Chapter 1 – Purpose and Need

Document Structure

The Forest Service has prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Additional documentation may be found in the project planning record located at the Olympic National Forest Headquarters in Olympia, WA. See Analysis File section at the end of Chapter 3 for more information.

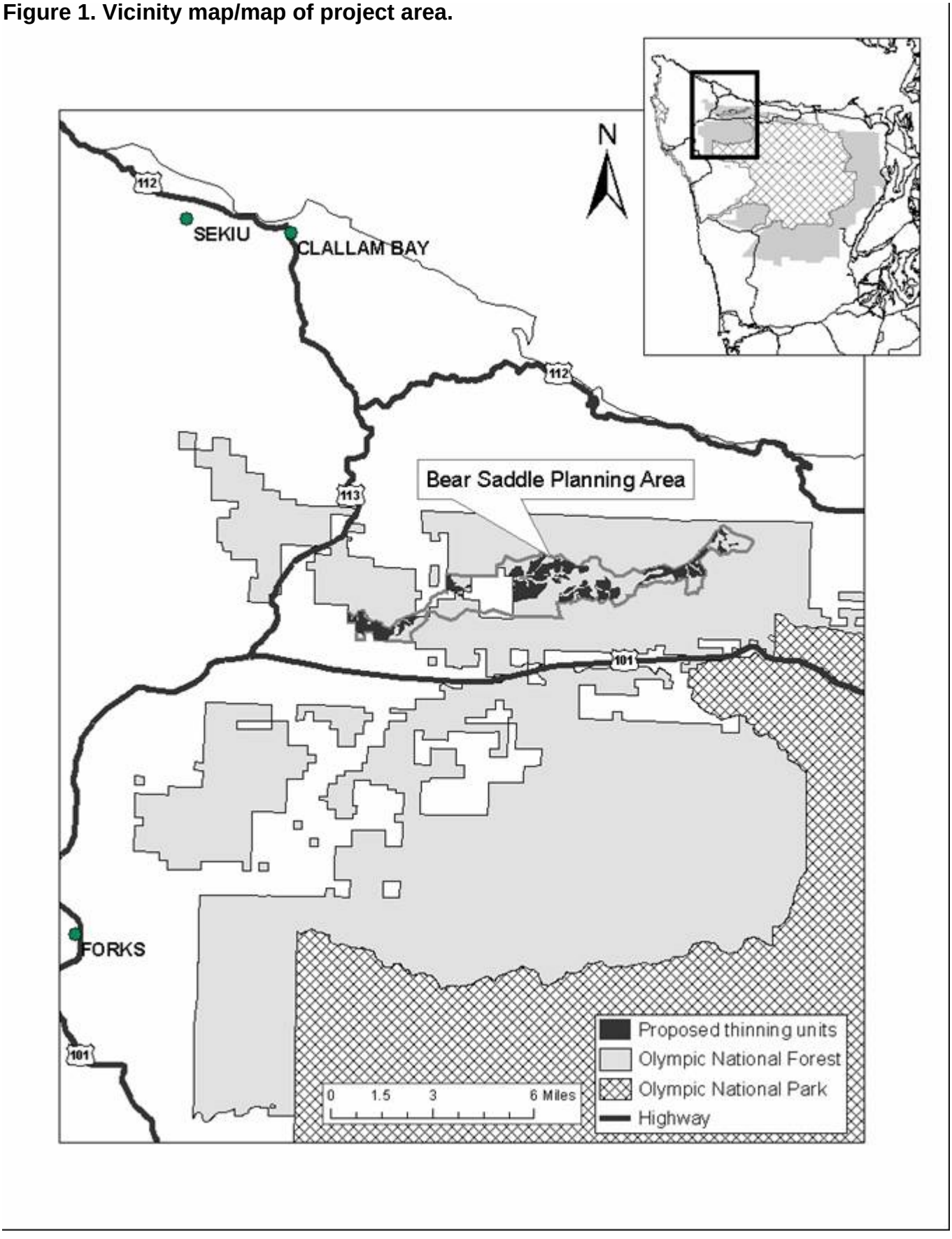
Project Location

Identification of the planning area for potential management actions is supported by recommendations of the Soleduck Pilot Late-Successional Reserve Assessment (USDA 1997) and the Olympic National Forest Strategic Plan (USDA 2004b). The assessment recommended variable density thinning within second growth stands (reforested clearcuts) that are over dense and lack diversity. The Strategic Plan takes a landscape scale look at restoration and identifies priorities and restoration needs for a variety of functional areas; including aquatics, wildlife, silviculture, and fire. It established restoration priorities for the watersheds across the Forest. The Middle Sol Duc and Deep Creek watersheds were rated high, and the West Twin River watershed was rated medium.

The 6,658 acre planning area (5,618 acres of National Forest System Land within the planning area) is located in Clallam County, located roughly along the Bear Creek West Twin Road (Forest Service Road 30) and to the north of the Bear Creek Road (see Figure 1). The planning area lies within the Middle Sol Duc, Deep Creek, and the West Twin River 6th field watersheds, which are a part of the Sol Duc and Lyre River/Twin River 5th field watersheds. The Sol Duc watershed is a Tier 2 Key Watershed, indicating that it is a source of high water quality.

The legal land description for this project is T30N, R10W, Secs. 3, 4, 7-9, and 18; T30N, R11W, Secs. 10-15, 17, 19; and T30N, R12W, Sections 23 and 24.

Figure 1. Vicinity map/map of project area.



Purpose and Need for Action

Current condition

In the Middle Sol Duc, Deep Creek, and West Twin River watersheds historic fire, clearcut timber harvesting, and replanting have resulted in 45-60 year old forest stands that are uniform and simplified. The forest canopy is at full closure with all growing space fully occupied. As competition for light and space continues, trees will continue to decline in vigor and become more susceptible to insect and root diseases. When forest stands are in this condition little understory vegetation and low plant species diversity exist due to the dense overstory canopy shading out shrubs and herbs. These forest stand conditions (dense, single-storied second-growth) also exist in Riparian Reserves and do not provide large trees to eventually fall into the streams for aquatic habitat.

