

Sparrow Blowdown Salvage

Environmental Assessment

**Siuslaw National Forest
South Zone Ranger District
Douglas County, Oregon**

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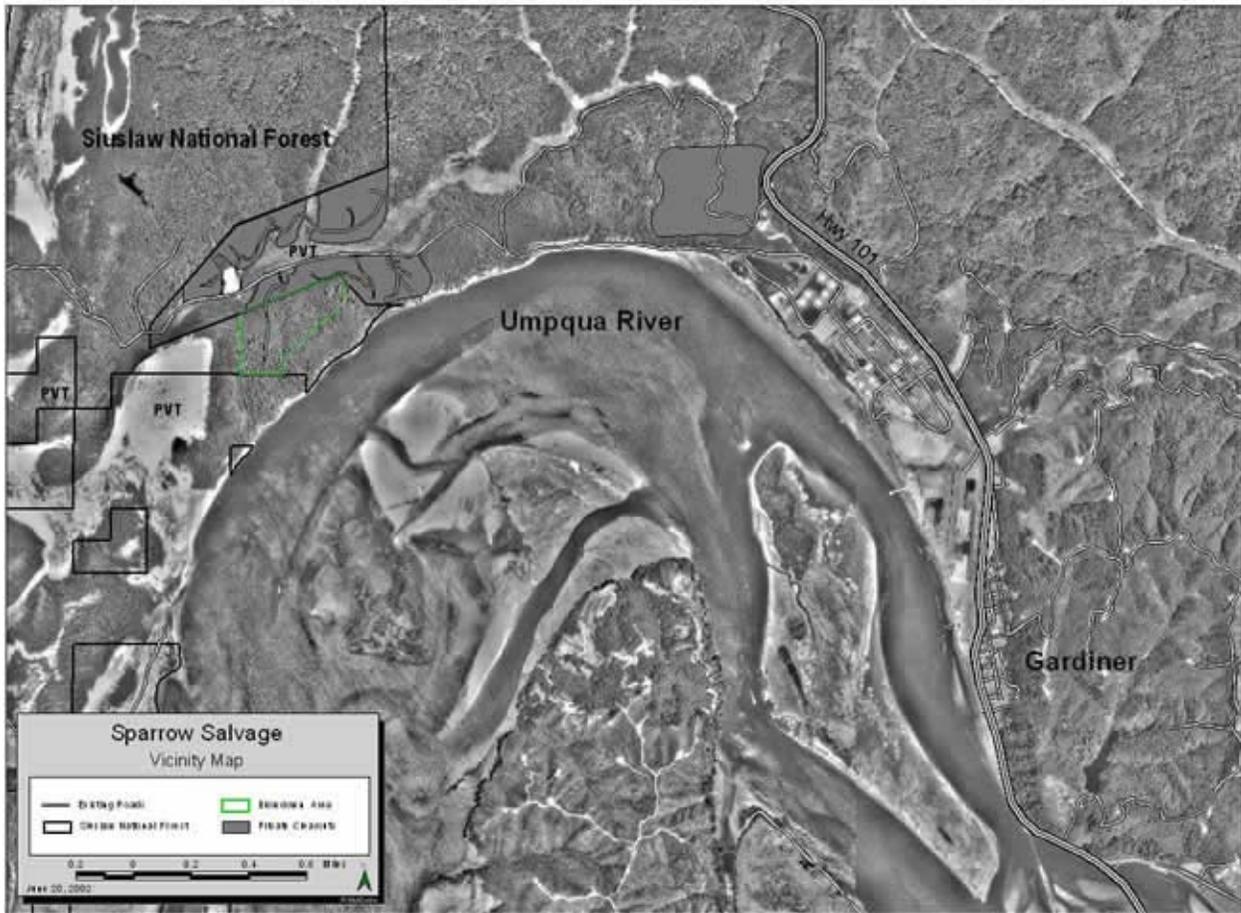
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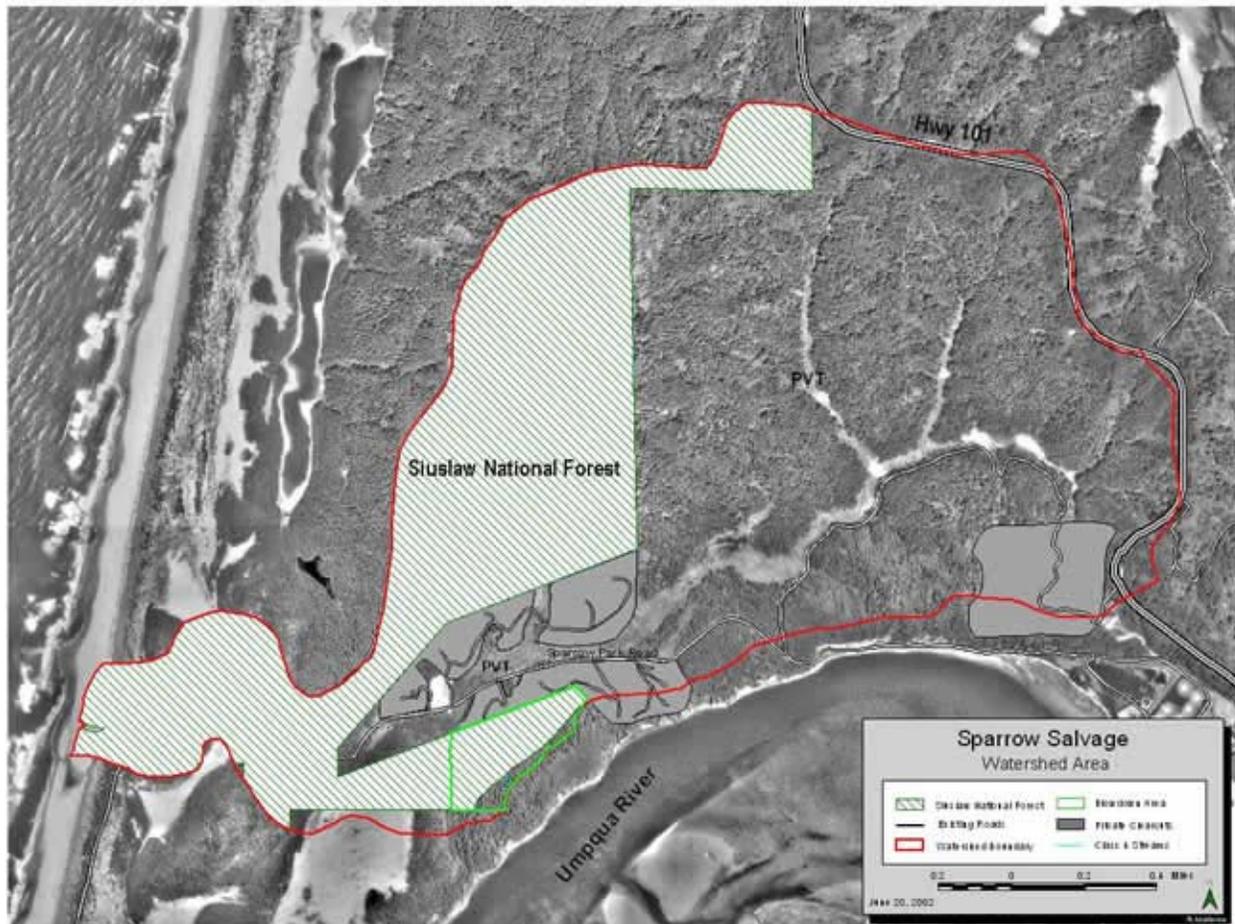
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Vicinity Map



