance would also create seedbeds suitable for noxious weed seed germination. Within the project area, soil disturbance would occur on two percent or less of the ground over four acres. It is expected that noxious weed invasion would occur more rapidly on disturbed areas. To mitigate for further noxious weed spread, disturbed areas would be seeded with grasses (as described in the Mitigation Measures section). The grasses would cover the disturbed soil, reducing the chance of establishment from tansy ragwort and other noxious weeds.

Hazard trees to be felled and possibly removed are single trees located at multiple sites. The amount of soil disturbance and reduction in canopy cover from removal of a single tree is minimal. Felling and removal of the hazard trees would have little effect on the spread and establishment of noxious weeds.

4. Coarse Wood Availability to Streams

The Quartz Creek and Minor Tributaries Watershed Analysis (Ecosystems Northwest 1998) identifies a substantial shortage of coarse woody debris in the Quartz Creek watershed, and specifically in riparian reserves and streams. This situation is largely the result of extensive harvest on private lands in the watershed.

Alternative A -- No Action

With the No Action Alternative, a timber contract would not be used to fall and leave hazard trees in riparian areas with this decision. However, the trees will either fall on their own or be felled by District personnel to alleviate safety issues, resulting in inputs of downed woody to the riparian and stream ecosystem.

Alternative B -- Proposed Action

This alternative avoids adding cumulatively to the watershed-wide shortage of riparian coarse wood by retaining all hazard trees felled within riparian reserves, except for portions of trees that fall into the road prism.

Non-Significant Issues

5. Soil Erosion

There are no expected impacts to the soil resource because ground-disturbing equipment would remain on roads and be prohibited in riparian reserves; the geographic extent of the project is small; the project area, with the exception of roadside hazard trees, is located on a dry, upland knob that is approximately one-quarter mile from the nearest stream; and the minimal risk of increased erosion resulting from harvest activities can be acceptably mitigated using standard erosion control practices.

6. Magnitude and Timing of Peak Flows

There are no expected impacts to peak flow because the geographic extent of the project is small in relation to the size of the Quartz Creek watershed and the action proposes to remove mostly trees that have already been blown down so that forest canopy characteristics would not be substantially altered from the existing condition.

7. Management Indicator Species, Neotropical Migratory Birds, and Survey and Manage Species.

There are no expected impacts to these species because the amount or characteristics of required habitat for these species would not be not significantly changed. The felling of a limited number of trees with this project may unintentionally take individual migratory birds, but is not expected to have a measurable negative effect on bird populations because of the limited extent of the habitat removal. The action would occur outside the nesting season of most neotropical migratory birds (after July 15 through March 1) to further mitigate losses. Survey and Manage Species were surveyed for as necessary and none were found in the project area. Appendix A-2 describes this in more detail.

8. Aquatic Species

There are no expected impacts to listed fish because the project would not transmit effects to stream channel where listed species are present; would not disturb a substantial amount of woody vegetation in riparian reserves; would not decrease stream shade, or bank stability; and would not adversely affect Essential Fish Habitat as designated by the Magnuson-Steven Act.

9. Cultural Resources

Surveys within this landscape have documented cultural resource sites. However, surveys indicated there would be no effect to significant cultural resources because cultural resource sites found near the proposed harvest sites would be avoided, and the District Archeologist would evaluate inadvertent discoveries.

Indirect, Cumulative, and Unavoidable Effects

The above analysis of cumulative effects considered past, present, and reasonably foreseeable future actions on these lands. Hazard tree removal will be a continuing activity along these open public roads, which will diminish the availability of snag habitat within 100-200' of the road prism over time. The surrounding private landscape is expected to be harvested on short-

rotations (<80 years), resulting in a continuous supply of early seral habitat in this part of the watershed. Required use of stipulations in the State Forest Practices Act is assumed to minimize impacts to resources.

This Environmental Assessment is tiered to the Final Environmental Impact Statement for the Willamette National Forest Land and Resource Management Plan as amended and the analysis of cumulative effects therein.

Potential changes in the physical and chemical nature of the earth's climate are likely to have impacts on the Nation's agriculture, forest, and related ecosystems. The extent and magnitude of these changes are uncertain at this time. There is a lack of sufficient information to predict and detect changes in health, diversity, and productivity of these systems due to global climatic change. The Department of Agriculture and Forest Service are researching issues of global climate change, and the implications for forest management activities. Current Forest Service direction states that NEPA disclosure documents at the regional or project levels are not the appropriate means for addressing the global climate change issues.

Required Disclosures

There are no proposed activities on prime farmlands or rangelands within the planning area, and therefore, there would be no adverse affects to these resources. Floodplains do occur in the planning area, and impacts are described above.

American Indian rights, including those covered by the American Indian Religious Freedom Act, would not be affected by the implementation of this project.

Proposed actions would be conducted in a manner that does not exclude persons (including populations) from participation in, deny persons (including populations) the benefits of, or subject persons (including populations) to discrimination because of their race, color, or national origin, as directed by Executive Order #12898.

The proposed action is not likely to adversely affect aquatic systems, recreational fisheries, or designated Essential Fish Habitat. The effects that are likely to occur are based on sound aquatic conservation and restoration principles for the benefit of recreational fisheries, as directed by Executive Order #12962. Since the project is not likely to adversely affect EFH, no further consultation under the Magnuson-Stevens Fishery Conservation and Management Act is required.

The U. S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, religion, sex, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited basis apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's Target Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue SW, Washington, DC 20250-9410, or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Civil Rights/Environmental Justice

Civil Rights legislation and Executive Order #12898 (Environmental Justice) directs an analysis of the proposed alternatives as they relate to specific subsets of the American population, which include ethnic minorities, people with disabilities, and low-income groups. Shadow Salvage is not located in a minority community and would not affect residents of low or moderate income. Proposed actions would be conducted in a manner that does not exclude persons (including populations) from participation in, deny persons (including populations) the benefits of, or subject persons (including populations) to discrimination because of their race, color, or national origin.

CHAPTER IV Consultation with Others

This section summarizes the public involvement effort made during the planning and analysis stages for this project. The effort included a scoping packet, mailings, and written communications with the public. The Public Involvement section in the Analysis File contains a complete record of communications related to this project and issues associated with the proposed action.

Public Involvement Activities

Shadow Salvage Timber Sale has been in the Willamette National Forest's Schedule of Proposed Actions every quarter starting in January of 2003.

On January 28, 2003, a Scoping Packet was routed to district managers and specialists to describe the proposed action, purpose and need for the project.