The distribution and quantity of these dense, second-growth stands in the project area are affecting the amount and connectivity of late-successional habitat. For example, about 835 acres of the stands proposed for thinning reside in the Soleduck Late Successional Reserve (LSR) where approximately one-third of the area was clearcut in the past. Most of these historic clearcuts were then broadcast burned and replanted. The Snider Ridge-Twin Rivers Late Successional Reserve (LSR) block, which is the part of the Soleduck LSR that includes portions of the project area, is described as having the general landscape condition of having "[m]atrices of late-successional/old-growth ecosystems, fragmented by ecosystem initiation and competitive exclusion ecosystems (plantations) and isolated from the main body of the LSR" (USDA 1997, pg. 29). Furthermore, parts of LSRs where known spotted owl pairs do not have sufficient habitat for viability and are not functioning adequately for this species include the Snider Ridge Twin-Rivers block (USDA 1997, pg. 55-56). The Soleduck LSR Assessment identified managed second-growth stands, including stands within owl activity centers whose 0.7 mile radius nest territory circle contains less than 500 acres of suitable habitat, as high priority treatment areas for increasing interior forest habitat and reducing fragmentation.

Figure 2. Picture of forest stands in project area.

If no action is taken, the overstocked forest stands would continue to experience increased tree mortality and reduced plant diversity on the forest floor. The competition-related tree mortality would produce numerous small-diameter snags of little wildlife habitat value. The production of many small-diameter snags would also restrict the capability for the forest to produce the size and quantity of large woody debris sufficient to sustain physical complexity and stability of the Riparian Reserves and associated streams. As a result (for many decades to come) these stands would not develop late-successional habitat characteristics, and the existing fragmentation of late-successional forest habitat across the landscape would remain.