[Link to view map at 11.3 x 14.8 inches \(325kb\)](#)

Threemile Watershed Map



[Link to view map at 11.3 x 14.8 inches \(333kb\)](#)

Sparrow Blowdown Salvage

Analysis File

- A. Scoping and Public Comments
- B. Fisheries Biological Assessment
- C. Wildlife and Plants Biological Evaluation
- D. Special Status Plant Review
- E. Silviculture Prescription and Vegetation Management Plan
- F. Fire and Fuels Assessment
- G. Hydrology and Soils Assessment
- H. Heritage Resource Report
- I. Internal Correspondence
- J. Logging Plan
- K. Economic Analysis

The Planning Area

The planning area for the Sparrow Blowdown Salvage Environmental Assessment (EA) is located on the Oregon Dunes National Recreation Area (ODNRA) in portions of the N1/2 SW1/4 and S1/2 NW1/4 of section 17T.21 S., R.12 W., (refer to Vicinity Map, page iv). The area lies in the Threemile sub-watershed (refer to the Watershed Area Map, page v), about 4 miles north of Reedsport. It is bordered on the north by previously harvested (1996) Roseburg Resources lands and on the south by Douglas County lands that are planned for harvest this summer. A newly constructed Douglas County road traverses through the planning area to access adjacent county ownership.

Proposed Project

The Siuslaw Forest Supervisor proposes a temporary non-significant amendment to the Oregon Dunes Management Plan to authorize and implement the sale and harvest of about 45 acres of blow down timber using skyline and ground based or helicopter logging system. The amendment would terminate upon closure of harvest activities.

The Problem (Issue) To Be Addressed

Based on available information, and direction from the Siuslaw Forest Plan and the Oregon Dunes Management Plan as amended by the Northwest Forest Plan, Forest Supervisor Gloria Brown identified the following problems:

- Reducing the threat of a wildfire spreading onto adjacent private lands while protecting the existing wilderness attributes that may affect the potential inclusion of an inventoried roadless areas into the wilderness preservation system; and
- Meet the obligation to replace contracted timber volume while minimizing on other National Forests the amount of harvest on mature natural stands used to provide the replacement volume.

Evidence Used by the Forest Supervisor in Deciding to Address These Problems

On February 7, 2002, a major windstorm blew down 45 acres of trees on the National Forest and additional acreage on adjacent Douglas County lands. The area was previously harvested in the 1930's and the stand naturally regenerated to mostly Sitka spruce with some Douglas fir and western hemlock. Natural regeneration of the stand led to extremely high stocking levels resulting in a single storied stand of small diameter trees. Most of the stand averages 14" in diameter and 400 stems per acre but also has some scattered large trees of about 150 years old. The amount of down material on the site is in excess of 340 tons per acre, well above what would be naturally occurring in this type of stand (about 20 tons per acre in natural stands (*Late-Successional Reserve Assessment, Oregon Coast Province, Southern Portion*, June 1997)).

This blow down occurs in an area of high public use, increasing the risk of a human caused fire occurrence. The adjacent private lands have previously been harvested and the resulting slash has been left untreated. If a fire were to start in this area, the ability to control its spread onto private land would be unlikely. The prevailing wind pattern is likely to cause the fire to burn toward the town of Gardiner Oregon, less than two miles away.

The Oregon Dunes National Recreation Area was established in 1972 to provide a wide range of recreation opportunities to the public while allowing for the protection of adjacent landowners from escaped wildfires. In the Record of Decision (ROD) for the Dunes Management Plan, July 12, 1994, the Forest Supervisor recognized that timber harvest was not specifically addressed in the legislation establishing the ODNRA (Public Law 92-260) but that there may be instances where commercial timber harvest may be necessary to achieve other resource objectives such as hazard reduction and habitat diversification (Chapter III, page 14). Management of vegetation to reduce the threat of wildfires to public safety and property was also identified in the ODNRA Management Plan (Chapter III, page 14).

The stand of blow down is in Management Area 10(F) – Plant, Fish, and Wildlife Habitats of the ODNRA Management Plan (Chapter III, page 42). The goal of this management area is “To maintain, create, enhance, or restore a variety of special plant, fish, and wildlife habitats.” The desired conditions should provide optimum physical and biological conditions necessary for native plant, fish, and wildlife communities in an area that is predominately natural in appearance and has low human use and disturbance. Forest habitats are further described to include “multiple vegetation layers with a relatively undisturbed shrub layer”... “with snags and down logs present in numbers expected to occur naturally.” These goals and objectives are in conflict with Standard and Guideline F-17 that states, “leave all dead and down woody material”. This project would issue a project specific plan amendment to leave down woody material at naturally occurring levels.

Pursuant to Section 2001(k)(3) of the Rescission Act (Public Law 104-19) and the September 17, 1996 settlement agreement in Northwest Resources Council vs. Glickman and Babbit, the Forest Service is obligated to replace timber volume previously under contract that was withdrawn from harvest to protect the marbled murrelet. Under the Act and the agreement, such alternative timber volume must be "an equal volume of timber, of like kind and value, which shall be subject to the terms of the original contract (or as otherwise acceptable to the purchaser)." The timber blown down in Sparrow Salvage meets the replacement volume criteria, thus it provides an opportunity to meet an existing obligation. This negates the need to harvest mature standing green timber.

Scoping

To help identify public concerns about the proposed project, interested citizens, organizations, regulatory agencies, and local governments were informed about this proposal. Public comment on the proposal was solicited through the Siuslaw National Forest’s quarterly “Project Update” publications and public scoping letters. Scoping letters were mailed on May 21, 2002. Comments were requested by June 6, 2002. Five letters or phone calls were received.

In addition to meeting the identified needs, the range of alternatives considered reflects concerns raised during public scoping for this EA, and concerns raised during monitoring of other District projects. The merits (including the effectiveness) of the proposed project are that wildfire hazard will be reduced and that replacement timber volume can be provided.

Alternatives Considered But Eliminated from Detailed Study

During scoping, a concern was raised regarding the safety of the logging crew while working near retained standing wind firm trees and snags. The Proposed Action objective is to retain all sound standing live trees and all snags greater than 14 inches dbh and 20 feet in height while providing for the safety of the operation. It is understood that trees and snags in close proximity to landings and skyline corridors would be cut. It is also understood that other trees and snags that would put any person connected with the harvest operation at risk would also be cut. The minimum retention objective for snags and down trees is an average of 1000 to 1500 cubic feet per acre. While there may be less than this amount in some areas where more hazard exists, there would be a larger amount in other areas.

This objective was discussed on-site with a Safety Compliance Officer from the State of Oregon Department of Consumer and Business Services. It appears that the Proposed Action objectives for live tree and snag retention are consistent with state safety regulations. Therefore, an alternative that would cut all snags and standing green trees was not fully developed.

Alternatives Considered in Detail

Design criteria (identified below) outline the practices to be used, including their timing and duration, when planned actions and activities are implemented. Mitigation measures for all proposed actions are covered by the design criteria.