In addition to the Scoping Packet, an ID team with representatives from each of the scientific disciplines met on January 28, 2003, to discuss this proposal.

Other Interested Groups and Federally Recognized Tribes Consulted Include:

- Oregon Natural Resources Council
- Cascadia Wildlands Project
- Confederated Tribes of the Grand Ronde
- Confederated Tribes of the Siletz Indians
- Confederate Tribes of the Warm Springs
- Klamath Tribes
- Oregon Department of Fish and Wildlife

References Cited

Ecosystems Northwest. 1998. Quartz Creek and Minor Tributaries Watershed Analysis. Corvallis, OR for the Blue River Ranger District, Willamette National Forest. 124 pp.

Migratory Bird Treaty Act of 1918.

USDA Forest Service. 1990. Final Environmental Impact Statement, Land and Resource Management Plan, Willamette National Forest.

USDA Forest Service. 1994. Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional Old-Growth Forest Related Species within the Range of the Northern Spotted Owl.

USDA Forest Service. 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl.

USDA Forest Service. 2001. Record of Decision for Amendments to the Survey and Manage Protection Buffer, and other Mitigation Measures Standards and Guidelines.

USDI Fish and Wildlife Service. 2003. Biological Opinion. Formal and Informal Consultation on Fiscal Year 2003-2004 Routine Habitat Modification Projects within the Willamette Province.

Appendix A-1: Shadow Salvage Wildlife Biological Evaluation

Purpose/Location

The purpose of this Biological Evaluation is to review the Shadow Salvage Timber Sale in sufficient detail to determine whether the proposed action will result in a trend toward Federal listing of any sensitive wildlife species, or if the proposed action will affect wildlife species listed under the Endangered Species Act.

For specific project information, please refer to the Environmental Assessment and Analysis File.

Proposed Action and Purpose

The purpose of this project is salvage of windthrown trees on approximately four acres, and the associated felling of approximately 31 hazard trees on Forest Roads 2618-305 and 2618-307. If down wood levels currently exceed the Northwest Forest Plan Standard and Guideline (C-40) of 240 linear feet/acre, the entire length of the felled hazard trees may be removed. There is an exception: all hazard trees felled in riparian reserves will be retained as large down woody material, except those portions which fall in the road prism.

Summary of Mitigation Measures for Threatened, Endangered, and Sensitive (TES) Wildlife

Seasonal operating restriction between January 1-August 30 to protect bald eagles, the northern spotted owl, harlequin ducks, and osprey. This restriction may be shortened to January 1-July 15 if bald eagle surveys along the McKenzie River adjacent to Forest Service road 2618-305 are completed and if no active eagle nests are found. Because spotted owl habitat surveys have not been conducted to protocol in the salvage sale or hazard tree area, a seasonal restriction for them is required.

No removal of existing down woody material along the haul route. Only those hazard trees marked for falling and determined to provide greater than the down wood requirements may be removed to protect those species dependent on down wood habitat, i.e. Pacific and Baird's shrew, Pacific fisher, and Oregon slender salamander. For the 4-acre salvage area, a minimum of 240 linear feet/acre of decay class 1 and 2 and greater than 20" dbh shall be left (NWFP Standards and Guidelines C-40). Trees left as large down wood should reflect the species mix of the stand. Refer to Appendix 1 Shadow Salvage Hazard Tree Wildlife Assessment for specifics about the hazard trees and which of these may be removed after falling.

Minimize damage to existing adjacent trees and vegetation during falling and yarding. Protection of the adjacent larger diameter trees and snags planned to be left shall be a priority when falling and yarding.

Prefield Review

A prefield review of the proposed project area for wildlife species listed on the 2002 Regional Forester's List for the Willamette National Forest was conducted. There are no known threatened, endangered, or sensitive (TES) wildlife species located within the proposed Shadow Salvage sale unit or along the haul route where hazard trees would be felled and removed. There

is potential habitat for some species, however, and there are species located in the landscape that could be impacted directly by disturbance created during these activities or by the potential future habitat condition of the stands treated. Table 1 lists each TES species, the potential for effects from the proposed action, and mitigation measures necessary to alleviate potential effects.

Table 1: Summary of Impact Determinations for Wildlife Species on the Regional Forester's Sensitive Species List, Willamette National Forest. The Regional Forester is required to develop a sensitive species list under Forest Service Manual 2672.11. The Regional Forester's Sensitive Species List for Animals was last revised September 2002 (Forest Service Manual 2670 Interim Directive 90-1).

TES Species	Habitat present?	Impact/Required Mitigation
Least Bittern <i>Ixobrychus exilis</i>	No Habitat	NI
Bufflehead <i>Bucephala albeola</i>	No Habitat	NI
Harlequin Duck <i>Histrionicus histrionicus</i>	Habitat	NI/ Seasonal restriction on falling of hazard trees along Forest Service Road 2618-305 between April 1-June 30. This RX will result in NI because harlequin ducks would not be disturbed during nesting season.
Yellow Rail <i>Coturnicops noveboracensis</i>	No Habitat	NI
Black Swift <i>Cypseloides niger</i>	No Habitat	NI
Tricolored Blackbird <i>Agelaius tricolor</i>	No Habitat	NI
Baird's Shrew <i>Sorex bairdii permiliensis</i>	Habitat	NI/Habitat will be maintained. A minimum of 240 linear feet/acre (NWFP C-40) of large down woody material will be left if it is not currently present.
Pacific Shrew <i>Sorex pacificus cascadenis</i>	Habitat Class III and IV streams	NI/ Riparian habitat will be maintained. A minimum of 240 linear feet/acre (NWFP C-40) of large down woody material will be left if it is not currently present.
California wolverine <i>Gulo gulo</i>	No Habitat	NI
Pacific Fisher <i>Martes pennanti</i>	Habitat	NI/Forest floor structural diversity would be maintained and large down wood will continue to be provided.
Pacific Fringe-tailed Bat <i>Myotis thysanodes vespertinu</i>	No Habitat	NI
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	Habitat	NLCT due to loss of suitable large snag habitat.
Oregon Slender Salamander <i>Batrachoseps wrighti</i>	Habitat	NI/A minimum of 240 linear feet/acre (NWFP C-40) of large down woody material will be left if it is not currently present. The species and sizes of down wood left shall be in the same proportion as they are represented in the forest stand.
Cascade Torrent Salamander <i>Rhyacotriton cascadae</i>	Habitat	NI/ Riparian habitat will be maintained. A minimum of 240 linear feet/acre (NWFP C-40) of large down woody material will be left if it is not currently present.

