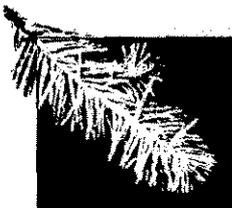


1.

Purpose of and Need for Action



1. Purpose of and Need for Action

1.1 Introduction

The Washington Department of Natural Resources (DNR) is proposing a Habitat Conservation Plan (HCP) as a resource management strategy to assure long-term sustainable revenue for the trusts and long-term health of forest resources. Species listed as threatened and endangered under the federal Endangered Species Act (16 U.S.C. § 1531 et seq.) currently occupy lands managed by DNR. Further, these lands contain a wide variety of habitat types that support fish and other species. DNR has prepared a draft Habitat Conservation Plan to address trust land management issues relating to compliance with the Endangered Species Act (ESA). In addition, the draft HCP addresses the goal of enabling DNR to conduct large-scale experimentation within the Olympic Experimental State Forest. The HCP planning area encompasses approximately 1.6 million acres of state forest lands managed by DNR within the range of the northern spotted owl (see Map 1). The Olympic Experimental State Forest is one of nine planning units in the HCP planning area (see Map 2). The term of the permit would be 70 to 100 years (See Implementation Agreement).

The proposed draft HCP is part of an application for an incidental take permit and an agreement covering unlisted species. DNR will submit the draft HCP for review to the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The two federal agencies (referred to as "the Services") will comment at that time. The proposed draft HCP describes mitigation strategies for two federally listed species -- the northern spotted owl (*Strix occidentalis caurina*) and the marbled murrelet (*Brachyramphus marmoratus*). In addition, although DNR does not expect to take any individuals of these species, it is requesting that other upland species listed by the federal government as endangered or threatened within the range of the northern spotted owl be included in the permit. These additional species are the Oregon silverspot butterfly (*Speyeria zerene hippolyta*), the Aleutian Canada goose (*Branta canadensis leucopareia*), the peregrine falcon (*Falco peregrinus*), the bald eagle (*Haliaeetus leucocephalus*), the Columbian white-tailed deer (*Odocoileus virginianus leucurus*), the gray wolf (*Canis lupus*), and the grizzly bear (*Ursus arctos*). The HCP also outlines a plan to conserve habitat for other species in western Washington, for which DNR is seeking an unlisted species agreement. The proposed agreement would cover western Washington runs of several salmonids and other unlisted species, including federal and state candidate species, west of the Cascade crest.

DNR, USFWS, and NMFS are serving as joint lead agencies in the preparation of this draft environmental impact statement (DEIS) to meet their respective requirements under the Washington State Environmental Policy Act (SEPA) and the National Environmental

Policy Act (NEPA). The agencies are seeking public comment on both the draft HCP and draft EIS before they finalize the HCP and prepare the final EIS. The Services will be providing comments on the proposed draft HCP during the public comment period. This will be the Services' first formal opportunity to provide feedback to DNR regarding the proposed draft HCP.

This chapter describes the purposes and needs associated with the joint lead agencies' proposal for action. The purposes DNR seeks to achieve as permit applicant are defined within the context of DNR's trust management responsibilities. The chapter also provides an overview of the Olympic Experimental State Forest and its unique position within the proposal. The chapter concludes with a summary of the concerns raised during public scoping for the HCP project and the Olympic Experimental State Forest project.

1.2 DNR's Purpose and Need

Context of the Proposed Action

At statehood in 1889, the federal government granted specific lands across Washington State to be managed, leased, or sold by the state for the benefit of schools and other public institutions. These lands are referred to as Federal Land Grant Trusts. In addition, the state also manages Forest Board Trust lands that may not be sold and are managed to perpetuate the forest resource and support various tax funds administered by the state and by the counties. The state's duties as the trustee of these lands are defined in the Washington State Enabling Act, the Washington State Constitution, federal and state statutes, and case law.

In 1957, the State Legislature established the Washington Department of Natural Resources to serve as manager of trust lands, including forested, aquatic, and urban and agricultural lands. Duties have been added by the legislature, so that today DNR also manages special natural areas, fights fires, and regulates forest practices on state and private forest lands. By statute, DNR consists of the Board of Natural Resources,¹ the Commissioner of Public Lands as Department Administrator, and the Department Supervisor. DNR is statutorily charged with managing forested trust lands. DNR has legal duties beyond those of other landowners as a result of its trust management responsibilities. On behalf of the trust beneficiaries, DNR strives to produce the most substantial support possible over the long term while exercising prudent management and preserving the trust estate. Recognizing the perpetual nature of the trusts, DNR strives to do this without unduly favoring either the present or the future recipients of trust benefits. (See Chapter II of the draft HCP for more information about the trust mandate.)

¹ The Board consists of four publicly elected officials (a county commissioner from a county with Forest Board Lands, the Governor, the Superintendent of Public Instruction, and the Commissioner of Public Lands) and two technically knowledgeable members: the dean of the College of Forest Resources at University of Washington and the dean of the College of Agriculture and Home Economics at Washington State University.

The policies of the Board of Natural Resources that guide DNR's management of 2.1 million acres of forested trust land are reflected in the Forest Resource Plan (1992). The Forest Resource Plan provides policy direction for timber harvest, protection of special ecological features, landscape planning, aquatic system protection, wildlife, public use, silviculture, research, and more. (See Appendix A for a description of current policies.) The plan was adopted by the Board in 1992 to address the challenges of the 1990s. The plan is a comprehensive plan and must be read and interpreted as a whole (DNR 1992b p. No. 1). One of the greatest challenges facing DNR that is addressed in the Forest Resource Plan is the need to generate income for the trusts from the sale of timber while providing wildlife habitat for native species. The plan provides two policy statements that clarify DNR's position on wildlife habitat (Policy No. 22) and on endangered, threatened, and sensitive species (Policy No. 23). The policy statements follow:

Policy No. 22: The department will provide wildlife habitat conditions which have the capacity to sustain native wildlife populations or communities. The department will develop wildlife habitat objectives based upon habitat availability and function, species status and species vulnerability, and trust obligations. When there are apparent conflicts between meeting the wildlife habitat and trust management objectives, the department will seek balanced solutions and policies.

Policy No. 23: The department will meet the requirements of federal and state laws and other legal requirements that protect endangered, threatened and sensitive species and their habitats. In addition, the department will voluntarily participate in efforts to recover and restore endangered and threatened species to the extent that such participation is consistent with trust obligations.

The conflicts mentioned in Policy No. 22 currently exist within DNR's management and operations. Federal regulations under the ESA have placed constraints on trust land management and have limited DNR's ability to provide predictable income from forest management activities. While DNR is currently meeting its trust responsibilities as directed in the Forest Resource Plan, DNR is proposing an HCP as the means to ensure compliance with the ESA in a way that best meets the policy goals set forth in the Forest Resource Plan. This is the context for DNR's proposal. (See Chapter III of the draft HCP for more discussion of the planning context.)

DNR's Need for Action

The listings of the northern spotted owl and the marbled murrelet have created an environment of uncertainty and inefficiency for trust land management and have limited DNR's ability to meet its trust obligations. Future listings of forest-dependent species under the ESA may further disrupt DNR's ability to provide support to beneficiaries.

It is within the larger context of trust responsibilities that DNR states its need:

DNR has a need to secure an incidental take permit and an agreement on unlisted species if doing so is in the best interests of the trust beneficiaries.

Purpose of the Proposed Action

The purposes for DNR's action are to strive to:

1. Produce the most substantial support possible over the long term consistent with trust duties conveyed on DNR by the state of Washington;
2. Ensure forest productivity for future generations;
3. Reduce the risk of violating the Endangered Species Act within the range of the northern spotted owl through sound, biologically based management;
4. Reduce the likelihood of trust management disruptions due to future listings;
5. Enable DNR to conduct management and research activities within the Olympic Experimental State Forest in areas currently occupied by listed species in order to build new knowledge relevant to trust management obligations and species conservation; and,
6. Enable DNR to adequately carry out the Board's policies as reflected in the Forest Resource Plan.

Based on a full analysis of the final HCP and final EIS, the Board of Natural Resources will determine whether to enter into an agreement with USFWS and NMFS.

1.3 USFWS' and NMFS' Purpose and Need

U.S. Fish and Wildlife Service Context

The USFWS is proposing to issue an incidental take permit to, and enter into an unlisted species agreement with, DNR. The purpose of the USFWS proposal is to authorize incidental take of nine listed species (northern spotted owl, marbled murrelet, Oregon silverspot butterfly, Aleutian Canada goose, peregrine falcon, bald eagle, Columbian white-tailed deer, gray wolf, and grizzly bear), including habitat modification for up to 100 years.² Such authorization is necessary because activities associated with implementation of DNR's HCP may result in take of listed species despite the extensive mitigation program sponsored by DNR. The purpose of the USFWS proposal to enter into an unlisted species agreement is to provide assurances to DNR that no additional land restrictions or financial compensation will be required from DNR for species adequately covered by a properly functioning habitat conservation plan. The USFWS, NMFS, and DNR consider the implementation of a *habitat conservation plan and unlisted species agreement* to be the most effective means to reconcile the applicant's proposed activities with the prohibitions against take and other conservation mandates of the Endangered Species Act (ESA).

The needs and goals of the USFWS are (1) to conserve listed species, their habitats, and associated species during DNR's proposed actions; and, (2) to ensure compliance with the ESA, National Environmental Policy Act (NEPA), and other applicable federal laws and regulations.

² The length of permit has not been negotiated at the time of this writing.

The decision to be made by the USFWS is whether or not to issue an incidental take permit and enter into an unlisted species agreement. The USFWS may issue an incidental take permit pursuant to section 10(a)(2)(B) of the ESA conditioned on implementation of an agreed upon habitat conservation plan submitted by DNR. In reaching its decision, the USFWS must consider five criteria for permit issuance, specifically:

1. Is the proposed take incidental to an otherwise lawful activity?
2. Are the impacts of the proposed taking minimized and mitigated to the maximum extent practicable?
3. Has the applicant ensured that adequate funding will be provided to implement the measures proposed in the habitat conservation plan?
4. Is the proposed take such that it will not appreciably reduce the likelihood of survival and recovery of the species in the wild?
5. Are there other measures that should be required as a condition of the permit?

In addition, the Secretary of the Interior must have received such other assurances as he may require that the plan will be implemented.

Issuance of a permit allowing for incidental take must comply with the intent and provisions of sections 10 and 7 of the ESA; that is, the permit must not jeopardize the continued existence of listed species while promoting habitat and species conservation and allowing incidental take of listed species during nonfederal activities.

National Marine Fisheries Service Context

In addition to the need stated above, the National Marine Fisheries Service (NMFS) intends to meet certain ecological goals necessary to conserve anadromous fish and fish habitat in the Pacific Northwest. These goals can be achieved through coherent integration of conservation measures on federal and nonfederal lands. The development of HCPs on nonfederal lands that supplement the more protective conservation measures in place on federal lands is central to this effort. The HCP conservation measures described by DNR for anadromous fish are designed to complement, to the maximum extent practicable, the measures presently being implemented on federal lands. These federal measures are summarily stated in the Aquatic Conservation Strategy objectives outlined in the President's Forest Plan (USDA and USDI 1994b), which include:

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.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, 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 for aquatic and riparian-dependent species.

3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must be within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
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.
6. Maintain and restore instream 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.
7. Maintain and restore the timing, variability, and duration of flood-plain inundation and water table elevation in meadows and wetlands.
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 areas of surface erosion, bank erosion and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.
9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

With HCPs on forested landscapes, such as the proposal by DNR, meaningful contributions to these ecological goals can be made through a variety of mitigation measures. This draft EIS evaluates the contributions and limitations of the reasonable alternatives with respect to the water quality and riparian functions necessary to conserve anadromous fish.

While NMFS is not proposing to issue an incidental take permit, NMFS is proposing to enter into an unlisted species agreement. On the basis of their full analysis of the final HCP and final EIS, the Services will determine whether to issue or deny the requested permit and agreement or to recommend amendments prior to issuance.

1.4 Regulatory Framework

DNR's Regulatory Framework for Compliance with Environmental Laws

The policies of the Board of Natural Resources and thus DNR's land management activities comply with all generally applicable federal and state laws and are consistent with general state laws affecting land management activities. Federal and state laws relevant to this action include the ESA, NEPA, Clean Water Act, Clean Air Act, Washington State Forest Practices Act, Washington State Environmental Policy Act, and the Washington State Hydraulic Code Rules.

Overview of Federal Requirements for Species Conservation

The Endangered Species Act (ESA) protects species that have been formally designated as either "endangered" or "threatened." Once a species is listed, a variety of protections are conferred on it by the ESA. Two federal agencies, USFWS and NMFS, have responsibilities for implementing the ESA, including the designation of critical habitat and planning for the recovery and delisting of each listed species. The ESA prohibits the "take" of listed animal species.³ Take is defined in the ESA as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. §1532 (19)). Harm is further defined in USFWS regulations as "an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 C.F.R. 17.3). Finally, as noted above, section 10 of the ESA allows nonfederal landowners to seek approval of a conservation plan and issuance of an incidental take permit as an alternative to the take prohibition.