Alternative 1: Active management to reduce the threat of wildfire (Forest Service's Preferred Alternative)

Actions included in this alternative are designed to address the problems identified by the Forest Supervisor. The actions incorporate the following: standards and guides established by the Siuslaw Forest Plan, as amended by the Northwest Forest Plan; standards and guides established by the ODNRA Management Plan as amended by this environmental assessment; the design criteria; and monitoring protocols outlined below. Selecting this alternative would result in the following actions:

To quickly reduce the threat of wildfire and establish a new stand, the following activities are proposed:

- Issue a temporary amendment to the ODNRA Management Plan to authorize and implement the sale and harvest of trees that blew down in the Sparrow Park area;
- Commercially harvest 45 acres of blow down;
- Prescribe burn remaining fine fuels and logging slash piles;

- Utilize natural regeneration and plant mixed conifer stock to establish a new stand;
- Seed disturbed sites lacking canopy cover (tractor firelines, landings) with native grass mix to reduce noxious weed competition.

To reduce the existing backlog of obligated replacement sale volume the following actions are proposed:

- Offer the Sparrow Salvage Sale to a purchaser qualified for replacement volume.

Design Criteria for the Proposed Action

The following design criteria will guide the above activities:

Fire hazard reduction:

- Reduce fire hazard fuels to approximately 20 tons per acre;
- Conduct a post-harvest hazardous fuels analysis to determine the need for broadcast burning and burn if fuels must be further reduced to meet hazard reduction objectives;
- Design the broadcast burn prescription to minimize consumption of retained snags and coarse wood;
- Broadcast burn at a low intensity that would reduce fine flashy fuels but not consume retained logs, snags and trees;
- Burn landing piles if the unit is not broadcast burned;
- Broadcast burn in compliance with Smoke Management standards and in coordination with the State Air Resources Board.

Noxious weeds:

- Require Cleaning of Equipment C6.343 (OPTION 2) for all ground based logging equipment (6 acres shovel logging) and tractor fire line construction equipment;
- Seed landings and tractor firelines with competitive natural (if available) grasses.

Aquatic habitat/Water quality:

- Retain down trees in stream channels;
- Retain 5 down trees per 100 feet of designated stream channel (refer to map on page 7); retain trees that have root wads attached and that currently span the stream;
- Remove and stockpile approximately 20 blown down trees with root wads attached for use in future fish habitat restoration projects. These trees are flagged with pink ribbon and are located as shown on the KV map, page 7;
- Apply practices as described in General Water Quality Best Management Practices (BMP's), Pacific Northwest Region, November 1988.

Wildlife habitat:

- Retain standing wind firm trees as safety permits;
- Retain snags as safety permits;
- Selection of standing trees and snags for retention will be based upon *Oregon Guidelines for Selecting Reserve Trees*, Oregon Occupational Safety & Health Division, 1995.
- Retain down trees for coarse wood. Retained snags will be greater than 14" diameter at breast height (dbh) and 20' tall;
- Retained down trees or snags will be in the amount of 1000 to 1500 cubic feet per acre of per acre. Retained snags greater than 10 inches dbh and 10 feet in height will count toward this coarse wood requirement. Snags are a higher priority and would be counted

before down trees or logs. After snags, down trees and logs would make up the difference;

- If a new nest site (marbled murrelet, bald eagle, or spotted owl) is discovered in the vicinity of the project area, a unit wildlife biologist will evaluate the potential for negative impacts to nesting within 0.25 mile of the nest site (0.5 mile line-of-site for bald eagle nests), and will apply appropriate restrictions if necessary;
- Plant tree seedlings at wide spacing of not more than 120 trees per acre to promote accelerated growth and development of large trees with moss-covered limbs in lower portions of trees.

Logging systems/Log haul:

- Harvest trees with skyline and loader logging harvest systems or with helicopter;
- Acquire Temporary Road Use permits to facilitate timber haul over Roseburg Forest Products, Douglas County and Port Blakely managed roads;
- Acquire Temporary Land Use permit from Roseburg Forest Products for yarder tailhold and guyline anchors;
- Acquire Temporary Land and Road Use from International Paper Company for helicopter landing and road use if helicopter is the selected harvest method;
- Loader logging may be utilized on slopes less than 30% (for locations, refer to map on page 8);
- Conduct skyline and loader logging operations from the newly constructed Douglas County road that traverses through the project area and from a Roseburg Resources road that is directly adjacent;
- Utilize the “barrow pit” on International Paper Company land as a helicopter landing if a helicopter logging system is used;
- Season of operation is year-round. Approximately 465 cubic yards of locally available crushed concrete for a road base and 100 cubic yards of crushed aggregate for a cap on the first 500 feet where the road is steep is planned;
- Protect property monuments within and adjacent to the project area (refer to map on page 9);
- Provide traffic warning signing during commercial haul periods on Sparrow Park road.

Monitoring for the Proposed Action

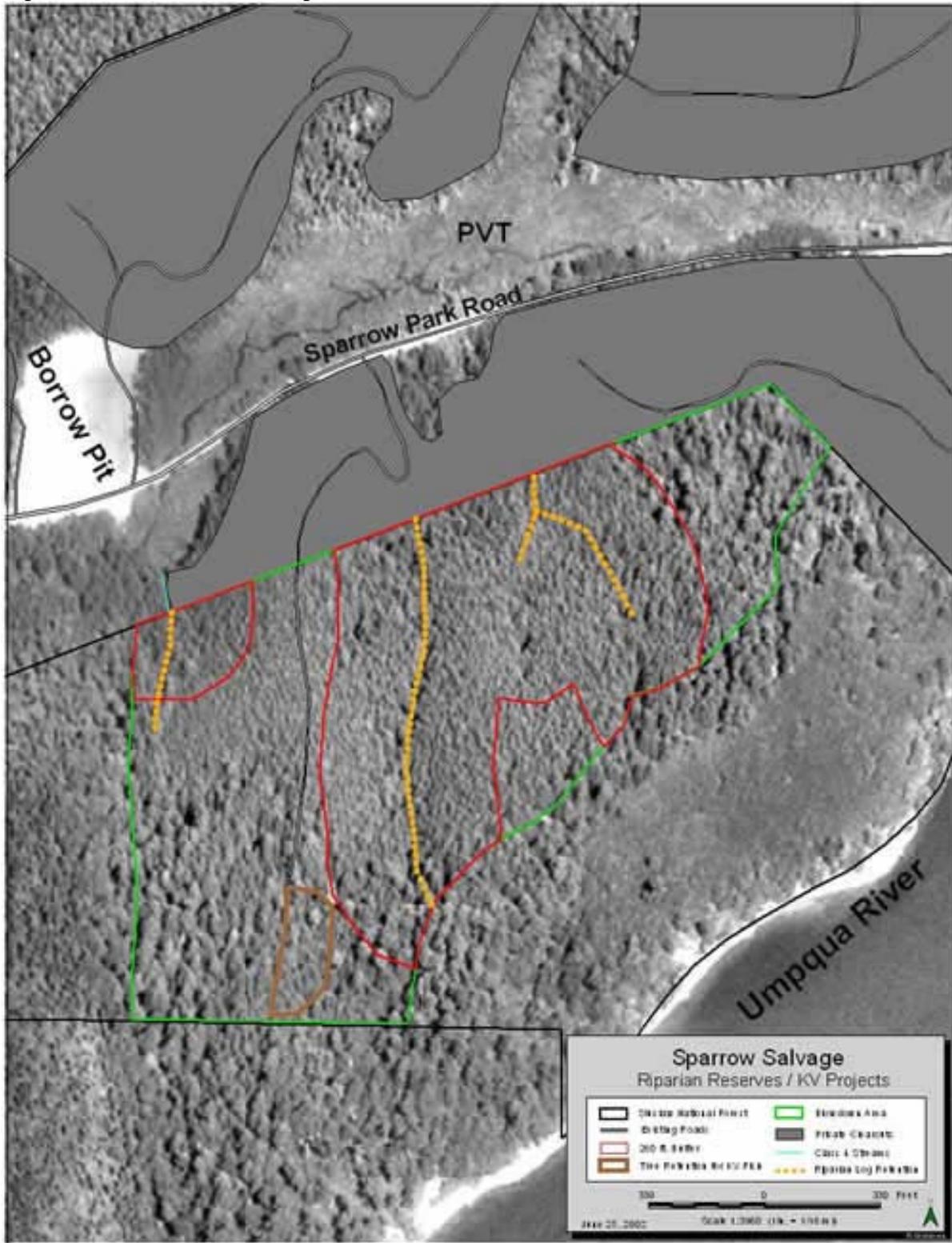
- Conduct annual noxious weed detection monitoring for three years following harvest;
- Conduct 2 and 6-year reforestation surveys to assure accomplishment of reforestation objectives.