TES Species	Proposed Action)	Impact/Required Mitigation
Foothill Yellow-legged Frog <i>Rana boylii</i>	No Habitat	NI
Oregon Spotted Frog <i>Rana pretiosa</i>	No Habitat	NI
Northwestern Pond Turtle <i>Clemmys marmorata marmorata</i>	No Habitat	NI
North American Lynx <i>Felis lynx canadensis</i>	No Habitat	NI
Northern Spotted Owl <i>Strix occidentalis</i>	Habitat	MANLAA / Seasonal Restriction March 1 – July 15 to eliminate disturbance during the critical nesting period in unsurveyed suitable habitat near historic activity centers. No habitat in salvage unit due to open canopy. Some hazard trees are in habitat.
Peregrine Falcon <i>Falco peregrinus anatum</i>	No Habitat	NI
Bald Eagle <i>Haliaeetus leucocephalus</i>	Habitat along haul road only	NE / Seasonal restriction January 1 – August 30 to eliminate disturbance during the critical nesting period. This restriction may be lifted if bald eagle surveys along the McKenzie River adjacent to Forest Service road 2618-305 are completed and if no active eagle nests are found.
Mardon Skipper <i>Polites mardon</i>	No Habitat	NI

NI / NE== No Impact for sensitive species. No Effect for TE species.

NLCT = May impact individuals or their habitat, but the action will Not Likely Contribute to a Trend towards Federal Listing or loss of viability to the population or species.

MANLAA=May Affect, Not Likely to Adversely Affect.

MCT = May impact individuals or their habitat, with a consequence that the action May Contribute to a Trend towards Federal Listing or a loss of viability to the population or species.

BI = Beneficial Impact.

Effects of the Proposed Project

There are no impacts/effects to any PETS species with the implementation of Alternative A, No Action. Effects described below for hazard tree felling may occur under a separate decision.

Northern Spotted Owls: The salvage unit is not currently providing spotted owl habitat. The hazard trees lie within potential habitat. Noise generated from this project could disturb this species. Implementation of Alternative B may affect, but is not likely to adversely affect the northern spotted owl due to the falling of large trees which are hazards along the haul route, and due to noise disturbance in unsurveyed habitat during the non-critical breeding season. Two historic activity centers are located within ¼ mile of the proposed haul route where hazard trees will be felled. This project is covered under the programmatic formal and informal consultation for fiscal year 2002-2003 projects with the U.S. Fish & Wildlife Service. The Biological Opinion dated February 27, 2003 addresses the falling and removal in some cases of hazard trees in unsurveyed spotted owl habitat, some of which are suitable nest trees.

Bald eagles: The salvage unit is not currently providing bald eagle habitat. The hazard trees lie within potential habitat. Noise generated from this project could disturb this species. Implementation of Alternative B will not affect bald eagles because a seasonal restriction from January 1-August 30 will be implemented. This restriction may be lifted if protocol surveys are conducted along the McKenzie River and in suitable nesting habitat approximately one mile above the river, and no active bald eagle nests are found.

Harlequin ducks: There is no habitat for this species in the salvage unit. Some of the hazard trees lie in riparian habitat adjacent to the McKenzie River that may be suitable for harlequin duck nesting. Implementation of Alternative B will not impact harlequin ducks because a seasonal operating restriction from April 1-June 30 will be implemented.

Townsend's Big-eared Bats: Habitat for this species occurs in the salvage unit and in the associated hazard trees. Whether bats roost in these trees is unknown. Implementation of Alternative B may impact individual Townsend's Big-eared Bats or their habitat due to falling of large snags. This action will not likely contribute to a trend towards Federal Listing or loss of viability to the population or species because of the relatively small scale nature of this project. Approximately 31 hazard trees would be felled, and only about half of these have diameters large enough that bats may roost in them.

No other TES wildlife species will be affected with the seasonal restrictions in place as described above to avoid disturbance during critical nesting and fledging periods, and with the retention of adequate levels of large down wood in these forested habitats.

Prepared by: /s/Ruby Seitz, Wildlife Biologist
McKenzie River Ranger District
April 7, 2003

Table 2: Summary of Biological Background for Animal Species on the Regional Forester's Sensitive Species List, Willamette National Forest (September 2002).

Species	Habitat
BIRDS	
<p>Northern Spotted Owl <i>Strix occidentalis caurina</i></p> <p><i>Status: Threatened</i></p>	<p>Occur primarily in the interior of older timber stands with structure required for food, cover, nest sites, and protection from weather and predation. Reproductive habitat = forest w/ canopy closure 60 – 80%; multi-layered, multi-species canopy dominated by large overstory trees (> 30”dbh); abundant large trees w/deformities (e.g. large cavities, broken tops, dwarf-mistletoe infections, decadence); abundant large snags/down logs; and sufficient open flying space below the canopy. Foraging habitat = forest w/ > 2 canopy layers; overstory trees > 21" DBH; abundant snags/down wood; and a 60-80% canopy closure. Dispersal habitat = forest w/ > 11" DBH trees and > 40% canopy closure. Numerous nests recorded on the McKenzie River RD.</p>
<p>Northern Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p><i>Status: Threatened</i></p>	<p>Use scattered old-growth conifer trees in proximity to rivers, lakes, and reservoirs with plentiful prey. Feed primarily on fish, but will also eat waterfowl and carrion. On the McKenzie River RD, they currently nest at Clear Lake and Blue River Reservoir. There have been sightings at Trailbridge, Cougar, and Smith Reservoirs, Fish, Linton and Lost Lakes and along the McKenzie River.</p>
<p>American Peregrine Falcon <i>Falcon peregrinus anatum</i></p> <p><i>Status: Sensitive</i></p>	<p>Preferred nesting sites are sheer cliffs 75 ft. or more in height. They forage within a variety of forest types. Numerous potential and occupied habitat occurs on the McKenzie River RD.</p>
<p>Least Bittern <i>Ixobrychus exilis</i></p> <p><i>Status: Sensitive</i></p>	<p>Freshwater or brackish marshes with tall vegetation. Stalks through the weeds to find prey. Eats small fish, frogs, insects, small mammals, and sometimes bird eggs and chicks. Nests is small platform of sticks and live or dead vegetation, placed in cattails, bulrushes, or bushes 8-14” above water. Sightings of individuals at Fern Ridge and Salem. No recorded sightings or habitat on the McKenzie River RD.</p>
<p>Bufflehead <i>Bucephala albeola</i></p> <p><i>Status: Sensitive</i></p>	<p>Summers on wooded lakes and rivers, winters on lakes and coastal waters. Nesting normally occurs near lakes in tree cavities 5-50 feet high. Dives underwater and eats small mollusks, fish, snail, and crustaceans. Also eats aquatic insects. Only documented wintering on McKenzie River RD.</p>
<p>Harlequin Duck <i>Histrionicus histrionicus</i></p> <p><i>Status: Sensitive</i></p>	<p>During nesting (April-June) adults require fast-flowing water with one + loafing sites nearby, dense shrub or timber/shrub mosaic vegetation on the bank, and an absence of human disturbance. Nest on ground under the shelter of vegetation, rocks, or large woody debris. Midstream loafing sites are very important. Broods prefer low gradient streams with adequate macroinvertebrate abundance. Recorded breeding/foraging in tributaries to the McKenzie River and foraging in the McKenzie River.</p>
<p>Yellow Rail <i>Coturnicops noveboracensis</i></p> <p><i>Status: Sensitive</i></p>	<p>Feeds in shallow water, eating snails, insects, and some seeds and grasses. Summers on wet meadows, marshes, winters on grasslands, fields, coastal marshes. No documented habitat on McKenzie River RD.</p>