Brief Review of Listings with Major Impacts on DNR Management

The northern spotted owl was listed as threatened under the federal Endangered Species Act in June 1990. The listing had an immediate impact on DNR's ability to conduct timber sales activities. Following the listing of the spotted owl, USFWS biologists described habitat area and density, on the basis of the owls' median home range, within which habitat loss may constitute a taking. The criteria established "owl circles" ranging in radius from 1.8 to 2.7 miles. While USFWS guidelines were later rescinded, the biology behind the "owl circles" was not challenged. Current DNR timber sales are designed to meet an acceptable level of risk as defined by the Board of Natural Resources. DNR's timber sales policies are consistent with the biological guidance

³ The civil penalties for taking a threatened species range up to \$25,000 (16 U.S.C. § 1540 (a)). Any person who "knowingly violates" the ESA could receive up to 1 year in prison, a \$100,000 fine or both (U.S.C. § 1540 (b)(1)). In some cases, the violator could be charged with a Class D felony and receive up to 5 years in prison and a \$250,000 fine or both. The act prohibits anyone who has been convicted of a violation from receiving a permit for incidental take.

represented in the rescinded guidelines and are designed to avoid a violation of federal law.

DNR conducts 2-year surveys on proposed timber sales to collect and update information about owl sites. DNR maintains 40 percent of the area within owl circles in habitat, and DNR situates many of its timber sales within suitable habitat outside the 40 percent. DNR's application of these criteria has resulted in potential harvest constraints on 680,000 acres (approximately 42 percent) of the 1.6 million acres of DNR-managed trust land within the owl's range. Section 4.2.1 of this draft EIS describes DNR's current management strategies to identify owl sites and to comply with the prohibition against take.

Forest management activities on state lands also comply with the Washington State Forest Practices Act (RCW 76.09) rules that currently require detailed environmental analysis for most forest practices occurring on the 500 acres of suitable habitat surrounding spotted owl sites, except where a federal incidental take permit has been issued by the USFWS.

USFWS guidance for managers of nonfederal forest lands within the range of the northern spotted owl can be found in various places. The "Final Draft Recovery Plan for the Northern Spotted Owl" (USDI 1992b) defines conservation objectives for nonfederal lands. USFWS is currently drafting a special regulation for the northern spotted owl pursuant to section 4(d) of the ESA. In addition, the USFWS has issued a special report providing background information for the development of the proposed 4(d) special rule as it pertains to owls on the Olympic Peninsula (Holthausen et al. 1994).

In October 1992, USFWS listed the marbled murrelet as a threatened species. While USFWS has not issued guidelines for avoiding take of the marbled murrelet, landowners are still at risk for taking. As much as 75 percent of the HCP planning area is within the range of the marbled murrelet.⁴ At present, DNR's timber sales are designed to meet an acceptable level of risk as defined by the Board of Natural Resources. The result of a "risk management" strategy is that no timber sales are currently planned within the majority of potential suitable murrelet habitat (roughly 90 percent) within 40 miles of marine waters for an indeterminate period. DNR timber sales in potential suitable murrelet habitat located from 40 to 52.25 miles of marine waters are reviewed on a case-by-case basis. In the spring of 1994, DNR initiated a survey program designed to help the Board assess risk by studying the relationship between conditions of forest stands and murrelet activity in those stands.

Other species that may occur on state lands are candidates for protection under the ESA. These include various species of plants, fish, and amphibians.

⁴ See Section 4.2.2. This amount depends on which distance from marine water is used (i.e., 40 miles, 52.25 miles, or 66 miles). The potential maximum distance is 66 miles, based on the furthest inland distance of a known occupied site recorded in Oregon. If 66 miles is used, then 1,222,069 acres (or 75 percent) of the 1,636,856 acres of DNR-managed lands within the plan area are included.

In summary, the listings of the owl and murrelet have significantly increased the environment of uncertainty and inefficiency regarding ESA compliance for trust land managers and have limited DNR's ability to meet its trust obligations. To reduce the risk of violating the ESA, DNR spends approximately \$4 million each year to survey for northern spotted owls. Marbled murrelet habitat relationship surveys have just begun, at an estimated cost of \$900,000 to \$1.4 million per year until completion. Surveys are a costly strategy to reduce the risk of take. Survey programs react to ESA restrictions, whereas conservation planning enables DNR to design the most efficient way to achieve ESA compliance. An approved HCP would establish a balance between protecting listed species and meeting the needs of current and future generations of trust beneficiaries.

1.5 Overview of the Olympic Experimental State Forest

Before DNR considered doing a multispecies HCP to resolve compliance issues, the department made a commitment to seek new ways to integrate timber harvest and ecological protection in the Olympic Experimental State Forest (DNR 1995f). Conceived amid the debates that preceded the listing of the northern spotted owl, the primary objective of the Experimental Forest was to discover - through experimentation - ways in which DNR could manage the remaining mature, natural forests on state lands on the western Olympic Peninsula (approximately 60,000 acres). Several actions were taken to implement the Experimental Forest; however, the listing of the owl and murrelet prevented DNR from initiating any experiments in mature forest habitat. While some relief from spotted owl restrictions was provided in a planning process approved by Congress (HR4489), the single species approach was not sufficient to realize the goal of the Experimental Forest.

Enabling DNR to conduct large-scale experimentation in a working forest that provides substantial income to the trusts is a priority for DNR. For this reason, the Olympic Experimental State Forest is an integral part of DNR's multispecies habitat conservation proposal. The basic assumption underlying the Experimental Forest is that rigorously designed experimentation and the application of nontraditional forest practices in a commercial forest will provide solutions to forest management problems. The knowledge gained will be valuable for trust land management, species conservation, and production of forest commodities.

The 264,000 acres of DNR-managed lands on the western Olympic Peninsula present unparalleled opportunities for research. Olympic National Park is close to much of the Experimental Forest, and contains unmanaged watersheds. The national park offers "control areas" for rigorous comparisons between actively managed and unmanaged areas. Olympic National Forest land is adjacent to several large blocks of DNR-managed land and contains designated USFS reserves and USFS Adaptive Management Areas. DNR-managed lands offer a host of possibilities for silvicultural manipulation in existing habitat, restoration, and other innovative practices more appropriate to areas outside federal reserves. Further, the Olympic Peninsula is considered one of the most productive

tree-growing regions in North America. The west side of the peninsula contains a large, continuous block of low-elevation commercial forest land, of which DNR is a major land manager. The productivity of these lands should produce rapid results from innovative practices, in comparison with other growing regions. Finally, a large portion of the Experimental Forest contains young stands, the result of intensive harvest of old growth from the 1960s through the 1980s. These stands hold the potential for large-scale application of innovative silvicultural practices intended to accelerate development of forest conditions associated with older forests. Such experiments may increase the habitat value of these stands while returning substantial income to the trusts.

Based on this rationale, the department has envisioned the Olympic Experimental State Forest as a unique commercial forest where innovative techniques are applied, where new knowledge is aggressively sought and applied, and where creative ideas can grow and long-standing problems be solved. In future decades, the implementation of the Experimental Forest will enable DNR to seek and test new methods while meeting its trust management obligations. However, realizing the vision of the Experimental Forest means securing an incidental take permit for both the northern spotted owl and the marbled murrelet. For this reason, the Olympic Experimental State Forest is included in the draft HCP and in the application for the incidental take permit and unlisted species agreement. Because of the uniqueness of the Experimental Forest, it is a separate planning unit (see Map 2). The draft HCP details the conservation elements of the Experimental Forest.

1.6 Issue and Concerns

Public scoping was conducted to assist the lead agencies (DNR, USFWS, and NMFS) in determining the issues that would be addressed in developing DNR's proposal and the range of alternatives considered. Scoping also helped assess the level of analysis and the types of data that were required. Table 1.1 summarizes the lead agencies' efforts to involve the public during the information-gathering phase. Scoping was conducted separately for the Olympic Experimental State Forest and DNR's HCP project. Following scoping, the lead agencies found that the action required to implement the Experimental Forest was an application for an incidental take permit and that one permit application was sufficient for the Olympic Experimental State Forest and the remainder of the 1.6 million acres. Therefore one EIS, not two, would analyze the impacts of DNR's proposal and the permit decisions of the federal agencies.

Table 1.1: Summary of public information and involvement for DNR's conservation planning project

Public Information and Involvement	DNR's Habitat Conservation Planning Project (HCP)	Olympic Experimental State Forest (OESF)
Pre-Scoping Public Involvement	No formal meetings ⁵	2 public workshops (34 people, 12/93)
Scoping Notice in SEPA Register	4/25/94, 5/13/94	2/28/94, 4/8/94
Notice of Intent in Federal Register	5/2/94	3/3/94
Public Scoping Meetings	10 meetings (total of 100 people, 5/94 & 6/94)	1 meeting (8 people, 3/29/94)
Written Comments Received	46 letters	32 letters
Scoping Reports and Summaries	7/19/94 (DNR) 9/12/94 (USFWS) <i>Bulletin</i> article (DNR)	5/28/94 (DNR) 9/14/94 (USFWS) <i>Vision</i> article (DNR)
Presentations to Board of Natural Resources ⁶	Project Director updates at regular meetings; Special workshops <u>open to public</u> 2/2/95 and 4/20/95; Board held 4 special meetings during 2/95 to hear public input.	Project Manager gave regular updates; 12/94 briefed Board on need to streamline project with HCP
Presentations made to interested groups on request	HCP team members made more than 40 presentations	OESF team members made more than 10 presentations

Following the formal scoping periods, DNR and USFWS continued to receive public input, to respond to requests for information, and to issue news bulletins to more than 3,000 people. The Board of Natural Resources received regular updates at each monthly meeting. In addition, more than 40 briefings were held with interested groups, such as the Northwest Indian Fisheries Commission and the Washington Association of Counties. Formal comments on the scope of the Olympic Experimental State Forest and HCP

⁵ Project Director and other DNR representatives spoke on behalf of the project to variety of audiences prior to initiating formal public involvement through the scoping process.

⁶ All meetings of the Board follow the notification procedures for open public meetings.

proposals were submitted as individual letters, oral comments noted at public meetings, and a video tape. In addition to these, letters related to the scope of the proposals were added to the record.

The primary environmental issues and concerns identified during the development of this draft EIS, listed below in the order they are addressed in the document, include the potential for effects from DNR's proposed management activities and the proposed incidental take permit on:

Northern spotted owl. Concerns include conserving forest areas which provide the necessary ecosystem requirements for nesting, roosting, and foraging habitat and dispersal habitat.

Marbled murrelet. Concerns include conserving forest areas which provide nesting habitat, specifically, forests with old-growth characteristics.

Salmonid fish species. Concerns include protecting riparian ecosystems to satisfy habitat requirements. The effects on habitat from erosion and mass-wasting potential are a major concern.

Other wildlife and plant species. Concerns include provision of wildlife habitat that contributes to demographic support, maintenance of species distribution, and facilitation of dispersal. For plant species, concerns include the protection of limited ranges and/or narrow habitat ecosystem requirements.

Physical landscape (geology and soils). A discussion of soil types, soil erosion potential in relation to geomorphology, and geologic hazards including mass wasting and sediment delivery.

Air quality. A discussion of existing air quality in the planning area and the potential impact of the alternatives on air quality.

Water quality. Concerns discussed include the impacts of the alternatives on water quality and quantity, and proposed measures to minimize and mitigate impacts.

Cultural resources. A discussion of the potential impacts of the alternatives, and measures for conservation, protection, and management of cultural resources.

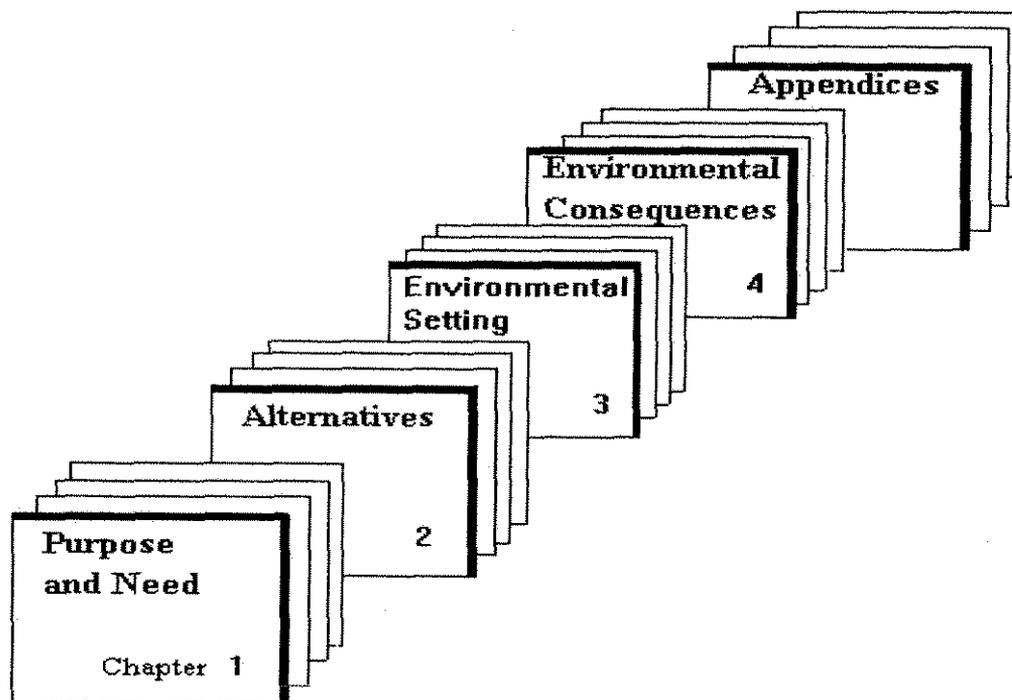
Potential social and economic consequences. A discussion of the potential impact of the alternatives on local communities and the region.