Desired Future Condition

The general desired condition for this area is diverse, multi-storied stands that provide improved habitat for late-successional and old-growth dependent species, as well as the amounts and distributions of coarse woody debris important for proper riparian function. Such stands would also contain openings that enhance herbaceous plants on the forest floor.

Conifer Stands

The desired future condition for conifer stands in Late Successional Reserve (LSR) and Riparian Reserves is to develop old-growth character in the next 60-100 years that would provide both habitat values within the stands and connectivity between existing old-growth habitat. Stands with old-growth characteristics would exhibit the following conditions (Old-Growth Definition Task Group 1986; and Carey and Johnson 1995):

- a patchy, multilayered forest canopy with high crown closure and trees of several age classes;
- a variety of herbs, shrubs, and coniferous tree seedlings and saplings on the forest floor;
- overstory trees exceeding 36 inches in diameter at breast height (dbh) with large crowns, large branches, broken tops and other indications of old and decaying wood in some of them;
- understory trees with a range of diameters and ages;
- large standing dead trees (>4 per acre over 20 inches dbh and 15 feet tall, and as many as 12 per acre);
- and coarse woody debris (15-20% ground cover).

The objective within Adaptive Management Area (AMA) is to add structural diversity to the stand, which includes many of the stand conditions described above.

Alder-Dominated and Mixed Alder/Conifer Stands

The majority of these alder-dominated and mixed stands are the result of past logging disturbance. Over the next several decades and without treatment, the majority of alder will die and be replaced by conifers growing in the understory or by other more resilient hardwood species. The desired future condition in alder-dominated and patchy alder/conifer stands is late successional conifer-dominated conditions developed by the acceleration of the natural replacement process. These stands will continue to include a significant component of hardwood trees such as bigleaf maple, black cottonwoods, and large alder; along with a variety of shrubs and herbs. Alder will remain in these stands and continue to fix nitrogen until transience. Patches of pure alder will not be treated as part of this project.

Riparian Reserves

The desired future condition for the portions of stands in Riparian Reserve is similar to that for stands in LSR, except for the addition of a stand condition that provides a shade canopy within 50 feet of the streams and wetlands.

Purpose and Need

Therefore, the purpose of this proposal is to

- increase structural diversity of forest stands by developing a multi-layered canopy and other components of late-successional habitat.

The purpose of and need for action is based on the premise that 1) inadequate amounts of late-successional habitat exist in all Forest Plan allocations in the planning area watersheds and that 2) accelerating the development of second-growth stands would provide late-successional/old-growth habitat conditions sooner than if the stands were left to develop naturally. Such actions are recommended by the Northwest Forest Plan (USDA and USDI 1994b), the Soleduck Late Successional Reserve Assessment (USDA et al. 1995), and the Olympic National Forest Strategic Plan (USDA 2004b).

There is a need for forest stands that are structurally diverse. The stands within the proposed project units are single-storied, second-growth stands that are experiencing a slowing of growth due to overcrowding. Additionally, these stands do not provide adequate habitat for old-growth dependent species.

Because the only certain funding source to accomplish the implementation of this project is through the sale of wood products that would be removed as part of the treatment, a secondary need is to have economically viable commercial timber sales. Additional restoration work could be implemented with any excess revenue generated from the sales.

The objectives of this project are to reduce tree density; add structural and spatial complexity; maintain or increase crown and branch size and diameter growth of individual trees; and introduce an understory of seedlings/saplings, shrubs, and herbs. Additional goals include increasing the number of snags and snag recruitment trees suitable for cavity nesters and to contribute to large woody debris recruitment in forest stands and riparian areas. In alder and patchy alder/conifer stands, the objective is to release healthy understory conifers and thin pure conifer patches while retaining a hardwood component throughout these stands.