Species	Habitat
Black Swift <i>Cypseloides niger</i> <i>Status: Sensitive</i>	Found near cliffs in mountainous regions. Feeds on-the-wing eating flying insects. Nests in small colonies on ledges or mountain crevices, often behind a waterfall. There are historical summer records in the Santiam Pass area, Linn County, which suggests breeding in that area. No current sightings on the McKenzie River RD.
Tricolored Blackbird <i>Agelaius tricolor</i> <i>Status: Sensitive</i>	Found in freshwater marshes w/cattails and dense shrubs, grain fields. Feeds on the ground, eating insects, grains, and weed seeds. Nests in large colonies. Nest of coarse reeds and grasses lined with finer material placed in reeds above ground or water. Breeds locally in eastern Rogue Valley, S. Klamath Co, and mainly in north-central Oregon. Scattered summer reports in Willamette Valley. No documented sightings on the McKenzie River RD.
MAMMALS	
Baird's Shrew <i>Sorex bairdii permiliensis</i> <i>Status: Sensitive</i>	Not much is known of its habitat, but in 1986, 2 specimens were trapped from an open Douglas-fir forested area with numerous rotting logs in Polk Co. It has been trapped on the McKenzie River RD in the Mill Creek area and south as well as in the Blue River watershed.
Pacific Shrew <i>Sorex pacificus cascadenis</i> <i>Status: Sensitive</i>	Generally found in wet or marshy areas along class III-IV streams w/red alder-salmonberry-skunk cabbage and banks with abundant down material. Occasionally found in adjacent conifer forest w/moist abundant decaying logs and brush. Nests made of grasses, mosses, lichens, or leaves. Feed on slugs, snails, insects, and sometimes vegetation. No documented sightings on the McKenzie River RD.
Pacific Fisher <i>Martes pennanti</i> <i>Status: Sensitive</i>	Found in a wide variety of densely forested habitats at low to mid-elevations. Diet consists of small and medium-sized forest mammals (porcupines, snowshoe hares, tree squirrels, mice, and voles most common). Also eat carrion, and will seasonally eat birds, bird eggs, amphibians, fish, and insects. Use ground burrows, tree cavities, witches'-brooms or other clumped growth, or occasionally bird or small mammal nests as resting sites. Tree cavities are used by most maternal females with young and ground burrows are used mostly in winter. Data suggests they do better in areas with minimized fragmentation of old growth, second-growth, and riparian area and in areas with abundant down and standing woody material important. Few documented sightings on the McKenzie River RD, mostly in the higher elevations.
California Wolverine <i>Gulo gulo</i> <i>Status: Sensitive</i>	Found primarily in wilderness or remote country where human activity is limited. High elevation areas appear to be preferred in summer, which may effectively separate wolverines and intensive human disturbance in most areas. In winter, wolverines move to lower elevations which are snowbound with very limited human activity. They do not significantly use young, dense stands of timber or clearcuts. The majority of activity occurs in large expanses of scattered mature timber, with some use of ecotonal areas such as small timber pockets, and rocky, broken areas of timbered benches. Heavy use of openings w/ good winter populations of big game, a principal source of carrion which makes up much of the wolverine's diet. They also feed on marmots, snowshoe hares, various rodents, insects, insect larvae, eggs, and berries. Rare documented sightings on the McKenzie River RD, mostly at higher elevations.
Pacific Fringe-tailed Bat <i>Myotis thysanodes vespertinu</i> <i>Status: Sensitive</i>	Rare in Oregon. Very little known about habitat in Oregon. Three captured in 1971 were associated with young coniferous forest. They are known to use caves, mines, rock crevices, and buildings as both day and night roosts. Nothing is known about habits in winter. Diet of moths, leafhoppers, lacewings, daddy-loglegs, crickets, flies, true bugs, and spiders. No recorded sightings on the McKenzie River RD.