Cumulative effects. A discussion of the effects of the alternatives together with past and reasonably foreseeable actions.

1.7 Overview of the Remaining Chapters

Chapter 2 describes the range of alternatives considered, including "No Action" or no change from current management. Chapter 2 also compares the extent to which each reasonable alternative meets the stated purpose and need for action. Chapter 3 provides an overview of the elements of the environment that may be affected by the alternatives under consideration. Chapter 4 details the anticipated effects of the alternatives on the resources of concern. Figure 1-1 illustrates the organization of this draft EIS.

Figure 1-1: How this draft EIS is organized

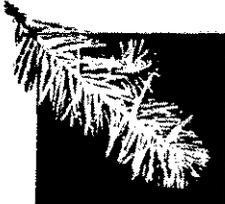


Chapter 1: The purpose and need to which DNR, USFWS, and NMFS are responding, and the public issues surrounding the proposed action.

Chapter 2: The review of the range of alternatives originally considered and comparison of the reasonable alternatives.

Chapter 3: Broad overview of resources within HCP planning area.

Chapter 4: An analysis of the affected environment and the potential impacts and proposed mitigation provided by the alternatives under consideration.



2. Alternatives

2.1 Introduction

The previous chapter described the joint lead agencies' purposes and needs for the proposed action. Chapter 2 focuses on the proposed action and its alternatives. The joint lead agencies considered a range of alternatives, including the proposed action and no action. Because applying for an incidental take permit is an applicant-driven process, DNR can propose a variety of alternatives on which the Services would act. As stated in Chapter 1, it is the responsibility of USFWS and NMFS, as permittees, to evaluate and respond to proposals submitted by applicants under section 10 of the Endangered Species Act (ESA).

This chapter describes how the range of alternatives was narrowed to the reasonable alternatives and No Action. For the HCP planning area excluding the Olympic Experimental State Forest, a total of 14 alternatives are identified and discussed, and of those, three alternatives are discussed in detail. Ten distinct alternatives are identified and discussed for the Olympic Experimental State Forest; of those, three are discussed in detail. The evaluation of alternatives summarized in this chapter centers around the purposes and needs for action, described in Chapter 1.

2.2 Development of DNR's Alternatives

The range of alternatives is constrained by both the need and the purposes. First, alternatives must meet the stated need. As described in Chapter 1, DNR states its need within the larger context of its trust responsibilities:

DNR has a need to secure an incidental take permit and an agreement on unlisted species if doing so is in the best interests of the trust beneficiaries.

DNR's proposed action is discretionary. When an agency is involved in discretionary decision making, the agency should define what is likely to occur if the action is not taken, in this case, if the permit is not issued and no HCP is implemented. In this draft EIS, the No Action alternative is defined as no change from current management direction or level of management intensity.¹ For DNR, the No Action alternative

¹ Section 1502.14(d) of NEPA requires the alternatives analysis in the EIS to include the alternative of no action. The President's Council on Environmental Quality provides guidance to assist agencies in defining the no action alternative (46 Fed. Reg. 18026 (1981)). There are two distinct interpretations of no action; the first captures DNR's definition, while the second describes USFWS' and NMFS' perspectives. The first interpretation of no action is more common for agency planning proposals in which the no action

describes the current and likely future management of trust lands within the range of the northern spotted owl without an HCP.² Whereas the No Action alternative achieves compliance with the ESA through an avoidance-of-take approach, the HCP alternatives use the section 10 process to determine if ESA compliance through an HCP provides increased benefits to each of the trusts managed by DNR when compared to No Action.³ As explained in Chapter 1, DNR will explore this question throughout the development of, and public comment on, the draft EIS and the proposed draft HCP.

The comparison of reasonable alternatives contained in this draft EIS will assist DNR, USFWS, and NMFS during the decision-making process. Prior to any decision to approve an HCP, DNR must find that implementation of an HCP is consistent with all trust duties placed on it by the Legislature. DNR will submit a final proposal (consisting of the final EIS with response to public comments, final HCP, and Implementation Agreement) to USFWS and NMFS **only if the Board of Natural Resources determines an incidental take permit is in the best interests of the trust beneficiaries.** Further, the Services will not issue a permit or enter into agreements with DNR unless adequate conservation is secured, and the intent of the ESA is satisfactorily addressed. Through the comparison of the No Action alternative to the HCP proposal and the other reasonable alternative, the joint lead agencies will consider the benefits and disadvantages of reserving for some future time the implementation of the proposal.

This DEIS is part of a State Environmental Policy Act (SEPA) phased review for forest resource management on DNR- managed lands. SEPA review began with the 1992 Forest Resource Plan (FRP) and EIS. The proposed draft HCP is one planning component under the FRP. The proposed draft HCP more specifically defines the following FRP policies:

- Policy No. 20, Riparian Management Zones;
- Policy No. 21, Wetlands;
- Policy No. 22, Wildlife Habitat (for some habitat characteristics); and,
- Policy No. 23, Endangered Species.

alternative may be defined as "no change" from current management direction or level of management intensity. This definition of no action means continuing with the present course of action until that action is changed; thus the basis for comparison would be the projected impacts of the continued implementation of the existing management plan. The second interpretation of the no action alternative is illustrated in instances involving federal decisions on proposals for projects. No action in this case would mean that USFWS and NMFS would not issue the permit, and the resulting environmental effects from taking no action (no HCP) would be compared with the effects of implementing the proposed HCP. See Section 2.5 for a description of the No Action alternative.

² The No Action alternative has been referred to as No Action, No Change, or No HCP during the early planning phase.

³ DNR will consider public comment before determining if the proposal is in the best interests of the trusts. In addition to this draft EIS, the Board of Natural Resources has requested information on the economic impacts of this proposal to each of the trust beneficiaries. Additional information is contained in staff reports to the Board and in the paper entitled "Background and Analytical Framework for the Proposed Draft HCP", dated 10/16/95, produced by DNR's Office of Policy Analysis and Research (DNR 1995b).

If adopted, the HCP will be incorporated into landscape planning (FRP Policy No.16).

Phased review assists the department, other agencies, and the public to study issues at the appropriate scope and level of environmental review to coincide with meaningful points in their planning and decision-making processes. The department will conduct a SEPA review when the environmental effects of proposed subsequent plans or activities can be meaningfully evaluated. This DEIS will be used as appropriate to meet the department's future responsibilities under SEPA.

Like the need statement, purposes help narrow the range of alternatives. Purposes are the goals to be attained by meeting the need through the proposed action. DNR's purposes reflect the overriding goal of prudent trust land management. The purposes for DNR's action are to strive to:

1. Produce the most substantial support possible over the long term consistent with trust duties conveyed on DNR by the state of Washington;
2. Ensure forest productivity for future generations;
3. Reduce the risk of violating the ESA within the range of the northern spotted owl through sound, biologically based management;
4. Reduce the likelihood of trust management disruptions due to future listings;
5. Enable DNR to conduct management and research activities within the Olympic Experimental State Forest in areas currently occupied by listed species in order to build new knowledge relevant to trust management obligations and species conservation; and,
6. Enable DNR to adequately carry out the Board's policies as reflected in the Forest Resource Plan.

2.3 Features Common to All Reasonable Alternatives

The reasonable action alternatives and the No Action alternative are analyzed in detail in this draft EIS. Other alternatives were considered but eliminated from detailed analysis for specific reasons explained in this chapter. The No Action alternative and each of the reasonable alternatives attempt to meet DNR's trust responsibilities, comply with the ESA, and are operationally feasible. Resource management actions of the department would be consistent with the policies of the Board of Natural Resources, as reflected in the Forest Resource Plan (1992), under the reasonable action alternatives as well as the No Action alternative. Management actions that are not specifically addressed in the alternatives would continue to be guided by the Board's policies.

Compliance with existing law is required of all reasonable alternatives and the No Action alternative. The Board of Natural Resources' ability to modify its policies appropriately is

maintained under all alternatives. All reasonable alternatives preserve DNR's ability to adjust to legal or regulatory changes.⁴

Unlike the No Action alternative, reasonable action alternatives provide for the incidental take of federally listed species occurring on DNR-managed lands. Reasonable alternatives are constrained geographically to the planning area (see Map 1). DNR has limited the area and species covered in the planning area to the 1.6 million acres of forested trust lands within the range of the northern spotted owl. To achieve the greatest relief through an HCP and still have a manageable scope, DNR limited its conservation planning for unlisted species and salmonids to the west side of the Cascade crest. DNR did not seek to address multiple habitats and species throughout eastern Washington.⁵ Reasonable alternatives are therefore limited in scope for trust lands east of the Cascade crest to conservation measures for northern spotted owls and other federally listed upland species (including the gray wolf and grizzly bear, see p. 1-1). Efforts to seek an incidental take permit for aquatic and riparian-dependent species on the east side of the Cascade crest may be developed in a later and separate process. In the interim under all reasonable alternatives, DNR will continue the protection as described in the No Action alternative for riparian ecosystems east of the Cascade crest.

The conservation elements common to all alternatives are aquatic and riparian habitat conservation strategies, as well as species conservation strategies for listed species. Reasonable OESF alternatives contain an explicit information-gathering element. The major difference in strategies to achieve compliance with the ESA between the reasonable alternatives and the No Action alternative is the focus on habitat development through time rather than a focus on the current habitat of individual animals.

2.4 Range of Alternatives Originally Considered

The range of reasonable alternatives available for analysis was constrained by the six purposes reflecting DNR's trust responsibilities, ESA compliance, and management efficiency. During the scoping process (see Section 1.6) a variety of alternatives was suggested for consideration. In addition to the No Action alternative, only those that met the need and purposes were analyzed in detail in this document. An alternative is not considered reasonable if it fails to achieve the stated objectives including the purpose and need.

Two coarse filters were used to evaluate the suggestions received. First, the lead agencies determined which alternatives were outside the scope of the proposal. Alternatives that

⁴A draft of the Implementation Agreement accompanies the proposed draft HCP. Such agreements are used to document the legal commitments between the applicant and the Services associated with approved incidental take permits.

⁵ DNR's current management considers at-risk fish stocks and the possible listings of fish and other species on all DNR-managed lands. Current management includes compliance with SB 1309 Ecosystem Standards for State-owned Agricultural and Grazing Lands, and the consideration of the proposed draft wild salmonid policy (WDFW et al. 1995).

were undefined, remote, or speculative were excluded from further analysis. These included alternatives that expressly did not meet ESA requirements by directing DNR to resist compliance with ESA and/or contest the listing of the northern spotted owl. Similarly, alternatives that directed DNR to pursue amendments to the Enabling Act or the Washington State Constitution in order to broaden or narrow the definition of trust beneficiaries were determined to be beyond the scope of this proposal. Suggested alternatives directing DNR to halt all timber harvest and generate income for trust beneficiaries through recreational fees and nontimber resource extraction were also determined to be remote, speculative, and outside the scope of this proposal.⁶ Second, the joint lead agencies further refined the range of alternatives by separating distinct alternatives from suggested management strategies. Because of the nature of this proposal, nearly all conceivable management strategies could be applied to meet the conservation objectives. Therefore, suggestions to avoid harvest of old growth, apply natural selection ecoforestry, ban clearcuts, use rail to transport logs, and use longer rotations did not represent distinct alternatives. DNR maintains flexibility to employ various land management strategies, including selective harvest and land transfers, regardless of the proposed action.

A few of the suggested alternatives that did not make it through the two coarse filters are described in Section 2.5 in order to further explain their elimination from consideration.

2.5 Evaluation of Alternatives Related to Eight Planning Units in HCP Area (Excluding OESF)

This section describes and evaluates against the stated purposes and needs 14 potential alternatives relating to DNR's proposed action for the HCP planning area outside of the Olympic Experimental State Forest (see Table 2.5.1).

Potential alternatives relating to DNR's proposal for the Olympic Experimental State Forest are discussed separately in Section 2.6. OESF alternatives are numbered, in order to make sure the OESF alternatives are not confused with those considered for the larger HCP planning area. The matrices at the end of this chapter summarize the management strategies and the environmental consequences of the reasonable alternatives and No Action.