Proposed Action

The Olympic National Forest proposes to commercially thin simplified, young, second-growth stands to accelerate the development of some of the structural and compositional features of late-successional forests and accelerate the growth of forest stands in Late Successional Reserve, Adaptive Management Area, and Riparian Reserve land allocations in the project area within the Middle Sol Duc, Deep Creek, and the West Twin River watersheds.

The project area includes approximately 2,189 acres proposed for commercial thinning in forest stands that are approximately 45 to 60 years old. Proposed logging systems would include a combination of ground-based, cable, and helicopter logging. Access for this project would use current Forest System roads, Bonneville Power Administration (BPA) access roads, unclassified/abandoned road grades, and short segments of new temporary road and safety spurs. Unclassified/abandoned roads would be more fully decommissioned after using them for access, and temporary and safety spurs would be decommissioned. Opportunities would also exist to decommission additional system and nonsystem roads and implement other restoration work with funds generated from the project.

The Proposed Action is represented by Alternative B in Chapter 2. Please refer to pages 15-25 for a more detailed description of the Proposed Action.

Decision Framework

As a result of this environmental analysis, the responsible official (Olympic National Forest Supervisor) will decide how much commercial thinning treatments will be accomplished, what level of access is appropriate in the project area, and what management requirements and mitigation measures are included in the project.

Selection of an alternative and mitigation measures will be based on environmental effects, the ability to meet the project's Purpose and Need, and economic feasibility.

The decision will include a determination of the significance of the effects and a statement regarding consistency with the standards, guidelines, goals and objectives of the Forest Plan, and other laws and regulations.

Management Direction

The Forest Plan

This Environmental Assessment is tiered to the Final Environmental Impact Statement for the 1990 Olympic National Forest Land and Resource Management Plan (LMRP) (USDA 1990a, USDA 1990b). The LMRP was amended by the 1994 Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA and USDI 1994b), commonly known as the Northwest Forest Plan, and its amendments. This document also tiers to the April 2005 Final Environmental Impact Statement (FEIS) for the Pacific Northwest Region Invasive Plant Program: Preventing and Managing Invasive Plants (USDA 2005a), as well as the March 2008 Olympic National Forest Final Environmental Impact Statement and Record of Decision for the Beyond Prevention: Site-Specific Invasive Plant Treatment Project (USDA 2008).

This analysis also incorporates by reference the following documents:

- Olympic National Forest's LRMP - The 1990 Olympic National Forest Land and Resource Management Plan (Forest Plan or LMRP), as amended by the 1994 Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (1994 ROD or Northwest Forest Plan) and its amendments, provides management direction for the National Forest System lands (NFS) within the project area. Direction is provided in the form of goals and objectives, and Forest-wide and Management Area standards and guidelines.

- Road Management Strategy (USDA 2000) and the Olympic National Forest Access and Travel Management (ATM) Plan (USDA 2003b) – Provides the starting point for moving toward a smaller, more affordable road network, and informs future analyses and decisions regarding management of the Forest's road system.

- Sol Duc Pilot Watershed Analysis (USDA et al. 1995), the Deep Creek and East and West Twin Rivers Watershed Analysis (USDA et al. 2002) – Purpose of these analyses is to develop and document a scientifically based understanding of the ecological structures, functions, processes, and interactions occurring within a watershed.

- Soleduck Late Successional Reserve Assessment (USDA 1997) – Examines the historic and current uses, vegetative conditions, and late-successional forest associated species within the late-successional reserve, as well as identifying appropriate treatments to achieve desired conditions.

- Olympic National Forest Strategic Plan (USDA 2004) – as described elsewhere.

- October 2005 Record of Decision for the Pacific Northwest Region Invasive Plant Program: Preventing and Managing Invasive Plants EIS (USDA 2005b) – Documents the decision on a Region wide approach to preventing and managing invasive plants.