Alternative 2: No action

The no-action alternative is required by Council of Environmental Quality regulations (40CFR 1502.14(d)). The no-action alternative forms the basis for a comparison between meeting the project needs and *not* meeting the project needs. This alternative provides baseline information for understanding changes associated with the action alternative and expected environmental responses as a result of past management actions. Selecting this alternative would continue the following existing resource situations:

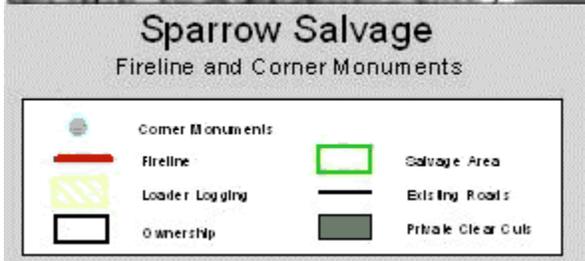
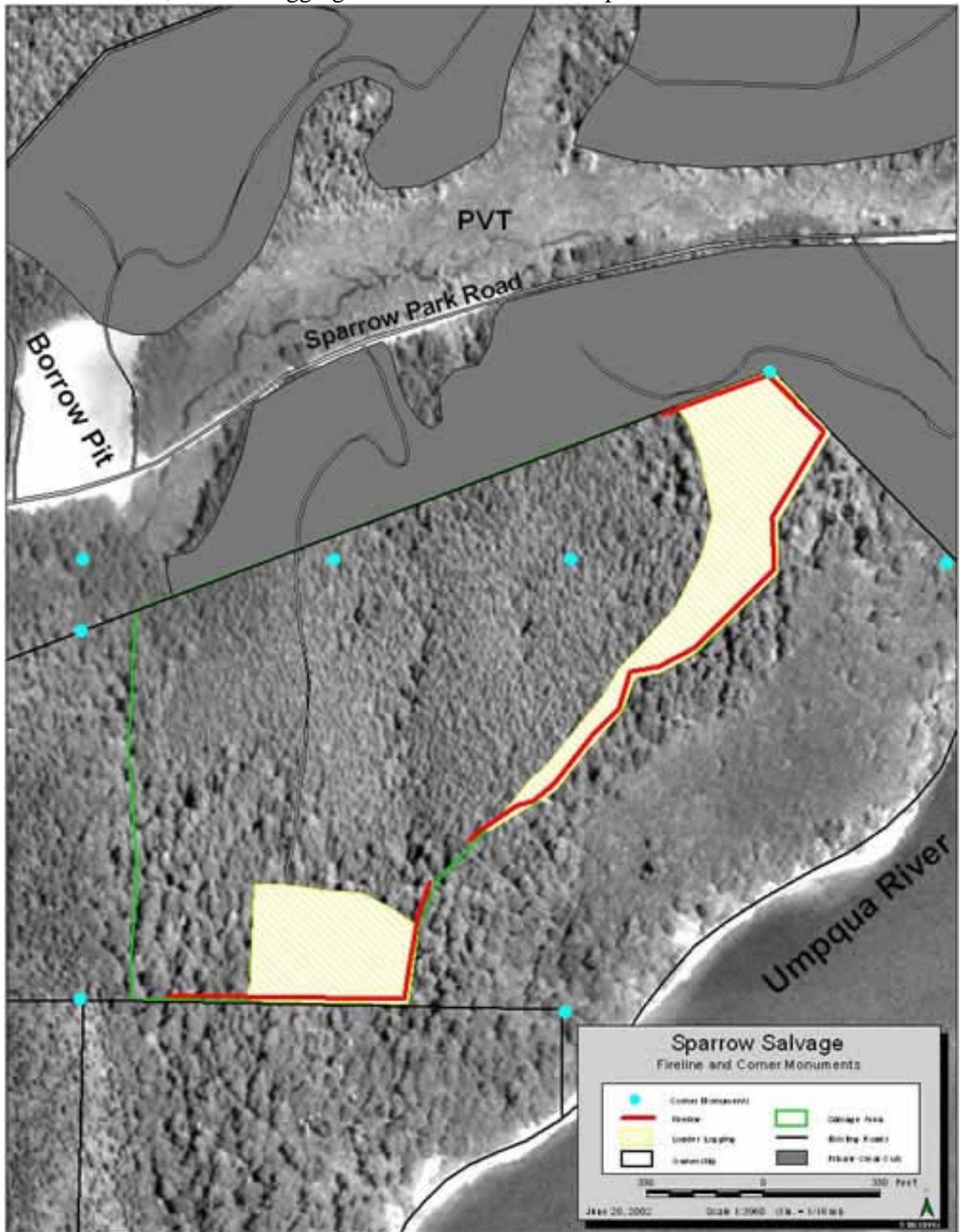
- All blow down will be retained on the site and allowed to decay;
- The area will regenerate naturally from adjacent seed sources.

Riparian Reserve and KV Map



Link to map at 14.8x11.3 inches (219kb)

Corner Monuments, Loader Logging and Tractor Fire line Map



Link to map at 14.8x11.3 inches (217kb)

In this chapter, team members' names accompany their written contributions to indicate that they believe the cited references are relevant, the inferences drawn from them are appropriate, and the predictions are supported by the cited literature and their own professional judgment. In this section, a single author uses "I"; when "we" is used, it means one or more other team members concur.

In this chapter, we predict the likely environmental effects of the proposed alternatives, whose outcomes are based on the assumption that the project design criteria have been followed.

Based on the science literature and our collective experience, we are confident in the accuracy of our analysis of the **current** conditions discussed in chapter 1. In chapter 3, when we describe the environmental effects of each alternative, we are **predicting** those effects based also on the literature and our collective experience; however, we recognize that predictions are inherently uncertain, some just a little and some highly.

Fire Hazard Reduction—Predicted Effects of Activities To Address the Reduction of Hazardous Fuels

Forest stand regeneration (Stu Johnston)— The area is expected to naturally regenerate with Sitka spruce from adjacent seed sources. Planting Douglas fir and western hemlock at a wide spacing will provide some species diversity, similar to present stand composition. Maintaining spacing between trees wide enough to maintain crown ratios in the 50% to 70% range will provide root and tree structure more resistant to blow down.

Under alternative 2, a more sporadically stocked predominantly Sitka spruce stand will develop without removal of present material and competing vegetation. Wind firmness will depend on regeneration success from natural seeding and subsequent future density management, if needed.

Project economics (Don Large)--Commercial timber removal under Alternative 1 will produce about 1,300 thousand board feet (MBF) or 2,800 hundred cubic feet (CCF). A MBF to CCF conversion factor of 2.1 was used for this analysis.