Species	Habitat
Canada Lynx <i>Felis lynx canadensis</i> <i>Status: Threatened</i>	At this time, the Regional Forester's Sensitive Species List (2002) designated the lynx as suspected to occur on the Willamette National Forest. This species uses high elevation forested habitats that often coincide with populations of snowshoe hare. Forest conditions are generally lodgepole pine and subalpine fir.
AMPHIBIANS AND REPTILES	
Oregon Slender Salamander <i>Batrachoseps wrighti</i> <i>Status: Sensitive</i>	Live in forested areas, especially old-growth Douglas-fir and younger stands with abundant downed large logs. They lay their eggs under thick bark, inside a crevice in a log, or in talus. Juveniles and adults live under thick bark, inside partially decayed logs, or in debris piles around the bases of large snags. They also occur in moist talus w/ abundant woody debris. Documented sightings are scattered throughout McKenzie River RD at lower elevations.
Cascade Torrent Salamander <i>Rhyacotriton cascadae</i> <i>Status: Sensitive</i>	Live in very cold, clear springs, seeps, headwater streams, and waterfall splash zones. Forage in moist forests adjacent to these areas. Eggs are laid in rock crevices in seeps. Larve and adults live in gravel or under small cobbles in silt-free, very shallow water that is flowing or seeping. Adults may be found under debris on streambanks or in streamside forests and talus during rainy periods. Documented sightings from class IV stream headwater areas on McKenzie River RD.
Foothill Yellow-legged Frog <i>Rana boylei</i> <i>Status: Sensitive</i>	Live in sections of low-gradient streams with exposed bedrock or rock and gravel substrates. Attach eggs to the bottom of quiet scour-pools or riffles in gentle-gradient streams, often where there is only slight flow from the main river. Hatchlings cling to egg masses initially and then to rocks. Nearest known sightings are on private land adjacent to the Sweet Home RD to the northwest. No documented habitat or sightings on the McKenzie River RD.
Oregon Spotted Frog <i>Rana pretiosa</i> <i>Status: Candidate for Federal Listing</i>	Favor lakes and slow moving streams associated w/a permanent water source w/ a soft and muddy bottom. A marsh specialist w/strong preference/requirement for warmer waters; more aquatic than other ranids; often found in water or water's edge floating on the surface or resting on aquatic vegetation. Diet is invertebrates caught above and below the surface. Early breeders: egg masses are typically deposited on top of one another in a communal fashion, not attached to vegetation, and deposited in warmer shallow water, making them susceptible to mortality due to freezing or drying. The only documented population on the McKenzie River RD occurs in and around Penn Lake in the Three Sisters Wilderness Area.
Northwestern Pond turtle <i>Clemmys marmorata marmorata</i> <i>Status: Sensitive</i>	Inhabits marshes, sloughs, moderately deep ponds, slow moving portions of creeks and rivers. Observed in altered habitats including reservoirs, abandoned gravel pits, stock ponds, and sewage treatment plants. Occur from sea level to about 1,830 meters. Require basking sites, such as partially submerged logs, vegetation mats, rocks and mud banks, and may even climb a short way onto tree branches that dip into the water. They use uplands for egg laying, overwintering, and dispersal. They may move up to 500 meters and possibly more for overwintering where they burrow into leaf litter or soil. Nest distances from the water course ranges from 3 meters to over 402 meters. Most nesting areas are characterized by sparse vegetation, usually short grasses or forbs. Documented sightings on the McKenzie River RD are in lower elevation side-channels of the McKenzie River.
INVERTEBRATES	
Mardon Skipper <i>Polites mardon</i> <i>Status: Candidate for Federal Listing</i>	The USFWS latest review indicated this species occurs in the Puget Sound and southern Cascades area of Washington, in the Siskiyou Mountains of Oregon, and in isolated remnants on serpentine grasslands in Del Norte County, California. They are not known to occur in this part of the Oregon Cascades. They generally occur in grassy openings in subalpine coniferous forests in mountain regions.

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Appendix A-2: Shadow Salvage Survey and Manage, Management Indicator Species, and Landbird Analysis

Survey and Manage

The Record of Decision (ROD) for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (2001) amends the Northwest Forest Plan to provide a more efficient level of species protection. The ROD requires that all habitat altering projects consider their effects to Survey and Manage, Protection Buffer, and Mitigation Measure species. The species listed in Table 1 occur on the Willamette National Forest.

Table 1: Survey and Manage, Protection Buffer, and Mitigation Measure Wildlife Species on the Willamette National Forest (ROD 2001, and updated with 2002 Annual Species Review results, March 2003).

SPECIES	Management Strategy	Habitat
Megomphix hemphilli (Linn and Marion Counties only)	A = Rare. Predisturbance surveys required. Manage known sites. 180' no-harvest buffer.	Forested areas with a hardwood component and down woody material
Megomphix hemphilli (S. of Linn/Benton Counties only)	F = Status Unknown. Strategic Surveys Required Only. Manage Known Sites. 180' no-harvest buffer.	Forested areas with a hardwood component and down woody material
Pristiloma arcticum crateris	B = Rare. Predisturbance Survey Required. Manage Known Sites. 180' no-harvest buffer.	Forested areas with a hardwood component and down woody material
Arthropods	F = Status Unknown. Strategic Surveys Required Only. 180' no-harvest buffer.	Unknown
Red Tree Vole	C = Uncommon. Predisturbance Survey Required. Manage High Priority Sites. 10 acre protection buffer.	Forested stands >10" DBH
Great Gray Owl	A = Rare. Predisturbance Survey Required. Manage Known Sites. 0.25 mile protection buffer on known site.	Mature stands near openings (natural or human-made)
Fringed myotis, silver-haired bat, long-eared myotis, long-legged myotis, and Townsend's big-eared bat.	Protect caves, abandoned mines, abandoned wooden bridges, and abandoned buildings.	Caves, mines, abandoned wooden bridges, and abandoned buildings.
Black-backed woodpecker	Manage snags to provide for 100% population levels	High elevation forests.
Pygmy nuthatch	Manage snags to provide for 100% population	High elevation forests.

SPECIES	Management Strategy	Habitat
	levels	

Determination: Habitat for these species either does not occur in the salvage unit or in the individual hazard trees, or the activity is of a scope, scale, and intensity that the anticipated negative impact of the project on the habitat or life requirements of these species is so small as to not trigger a need to survey. Hazard tree falling is an example of an activity the 2001 ROD recognized as not requiring surveys (2001 ROD pg. 22). Though not required, protocol surveys for red tree voles were conducted in the 4-acre salvage unit on December 18, 2002. Identified hazard and adjacent trees along the haul route were individually inspected on Feb. 20, 2003 for red tree vole nests. None were found.

Management Indicator Species

Management Indicator Species (MIS) were addressed in the Willamette National Forest Plan (1990). They include the spotted owl, pileated woodpecker, marten, elk, deer, cavity excavators, bald eagles, peregrine falcons, and fish. Through Region-wide coordination, each Forest identified the minimum habitat distribution and habitat characteristics needed to satisfy the life history needs of the MIS's. Management recommendations to ensure their viability were incorporated into all WNF FSEIS Action Alternatives. This project meets applicable Standards and Guidelines from the WNF Plan. The amount or characteristics of habitat is not significantly changed with this project. With the 1996 and 2001 Amendments to the WNF Plan (i.e. the Northwest Forest Plan, NWFP), persistence for spotted owls, pileated woodpeckers, and marten was evaluated, and the FSEIS indicated persistent populations would be maintained under the NWFP Standards and Guidelines (Appendix J2). This project meets applicable Standards and Guidelines from the NWFP.

Migratory Landbirds

A January 11, 2001 Executive Order outlines the "Responsibilities of Federal Agencies to Protect Migratory Birds." Habitats vary broadly for this large group of species. The removal of standing hazard trees and snags may unintentionally take individual migratory birds, but is not expected to have a measurable negative effect on bird populations because of the limited extent of the habitat removal. The seasonal restriction currently in place will restrict habitat-altering activities between March 1 through July 15, or August 30 if bald eagle surveys result in an extended seasonal restriction. This will reduce effects to nesting migratory birds, as well as non-migratory birds because most of them would have nested and fledged young by that time. Most primary and secondary cavity nesters complete nesting by the end of July (Oregon Breeding Bird Atlas 1995-1999).