⁶ DNR currently sells nontimber resources for the benefit of the trusts.

Table 2.5.1: Key to potential alternatives related to eight planning units in HCP area (excluding OESF)

Fully Developed Alternatives: A-C	
<p>Alternative A: No Action Continue under current management direction. Comply with ESA by avoiding take of listed species. Survey to assess risk of take. Subject to changing regulations and future listings.</p>	
<p>Alternative B: Proposed HCP Comply with ESA by implementing long-term plan, minimize and mitigate the take of listed species throughout the range of the spotted owl. Provide habitat to obtain an unlisted species agreement on DNR-managed lands in five west-side planning units.</p>	
<p>Alternative C Similar to Alternative B, with added conservation elements designed to enhance likelihood of approval from the permitting agencies.</p>	
Alternatives Eliminated from Detailed Analysis: D - N	
Potential Alternative	Why Eliminated? ¹
D. Revisit previous Board Policies	Does not meet purposes 1,2,3,4,6
E. HCP for spotted owls and marbled murrelets only	Does not meet purposes 2,3,4
F. Watershed analysis-based HCP	Does not meet purposes 1,6
G. Hybrid of Alternatives A and B	Is not a distinct alternative
H. HCP scenarios based on proposed 4(d) special rule	Does not meet purposes 3,4
I. Separate HCPs for each trust	Does not meet purposes 1,2,3
J. Statewide multispecies HCP for all trust lands	Beyond scope of this action
K. Regulatory HCP for Forest Practices	Beyond scope of this action
L. Unzoned conservation strategy throughout	Does not meet purposes 1,3
M. "Ecoforestry" HCP	Does not meet purpose 1
N. No Harvest	Does not meet purpose 1

¹ See p. 2-18 for description of Alternatives D-N. See p. 2-3 for list of six purposes.

Alternative A

Alternative A is considered in detail throughout this draft EIS. Under Alternative A, DNR would not implement a habitat conservation plan, and the Services would not issue an incidental take permit or agreement on unlisted species. Chapter 4 of this draft EIS provides a detailed examination of the environmental consequences associated with continued implementation of the No Action alternative in order to permit a comparison to the reasonable alternatives. The results of this analysis are summarized in a matrix at the end of this chapter.

Under the No Action alternative, DNR would continue the implementation of the policies of the Board of Natural Resources as described in the Forest Resource Plan (1992) and comply with the ESA without an HCP. The relevant policies of the Board as articulated in the Forest Resource Plan (1992) are stated below:

Policy No. 23: Endangered, Threatened, and Sensitive Species Policy

The department will meet the requirements of federal and state laws and other legal requirements that protect endangered, threatened, and sensitive species and their habitats. In addition, the department will voluntarily participate in efforts to recover and restore endangered and threatened species to the extent that such participation is consistent with trust obligations.

Policy No. 22: Wildlife Habitat

The department will provide wildlife habitat conditions which have the capacity to sustain native wildlife populations or communities. The department will develop wildlife habitat objectives based upon habitat availability and function, species status and species vulnerability, and trust obligations. When there are apparent conflicts between meeting the wildlife habitat and trust management objectives, the department will seek balanced solutions and policies.

Policy No. 20: Riparian Management Zones

The department will establish riparian management zones along Type 1 through 4 Waters and when necessary along Type 5 Waters.⁷ The department will focus its efforts on protecting key nontimber resources, such as water quality, fish, wildlife habitat and sensitive plant species.

Policy No. 21: Wetlands

The department will allow no overall net loss of naturally occurring wetland acreage and function.

Policy No. 19: Watershed Analysis

The department will analyze by watershed the effects of past, present and reasonably foreseeable future activities on water quality and quantity, and it will modify operations to control risks to public resources and trust interests.

⁷ See Glossary for definition of Water Typing System.

Policy No. 28: Developing and Maintaining Roads

The department will develop and maintain a road system which integrates management needs and controls effects on the forest environment.

Policy No. 40: Research

The department will conduct applied research to monitor and evaluate silvicultural activities, test current practices and, where appropriate, initiate a process for change. The research will focus on issues relating to protection and conservation as well as forest production.

Where the Board's policies are broadly stated, implementation would continue to involve a wide range of management activities. In projecting the effects of the No Action alternative on specific habitats, a range of management activities is described to illustrate the current variability in implementation and what is likely to occur in the near future as DNR strives to meet the policy goals. For example, the constraints on management activities around riparian habitats may vary under Alternative A from a buffer of 25 feet on a Type 3 stream less than 5 feet wide to a buffer 150 feet on the same stream type, with the average being 85 feet.

Uncertainty regarding compliance with the ESA is the dominant feature of this alternative and would continue through time. Requirements could stiffen, more species could be listed, or requirements could relax with changes in federal policy. DNR would respond to changing ESA requirements and take precautions when guidance is lacking to ensure compliance with the ESA.

Regarding compliance with applicable laws including the ESA, DNR would continue management policies and practices designed to reduce the risk of violating the ESA (summarized in Table 2.5.2). Risk-management practices or policies include: (1) conducting 2-year surveys on proposed timber sales in suitable spotted owl habitat; (2) deferring from sale 15,000 acres of mature forest within the boundary of the OESF until 2005; (3) deferring timber sales involving potential marbled murrelet habitat within 40 miles of marine waters and conducting a case-by-case review of sales between 40 and 52.25 miles; (4) conducting marbled murrelet habitat relationship studies to assist the Board of Natural Resources in determining an acceptable level of risk; and, (5) screening certain other sales for potential taking of a federally listed species.

Under the No Action alternative, the focus of DNR's conservation efforts related to compliance with the ESA is on current habitat conditions. Existing suitable habitat for murrelets would be essentially off-limits for harvest; in areas now occupied by owls, sales would only be offered where there is more than 40 percent suitable habitat within a territorial owl circle.

Spotted Owls

As indicated above, in areas now occupied by owls, sales would only be offered where there is more than 40 percent suitable habitat within a territorial owl circle. Where survey information shows an owl activity center (or circle) has been abandoned, additional acres would be available for sale upon the completion of a series of decertification surveys.

Therefore, no new habitat is likely to be developed over time. Conversely, where surveys show new owl activity and habitat below the 40 percent threshold, these areas would be off-limits. The No Action alternative assumes DNR will continue to survey in an attempt to clear for harvest as much mature timber as possible but also that the Board would continue its current risk-management approach regarding sales in suitable habitat. The costs of complying with ESA would include the costs of continuing the current survey program.

Marbled Murrelet

Under the No Action alternative, DNR would not be permitted to incidentally take a marbled murrelet and would not implement a habitat conservation plan. Management of potential murrelet habitat in the foreseeable future under this alternative is uncertain; however, it would likely follow current management direction.

DNR is currently implementing an interim, internal approach to ESA compliance, designed to protect marbled murrelet habitat on DNR-managed lands. Initiated in April 1994, the approach automatically defers timber sales on any state trust lands where the structural characteristics of the forest meet the Forest Practices Board's definition of suitable marbled murrelet habitat as originally defined by the marbled murrelet emergency rule alternative (WAC 222-16-010), commonly referred to as the Occupied Stand Approach. DNR currently defers from timber harvest 100 percent of the stands within 40 miles of marine waters if those stands contain eight or more trees per acre that are greater than or equal to 32 inches diameter at breast height (dbh) and/or contain two potential nesting platforms per acre. The stem density criterion is most commonly used to determine whether a stand is suitable habitat because of the difficulty of counting potential nest platforms.

Proposed timber sales that include stands located within 40 miles of marine waters that contain between two and seven trees per acre that are greater than or equal to 32 inches dbh are deferred. For timber sales located between 40 and 52.25 miles inland, DNR evaluates each stand on an individual basis to make a determination whether to defer the sale. The factors considered include habitat quality, stand size, potential nest platform density, isolation of stand, distance to saltwater, and whether the stand is located in a watershed administrative unit where murrelet presence has been documented by WDFW. Timber sales in stands located beyond 52.25 miles from marine waters are not currently evaluated for murrelet habitat.

Under the No Action alternative, DNR would continue to conduct the habitat relationship studies in western Washington. These studies were initiated in 1994 and assist DNR in determining marginal habitat types that could be made available for harvest. Once completed, data from these habitat relationship studies will be used by the Board of Natural Resources to make decisions concerning the deferral or harvest of stands determined to have some potential as marbled murrelet habitat. It is unknown how this decision process may function or what level of risk the Board may decide is appropriate.

Riparian Areas

Under the No Action alternative, riparian areas would receive protection as guided by DNR's Forest Resource Plan (1992) and the Washington Forest Practices Rules. This includes protection of unstable slopes, riparian and wetland management zones, integrated road management plans, research and application of watershed analysis.⁸

Under the No Action alternative, DNR would continue its current policy of establishing and protecting riparian management zones of varying widths along all Type 1 through 4 Waters and on approximately 50 percent of Type 5 Waters. While generally treated as no-harvest areas, these zones may be actively managed provided that fish and other key nontimber resources receive adequate protection. The widths of these zones range from forest practices minimums to substantial buffers applied on a site-specific basis (see Matrix 1a). Based on data collected from recent years, average buffer widths (measured from the stream edge on each side of the stream) on Types 1 and 2 were 196 feet and ranged up to 400 feet. On Types 3 and 4 the average widths were 85 feet and 55 feet, respectively, and ranged up to 300 feet. Thus, under No Action, DNR would continue to provide protection exceeding the minimum requirements of the Forest Practices Act based on site-specific resource issues.

⁸There are several ways in which watershed analysis may occur under No Action. DNR may initiate or enter into a forest practices watershed analysis with other landowners, may conduct a watershed assessment as part of state land management planning (usually through the landscape planning process being implemented under the Forest Resource Plan), or may acquire new or existing information through cooperative efforts with local tribes, organizations and state or federal agencies.

Table 2.5.2: Summary of management under the No Action alternative

A more detailed description of management strategies under the No Action alternative and the two reasonable HCP alternatives is provided at the end of this chapter in Matrix 1a.

Element	Management Under No Action Alternative
Northern Spotted Owl	<ul style="list-style-type: none"> ● Timber sales are designed to meet level of acceptable risk as determined by Board of Natural Resources. ● Two-year surveys conducted on proposed timber sales to collect/update information on owl sites. Maintain 40% of existing habitat within owl circles in habitat, manage remaining % so that no additional forest land becomes owl habitat. As owls move, surveys will likely add and subtract sites.
Marbled Murrelet	<ul style="list-style-type: none"> ● Timber sales are designed to meet level of acceptable risk as determined by Board of Natural Resources. ● No timber sales within majority of potential suitable habitat within 40 miles of marine waters for indeterminate period. ● Case-by-case review of sales in potential habitat within 40-52.25 miles of marine waters. ● Conduct habitat relationship study to determine an acceptable level of risk.
Riparian / Aquatic Habitat	<ul style="list-style-type: none"> ● Conservation strategies for the protection of riparian areas (including streams, lakes, wetlands, steep slopes) range from forest practices minimums to substantial buffers applied on a site-specific basis.
Olympic Experimental State Forest	<ul style="list-style-type: none"> ● See Section 2.6, same as OESF Alternative 1.

Alternative B (Preferred Alternative)

Alternative B is DNR's proposed alternative and is designed to meet all of the stated purposes and needs. Under this alternative, DNR would implement an HCP and receive an incidental take permit for spotted owls, marbled murrelets, and other federally listed species throughout the planning area, as issued by the Services, for 70 to 100 years (See Implementation Agreement). DNR would enter into an agreement on unlisted species which may occur on DNR-managed lands within western Washington. The conservation plan would ensure that specific habitat conditions were achieved where designated, and DNR would be relieved of the prohibition against take for the permitted species. DNR would set objectives for management to implement specific conservation strategies for the following habitats: spotted owl nesting, roosting, and foraging; spotted owl dispersal habitat; riparian and aquatic habitat; and nesting habitat for marbled murrelets.

Under this alternative, DNR would receive an incidental take permit from USFWS for northern spotted owls, marbled murrelets and other listed species (see p. 1-1). DNR would implement the conservation strategies in accordance with an approved HCP. A science-based conservation plan would replace the case-by-case survey requirements for compliance with ESA. Alternative B is described in greater detail in the proposed draft Habitat Conservation Plan.

DNR would provide a mix of habitat types benefiting other species and would be assured by USFWS and NMFS that additional species occurring on DNR-managed lands in western Washington would be included under the permit if listed. Thus, under this alternative, DNR would gain regulatory certainty by entering into an agreement covering presently unlisted species that might become listed during the term of the HCP. Chapter 4 of this draft EIS provides a detailed examination of the environmental consequences associated with Alternative B in order to permit a comparison of the reasonable alternatives and the No Action alternative. The results of this analysis are summarized in a matrix at the end of this chapter.

Washington State Forest Practices Rules and the policies of the Board of Natural Resources as described in the Forest Resource Plan policies (1992) would continue to guide DNR's forest management activities in programs and locations not addressed in the HCP.