The economic analysis used the transaction-evidence appraisal (TEAECON) program developed by the Mount Hood National Forest. This program--developed for planners in Oregon and Washington--is used to analyze basic gross timber values and develop estimated advertisement rates for sales greater than 250 thousand board feet (MBF). The advertised rate reflects recent market conditions for thinning sales in Region 6 and is the minimum amount needed to cover Forest Service expenses associated with planning, sale preparation, and sale administration; logging and associated costs; the required minimum collection (0.30 x total CCF volume) for the

National Forest Fund (NFF); 10% of gross receipts to roads and trails (a NFF collection); and costs for essential KV projects.

Two harvest systems were considered: Skyline with 6 acres of loader logging and helicopter. Based on recent (April 2002) market rates in Oregon and Washington, the advertised rate for the sale of timber under Alternative 1 would be \$78.37 per CCF for the skyline and loader system. At this rate, there is sufficient revenue to cover essential KV reforestation costs, KV mitigation plantation release, KV non-mitigation stream structure (logs) transportation, as well as a \$105,969 salvage sale fund (SSF) collection. The advertised rate for the sale of timber under Alternative 1 for the helicopter system would be -\$28.10 per CCF for the helicopter system. It is anticipated that there is sufficient revenue to cover essential KV reforestation costs, KV mitigation plantation release, and KV non-mitigation stream structure (logs) transportation. Under the helicopter option, no collections to the salvage sale fund could be made nor could Forest Service planning and administration costs be met. This would be a below-cost sale. Table 1 summarizes the sale value, collections, costs, and the balance for Alternative 1. Depending on future market values for this type of timber, the balance could be increased or decreased.

Table 1. Estimated sale value, collections, KV project costs, and balance

Alternative/ Logging System	Total sale value	Minimum NFF collection s	Essential KV and KV mitigation projects	SSF collections *	KV non- mitigation projects	Gross Balance	Forest Service Costs	Net Balance **
1 Skyline	\$219,273	\$700	\$10,174	\$105,969	\$4,500	\$97,930	\$97,930	\$0
1 Helicopter	\$52,630	\$700	\$10,174	\$0.00	\$4,500	\$29,926	\$97,930	-\$68,004

* To maintain a continuing salvage sale program, collections are made to maximum of \$47.42 per ccf

** The helicopter option for Alternative 1 will not cover Forest Service planning costs, thus this would be a below cost sale

Terrestrial Species (Doug Middlebrook, Dan Segotta)

Threatened, endangered or sensitive wildlife species—There is no anticipated effect on any of these species. Either no suitable habitat exists within the project area, suitable habitat is present within or adjacent to the project area but proposed treatments are not expected to impact local populations, the suitable habitat is unoccupied, or the project area is outside the known range. In the case of the Northern bald eagle suitable habitat exists adjacent to project area, but surveys revealed no individuals within ½ mile of project site.

Threatened, endangered or sensitive plant species-- There is no anticipated effect on any of these species. No suitable habitat exists within the project area.

Management indicator species-- There is no anticipated effect on any of these species. Suitable habitat is present within or adjacent to the project area but proposed treatments are not expected to impact local populations.

Survey and manage terrestrial species--Standards and guidelines within the Record of Decision

for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD) require survey for certain species of rare plants and animals before ground disturbing activities are conducted. The only survey and manage species subject to pre-disturbance surveys in the project area is the red tree vole, *Phenacomys longicaudus*. The project does not propose to remove suitable red tree vole habitat, thus no surveys are required. Therefore, implementation of the proposed action is not anticipated to impact the red tree vole.

Survey and manage vascular plants, fungi, lichens, and bryophytes--No known sites of survey and manage plant species are recorded within the project area. Blowdown adjacent to larger trees on the south end of the project area are potential habitat for several species of lichens. Protocol surveys were conducted during May of 2002 with no positive lichen sites discovered.

Land birds--Project activities will remove 45 acres of down and unstable standing trees. Since the project will occur during the land bird-nesting season, there is potential for nesting disruption or harm to young of the year if birds have nested within the blowdown. However, due to the small scale of the project area, and lack of harvest in existing standing green timber, negative impacts to local populations of land birds are not expected. No intentional take of migratory birds will occur under this project.

Hydrology (*Johan Hogervorst*)

The area under consideration is located in the Threemile sub-watershed and is dominated by sandy soils that were once open dune sand. The nature of the open dunes that once existed here can best be described as transient. Encroaching vegetation over time has stabilized this condition and altered the ecosystem. Main stem perennial stream channels below the project site are sandy bottom and marshy in nature, with little conifer vegetation due to the wet condition.

The soils on the project site have very little water holding capacity, which lends to ephemeral flow for all channels on the project site. The dunal sheet along the coast has a simple dunal aquifer that is recharged during winter rains (60-80 inches per year). It has been estimated by Hampton (1963) in other locations on the dunes that about 75% of water that falls on the dunal sheet reaches the aquifer. The rest flows as surface water in intermittent stream channels or is pumped by vegetation back into the atmosphere. A small amount is perched by impermeable iron layers in the soil profile, producing ephemeral lakes and wetlands in the dunal sheet.

There will be minimal effects to the hydrology from the proposed action for the following reasons:

- Streams within the area are sandy bottom, intermittent channels that are not susceptible to sedimentation. Any new sand entering channels will most likely be from blown down trees that have been uprooted near channels.
- Soils are very porous with little potential for long-term compaction, allowing overland flow to quickly infiltrate in unroaded and lightly compacted areas.
- Mitigations will be used on existing and designated roads to limit potential for surface erosion and soil displacement.
- Large wood left on hill slopes and in stream channels will allow natural development of soils and channels over time.
- Burning of the area for site preparation and fuels reduction will be done in a low intensity fashion to protect soils and stream channels.

The hydrologic regime of the project area has been altered by the catastrophic natural event that has occurred here. Salvage harvest of some of this downed material while leaving approximately 20 trees per acre on hill slopes and 5 trees per every 100 feet of intermittent stream channels will allow recovery of watershed conditions with little additional effects from harvest over and above the effects from the natural catastrophe.

Under Alternative 2, there will generally be more water available to both surface and subsurface hydrology given the nearly complete loss of trees from this 45-acre site. The amount of water pumped out of this area by trees (evapotranspiration) prior to the blow down event is unknown. Under this alternative, trees and shrubs that recolonize on site will cause evapotranspiration to recover within 10 to 20 years.

Under Alternative 2, some localized surface erosion into intermittent stream channels may occur from trees that have blown down on the steep banks of some of these channels. Given that stream channels in this area of the dunes have only sand substrate, elevated sediment input is not a detriment to these streams. Currently, trees that have fallen into the channels in question will also help to maintain channel form over time. Fallen trees that have traversed the stream high above will eventually break and fall into the stream over the next century, assuring a long-term source of wood.

Soil productivity (*Johan Hogervorst*)

The salvage area is covered by Svenson loam soil type (Douglas County Soil Survey, Not yet in print). It is described as a well-drained soil with moderate hazard for surface erosion. Generally, this soil is described as having a 12-inch surface layer of very dark brown or very dark grayish brown loam and a 29-inch sub-surface layer of very dark brown loam or clay loam. Observations of the soil profile near the root wads of blown down trees on the site do not confirm the soil survey description. Although there is a surface layer of darker soil caused by incorporation of organic material, subsurface layers are pure sand, and not loam and clay loam as stated in the unpublished soil survey. For the purposes of this analysis, it will be assumed that soil is sandy and well-drained as observed on site.