One of the hazard trees that will need to be felled for safety reasons on Forest Road 2618-305 contains an osprey nest. It is unknown if this nest was active in 2002. This hazard tree poses a safety issue because this road receives moderate public use, and also provides access to two private residences. The Forest Service has an obligation to the public for the safety and maintenance of forests along road corridors. The selection and assessment of hazard trees



follows regional guidelines (Forest Disease Management Notes, Pacific Northwest Region). They are dead or dying and within striking distance of roadways or turnouts, and constitute a hazard to the roadways or turnouts by the extent and direction of their lean. Removal of identified hazard trees would eliminate the chances of them falling into roadways or turnouts, as well as the likelihood for accidents to occur. Osprey are protected by the Migratory Bird Treaty Act of 1918. Falling and possible removal of the osprey nest tree will be mitigated by a seasonal restriction between March 1-September 15. If the nest is inactive or the young fledge and are independent of the nest tree before then, this restriction may be lifted or shortened. Falling of the osprey nest tree would not impact the species overall, although the particular pair which might be using this tree would need to expend additional energy to build a new nest in the future. There appears to be no shortage of other suitable nest trees adjacent to or near this stretch of the McKenzie River.

/s/Ruby Seitz
Wildlife Biologist



**Results of Prefield Review and Field Reconnaissance
for
Protection Buffer and
Survey and Manage Animal Species**

Willamette National Forest

Project Name: SHADOW SALVAGE AND HAZARD TREE PROJECT

Location: Township 17 South, Range 4 East, Sections 7, 8 and Township 17 South, Range 3 East, Sections 1, 12 as well as hazard trees on roads 2618- 305 and 2618-307.

Is the project ground disturbing? Yes (if yes, then conduct survey if required by matrix) No
(if no, then document in project file)

Species	Habitat Present? Yes or N	Date Surveyed	Surveyors	Species Located	Additional Survey Needs? When and Where?
<i>Megomphix hemphi/li</i> Oregon megomphix	Yes	Surveys not required			
<i>Strix nebulosa</i> Great gray owl	Yes	Surveys not required			
<i>Phenacomys (Arborimus)</i> Red tree vole	Yes	December 18, 2002 February 20, 2003	Shadie Nimer Ruby Seitz	No	No

Survey and Manage species surveys are not required for hazard tree removal ((2001 ROD pg. 22). Though they were not required, protocol surveys for red tree voles were done in the 4-acre salvage unit on December 18, 2002. Identified hazard and adjacent trees along the haul route were individually inspected on Feb. 20, 2003 for red tree vole nests. None were found.

/s/ Ruby Seitz
Wildlife Biologist

Date: 4/7/03



Appendix B-1: Shadow Salvage Botany Biological Evaluation

Introduction

The purpose of this Biological Evaluation is to review the Shadow Salvage Sale in sufficient detail as to determine whether the proposed action will result in a trend toward Federal listing of any sensitive plant species.

Plant Species of Concern:

Current management direction mandates conservation of several categories of rare plants on the Willamette National Forest. Protection of federally listed Threatened and Endangered species is mandated by the Endangered Species Act. No federally listed Threatened or Endangered, or proposed plants, nor suitable habitat for these listed plants are known to occur in the project area. Sensitive species are protected by USDA Forest Service regulations and manual direction (FMS 2672.4).

Prefield reviews were conducted to determine which species from the Regional Foresters 2002 Sensitive Species List for the Willamette National Forest are known from the project area or have suitable habitat present and potentially occur in the project area. Results show no known occurrences of sensitive plant species within the project area. There is no potential habitat for sensitive species in the project area (see Appendix A).

II. Description of the Proposed Project

Location Description:

The proposed salvage sale is located in the Quartz Creek Watershed on the McKenzie River Ranger District, Willamette National Forest, OR. The legal location for the project is: T17S R3E Sec.1 and 12, and T17S R4E Sec. 7 and 8 of the Willamette Meridian, Lane County Oregon.

Alternative A -- No Action

No wind fallen or root sprung trees would be salvaged under this alternative. No hazard trees will be felled and removed along haul routes.

Alternative B -- Action Alternative

Windthrown and wind damaged trees within the project area would be salvaged and harvested. This would provide approximately 79 MBF for saw timber. Hazard trees along the five-mile haul route would be felled to ensure safety. The hazard trees would provide approximately 10 MBF of saw timber. In side the riparian areas, all pieces of wood felled outside the road prism will be left. Outside of riparian areas, trees felled would be retained on the ground if they are needed for course woody debris, the remaining trees would be removed if for saw timber. Trees would be skyline yarded to existing Forest roads. No equipment would leave the existing roads.

III. Existing Environment



Survey Results:

Field surveys using the intuitive-control method were conducted on August 20, 2002 and February 14, 2003 by Susan Stearns. No sensitive plant species or potential habitat for species from the 2002 Regional Forest's Sensitive Plant List for the Willamette National Forest were located during the survey, see Appendix B-1.

IV. Impacts of the Proposed Project

Direct and Indirect Impacts:

This project will cause no direct or indirect effects to sensitive plant because no sensitive plants were observed during surveys of the project area.

Cumulative Effects:

There are no cumulative effects to sensitive plant species because no sensitive plants were observed during surveys of the project area.

Compliance with Management Direction:

This Biological Evaluation has documented the completion of the steps outlined in the Regional Office directive on the 2670 section of the Forest Service manual.

V. Determinations

It is my determination that selection of any alternative will have no impact on sensitive plants and their associated habitat because no sensitive plant species occur within the Shadow Salvage Sale area.

In the event that a sensitive plant population is discovered after the timber sale is sold, Contract Clauses C9.52 and C6.25 will be enforced and project modifications may result.