The conservation strategies contained in Alternative B are derived in large part from the conceptual description of "HCP Option #1" which is contained in the recommendations of the HCP Science Team that advised DNR during the scoping of the HCP (DNR 1995e). The following describes the main features of the proposed alternative. (See Table 2.5.3)

Northern Spotted Owl

The intent of the spotted owl conservation strategy under Alternative B is twofold. First, the strategy is intended to provide nesting, roosting, and foraging (NRF) habitat and dispersal habitat in strategic areas such that the conservation objectives of demographic support, maintenance of species distribution, and dispersal are achieved. Second, in areas designed to provide NRF habitat, DNR will seek to create a landscape in which active forest management plays a role in the development and maintenance of the structural characteristics that comprise such habitat. To accomplish this actively managed spotted owl landscape, the strategy includes a research phase, a transition phase, and an integrated management phase.

There are four main components of DNR's conservation strategy for the northern spotted owl: identification of DNR-managed lands most important to spotted owl conservation, determination of habitat goals for areas established to provide NRF habitat, development of guidelines for management activities allowed within NRF habitat areas; and, development of guidelines for provision of dispersal habitat. Several scenarios are possible in the actual application of this strategy. It is important, therefore, to read the draft Habitat Conservation Plan for details. In general, in areas designated to provide NRF habitat, DNR will manage its trust lands to provide a target condition of at least 50

percent NRF habitat within each landscape. Specific provisions are also applied to nesting habitat within these areas.

The conservation strategy for spotted owls on the east slopes of the Cascades is constructed on the same principles as that for western Washington. Differences in the strategy between eastern and western Washington arise from differences in forest ecology and spotted owl habitat ecology on the east versus west side of the Cascades. Matrix 1a provides additional information about the proposed spotted owl habitat management under Alternative B.

Marbled Murrelet

Under this alternative, DNR would implement an interim strategy that includes deferral of all timber sales that meet a minimum definition of marbled murrelet nesting habitat until the habitat relationship studies are completed for each planning unit in western Washington.

Unlike the definition used in the No Action alternative, the interim definition of potential nesting habitat in Alternative B refers to suitable habitat blocks as contiguous forested areas that: (1) are at least 5 acres in size; (2) contain an average of at least two potential nesting platforms per acre; and, (3) are within 50 miles of marine waters. The Alternative B definition of nesting habitat is a more conservative definition than that used in Alternative A.

During the interim period, a 2-year habitat relationship study would be conducted in each planning unit. The studies would sample the vegetation and conduct protocol surveys in all forest types that might potentially be used by murrelets. Data produced from these studies would be used to identify the sites with the lowest probability of occupancy (marginal habitat) and that, from this sample, would be predicted to contain 5 percent or less of the actual occupied sites that exist on DNR-managed lands within the planning unit. These sites would be released from deferral as soon as the habitat relationship study is completed for that planning unit. Every acre of the remaining suitable habitat (which would be expected to contain at least 95 percent of the occupied sites with the highest probability of occupancy) would be surveyed using a standard survey protocol acceptable to the USFWS. Once these intensive surveys are completed, surveyed unoccupied habitat would be available for harvest if the harvest adheres to all other provisions of the HCP.

Upon completion of the habitat relationship studies and inventory surveys within each planning unit, a long-term conservation plan would be developed for each planning unit and the HCP amended.

Riparian and Aquatic Ecosystems

The riparian strategy for Alternative B applies to the five west-side planning units only. Alternative B does not propose a riparian strategy for the east side, rather it continues DNR's current management of riparian and wetland habitats (same as No Action). As a result, DNR is not seeking an agreement from the Services on unlisted species occurring on the eastern slopes of the Cascades.

Under Alternative B, DNR proposes a riparian strategy for western Washington that is designed to maintain healthy riparian ecosystems with an emphasis on providing quality salmonid habitat. The strategy assumes that while salmonids live in the aquatic environment, their welfare is directly dependent on how well the entire riparian ecosystems is functioning. The riparian strategy proposed in this alternative is intended to reduce the likelihood that DNR's management would be disrupted in the event that salmonids are listed as threatened or endangered in western Washington.

Alternative B addresses the protection of unstable slopes and wetlands. Alternative B would likely provide greater protection to the riparian ecosystem by specifying the parameters for management activities. Comprehensive landscape-based road network management plans would be developed for designing and routing road systems. Two-thirds of DNR-managed forest land in the significant rain-on-snow zone would be maintained in a hydrologically mature condition, as applied to drainage basins that are approximately 100 acres in area. There are some exceptions to this which are described in the draft HCP.

Under the proposed alternative, riparian management zone widths, specified as a range, would be set for Type 1, 2, 3, and 4 Waters, with the protection of Type 5 Waters being linked to unstable slopes. The riparian zone widths (each side of the stream) would be based on site potential tree height for Type 1 through 3 Waters and 100 feet for Type 4 Waters, with added buffer to protect certain wind-prone areas. The inner 25 feet of the riparian management zone would be a no-harvest area; the next 75 feet would consist of a minimal-harvest area; the remaining portion would be a low-harvest area. By providing a more consistent, and in some cases wider, riparian management zone on all water types compared to No Action, Alternative B would provide greater certainty of protection.

Other species of concern

The conservation of habitat designed to address the needs of spotted owls, marbled murrelets, salmonids and riparian areas contained in this alternative would benefit many additional species. In addition, Alternative B would apply strategies for protecting uncommon habitats, such as talus slopes and caves within the five west-side planning units. Finally, this alternative would provide specific protective measures for the other federally listed, upland species within the range of the northern spotted owl. (See Matrix 1a).

Table 2.5.3: Summary of management under Alternative B

Element	Management under Alternative B: Proposed HCP
Northern Spotted Owl	<ul style="list-style-type: none"> ● Based on strategies designed to contribute to demographic support and species distribution and to facilitate dispersal. ● Supports spotted owl populations near federal reserves with 50% nesting, roosting and foraging (NRF) habitat and 50% dispersal habitat developed and maintained in designated areas. ● Allows NRF habitat for spotted owls to move over time as other stands reach target conditions within designated landscapes. ● Allows management activities within dispersal habitat and some within designated NRF habitat.
Marbled Murrelet	<ul style="list-style-type: none"> ● Proposes interim strategy to preserve options while developing information needed to prepare long-term plans on planning unit basis. ● Includes collect of region-specific data through a series of 2-year habitat relationship studies to determine relative importance of various habitat types. ● Protects all occupied murrelet sites found during surveys. ● Releases for harvest surveyed but unoccupied murrelet habitat.
Riparian Areas	<ul style="list-style-type: none"> ● Protects aquatic and riparian ecosystems (in-stream and streamside) in western Washington by buffering all Type 1 through 4, and some Type 5, Waters. ● Establishes riparian zone width based on site potential tree height for Type 1 through 3 Waters, and 100 feet for Type 4 Waters, with added buffer to protect certain wind-prone areas. ● Allows commercial management activities in riparian buffer consistent with objective of maintaining or restoring salmonid habitat. ● Protects unstable slopes. ● Protects wetland acreage and function to meet objective as stated in Forest Resource Plan. ● Limits cumulative impacts of management activities by addressing hydrologic maturity in rain-on-snow zones, road network management. ● Provides the same as riparian management in eastern Washington as No Action.

A more detailed description of management strategies under Alternatives B, C, and No Action is provided at the end of this chapter in Matrix 1a.

Alternative C (Environmentally Preferred Alternative)

This alternative describes another reasonable alternative, similar to Alternative B but with added conservation, and is considered in detail. Under this alternative, DNR would implement an HCP and receive an incidental take permit for spotted owls, marbled murrelets, and other federally listed species throughout the planning area. DNR would enter into an agreement on unlisted species which may occur on DNR-managed lands in western Washington. Chapter 4 of this draft EIS provides a detailed examination of the environmental consequences associated with this alternative in order to permit a comparison of the reasonable alternatives and the No Action alternative. The results of this analysis are summarized in a matrix at the end of this chapter.

This alternative was designed to provide DNR with a high degree of certainty with regard to ESA compliance; as a result, it places more restrictions on management within designated habitat areas than does Alternative B (see Table 2.5.4). Alternative C is derived in large part from the conceptual description of "HCP Option No. 2" which is contained in the recommendations of the HCP Science Team that advised DNR during the scoping of the HCP (DNR 1995e).

Alternative C was designed to provide a greater likelihood of compliance with the ESA for spotted owls, marbled murrelets, and salmon in comparison with Alternative B. This alternative provides additional protection within areas designated for spotted owl NRF habitat, murrelet habitat, and riparian areas in western Washington. In all other aspects, the objectives of this HCP alternative would be similar to those of Alternative B. DNR would provide a mix of habitat types benefiting other species in western Washington and would be assured by USFWS and NMFS that additional species would be included under the permit if listed.

Northern Spotted Owls

The conservation strategy for spotted owls proposed in this alternative would be similar to those described in Alternative B, with the following additional conservation measures: (1) the addition of experimental management areas in the South Coast Planning Unit; (2) additional NRF areas would be designated in Klickitat Planning Unit to support an existing cluster of owl sites on nonfederal lands; (3) NRF areas would be designated within 2.7 miles of federal reserves in Straits Planning Unit; (4) an increased NRF goal in designated areas of 60 percent level (by WAU)⁹; no active management would be allowed in spotted owl habitat that is of Type A or B quality; (5) the goal for development of new habitat in WAUs that have less than 60 percent habitat on DNR-designated NRF areas would be increased to old-forest standards (forests that are not yet of old forest quality can be managed to speed development of old-forest characteristics); (6) no salvage or forest health risk reduction activities would take place in spotted owl NRF habitat; and, (7) no harvest of habitat that is in excess of the 60 percent goal in a WAU would occur during the spotted owl breeding season to avoid direct harm to nesting pairs and their young. (See Matrix 1a).

⁹ WAU is a watershed administrative unit, the basic geographic unit used by DNR for watershed analysis.

Marbled Murrelet

Under Alternative C, DNR would implement an interim "no take" strategy for marbled murrelet habitat while information is gathered for a long-term plan. Conservation strategies for the marbled murrelet under Alternative C would be similar to those described for Alternative B, except that no harvest of marginal habitat or surveyed, unoccupied suitable habitat would occur until long-term plans had been developed and approved for entire planning area. Thus, Alternative C does not take a unit-by-unit approach to long-term planning; rather, it defers harvest until the completion of one long-term plan for murrelet habitat.

Riparian Areas

Alternative C follows a similar, though enhanced, strategy to Alternative B for the protection of riparian habitats on the west side. This alternative would provide riparian management zones on all water types and an additional wind buffer on both sides of the Type 1 and 2 Waters and the larger Type 3 Waters. Alternative C would expand the restrictions on management activities within riparian, wetland, and unstable slope buffers.

Other Species

Alternative C provides the same strategies for uncommon habitats for the west-side planning units and for federally listed species as Alternative B.

Table 2.5.4: Summary of management under Alternative C

Element	Management under Alternative C
Northern Spotted Owl	<ul style="list-style-type: none"> ● Supports spotted owl populations near federal reserves with 60% (NRF) habitat and 50% dispersal habitat developed and maintained in designated areas. ● Provides demographic support in more areas by adding acres of NRF habitat for spotted owls to those in Alternative B and by including protection in areas not near federal reserves. ● Restricts types of management activities that can occur within designated NRF areas to those that restore or enhance habitat conditions.
Marbled Murrelet	<ul style="list-style-type: none"> ● Follows a sequence of information gathering similar to that defined in Alternative B. ● Defers harvest of marginal habitat as well as surveyed but unoccupied habitat until completion of a long-term plan.
Riparian Areas	<ul style="list-style-type: none"> ● Protects aquatic and riparian ecosystems (in-stream and streamside) in western Washington by buffering all Type 1 through 5 Waters and wetlands. ● Protects riparian zone width based on site potential as indicated by tree height, with added buffer to protect certain wind-prone areas. ● Restricts management activities in riparian areas to those that restore or enhance habitat conditions. ● Protects unstable slopes. ● Limits cumulative impacts of management activities by addressing hydrologic maturity in rain-on-snow zones, road density, road maintenance.

The following alternatives were considered but not included in the detailed analysis because they did not meet the need and purposes and were not determined to be feasible.

Alternative D: Revisit Previous Board Policies

Under Alternative D, DNR would not propose an HCP, and the Board of Natural Resources would reconsider its current risk-management position with regard to timber sales involving potential habitat. DNR would follow the Washington Forest Practices Rules, and the Board of Natural Resources would rescind or replace the Forest Resource Plan (1992). Under Alternative D, DNR sales practices would challenge federal guidelines for ESA compliance, putting DNR and trust beneficiaries at increased risk of violating the prohibition against take. The potential legal challenges, injunctions, and stop-work orders associated with this alternative would not result in efficient operations or prudent management. Alternative D would increase the likelihood of management

disruptions due to future listings and would not constitute sound, biologically based management for trust lands. Alternative D is not considered to be a reasonable alternative because it does not meet the need or purposes of the proposed action.