Approximately 1,400 feet of existing road would be used to access this area to harvest downed trees with both ground-based and skyline systems. An additional 2,750 feet of designated skid trails will be flagged as straight, lateral routes off the existing roads to accommodate 6 acres of ground-based yarding. The designated trails will most often be a “one pass in, one pass out” access on flat, ridge-top terrain, where a tracked loading vehicle will be shuttling and bunching trees. All these existing and designated routes will be on slopes between 0 and 20 percent with occasional pitches up to 30 percent.

Compaction on the designated trails will be minor in this project area due to (1) the soil type, (2) the amount of logging slash on site, and (3) the minimal number of passes on each trail. Sandy soils have little structure that needs protection and a single-grain particle size that does not compact well. Logging slash that accumulates on trails during harvest can greatly reduce pressure on soil, and a bed of slash will be laid out in front of the machine as they move through the 6 acres of ground-based logging areas. The low number of passes will also minimize disturbance.

There are three main north-south running ridges within the project area. Skyline yarding equipment will be set up on the ridge farthest west in the harvest area and lines will be tied off to tail trees on the ridge farthest east. There will be some soil displacement on the middle ridge due

to trees that will partially drag across this ridge during yarding toward the west ridge. Overall effects to this middle ridge will be minimized by existing downed trees on this middle ridge, which will help to buffer against soil damage in most locations. Also, whole trees being yarded will sweep this middle ridge with their green tops, which will cause less damage than if the butt ends were to hit the ridge.

An additional effect on soil as part of the project will be the construction of 3,000 feet of dozer fire line. A tracked dozer will blade a line around about ½ the unit boundary on slopes less than 30% slopes. All burnable material will be scraped from this fire line in a swath about 10 feet wide. Water bars will be installed every 100 feet to prevent surface erosion from this fire line. Construction of this fire line will cause displacement of soil and removal of the organic soil layer from this trail, but compaction will be minimal. The estimated acreage of fire line is approximately 0.7 acres, some of which may overlap with designated trails mentioned above. It is estimated that reestablishment of the soil organic layer will take two decades or more, as vegetation reestablishes and organic material falls onto the site once again.

To reduce the high fuel loading and aid in site preparation for replanting, the site will be burned after harvest. At risk during this burn are: 1) soils on steeper slopes (>40%) that can be over heated by an intense burn that includes convective heating, and 2) stream channels that tend to funnel convective heat, burning up the large wood component and over heating soils. When soils are over heated in intense burns, nutrients in soil can be volatilized and lost, and soil can literally be cooked, producing a hardened layer that resists infiltration. Both of these risks will be greatly reduced by burning during weather and fuel moisture conditions most conducive to cooler burns that only eliminate the light slash and move quickly through the project site. There may be small, localized pockets of intense burning but these should be limited to under ½ acre of the project site. Lighting of this fire will back down into the edges of channels but will not be lit in channels themselves.

Potential for surface erosion within the project area will be minimal due to vegetation left on site. To prevent potential for rutting and subsequent surface erosion from vehicle use, all existing roads and designated trails on site will be blocked or gated to prevent public use.

Overall effects to soils from salvage logging at this site will be minimal and within acceptable levels, especially compared to what has already occurred naturally due to blow down. Sandy soils are less likely to suffer losses in productivity due to harvest equipment. Quantities of woody material left on site will aid soil development over time.

Under Alternative 2, as a result of the blow down severity, the soil mantle on the 45-acre project area is highly disturbed. When trees blew over, their root wads came out of the ground creating large holes and adjacent mounds around the exposed roots, resulting in massive soil displacement. With the larger trees, the distance from the top of these mounds to the bottom of the holes is between 10 and 15 feet. An extremely hummocky terrain has been created, and from observations of both managed and unmanaged areas on the Siuslaw National Forest, these wind fall hummocks can last for decades on the forest floor.

Under the No Action alternative, large trees that have blown over would be left on site to decay and become part of the soil over time. Added organic material from these downed trees would affect soil development, in the short-term by the decay of the needle material and longer-term through breakdown of the woody component. Short-term decay would be in the order years whereas decay of the woody component would be over centuries.

Currently, 1,400 feet of native surface private road crosses the west side of the project area. Assuming this road has a 20-foot wide zone of influence, this equates to approximately 0.6 acres of the forested area is in a compacted state, or about 1.3% of the area. This compacted area would stay in a non-productive state over the long term.

The 0.6 acres of road represent virtually the only location at risk for soil erosion over the long-term under the No Action alternative. Due to the amount of woody material on site, the existence of so much hummocky ground, and the generally porous nature of the sandy soils here, the rest of the project area would not likely be subject to surface erosion over the long term.

Fire (*Carl West*)

The Forest Service preferred alternative would allow the removal of the majority of the large fuel load decreasing the resistance to control issue immensely and allow for easier access to the area for fire suppression activity. A post harvest evaluation will be completed to determine the need for and level of treatment required to reduce the hazard to an acceptable level of medium risk and resistance to control. Reduce the fuel loading to 15 to 20 tons per acre and consume the majority of the fine fuels, 1" to 3". Broadcast or swamper burning will be conducted at a time when objectives can be accomplished with less risk of escape than during wildfire conditions.

Under Alternative 2, the area would remain in its current condition and is expected to be in an extreme fire hazard and risk for the next 5-7 years. The models show this area to exhibit 350 to 400 tons per acre of generated slash with anticipated flame lengths of 20-30 feet and spotting of up to .5 miles. The resistance to control in an untreated condition is beyond the capabilities of any handwork and will require some kind of mechanized machinery to penetrate the downed woody fuels. Left untreated adjacent to a highly used public access point to the beach, creates a situation of extreme concern for a human caused ignition source.

Heritage resources (*Phyllis Steeves*)—

A thorough literature search was conducted to determine if heritage resources (prehistoric or archaeological sites) are known to exist in the planning area, or have the potential to be adversely effected by proposed project activities. Included in the literature search were district site files, homestead records, land and cultural resource surveys, maps, land status atlas and local historical publications. In addition, resources provided by the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians and a documentation review of a joint Tribal-Forest survey indicated that no known sites will be impacted by proposed activities.

Noxious weeds (Dan Segotta)--Noxious weed colonization of the project area following harvest would be similar to that described for Alternative 2 below with the exception that Scotch broom colonization is anticipated to increase in some portions of the project area. Landings within the project area have potential for moderate to heavy Scotch broom infestation (vehicle and equipment seed vectors). Shovel logging areas and tractor fire line have potential for moderate Scotch broom infestation.

Following the prevention design criteria for competitive seeding and cleaning of equipment should reduce the risk of noxious weed infestation to acceptable levels over most of the project area. Mitigating actions will be required to control scotch broom on landings and along the county road (estimated 2 acres total). As planted trees and native brush species recapture the area isolated individual weeds within are expected to be shaded out.

Under Alternative 2, noxious weed colonization of the project area following a natural disturbance event (wind-throw in February 2002) would be anticipated. Himalaya berry and tansy ragwort (bird and wind seed dispersal vectors) would be the predominate weed species. Weed populations would remain light and native vegetation (brush) would be expected to recapture most of the area. A moderate level of Scotch broom colonization is anticipated along the new county road.