- Council on Environmental Quality (CEQ) Memo (CEQ 2005) – Provides guidance on the consideration of past actions in cumulative effects analysis.

- Bear Creek Saddle project analysis file - Contains specialist reports and other technical documentation used to support analysis and conclusions in this EA.

The 1994 ROD (USDA and USDI 1994b) incorporates seven land allocations, which amend the allocations described in the 1990 Forest Plan. There is considerable overlay among some allocations, and more than one set of standards and guidelines may apply (such as Riparian Reserve requirements within a Late Successional Reserve). In addition, where the standards and guidelines of the 1990 Forest Plan are more restrictive or provide greater benefits to late-successional forest-related species than do those of the 1994 ROD, the 1990 standards and guidelines apply.

The 1994 amendment also includes additional forest-wide standards and guidelines, and an Aquatic Conservation Strategy, with four components—Riparian Reserves, key watersheds, watershed analysis, and watershed restoration—that are designed to help improve the health of the aquatic ecosystem.

Land Allocations Within the Project Area

The following are land allocations found within the project area (see Forest Plan land allocations maps):

Late Successional Reserve (LSR): Late Successional Reserve areas are designated to protect and enhance late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth forest related species such as the northern spotted owl (USDA and USDI 1994b, pg. A-4). Silvicultural systems proposed for LSRs have two principal objectives: (1) development of old-growth forest characteristics including snags, logs on the forest floor, large trees, and canopy gaps that enable establishment of multiple tree layers and diverse species composition; and (2) prevention of large-scale disturbances by fire, wind, insects, and diseases that would destroy or limit the ability of the reserves to sustain viable forest species populations (USDA and USDI 1994b, pg. B-5). Road construction and maintenance in LSR are generally not recommended unless potential benefits exceed the costs of habitat impairment (USDA and USDI 1994b, pg. C-16).

Riparian Reserves (RR): Riparian Reserves, a major component of the Aquatic Conservation Strategy (ACS), include areas along all streams, wetlands, ponds, lakes, and unstable or potentially unstable areas (USDA and USDI 1994b, pg. A-5). Riparian Reserves overlay all other management areas. Generally, standards and guidelines for Riparian Reserves prohibit or regulate activities that retard or prevent attainment of ACS objectives. The 1994 ROD's standards and guidelines allow "silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives" (USDA and USDI 1994b, pg. C-32).

Adaptive Management Area (AMA): AMAs have been assigned the primary goal of developing and implementing innovative management practices that integrate economic and ecological values.

Spotted Owl Habitat Areas (C1 – NSO Habitat): An original 1990 LRMP designation where the primary goal is the maintenance of suitable habitat areas to meet the needs of spotted owl populations and other species associated with the same habitat type.

Timber Management (E1): An original 1990 LRMP designation where the primary goal is to produce timber on a long-term sustained yield basis.

This project is supported by the Forest Plan, as amended, for the protection and enhancement of late-successional and old-growth forest ecosystems in designated LSR, AMA, and RR (Riparian Reserves) land allocations (USDA and USDI 1994b). This project also utilizes information and recommendations from the Soleduck Late Successional Reserve Assessment (USDA 1997), Sol Duc Pilot Watershed Analysis (USDA et al. 1995), Deep Creek and East and West Twin Rivers Watershed Analysis (USDA et al. 2002), and the Olympic Adaptive Management Area Guide (USDA 1998b).

The Northwest Forest Plan defines silviculture as "the art and science of managing forest stands to provide or maintain structures, species composition, and growth rates that contribute to forest management goals" (USDA and USDI 1994b, pg. B-5). The first principal objective that the Northwest Forest Plan assigns to the use of silviculture in LSRs is the "development of old-growth forest characteristics including snags, logs on the forest floor, large trees, and canopy gaps that enable establishment of multiple tree layers and diverse species composition." It further states that "[s]tand management in Late-Successional Reserves should

focus on stands that have been regenerated following timber harvest or stands that have been thinned. These include stands that will acquire late-successional characteristics more rapidly with treatment, or are prone to fire, insects, diseases, wind, or other disturbances that would jeopardize the reserve."