Alternative E: HCP for Northern Spotted Owls and Marbled Murrelets Only

Under this alternative, DNR would apply for incidental take permits for spotted owls and marbled murrelets only. DNR would not plan for other species likely to be listed. This alternative was considered and rejected by DNR because it provided only short-term, limited relief. A species-by-species approach would not address the issue of disruptions of DNR's trust management activities as a result of future listings. Because of the diversity of species occurring on DNR-managed lands, this alternative was not considered reasonable. This alternative fails to address the objectives stated in purposes 2, 3, and 4. (See Section 2.2.)

Alternative F: Watershed Analysis-Based HCP

Under this alternative, DNR would propose an HCP using the forest practices watershed analysis process as the strategy to address riparian habitat conservation. The riparian conservation strategy would consist of buffers on fishbearing streams with a varying amount of harvest allowed within the buffers. Widths of buffers would be determined through watershed analysis. No protection would be provided for non-fishbearing streams unless they were associated with unstable slopes. The conservation strategies for the northern spotted owl and marbled murrelet would be similar to those under Alternative B.

There are several reasons why this alternative fails to meet the stated need and purposes. First, the current forest practices watershed analysis process does not consider either riparian or aquatic ecosystems, and at present there is no water-quality module or wildlife module.¹⁰ Second, because of the time and staff necessary to conduct watershed analysis, this alternative does not represent an economically or operationally feasible conservation strategy for 1.6 million acres of DNR-managed forested trust land (containing several hundred watershed units). Finally, many of the lands managed by DNR contain stocks of wild anadromous fish and may contain other aquatic and riparian-dependent species under consideration for listing under the ESA. It is unlikely that the Services would enter into an agreement on unlisted species without added conservation measures or extensive monitoring prior to completion of watershed analysis across all DNR-managed lands. If DNR proposed watershed analysis as the riparian conservation strategy, an extensive monitoring effort would be required to ensure that high quality conditions were achieved and maintained in exchange for the potentially risky conservation approach. Use of the watershed analysis tool as a riparian conservation strategy would not, in and of itself, be consistent with the policies of the Board of Natural Resources as articulated in the Forest Resource Plan (1992) relating to the protection of key nontimber resources.

¹⁰ A water quality module is in draft form and is currently under review by the Timber, Fish, and Wildlife Administration Committee.

After consultation with the USFWS and NMFS regarding the requirements that may be attached to this conservation strategy for fish and other species, DNR determined that it was neither prudent nor feasible to consider it in detail. Further, in order to apply watershed analysis as a conservation strategy throughout western Washington, it was deemed likely by DNR that measures very similar to those described in Alternatives B and C would need to be added -- making this less of a distinct alternative. This alternative was eliminated from further consideration.

Alternative G: Hybrid of Alternatives A and B

Under this alternative, DNR would implement an HCP and receive an incidental take permit for spotted owls and murrelets using the same conservation strategies as in Alternative B, but would employ a different riparian strategy. Under this alternative, DNR would seek an agreement on unlisted species using the riparian strategy described in the No Action alternative as the basis for its conservation of riparian habitat. The Forest Resource Plan policies would guide riparian management; however, DNR would include a comprehensive monitoring plan of riparian habitat. DNR would provide additional clarification and direction to the current policies to ensure that conservation measures benefiting fish and riparian-dependent species are consistently applied. Such clarification and direction is provided in the riparian strategies of Alternative B. Thus, DNR does not consider Alternative G to be a distinct alternative.

Alternative H: HCP Scenarios Based on Proposed 4(d) Special Rule

Alternative H is not considered to be a reasonable alternative. Alternative H encompasses a number of variations on the 4(d) theme. At present there has been no issuance of a special rule under section 4(d) of the ESA. A draft rule relating to northern spotted owls has been circulating for several months at the time of this writing. Under Alternative H, DNR would achieve ESA compliance for the northern spotted owl as directed by the proposed 4(d) special rule. Prior to the final approval of the proposed 4(d) special rule, DNR would continue under No Action since the draft rule is likely to change as a result of public review, making any planning now inefficient. Under Alternative H, DNR would achieve ESA compliance regarding the northern spotted owl only. Therefore, several scenarios could be constructed under Alternative H.

In the event that USFWS's draft proposed 4(d) special rule for the northern spotted owl is adopted in its current form, there would be six Special Emphasis Areas (SEAs) (60 Fed. Reg. 9484 (1995)). Outside the SEAs, DNR would need to maintain 70 acres of suitable habitat around owl site centers. Under one scenario, DNR would prepare six HCPs (and six environmental analysis documents) or one HCP with six planning areas, in order to receive an incidental take permit for spotted owls within the SEAs. It is reasonable to assume that DNR would have to continue to survey proposed timber sales in areas outside SEAs in order to maintain the 70 acres around site centers. Since the proposed 4(d) special rule is for spotted owls only, DNR would continue to avoid take of other listed species wherever they might occur. This scenario fails to adequately address management disruptions resulting from listings of other species, including the marbled murrelet and fish, thus does not meet purposes 3 and 4 (see Section 2.2). While feasible, this alternative would not result in efficient management, nor would it provide the level of relief available under a comprehensive HCP.

A second scenario would consist of applying for an incidental take permit and an agreement on unlisted species with a conservation strategy for the owl based on compliance with the proposed 4(d) special rule, and employing all the non-owl strategies defined in Alternative B. Surveys would be required outside of the SEAs. Under this scenario DNR would not be tailoring an HCP to meet its needs, rather, it would wait for the USFWS to define a set of rules, then follow them.

A third scenario would consist of following the proposed 4(d) special rule guidance for owls in eastern Washington, while in western Washington, DNR would prepare a multispecies HCP as described in Alternative B. DNR would develop HCP strategies for the two eastern SEAs. In the eastern Cascades, outside the two eastern SEAs, DNR would be required to survey for owls and maintain 70-acre circles around documented sites.

In summary, DNR considers the application of draft strategies of a controversial federal rule package to be speculative and therefore not prudent. Furthermore, as noted in Section 2.3, DNR maintains the flexibility to adjust to changing federal regulations under any alternative.

Alternative I: Separate HCPs for Each Trust

Alternative I was not considered a reasonable alternative. Under Alternative I, DNR would prepare a separate HCP for each trust.¹¹ Separate HCPs for each trust -- or for groups of trusts -- would be an inefficient way for DNR to apply for an incidental take permit or to implement conservation strategies because trust lands are interspersed. Within a township (36 square miles) DNR manages anywhere from one trust ownership to as many as six different trust ownerships. While riparian conservation strategies could be applied similarly for each trust ownership, separate conservation strategies for each territorial species potentially occupying that ownership would need to be developed. Such conservation strategies would need to offset the proposed take with a long-term, biologically based plan to develop and maintain habitat tailored to the particular ownership of the trust. For this reason, it is unlikely that DNR would be able to base spotted owl conservation solely on the strategy of augmenting federal reserves.

Under this alternative, mitigation for incidental take would either be greater for each trust separately or applied across the landscape to each trust in roughly the same way as proposed in Alternative B; as a result, only a negative or neutral impact would be achieved by separating the ownerships. DNR has worked to consolidate trust lands into reasonable management blocks to gain efficiencies in land management, and this alternative runs counter to efficient management and practicability. Separate HCPs would likely hinder DNR's ability to trade among trusts, sell, or transfer lands. In

¹¹ The major trust beneficiary groups include the Federal Land Grant Trusts, (i.e., Common schools (K-12)); Capitol (public buildings on the Capitol campus); University (University of Washington); Scientific and Agricultural Colleges (Washington State University); Normal Schools (Western Washington University, Evergreen State, Central Washington University, and Eastern Washington University); Charitable, Educational, Penal, Reformatory Institutions; and Forest Board (consisting of lands deeded to the state by counties after nonpayment of taxes).

addition, the preparation of separate HCPs would be impractical and inefficient, requiring redundant SEPA/NEPA documents as well as multiple draft and final HCPs.

Alternative J: Statewide Multispecies HCP for all Trust Lands

DNR chose to limit the geographic scope of the proposed HCP to trust lands within the range of the northern spotted owl. During scoping it was suggested that DNR do an HCP for all 2.1 million acres of DNR-managed forested trust lands statewide. Addressing multispecies issues on both the east and west sides of the Cascades would have expanded the scope of the proposed action beyond what was considered feasible.

Alternative K: Regulatory HCP for Forest Practices

Alternative K was not considered in detail because it is beyond the scope of the proposal. Under this alternative, DNR would propose a regulatory HCP rather than a proprietary HCP. This would expand the scope beyond the lands DNR manages to include all private forest lands in Washington. The Washington State Forest Practices Board, a separate state agency, would have to initiate this alternative. DNR does not consider this alternative to be a feasible or reasonable way to meet its stated need and purposes.

Alternative L: Unzoned Conservation Strategy throughout HCP Planning Area

The unzoned approach was developed to meet the need for landscape-level experimentation on the Olympic Experimental State Forest and is described in Section 2.6. It has been suggested that DNR consider applying the unzoned concept to the other eight planning units within the HCP planning area. Alternative L is not considered to be a reasonable alternative. Under Alternative L, DNR would establish specific landscape targets for conservation of habitat and for timber harvest. No area would be strictly "off-base," although conditions would be placed on areas such as steep slopes. Under this alternative, landscape targets would be set for the development of habitat; however, in landscapes approaching the target, some reduction of habitat would be allowed. Conservation would emphasize the development of future habitat in conjunction with an active research program and adaptive management. Alternative L may not focus on owl habitat where it could be most productive. Alternative L would, however, provide some habitat for late-successional species across all DNR-managed lands in the HCP area. To provide enough owl habitat, it is also likely that landscape targets would be high, resulting in reduced harvest levels. Broadly applying this approach to the other planning units would expand the research program and increase costs beyond what is manageable. DNR considers this approach to be feasible only within the Olympic Experimental State Forest Planning Unit, where it can be tested before broader application is considered.

Alternative M: "Ecoforestry" HCP

Alternative M is not considered to be a reasonable alternative. As discussed above (see Section 2.4), use of ecoforestry¹² is not prohibited under any of the reasonable alternatives. However, it would be uneconomical for DNR to apply the concept of

¹²Ecoforestry is used here as portrayed in the video tape "Natural Selection Ecoforestry" which was submitted to the joint lead agencies during scoping.

"ecoforestry" or "natural selection ecoforestry" as an exclusive management strategy to achieve sustained yields across all 1.6 million acres of trust lands. As more information is developed through U.S. Forest Service trials in Adaptive Management Areas and other research efforts, DNR may consider using "ecoforestry" techniques to achieve specific management objectives regardless of the proposed action.

Alternative N: No Harvest

Under the No Harvest alternative, DNR would achieve compliance with the ESA by not conducting harvest activities, building roads, or other land management activities within or near existing and potential habitat for listed and candidate species. Forested trust lands would be unmanaged in an effort to grow new habitat for listed and candidate species. Under this alternative, DNR would fail to meet its legal obligations to the trusts. This alternative was eliminated from detailed analysis because it does not meet DNR's stated need or purposes.

2.6 Evaluation of Potential Olympic Experimental State Forest Alternatives

One of DNR's stated purposes is to enable DNR to proceed with the implementation of the Olympic Experimental State Forest (referred to as OESF, or Experimental Forest in this section). This includes enabling DNR to conduct management and research activities in areas currently occupied by listed species. Distinct alternatives were considered as a result of the unique objective of the Experimental Forest. Features common to OESF alternatives are the same as described earlier in Section 2.3, with the addition of an explicit information-gathering element. Reasonable OESF alternatives include flexibility to employ a wide range of silvicultural treatments, new harvest technologies, various rotation ages, and other activities needed to promote the experimental nature of the forest. Detailed silvicultural prescriptions will be developed and tested throughout implementation on the basis of the general direction of the selected alternative.

During scoping for the OESF project several alternatives were suggested, many of which are evaluated below. The following alternatives are considered to be outside the scope of the proposal: (1) no harvest of ancient forest within the Experimental Forest; (2) ban all clearcutting within the Experimental Forest; (3) use "ecoforestry" techniques to achieve conservation goals and sustained harvest; (4) use long rotations (150 years) with various harvest techniques and new technologies; and, (5) increase harvest to limits of ESA and conduct no research.

Two planning contexts, zoned and unzoned, were used to generate different alternatives for the Experimental Forest. The concept of establishing special management areas, or zones, for habitat protection has become the prevailing strategy for forest management. As with the two reasonable HCP alternatives for other planning units (Alternatives B and C above), DNR could apply this strategy to retain and develop habitat areas in order to meet the needs of owls, murrelets, and riparian-dependent species within the Experimental Forest. Owl conservation zones would include varying objectives designed

to provide nesting, roosting, foraging, and dispersal habitat. Owl zones would attempt to cluster owl nesting sites and to develop habitat areas adjacent to federal owl reserves established in the President's Forest Plan (USDA and USDI 1994b).