Recreation (Don Large)—Before the blowdown occurred, recreation activity was primarily limited to mushroom picking and big game hunting. Removal of most timber will provide opportunity for individuals to walk safely through the area many years earlier than if left as currently exists. Harvest and probable subsequent burning will also substantially reduce wildfire risk from recreational use. A temporary increase in large vehicle traffic during commercial harvest operations will increase public traffic safety hazards.

Under Alternative 2, little recreation activity would be expected for at least two decades due to difficulty in hiking through the tangle of down trees. Individuals can be expected to walk the county road that traverses through the National Forest blowdown area, however.

Roadless area (Paul Thomas)--The project area is in the 3062 acre Umpqua Spit Roadless Area (6160). The closest designated wilderness is the Rock Creek Wilderness about 15 miles north of Florence Oregon. The Wilderness suitability report Oregon Dunes National Recreation Area (USDA Forest Service, 1976), the Roadless Area Review and Evaluation (USDA Forest Service, 1979) and the Siuslaw National Forest Land And Resource Management Plan (USDA Forest Service, 1980), previously evaluated the area for possible inclusion in the National Wilderness Preservation System.

The Wilderness Act of 1964 defined wilderness in the following way:

“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which – (a) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (b) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (c) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; (d) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

Though identified for potential inclusion in the wilderness preservation system by the Roadless Area Review and Evaluation process, the Oregon Wilderness Act of 1984 (Public Law 98-328) did not incorporate this area into the wilderness system and directed the area to be managed according to the Siuslaw Forest Plan. The Forest Plan as amended by the Oregon Dunes Management Plan provided direction to manage the area as either Non-Motorized Undeveloped or for Plant, Fish and Wildlife Habitat (USDA Forest Service, 1994), thus marinating wilderness attributes on Federal lands. Since wilderness designation does not include a legal requirement to protect the designated wilderness from adjacent activities, previous analysis did not evaluate the management effects of adjacent state, county or private lands on wilderness attributes.

In 1980’s, 780 acres of federal land was patented reducing the acres of federal ownership from

2371 acres to 1671 acres. In 2002, Douglas County exercised an existing right to construct a county road through the roadless area to lands owned by the county. The road travels through the center of the project area. This portion of the roadless area is a narrow strip of federal land about 1350 feet wide, which was harvested in the 1930's. It is surrounded on two sides by industrial forestlands, harvested in the 1990's. A third side is bordered by Douglas County, which manages their land for timber production and intends on harvesting their parcel in the summer of 2002. Considering the intensive land management activities on the adjacent lands, the wilderness attributes in this portion of the roadless area were severely compromised prior to the February 7, 2002 windstorm. Since no portion of the blow down is greater than 700 feet from industrial land, the impacts of private land management are readily visible from project area.

Neither Alternative 1 or 2 will protect, enhance or change the existing wilderness attributes of the roadless area, nor will there be a change in the attributes that affect the potential inclusion of the area into the wilderness preservation system. Since Alternative 1 proposes no new roads, and considering the current wilderness attributes are more significantly influenced by the location, condition and size of the roadless area and the management direction for the site is not changed, harvesting the blow down and associated hazard trees prior to establishing a new stand will not change the existing wilderness attributes of the site or the potential inclusion of the area into the wilderness preservation system.

Aquatic species--(*Mike Northrop*)

Under either alternative, no direct effects to fish are anticipated because the project area does not contain any fish-bearing streams.

Indirect effects can be expected from wildfire as well as logging. Under this alternative, the risk of a major wildfire originating in the project area is lessened and, along with it, the potential for large inputs of ash and sediment into Threemile Creek. Some sediment would probably be generated by the logging and fuel treatment activities. The amount of sediment would be small in comparison to that generated from a wildfire but would be slightly more than that generated from no logging and no wildfire. Any sediment generated from logging activities would have little affect on fish living in Threemile Creek. Threemile Creek downstream from the planning area naturally consists of a sand substrate and would be little affected by the addition of the small amount of sediment generated from logging.

Large wood in the creeks within the project area would be reduced by logging, however, the amount prescribed for retention within stream channels – five pieces for every 100 feet of stream – should lead to highly stable channels for some time into the future. Additionally, because the streams do not contain habitat for fish the removal of wood would not reduce the amount of fish habitat.

Stream temperatures would not change due to the implementation of this alternative. The removal of blow down trees along the streams within the project area will reduce stream shade, however, because these streams are dry in the summer this would result in no increase in water temperature.

Under Alternative 2, the type and magnitude of indirect effects are dependent on potential future outcomes for the project area. One potential outcome is for a wildfire to start in the project area and spread rapidly due to the high fuel load caused by the blow down. Although forest fires are uncommon on the Oregon coast, their intensity is usually very intense. Untreated slash on

adjacent private lands could allow the fire to grow to large size and affect most of the Threemile Creek drainage. Runoff after a large fire would probably introduce large quantities of ash and sediment to the stream system. These inputs could affect fish habitat in Threemile Creek including spawning areas for cutthroat trout. If the fire were to occur during the driest part of the year, large pieces of wood could be consumed and reduce the amount large wood present in the intermittent streams present in the project area. Summer water temperatures in Threemile Creek would also increase due to perennial streams outside of the project area being deforested by wildfire. This could result in a sizable decrease in the small cutthroat trout population endemic to Threemile Creek. On the other hand, if no fire were to occur, ash and sediment would not be generated. Eventually the blown over trees would rot and slowly settle into the intermittent streams channels within the project area, further stabilizing the channels and trapping sediments.

Threatened, endangered or sensitive fish species—Implementation of either alternative will have no effect on threatened, endangered or sensitive fish species. Either the specie is not present or no habitat is present within or downstream of the project.

Essential fish habitat for chinook or coho salmon or Pacific coast groundfish do not exist within the project area.

Cumulative Effects

The Council on Environmental Quality defines cumulative effects on the environment as those that result from the incremental actions of a proposal added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes them (40 CFR 1508.7).

For purposes of analyzing cumulative effects, the geographic area potentially affected by Alternative 1 is the 1960-acre planning area in the Threemile sub-watershed.

The analysis provided for each alternative and resource area reflects the sum of most planned actions on federal lands in the near future. Likely future actions on federal lands in the watershed include trail maintenance and harvesting of special forest products such as mushrooms.

The three acres of county land within this sub-watershed are scheduled for clearcut harvest this summer. On other nonfederal land, which comprises 65% of the watershed, the Team expects private landowners to continue current practices and uses of their land and no changes to current county and state land-use regulations. Current uses include industrial timber harvesting, plantation release and road maintenance.

Cumulative effects are measured relative to the baseline conditions described in chapter 1. Where specific effects are not described for a particular resource, cumulative effects are not expected to be measurably different from those under baseline conditions. Fuels reductions through timber harvest under Alternative 1 are expected to have the following cumulative effects:

Terrestrial species--Due to the existing highly disturbed nature of lands within and surrounding the project area, no wildlife or plant-related cumulative effects are expected as a result of the proposed action.

Aquatic species-- The extensive amount of private land in the area makes the prediction of cumulative effects difficult. Native fish species in the Threemile Creek drainage have probably

been lightly to moderately impacted by past land management activities. The action alternative does have small effects on fish populations in Threemile Creek but reduces the chance of a wildfire and leads to more certainty for the future of the project area and nearby fish populations.

Hydrology and soils -- The Threemile sub-watershed is 1,960 acres, most of which is covered by either open dune sand (<10%) or dunes that have become vegetated over the last century. There are a total of 8.25 miles of permanent and temporary roads for a road density of approximately 2.7 mi/mi² for the sub-watershed. This includes Highway 101 at the very top of the headwaters, and Sparrow Park Road (County and private industrial) down the middle of the drainage. No new permanent roads will be built as part of this salvage effort, but approximately 5,750 feet of low use temporary access and fire line will be used by ground-based machinery on site. These designated temporary roads amount to approximately 1.3 acres total and represent .07% of the watershed.