Likewise the Northwest Forest Plan direction for RR includes complying with the Aquatic Conservation Strategy (ACS) objectives by managing riparian-dependent resources to maintain existing conditions or implement actions to restore conditions. A use of silviculture in watershed restoration is to restore large conifers in RR. Appropriate practices may include thinning densely-stocked young stands to encourage development of large conifers and releasing young conifers from overtopping hardwoods (USDA and USDI 1994b, pg. B-31).

The Late Successional Reserve Assessment (USDA 1997) describes criteria for developing treatments for specific areas and prioritized management strategies for achieving the described desired conditions. This project follows Criteria 2 for forest ecosystems in the competitive exclusion stage and falls under Priority 2 (Accelerate), which addressed past harvesting that fragmented the forest. The project also falls under Priority 3 (Diversify), which addressed ecosystems that lack complexity.

Other guidance: The Olympic National Forest Strategic Plan

The Olympic National Forest Strategic Plan (USDA 2004b) aims to identify priority 6th field watersheds by aquatics, wildlife, and vegetation resource areas. The intent of the document is to help prioritize limited resources to accomplish work in the areas with the greatest resource need and, where possible, satisfy multiple resource management objectives.

The Strategic Plan provides the following priority ratings by resource area for the Middle Sol Duc, Deep Creek, and West Twin River 6th field watersheds (see Table 1).

Table 1. Forest Strategic Plan ratings for planning area 6th field watersheds.

	Middle Sol Duc River	West Twin River	Deep Creek
Overall rating	High	Medium	High
Aquatic	High	Moderate	Moderate
Wildlife	High	Moderate	Moderate
Commercial thinning opportunities			
LSR, 0-80 yrs (acres)	1,829	1,640	2,370
AMA 0-120 yrs (acres)	8,251	721	776
Precommercially thinned (acres)	1,323	444	973
Economic rating	High	High	Medium

These priority ratings for each resource area were developed based on the following criteria:

Aquatic: The priority for the aquatics resource area was based on three primary issues: maintaining and improving anadromous fish habitat, assisting in the recovery of listed threatened and endangered fish species, and maintaining water quality for municipal water supplies.

Wildlife: The priority for the wildlife ranking was based on the primary issues of maintaining and improving late-successional terrestrial wildlife species habitat and improving elk forage. Watersheds where the Olympic National Forest could have the greatest positive impact on listed threatened and endangered wildlife species – most notably the northern spotted owl and marbled murrelet – and forage availability were identified.

Vegetation Management: Commercial thinning opportunities were evaluated by identifying all managed forest stands currently between the age of 41 to 60 and 61 to 80 years of age in designated Late-Successional Reserves (LSR) or within Adaptive Management Areas (AMA). AMA stands between 81 and 120 years of age were also identified as potential opportunities. The potential for economically viable commercial thinning sales was also evaluated. Table 1 shows the acres by watershed and land allocation considered for potential commercial thinning along with economic rating.

Public Involvement

To help identify issues for this project, the Pacific Ranger District sent scoping letters on April 13, 2004 and April 5, 2005 to concerned publics, state, federal, and local government agencies describing the proposed action and requesting comments. The Lower Elwha S'Klallam, Makah, and Quileute tribes were also contacted prior to each scoping letter. The project has also been listed in the Forest's *Schedule of Proposed Actions* which describes the proposed action and is posted on the Olympic National Forest internet website. Ten responses were received.