The concept of an unzoned forest is viewed as more "experimental" than a zoned approach. It is based on the integrated management of the Experimental Forest to meet the objectives of trust revenue production and species conservation across the whole forest. The long-term vision of an unzoned forest includes the development of older forest stands that are well-distributed across the whole Experimental Forest. Habitat objectives would be met on an individual landscape scale and would be connected through association with the stream network.

In order to meet the purpose of enabling DNR to build new knowledge from the Olympic Experimental State Forest (see p. 2-3, no. 5), 10 alternatives were originally considered. (See Table 2.6.1). Three distinct alternatives are analyzed in detail for the OESF Planning Unit. In addition to the No Action alternative, two action alternatives were designed to enable forest-wide experimentation; they are referred to as Unzoned and Zoned. Following a description of these three alternatives is a discussion of seven additional alternatives that were considered but did not meet the need and purposes. These alternatives apply only to the Olympic Experimental State Forest Planning Unit. Matrix 1b at the end of this chapter summarizes the management strategies under OESF Alternatives 1, 2 and 3.

Table 2.6.1: Key to potential alternatives related to Olympic Experimental State Forest (OESF)

Fully Developed Alternatives: 1 - 3	
1. Alternative 1: No Action Continue under current management direction, same as Alternative A. Continue current level of research activities consistent with FRP Policy No. 40 without emphasizing OESF as focal point for experimentation. Do not concentrate effort to integrate commodity production with conservation, or to integrate other unique aspects of the OESF.	
2. Alternative 2: Unzoned Forest Initiate innovative program of experimental management, research, and habitat restoration activities throughout 11 landscape units. Comply with ESA by implementing long-term plan, minimize take of listed species, and provide habitat that benefits listed and unlisted species.	
3. Alternative 3: Zoned Forest Initiate experimental management, research, and restoration activities across majority of DNR-managed lands in OESF. Conduct limited research activities within zones designated to support clusters of spotted owl pairs. Comply with ESA, same as OESF Alternative 2.	
Alternatives Eliminated from Detailed Analysis: 4 - 10	
Potential OESF Alternative	Why Eliminated?
4. Research permit for spotted owls	Does not meet purposes 1,3,4,5
5. Scenario based on proposed 4(d) special rule	Does not meet purposes 4,5
6. Implement recommendations of the Commission on Old Growth Alternatives	Does not meet purposes 3,4,5
7. Plan under HR 4489	Does not meet purposes 4,5
8. Transition from Zoned to Unzoned	Does not meet purposes 1,5
9. Plan similar to Federal Ecosystem Management Assessment Team (FEMAT) recommendations	Does not meet purposes 1,5
10. No harvest	Does not meet purposes 1,5

¹ See page 2-3 for list of six purposes.

OESF Alternative 1

This alternative is the same as Alternative A described in Section 2.5. (See Table 2.6.2.) Under the No Action alternative, DNR would continue to manage lands within the Experimental Forest area according to existing policy and external regulatory control. No federal permits would be sought to enable DNR to conduct experimental management activities in potentially suitable spotted owl or marbled murrelet habitat. DNR would

conduct small-scale experiments involving second-growth stands, as mandated under FRP Policy No. 40. Also, under the Forest Resource Plan (1992), DNR is beginning to use a landscape planning process to identify landscape-level objectives consistent with department policies and to coordinate local management activities around these objectives. Initial working boundaries have been identified in DNR's Olympic Region. Eleven of these fall within the OESF boundaries.

When DNR's Forest Resource Plan was written, the department was already developing plans for an Olympic Experimental State Forest. Although a management plan was not yet adopted, it was assumed that a recommendation by the Commission on Old Growth Alternatives for Washington's Forest Trust Lands (1989) to defer harvest on 15,000 acres of mature timber within the proposed boundaries would be part of that plan; the department has been deferring harvest within the agreed-upon 15,000 acres since 1991. The deferral was to continue for 15 years (until 2005). At that time, the Board of Natural Resources would determine whether the deferral should continue and would base the decision on research results gained within the OESF. Since the larger OESF program, including the old growth research component, was not implemented as intended due to ESA restrictions, it is unclear what criteria will be used by the Board to make this determination. Nevertheless, the 15,000-acre deferral is part of the No Action alternative.

Northern Spotted Owls

Under this alternative, DNR would follow the management strategy described in Alternative A. Within a spotted owl site center (2.7 miles radius) no harvest would occur if existing habitat is equal to or less than 40 percent of the total area. Two-year surveys would be conducted to identify owl sites.

Marbled Murrelet

The conservation strategy for marbled murrelet under No Action in the OESF is the same as described in Alternative A.

Riparian Areas

In the past 5 years, field staff of DNR's Olympic Region have implemented significantly greater protection of streams and riparian areas than is required by Washington Forest Practices Rules for riparian management zones (WAC 222-30-020(3)). This level of protection on DNR-managed lands is consistent with actions to minimize disturbances of unstable channel margins and adjacent hillslopes, as required by WAC 222-16-050 and direction given by the Board of Natural Resources through the Forest Resource Plan (DNR 1992b). The special protective measures have been applied because of a high potential throughout the OESF for mass wasting and tree blowdown.

The No Action alternative for managing riparian areas in the OESF consists of the following:

- (1) riparian buffers on all stream types, the widths of which are based on ground protection required to minimize disturbance of unstable channel margins and adjacent hillslopes (referred to as the "interior-core buffer");
- (2) routine road maintenance;

-
- (3) protection of nonforested wetlands, as well as some forested wetlands and bogs;
 - (4) a sidecast-pullback program for maintaining and reducing failure potential of sidecast-constructed roads;
 - (5) landscape planning, under way in one of 11 landscape planning units within the Olympic Experimental State Forest;
 - (6) an in-stream restoration program in the Hoh basin, (COHO project; see Chapter 4); and,
 - (7) several different forms of watershed assessments leading to forest-practices prescriptions, including a process designed for state lands within the Usual and Accustomed Areas of the Hoh Tribe (Hoh Tribe and DNR 1993), Washington Forest Practices Board (1995b) watershed analysis, and watershed-assessment methods developed specifically for landscape-planning efforts (e.g., DNR 1995c).

Under this alternative, DNR would continue its present management and operational strategies for minimizing channel disturbances by mass-wasting and windthrow processes, as well as conservation efforts leading toward full implementation of the Forest Resource Plan (DNR 1992b).

Present practices range in different watersheds from Washington Forest Practices Rules minimums (WFPB 1995c) to substantial buffers on all stream types and wetland acreage to address nontimber resource issues and unstable slopes. Today, approximately 55 percent of riparian areas are protected by riparian management zones (i.e., limited-harvest to no-harvest buffers) that have average widths comparable to the OESF interior-core buffers described in Chapter 4 of this draft EIS. The variability in riparian protection across the OESF is due to a lack of detailed mass-wasting and channel condition inventories for all portions of the Experimental Forest and insufficient science staff to assist in the field with analyses of riparian conditions. In addition, DNR is making a transition from a site-specific to a watershed-scale mode of management; consequently, not all riparian areas are treated similarly.

Streamside buffers in the OESF currently exceed the current Washington Forest Practices Rules for Riparian Management Zone (RMZ) widths (WAC 222-30-020(3); WFPB 1995c), especially where they incorporate unstable ground. The intent of these buffers is to protect all unstable ground associated with riparian systems. These riparian buffers are actively managed to promote windfirm, structurally and compositionally diverse streamside forests capable of maintaining bank stability and functioning ecologically. For example, most Type 4 and 5 Waters located in proposed harvest areas with local slopes exceeding approximately 70 percent have been, or will be, protected by no-harvest or limited-harvest buffers.¹³ Buffer widths for Type 5 Waters currently are determined on the ground by qualified staff and average 105 feet wide. Harvest practices in these areas are not likely to change until a mechanism is invented for stabilizing ground that naturally is prone to failure. Furthermore, current practices in the Olympic Region often provide

¹³ This is due to the recurrence and severity of landslides and debris flows that originate in the headwalls of such drainages (e.g., see Benda 1993; Hoh Tribe and DNR 1993; O'Connor and Cundy 1993; Shaw 1993; DNR 1995c; McHenry et al. 1995; S. C. Shaw, DNR Olympic Region, Forks, WA, unpubl. data, 1991-94).

greater protection than Forest Practices RMZs in low-gradient, alluvial stream systems (i.e., Type 1 through 3) because Forest Practices RMZs do not adequately protect incised channel margins, unstable terrace and hillslope margins, and flood-plain wetlands.

Table 2.6.2: OESF management under Alternative 1 (No Action)

Element	OESF Management under Alternative 1
Northern Spotted Owl	<ul style="list-style-type: none"> ● Timber sales are designed to meet level of acceptable risk as determined by Board of Natural Resources. ● Two-year surveys conducted on proposed timber sales to collect/update information on owl sites. (There have been no surveys since 1993 in OESF.) ● 40% of area within owl circles in habitat is maintained. As owls move, sites will be added and subtracted. ● 15,000 acres of suitable habitat is deferred until 2005.
Marbled Murrelet	<ul style="list-style-type: none"> ● Same as HCP Alternative A.
Riparian Areas	<ul style="list-style-type: none"> ● Due to the physical features of the region, protection of unstable slopes is the key component of riparian conservation strategies. ● Unstable hillslopes are protected per Forest Resource Plan and DNR agreement with Hoh Tribe. ● Activity within riparian areas ranges from forest practices minimums to substantial buffers is based on site-specific characteristics, per the Forest Resource Plan.
Experimentation	<ul style="list-style-type: none"> ● No concentrated effort.

OESF Alternative 2

Under this OESF alternative (see Table 2.6.3), DNR would receive an incidental take permit and enter into an agreement on unlisted species by including this alternative with the overall HCP proposal as the proposed habitat conservation strategy for the OESF Planning Unit.

Northern Spotted Owl

This alternative would establish specific landscape targets for conservation of northern spotted owl habitat, which would be integrated with harvest level targets through strategic application of harvest techniques and silvicultural treatments. This alternative considers the particular age class distribution on the OESF where roughly 70 percent of the forest is in stands less than 30 years old. Landscape targets would be set for the development of habitat based on a working hypothesis of the quality, quantity, and distribution of potential habitat needed to meet the target. In addition to landscape-level management, forest stands would be managed in such a way that they are potential suitable spotted owl habitat during significant portions of the management cycle. Conservation would

emphasize the development of future owl habitat in conjunction with an active research program and adaptive management in order to learn how to provide robust ecosystem protection as well as timber harvest opportunities across the entire OESF.

Development of an unzoned forest would occur in two phases. The first is considered a habitat recovery phase. During this time each landscape would be managed so that old forest habitat (NRF) exceeds 20 percent of the acres in that landscape and sub-mature and old forest habitat (RF and NRF) together (that is, including the 20 percent above) exceeds 40 percent. The second phase is maintenance and enhancement, during which these same or higher percentages would be maintained within a mosaic of habitat that shifts location over time as guided by analyses and plans for individual landscape planning units.¹⁴ Under the unzoned forest alternative, the OESF would be managed to produce owl habitat as a by-product of the integrated management approach. While threshold amounts are specified in this DEIS, they should not be viewed as targets but as projections; the unzoned approach is an experimental hypothesis.

Under this alternative, the spotted owl strategy would be linked to the riparian and marbled murrelet strategies. Ecosystem protection is intended to derive, in large part, from management directed at maintaining or restoring riparian ecosystem function and older forest conditions across much of the managed uplands. Management of streamside forests, landslide-prone areas, areas important to marbled murrelet conservation, and owl nest groves would be designed to protect or restore ecosystem functions. A long-term effect of the intended management practices will be the development of large areas of older forests, well-distributed across the OESF. Under the Unzoned Forest alternative, larger patches of older forest with greater areas of interior-forest conditions would be developed across the OESF. Interim strategies for marbled murrelet conservation and for riparian ecosystem protection would provide owl habitat in addition to seasonal protection of nest groves. The long-term strategy for murrelet conservation, and its interaction with owl conservation, can not yet be predicted. The 15,000-acre deferral described under Alternative 1 is not part of the OESF action alternatives.

Marbled Murrelet

Marbled murrelet conservation would be identical to that proposed in Alternative B. (See Section 2.5.)

Riparian Areas

The riparian strategy, which is the same for Alternative 2 (Unzoned) and Alternative 3 (Zoned), is a restoration-based long-term effort to find solutions through experimentation and active resource management. The riparian strategy relies heavily on protection of unstable slopes which are common in the majority of drainages on the OESF. The strategy for managing riparian areas includes:

- (1) Continuation of the first seven activities listed under Alternative 1 (No Action) above, such that riparian, wetlands, and forest management policies of the DNR Forest Resource Plan (1992) are fully implemented and the HCP objectives for riparian habitat conservation are achieved;

¹⁴See Matrix 1b for additional details.

(2) Addition of exterior buffers (on all stream types) outside of the streamside (i.e., interior-core) buffers described under No Action, with their primary purpose being to protect the interior-core buffers from wind disturbances;

(3) A comprehensive road-maintenance plan for each landscape planning unit;

(4) Buffer protection of forested wetlands and enhanced protection of nonforested wetlands; and,

(5) A rigorous program of research and experimentation, designed to foster a better understanding of riparian processes and their land-management-induced modification, specifically with regard to protecting riparian buffers from windthrow and disturbances related to upland management practices.