About 146 acres in the sub-watershed have been clearcut harvested on private industrial lands (See Watershed Area Map and Table 1, below). Although the blow down area can be compared in some ways to the clear cuts in the watershed, downed wood left on the 45-acre salvage site will allow for more natural recovery of the ecosystem as compared to the clear cuts where all wood has been removed.

From a hydrologic and soils perspective, contributions of this project to cumulative watershed effects are very low given the nature of soils (sandy and porous) and streams (intermittent on site and marshy/sandy below) in this location.

Table 2 – Harvested acres for the Threemile sub-watershed.

Ownership	Total Acres	Acres Harvested/ Salvaged	Percent of Total sub-watershed
Private Industrial	1,269	146	7.5
Siuslaw National Forest	688	45	2.2
Douglas County	3	3	.2
Total	1,960	194	9.9

Fire--The site, left untreated, will increase the overall risk of wildfire and increase the rate of spread within the sub-basin to an unacceptable level. There are several private harvested units adjacent to the blow-down area, that have been planted and the slash has gone untreated. Probability of spotting into these units will be significantly increased if the area incurs an unplanned ignition during a critical time of year, during periods of high fire danger.

Heritage resources—Commercial harvest of this blown down stand will have minimal risk because actions are on previously disturbed ground from harvest in the 1930’s.

Recreation--Harvest will cumulatively shift the limited recreation experience associated with this area to several years earlier than if no treatment is accomplished.

Roadless area—No cumulative effects area expected under Alternative 1 since it will not protect, enhance or change the existing wilderness attributes of the roadless area. Neither will the attributes that affect the potential inclusion of the area into the wilderness preservation system be changed.

Threatened, endangered, sensitive, management indicator and survey and manage wildlife and plants species— Due to the existing highly disturbed nature of lands within and surrounding the project area, no wildlife or plant-related cumulative effects are expected as a result of the proposed action.

Noxious weeds—No measurable cumulative effects are anticipated with implementation of this alternative.

Consistency with Aquatic Conservation Objectives (*Mike Northrop*)

Portions of the project area are within riparian reserves. Implementation of the proposed action meets the intent of the aquatic conservation strategy by reducing the risk of wildfire. Although stand replacement wildfire can in many instances be considered part of the natural disturbance regime, a wildfire originating in the Sparrow Park blow down area should not be considered a natural occurrence. This is because the stand of trees that has been blown over is part of a densely stocked plantation on previously harvested land surrounded by created openings and untreated logging slash. Treating the fuels through salvage logging and re-establishing a more sparsely stocked stand would restore a more natural stand of trees to the area. The salvage operation itself would not cause any of the Aquatic Conservation Strategy objectives to not be met. The proposed action should restore watershed and landscape-scale features and connectivity by creating a more natural stand of trees. It should also maintain the physical integrity of the aquatic system, including stream bank and bottom configurations. The project would cause only minor, short-term effects to water quality and sediment delivery, and would lessen the chance for major detrimental effects occurring. Instream flows and floodplain inundation would not be affected. Plant communities would be restored to a more natural

composition, and various habitats would also be restored. For the reasons stated above, it appears that the action alternative is in compliance with the Northwest Forest Plan's aquatic conservation strategy.

Short-Term Uses and Long-Term Productivity (*The Team*)

The use or protection of natural resources for long-term sustained yield is the legislated basis of management and direction for the Forest Service (USDA, USDI 1994a, p. 321). Short-term uses include actions such as wildfire hazard reduction. The design criteria were developed to incorporate the standards and guides of the Siuslaw Forest Plan as amended by the Northwest Forest Plan and the ODNRA Management Plan. We expect that applying them to the proposed management actions will reduce the potential for long-term loss in productivity of forest soils that may result from short-term uses.

Unavoidable Adverse Effects (*The Team*)

Implementing any alternative would result in some adverse environmental effects that cannot be avoided. The design criteria, along with Forest standards and guides, are intended to keep the extent and duration of these effects within acceptable levels, but adverse effects cannot be completely eliminated. The following adverse environmental consequences would be associated to some extent with Alternative 1:

- ⇒ Short-term, localized reductions in air quality from dust, smoke, and vehicle emissions resulting from management actions and forest users;
- ⇒ Disturbance to wildlife when their habitat is disturbed by management actions or recreation Activities;
- ⇒ Temporary increase in large vehicle traffic during commercial harvest operations.

Irreversible Resource Commitments (*The Team*)

Irreversible commitments of resources are actions that disturb either a nonrenewable resource (for example heritage resources) or other resources to the point that they can only be renewed over 100 years or not at all. The design criteria--along with Forest and ODNRA Management Plan standards and guides--are intended to reduce these commitments, but adverse effects cannot be completely eliminated. For example, the continued use of existing roads that access the Forest is an irreversible commitment of the soil resource because of the long time needed for a road to revert to natural conditions.

Irretrievable Commitment of Resources (*The Team*)

An irretrievable commitment is the loss of opportunities for producing or using a renewable resource for a period of time. Almost all activities produce varying degrees of irretrievable resource commitments. They parallel the effects for each resource discussed earlier in this chapter. They are not irreversible because changing management direction could reverse them. The following irretrievable commitments of resources would be associated to some extent with all alternatives:

- ⇒ Alternative 1 -- Loss of soil productivity as a result of tractor fire lines and equipment access routes.
- ⇒ Alternative 2 -- Loss of replacement timber volume opportunity.

Environmental Justice (*Don Large*)

Effects of alternatives on the human environment (including minority and low-income populations) are expected to be similar for all human populations regardless of nationality, gender, race, or income. No disproportionately high and adverse human health or environmental effects on minority populations and low-income populations are expected as a result of implementing actions described for Alternative 1.

Other Disclosures (*The Team*)

Based on the Team's evaluation of the effects, we concluded:

- ⇒ Minority groups, women, and consumers may benefit from employment opportunities and products that proposed actions will provide; the no-action alternative would have neither adverse nor beneficial effects. None of the alternatives adversely affects civil rights. All contracts that may be awarded as a result of implementation would meet equal employment opportunity requirements.
- ⇒ None of the proposed actions will affect known prehistoric or historic sites. As outlined in the American Indian Religious Freedom Act, no effects are anticipated on American Indian social, economic, or subsistence rights.
- ⇒ No adverse effects on wetlands and flood plains are anticipated. No farmland, parkland or rangeland, or wild and scenic rivers will be affected.
- ⇒ This environmental assessment is tiered to the Siuslaw Forest Plan, as amended by the Northwest Forest Plan, and the ODNRA Management Plan, as amended by this environmental assessment, and is consistent with those plans and their requirements.
- ⇒ The proposed project is consistent with the Coastal Zone Management program.
- ⇒ None of the proposed actions are expected to substantially affect human health and safety.
- ⇒ The proposed project is not expected to measurably affect global warming. The USDA Forest Service will continue an active leadership role in agriculture and forestry regarding the reduction of greenhouse gas emissions.

Consultation with Others

This section summarizes the public involvement effort made by the Team during the planning and analysis process. Comments were received from five individuals or groups and the U.S. Fish and Wildlife Service. The information that they provided helped to develop the Design Criteria for the Proposed Action.