Prepared by: /s/ Susan Stearns
Susan Stearns
District Botanist
McKenzie River Ranger District

Date: February 20, 2003

Reviewed by: /s/ Cheryl Friesen
Resources Staff
McKenzie River Ranger District

Date: February 20, 2003



Appendix B-2: Willamette National Forest 2002 Sensitive Plant Species List

Species	Habitat Present in Project Area	Species Present in Project Area
<i>Agoseris elata</i>	N	N
<i>Arabis hastatula</i>	N	N
<i>Arnica viscosa</i>	N	N
<i>Asplenium septentrionale</i>	N	N
<i>Aster gormanii</i>	N	N
<i>Aster vialis</i>	N	N
<i>Botrychium minganense</i>	N	N
<i>Botrychium montanum</i>	N	N
<i>Botrychium pumicola</i>	N	N
<i>Calamagostis breweri</i>	N	N
<i>Carex livida</i>	N	N
<i>Carex scirpoidea</i> var. <i>stenochlaena</i>	N	N
<i>Cimicifuga elata</i>	N	N
<i>Coptis trifolia</i>	N	N
<i>Corydalis aqua-gelidae</i>	N	N
<i>Frasera umpquaensis</i>	N	N
<i>Gentiana newberryi</i>	N	N
<i>Iliamna latibracteata</i>	N	N
<i>Lewisia columbiana</i> var. <i>columbiana</i>	N	N
<i>Lycopodiella inundata</i>	N	N
<i>Montia howellii</i>	N	N
<i>Ophioglossum pusillum</i>	N	N
<i>Pellaea andromedaefolia</i>	N	N
<i>Polystichum californicum</i>	N	N
<i>Potentilla villosa</i>	N	N
<i>Romanzoffia thompsonii</i>	N	N
<i>Scheuchzeria palustris</i> var. <i>americana</i>	N	N
<i>Sisyrinchium sarmentosum</i>	N	N
<i>Utricularia minor</i>	N	N
<i>Wolffia borealis</i>	N	N
<i>Wolffia columbiana</i>	N	N



Appendix C: Shadow Salvage Sale Supplemental Botany Report

Introduction

This document serves as the Botanical Resource Report for the Shadow Salvage Sale on the McKenzie River Ranger District, Willamette National Forest. The legal location for the Project Area is T17S. R3E Sec.1 and 12; T17S. R4E Sec. 7 and 8 of the Willamette Meridian, Lane County Oregon.

Sensitive Plants

A prefield review showed no known populations of sensitive plants listed on the Regional Forester's 2002 Sensitive Plant List for the Willamette National Forest. There is no potential habitat for sensitive plant species in the project area. No sensitive plant species or habitats for the species were observed during the survey of the project area.

Survey and Manage Species

The salvage sale area is on the edge of Government and private land. The private land adjacent to the project is clearcut creating a strong edge effect on the project site. This site appears to be too dry and open to be habitat for Survey and Manage species. Surveys were conducted for Category A and C vascular plants, lichens, bryophytes, and fungi. See attached prefield review form for results of the survey. No survey and manage species were observed during the survey.

Noxious Weeds

The noxious weed tansy ragwort (*Senecio jacobaea*) is located in abundance on the adjacent private land. Scotch broom (*Cytisus scoparius*) occurs along the haul route. In my professional opinion it is not possible to prevent tansy ragwort from invading the salvage area. Seeding the disturbed soil as recommended for erosion control will help prevent establishment of this species.

The following mitigation measures will be implemented to reduce the introduction and spread of noxious weeds in the Shadow Salvage Sale area:

- Yarding equipment will be pressure washed to remove all dirt and debris prior to entering Forest land.
- Sources of rock and fill material shall be free of noxious weeds.

Prepared by: /s/ Susan Stearns
Susan Stearns District Botanist
McKenzie River Ranger District

Date: February 20, 2003



**Results of Prefield Review and Field Reconnaissance
for
Protection Buffer and Survey and Manage Plant Species
Willamette National Forest: FY 2002**

Project Name: Shadow Salvage Sale Unit #(s): All

Legal Location: T.17S, R.3E, Sections 1 and 12, and T.17S, R.3E, Sections 7 and 8

Is the project ground disturbing? Yes (if yes, then conduct survey)
No (if no, then document in project file)

Species	Habitat Present ? (Y/N)	Date Surveyed	Surveyor(s) Name(s)	Species Located ? (Y/N)	Additional Survey Needs? When and Where?
* ¹ <i>Botrychium minganense</i>	N	8/20/02	S. Stearns	N	N
* <i>Botrychium montanum</i>	N	8/20/02	S. Stearns	N	N
<i>Bridgeoporus nobilissimus</i>	N	8/20/02	S. Stearns	N	N
* <i>Coptis trifolia</i>	N	8/20/02	S. Stearns	N	N
* <i>Corydalis aqua-gelidae</i>	N	8/20/02	S. Stearns	N	N
<i>Cypripedium montanum</i>	N	8/20/02	S. Stearns	N	N
* <i>Eucephalus vialis</i>	N	8/20/02	S. Stearns	N	N
<i>Galium kamtschaticum</i>	N	8/20/02	S. Stearns	N	N
<i>Hypogymnia duplicata</i>	N	8/20/02	S. Stearns	N	N
<i>Lobaria linita</i>	N	8/20/02	S. Stearns	N	N
<i>Pseudocyphellaria rainierensis</i>	N	8/20/02	S. Stearns	N	N
<i>Schistostega pennata</i>	N	8/20/02	S. Stearns	N	N
<i>Tetraphis geniculata</i>	N	8/20/02	S. Stearns	N	N

¹ * Starred species are also on the Willamette NF Sensitive Species List

Signature: /s/ Susan Stearns
Botanist

February 19, 2003
Date



Appendix D: Shadow Salvage Fisheries Biological Assessment/ Biological Evaluation

The purpose of this biological assessment/biological evaluation (BA/BE) is to document the potential effects of the proposed action on listed species. The two species that will be evaluated are bull trout (*Salvelinus confluentus*) and Upper Willamette spring chinook salmon (*Oncorhynchus tshawytscha*). Both of these species are listed as threatened under the Endangered Species Act.

Project Area Description

The proposed salvage area is located in T17S. R3E Sec.1 and 12; T17S. R4E Sec. 7 and 8 of the Willamette Meridian, Lane County Oregon. Project area is four acres in size and located within the Ennis Creek drainage. The west and north portions of the project area are adjacent to Forest Service Road 2618-317; the east and south sides are adjacent to Rosboro Lumber Company lands that were clear-cut, in the summer of 2000. Bull trout and spring chinook salmon have not been documented in Ennis Creek. They do occur in the McKenzie River which is approximately 3.5 road miles from the salvage area, and approximately 1.5 air miles away. None of the stream crossings on the 2618 road contain fish. The streams are primarily intermittent, but there are also some perennial non fish-bearing streams along the haul route. There is approximately 1 mile of the haul route that parallels the McKenzie River. There is a variable vegetative buffer that ranges between 200 to 600 feet between the 2618 road and the McKenzie River. This buffer will protect the river from dust due to log haul. In addition with only 70 MBF of logs, there should be 15 or 16 log loads hauled from the site. This is an insignificant number and the effects of that haul would not be measurable in the McKenzie River (either by turbidity, suspended solids, or gravel embeddedness).