Management activities in riparian buffers would be limited to those that promote forest windfirmness and support the physical and biological integrity of riparian systems. A principal working hypothesis of this alternative is that buffers designed to minimize mass wasting and blowdown will be sufficient to protect other key physical and biological functions of riparian systems. A primary objective of the research and monitoring program on the OESF is to test this hypothesis.

Other Species

In general, the combination of the spotted owl, marbled murrelet, and riparian strategies is expected to provide conservation for many other species as well. However, some additional strategies are provided for selected species and habitats. These are outlined in Matrix 1b at the end of this chapter.

Table 2.6.3: OESF management under Alternative 2 (Unzoned Forest)

Element	Management Under OESF Alternative 2
Northern Spotted Owl	<ul style="list-style-type: none">● Conservation strategy for owls is designed to meet this objective: To develop, implement, test and refine landscape-level forest management techniques in the OESF that support a wide range of forest ecosystem values in DNR-managed commercial forests, including their occupancy by successfully reproducing spotted owls that are a functional segment of the Olympic Peninsula sub-population.
Marbled Murrelet	<ul style="list-style-type: none">● Same as Alternative B.
Riparian Areas	<ul style="list-style-type: none">● Unstable slope protection is the foundation for a majority of riparian conservation strategies.● Riparian management activities consistent with the objective of maintaining and restoring riparian functions and processes within a commercial forest.● Management activities within riparian zones and wind buffers will be designed, executed, and monitored as experiments.
Experimentation	<ul style="list-style-type: none">● Incidental take permit and agreement on unlisted species enable DNR to fully implement an innovative program of experimental management and research. Conservation is integrated throughout management of the OESF.

OESF Alternative 3

Under this OESF alternative (see Table 2.6.4), DNR would receive an incidental take permit and enter into an agreement for unlisted species by including this alternative with the overall HCP proposal as the proposed conservation strategy for the OESF Planning Unit.

Northern Spotted Owls

The zoned conservation strategy for spotted owls is based on near- and long-term conservation of spotted owls in the OESF by special management for nesting, roosting, and foraging habitat to provide for owl pairs within strategically located areas. Size and location of these areas are based on five considerations: (1) the juxtaposition and density of DNR-managed lands and federal reserves at the scale of the size of pair ranges; (2) the presence of existing habitat; (3) an objective to maintain pairs in the coastal lowlands; (4) the locations of currently and recently occupied pair sites; and, (5) the size of pair ranges, and the types and amounts of habitat used by pairs. Each zoned forest area has a specific intended function, such as to support occupancy and productivity by pairs in or adjacent to the Olympic National Park coastal strip to support occupancy and productivity by pairs in this area that bridges the coastal lowlands from upland forests in the interior federal

reserves to the Olympic National Park coastal strip and to support pairs in coastal lowland forests, in or adjacent to the Olympic National Park corridor, pairs in upland forests near Olympic National Park, and pairs in mostly lowland forests around the DNR-managed Clearwater Corridor Natural Area Preserve and the current Kalaloch pair site. Several "special pair areas" are also selected for interim support of occupancy and productivity at selected pair areas.

This strategy incorporates a stratified management design to develop NRF habitat configurations that will attract and support territorial owls, hypothesizing that owls will occupy sites as they become habitable. The habitat developed through this strategy is intended to meet the life needs of owl pairs in the following manner:

Nest Groves - Designed to provide prime habitat for nesting at multiple levels: individual stands, pair ranges, and pair clusters. Possibly more than one nest grove per pair area to provide for alternate nest-sites. About 200 acres in area; 100 percent "old-forest habitat" (following the terminology of Hanson et al. 1993).

Core Areas - Designed to provide prime habitat for provisioning nesting females, nestlings, and fledglings at multiple scales - stand, pair range, and pair cluster. Centered on nest groves. As compact as possible, based on ownership patterns, existing habitat, and management considerations. About 2,000 acres in area, at least 50 percent in sub-mature or old-forest habitat types (following the terminology of Hanson et al. 1993).

Annual Range - Designed to meet annual life needs for pairs. Centered on nest groves. As compact as possible, based on ownership patterns, existing habitat, and management considerations. Minimal overlap with adjoining areas managed as pair sites. About 14,000 acres; at least 40 percent in young-forest marginal or better habitat types (terminology and definitions for habitat follow Hanson et al. 1993).

Special Pair Areas - Designed to maintain or restore (around four of five sites) at least the minimum amount of habitat (young-forest marginal or better) recommended by the U.S. Fish and Wildlife Service (Frederick 1994) to avoid taking owls, 5,708 acres within 2.7 miles of the site center. The prescriptions for these areas may be relaxed when restoration of the areas managed for pair clusters results in threshold types and amounts of habitat in those areas.

Matrix - The rest of the DNR-managed lands will be managed without specific objectives for owl habitat.

The objectives of land management within each of the strata are to support the functions of those areas for resident spotted owl pairs. Management within nest groves will maintain and/or restore old-forest habitat conditions. In core areas, management activities will maintain and/or 50 percent or more of the area to sub-mature and old-forest habitat conditions. Other practices will maintain and/or restore young-forest marginal habitat conditions. Management in the annual range area will maintain and/or restore 40 percent or more young-forest marginal, sub-mature, and old-forest habitat conditions, including those stands in the nest groves and core area. Management practices within the

annual range may detract from habitat capability if they do not conflict with objectives for this stratum.

Management outside the special owl zones will be directed by other conservation, revenue, and information-gathering objectives. However, the conservation of riparian ecosystems and the interim strategies for marbled murrelet conservation will provide additional owl habitat. The long-term marbled murrelet strategy and the effects of its interaction with owl conservation can not yet be predicted.

Marbled Murrelet

Marbled murrelet conservation would be similar to that proposed in Alternative C (see Section 2.5).

Riparian Areas

The riparian strategy would be similar to the strategy described under Alternative 2. It relies heavily on protection of unstable slopes which are common in the majority of drainages on the OESF. Riparian protection would consist of a restoration-based strategy and a long-term effort to find solutions through experimentation and active resource management.

Other Species

In general, the combination of spotted owl, marbled murrelet, and riparian strategies are expected to provide conservation for many other species as well. However, some additional strategies are provided for selected species. These are outlined in Matrix 1b at the end of this chapter. Species associated with older forests will be concentrated in the owl zones.

Table 2.6.4: OESF management under Alternative 3 (Zoned Forest)

Element	Management under OESF Alternative 3
Northern Spotted Owl	<ul style="list-style-type: none"> ● Designate specific areas for spotted owl conservation within which management and active research activities are limited.
Marbled Murrelet	<ul style="list-style-type: none"> ● Same as Alternative C.
Riparian Areas	<ul style="list-style-type: none"> ● Unstable slope protection is the foundation for a majority of riparian conservation strategies. ● Riparian management activities consistent with the objective of maintaining and restoring riparian functions and processes within a commercial forest. ● Management activities within riparian zones and wind buffers will be designed, executed, and monitored as experiments.
Experimentation	<ul style="list-style-type: none"> ● Initiate experimental management, research, and restoration activities across a majority of DNR-managed lands in the OESF. Conduct limited research activities within zones designated to support clusters of spotted owl pairs.

The following OESF alternatives were considered but not included in the detailed analysis because they were not considered to be reasonable.

OESF Alternative 4: Research Permit for Spotted Owls

Under this alternative, DNR would not seek incidental take permits or unlisted species agreements. DNR would continue to manage within the OESF area under the No Action alternative, but it would apply for "scientific permits" allowed under the ESA for specific research projects in habitat. Such scientific permits would be narrow in scope and are generally used to cover such actions as banding individual birds. Alternative 4 does not address possible disruptions resulting from future listings. This alternative would not enable DNR to conduct experimental management activities at the landscape level. This alternative does not provide the regulatory relief or the flexibility to enable the implementation of the Olympic Experimental State Forest. Thus, it does not meet the need or purposes.

OESF Alternative 5: Scenario Based on Proposed 4(d) Special Rule

Alternative 5 is similar to Alternative H described above for the other eight planning units. According to the draft rule proposal currently circulating from USFWS, the vast majority of the OESF would be within a Special Emphasis Area (SEA). Thus, under such a 4(d) rule, DNR would have a choice of complying with owl circles (similar to No Action) or preparing an HCP for spotted owls. Under this alternative, DNR would either wait until the final rule is adopted and then pursue an HCP for spotted owls within the

SEA, or start now to prepare an HCP, assuming that the final rule will resemble the draft rule.

OESF Alternative 5 fails to adequately address management disruptions resulting from listings of other species, including the marbled murrelet and fish. While feasible, this alternative would not result in efficient management, nor would it provide the level of relief available under a comprehensive HCP.

OESF Alternative 6: Implement the Recommendations of the Commission on Old Growth Alternatives

Under this alternative, DNR would resume work on a management plan for the Experimental Forest as described in the 1989 report of the Commission, to attain the goal of a projected, separate sustained yield of 145 million board feet. This alternative describes a course of action that was feasible prior to the listing of the spotted owl in 1990, the marbled murrelet in 1992, and heightened concern for salmon. Under this alternative, it is likely that DNR would risk violating the ESA's prohibition on take. Given the current prohibitions on take of listed species and the negotiated agreements, this alternative is no longer considered reasonable by DNR. In addition, this alternative would not reduce management disruption in the event of future listings affecting the OESF.

OESF Alternative 7: Plan under HR 4489 (Public Law 102-436)

Under this alternative, DNR would propose a separate research and management plan for the Olympic Experimental State Forest. DNR would design a plan to cover all the elements outlined by Congress in HR 4489 and would achieve relief from ESA restrictions for spotted owl habitat.¹⁵ DNR would not achieve relief for species other than the spotted owl through this planning effort. This alternative would not reduce management disruption in the event of future listings affecting the OESF. OESF Alternative 7 is not considered a reasonable alternative because it does not meet the stated purpose (p. 2-3 no. 5). Due to the restrictions on research and management activities within marbled murrelet habitat, this alternative would not enable DNR to conduct large-scale experimentation.

OESF Alternative 8: Transition from Zoned to Unzoned Forest

Under this OESF alternative, DNR would receive an incidental take permit and an agreement on unlisted species by including this alternative with the overall HCP proposal as the proposed conservation strategy for the OESF Planning Unit. Under OESF Alternative 8, DNR would start with the protection of basic owl zones as described in OESF Alternative 3 (Zoned) but would also begin to develop habitat objectives in all 11 landscape planning units across the Experimental Forest, as described in OESF Alternative 2 (Unzoned). The result would be retention of most of the currently occupied owl and murrelet habitat in the Experimental Forest until habitat targets are reached on all landscapes. Marbled murrelet conservation would be similar to that proposed in

¹⁵ A brief history of the Congressional action along with the complete text of this legislation is contained in the March 1995 briefing materials for the Board of Natural Resources (DNR 1995f).

Alternative C (see Section 2.5). The riparian strategy is common to all OESF action alternatives.

The transition from a zoned to an unzoned forest would likely result in a limited harvest for the first five or six decades in all landscape units because of the disparity in age classes across the OESF. When potential harvest levels are considered, the zoned and unzoned alternatives are relatively similar in the amount of area unavailable for harvest during the early decades. However, under Alternative 8 *both sets* of constraints are applied in order to create the zoned owl areas *and* begin developing the habitat to meet landscape-level targets for the unzoned strategy. As a result, the amount of timber that would be available for harvest during the early decades under either strategy alone is reduced by nearly half under Alternative 8. This alternative is not considered reasonable because of the constraints on experimentation in habitat and the limited revenue generation to the trusts during the next 50 or more years.

OESF Alternative 9: Plan Similar to Forest Ecosystem Management Assessment Team

Under Alternative 9, DNR would prepare a plan that uses an approach similar to that recommended by the Forest Ecosystem Management Assessment Team (FEMAT) and that avoids most old growth harvest. This alternative would provide substantial protection for species and habitats, and would place little emphasis on manipulative research in habitat. This alternative would not enable DNR to conduct experimental management activities at the landscape level. DNR would invest in habitat restoration and habitat acceleration actions in young forest stands. This alternative is similar to the conservation strategy employed within designated U.S. Forest Service reserves. However, FEMAT was responding to legal direction applicable to federal forest lands. DNR-managed lands have a different legal mission, and all alternatives being considered must be consistent with that mission. OESF Alternative 9 does not meet DNR's need or purposes and is not considered reasonable.

OESF Alternative 10: No Harvest (Retain all existing habitat and grow more)

OESF Alternative 10 is similar to Alternative 4 except that there would be no harvest activities, including research-related harvests, within currently occupied habitat. This alternative would establish specific landscape targets for conservation of habitat and for timber harvest, and DNR would begin immediate implementation of landscape targets. Timber sales under this alternative would be limited to thinnings. This alternative is not reasonable because it would not provide DNR the ability to conduct large-scale experiments and would not provide reasonable trust revenue.