An earlier version of this EA, dated May 2006, was made available for public comment on May 5, 2006. Eight comments were received and have been considered in the preparation of this EA. Based on the analysis documented in the May 2006 EA Forest Supervisor Dale Hom made a decision on September 15, 2006 to implement the Bear Creek Saddle project. This decision was the subject of a lawsuit and due to a ruling against the Forest Service on a narrow issue of a NEPA procedural deficiency Forest Supervisor Hom withdrew his decision on June 20, 2008 with a letter to parties interested in the Bear Creek Saddle project. The June 20, 2008 letter expressed Forest Supervisor Hom's intent of issuing a new NEPA analysis to cure the procedural deficiency. This new analysis is documented in this EA.

Additional public involvement occurred with a meeting of interested stakeholders on October 30, 2008 at the Forest Headquarters in Olympia, Washington. This meeting was held to provide an opportunity for those interested in the project to express their thoughts and concerns. Five interested stakeholders attended the meeting.

Summarized below are the issues identified through review of public comments, local experience, field reconnaissance, District resource maps, and Interdisciplinary Team deliberations (see Issues section).

Issues

The Forest Service separated the issues into two groups: key and non-significant issues.

Key Issues

Key issues were defined as those directly or indirectly caused by implementing the proposed action. Indicators (or measures) follow each key issue to allow for comparison of how each alternative addresses or impacts the resource concern.

While the comment letters received during public scoping largely posed questions about the project, the Forest Service identified the following key issues:

Aquatic Conditions: Project activities, such as the construction of temporary roads, particularly within riparian reserves, may negatively impact aquatic conditions by increasing sedimentation.

Indicator: Miles of new temporary road construction and reconstruction of existing and abandoned roads.

Indicator: Post-harvest treatment of roads

Owl Activity Center: The potential impacts of implementing thinning activities within an existing owl activity center are not well known and may result in disturbance to use of the activity center, either through harvest activities or by possibly enhancing the habitat for barred owl occupancy.

Indicator: Acres proposed for thinning within a designated owl activity center by logging system.

Non-significant issues

The Council for Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations require this delineation in 40 CFR 1501.7, "…identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)…" Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. A list of non-significant issues and reasons regarding their categorization as non-significant may be found at the end of this section.

Logging on National Forests. A commenter stated that logging on National Forests is economically fraudulent and is exploitative of American taxpayers. One of the purposes of activities on National Forest System Land is described in the Organic Act of 1897 which states a purpose is to furnish a continuous supply of timber for the use and necessities of citizens of the United States. Olympic National Forest timber is appraised and sold using a fair market value process. There are many associated costs and benefits in the control and administration of national forests that are not economically obvious or measurable.

Ecosystem service of forests. A comment was made that due to the ecosystem services forests provide (providing oxygen, removing dust and gases, filtering carbon dioxide) they are worth more intact than logged. The proposed project aims to accelerate development of young

stands. The forest would remain intact and fully capable of providing the noted ecosystem services.

Forest management left to Nature. A comment was made that forest management should be left to Nature, that natural thinning agents (fire, wind, etc.) do a far superior job. The Forest Service has been given a mandate by Congress through laws and regulations to manage National Forest System Lands and the Forest Service is obligated to carry out these designated responsibilities. The practice of thinning second growth stands to increase species diversity has scientific validity.

Bonneville Power Administration road maintenance. A commenter stated that the Bonneville Power Administration roads are badly managed and show no evidence of regular drainage maintenance, and believes the Forest Service should be more assertive with BPA regarding road maintenance. Since this comment was made the BPA has conducted road maintenance on a number of its access roads. BPA roads not improved by BPA that are part of this project would be improved as part of implementation of this project.

Permitted waterline. One commenter raised the concern about the project impacting a permitted water transmission pipeline located on National Forest land in Section 24 of T30N, R12W, within planned commercial thinning Unit 61. Mitigation measures that apply to all alternatives will be implemented to protect the waterline. Therefore, this issue was not carried forward as a significant issue.

Unauthorized horse trail. Another commenter expressed concern about the project impacting a horse trail on Forest Service land. Given that it is not an authorized trail, however, the Forest Service is not obligated to maintain the trail.