The project area contains highly productive forest soils and is located on dry, upland ridge. The stand is forested with second growth and mature forests ranging from 80-120 years old. This area is located within a Western Hemlock plant series and sits at a 2000 ft. elevation with 20 to 40 percent slopes.

Proposed Action

The McKenzie River District Ranger proposes to remove approximately 70 MBF of windthrown and root sprung trees that blew down or were damaged during the winter of 2001. Many of the trees are laying across the 2618-317 road, but some are in the small stand adjacent to the road. Root sprung trees are green standing trees that are leaning with exposed roots that have been damaged to the point that they have a high probability of dying. Trees would be harvested and removed by a skyline yarder utilizing the existing road system. In addition, approximately 31 hazard trees would be felled along the five mile haul route. Down woody material would be left for ecosystems enhancement. This project would be implemented summer/fall 2003.

Effects Analysis

No Action Alternative



The No Action Alternative, if selected, would have no effect on listed fish species.

Proposed Action

Ground disturbance that frequently occurs during harvest activities may result in an increased risk of soil erosion and transport of sediment to streams. This issue is not significant to the proposed action because:

- Ground disturbing equipment would be prohibited in riparian reserves.
- The geographic extent of the project is small.
- The project area, with the exception of roadside hazard trees, is located on a dry, upland knob that is approximately one quarter mile from the nearest intermittent stream and 3.5 road miles from the river where bull trout and chinook occur.
- There is approximately 1 mile of the haul route that parallels the McKenzie River. There is a 200 to 600 foot vegetative buffer between the 2618 road and the McKenzie River. This buffer will protect the river from dust due to log haul. In addition with only 70 MBF of logs, there should be 15 or 16 log loads hauled from the site. This is an insignificant number and the effects of that haul would not be measurable in the McKenzie River (either by turbidity, suspended solids, or gravel embeddedness).

Timber harvest activities frequently alter the structure of the forest canopy, resulting in the potential to affect the annual pattern of snow accumulation and run off, which can alter the magnitude and timing of peak storm flows. If this occurs on large portions of the watershed, the potential exists for a cumulative impact on downstream flows. This is not significant to the proposed action because:

- The geographic extent of the project is small in relation to the size of the Quartz Creek watershed (4 acres in a 27,000 acre watershed).
- The action proposes to remove mostly trees that have already blown down so that forest canopy characteristics would not be substantially altered from the existing condition.

There is a watershed wide shortage of coarse wood in streams and riparian areas, and removal of hazard trees from the riparian area could cumulatively add to this shortage. This will be mitigated by the following:

- When cutting hazard trees, and to provide coarse wood to the riparian reserves, portions of hazard trees in riparian reserves that lie outside the road prism after falling will be retained on site. Portions that fall into the roadway may be removed.

Recommended Mitigation Measures

- To minimize the risk of erosion following harvest activities, the purchaser will scarify and seed all landings, and water-bar and seed skid trails as needed, upon completion of harvest activities.



- When cutting hazard trees, and to provide coarse wood to the riparian reserves, portions of hazard trees in riparian reserves that lie outside the road prism after falling will be retained on site. Portions that fall into the roadway may be removed.

Consistency with Programmatic Biological Opinion

The No Action Alternative, if selected, would have **no effect** on listed fish species.

The proposed Action Alternative, if selected, is consistent with the “typical effects” found in the Biological Opinion (February 25, 2003) that have the effects determination of “**may affect, but not likely to adversely affect**” listed fish species and their designated critical habitat.

- This project will not transmit effects to stream channels where listed species are present, and would not disturb a substantial amount of woody vegetation in riparian reserves, and would not decrease stream shade, or bank stability.

Magnuson-Stevens Fishery Conservation Act

Given the above rationale for the effects determination under the Endangered Species Act, this project will not adversely affect Essential Fish Habitat as designated by the Magnuson-Stevens Act.

/s/ RAMON RIVERA
District Fisheries Biologist



Appendix E: SHADOW SALVAGE TIMBER SALE AQUATIC CONSERVATION STRATEGY ANALYSIS *February 18, 2003*

ACS Objective #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.

Watershed Analysis has been conducted for the Quartz Creek Watershed where this project is located. This document describes the important physical and biological processes and features that occur within the landscape. Since the entire project comprises approximately 4 acres plus isolated hazard trees, landscape-scale features would be maintained.

ACS Objective #2: Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

Temporal and spatial connectivity within the watershed would be maintained, since the project is not large enough, or located in a position to affect connectivity between watersheds. The project's location on a ridge-top, far from streams, precludes chemical or physical obstruction of routes to areas critical to aquatic or riparian dependant species.

ACS Objective #3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The project is located on a ridge-top, far from the nearest stream. Hazard trees within riparian reserves will not be removed except for portions that fall into the roadway. This will not affect the physical integrity shorelines, banks, or channel bottoms.

ACS Objective #4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals comprising aquatic and riparian communities.

and

ACS Objective #5: Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate and character of sediment input, storage, and transport.



The project is located on a ridge-top, far from the nearest stream. This location, combined with design measures to control erosion, prevent off site migration of sediment, and restore and maintain ground covering vegetation, will maintain water quality and sediment regimes.

ACS Objective # 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. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

And ACS Objective # 7: Maintain and restore the timing, variability and duration of flood inundation and water table elevations in meadow and wetlands.

The project has no known effects on stream flows or wetland water tables in the watershed.

ACS Objective #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 distribution of coarse woody debris sufficient to sustain physical complexity and stability.

The project, with the exception of isolated hazard trees, is located on a ridge-top that is far from the nearest stream, riparian area, or wetland. Hazard trees within riparian reserves will be retained on site for coarse woody debris, except for the portions of these trees that fall into the roadway.

ACS Objective #9 Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

This project complies with the Northwest Forest Plan, and all of its applicable standards and guidelines. Option 9 was expected to maintain and restore late-successional and old-growth forest ecosystems, and provide adequate viability levels for all late successional species including species listed in the FSEIS ROD Table C-3, and subsequent 2001 ROD Table 1-1. The Watershed Analyses for the Quartz Creek Watershed did not identify any need for increased protection above the ROD recommendations. Adequate amounts of down woody debris will be retained on site. This project will not affect the amount or distribution of these habitats or species that use these habitats.

Prepared/Reviewed by:

/s/Dave Kretzing, Hydrologist

/s/Susan Stearns, Botanist

/s/Ramon Rivera, Fisheries Biologist

/s/Ruby Seitz, Wildlife Biologist

/s/Cheryl Friesen, Resources and Planning Staff Officer, and Wildlife Biologist

/s/John Allen, District Ranger

